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Contents

Conceptual Studies

Literary Reviews

Case Studies

Short Communication

EDITORIAL

Medical Ethics in *Ayurveda*

Ethics is an integral part of a good medical practice and constitute the application of moral principles, values and standards to the practice of medicine. Ethics simply means the rules or principles which govern right conduct. The application of ethics to the situation specific to medical practice is termed as Medical Ethics. In the current National Health Policy 2015; professionalism, integrity and ethics constitute the key policy principles. In the modern times awareness has also increased regarding the matters related to human rights and consumer protection. Doctors face medico-legal controversial issues on regular basis. The basic aim behind the knowledge and practice of ethics is to develop healthy professionalism, high quality patient care and to avoid unwanted legal issues. ***Centuries back, Ayurveda has advocated the practice of ethics in the field of medicine, necessitating the competence of the physician, getting consent, to develop the virtues of integrity, compassion and self effacement, to maintain good relation with co-professionals, to abstain from making false claims, advertisements and malpractices.*** References are available where matters of confidentiality and privacy of the patient have been given importance. Modern medical ethics has its roots in *Ayurveda*. Description of medical ethics is not available at a single place but there is undercurrent of these throughout the different ancient *Ayurvedic* texts.

The history of western medical ethics may be traced back to the guidelines on conduct of the physician as stated in the Hippocratic Oath. The first code of medical ethics, *'Formula Comitis Archiatrorum,* was published in the fifth century, during the reign of Ostrogothic king Theodoric the Great. In the medieval and early modern period, the credit goes to Ishaqibn Ali al-Ruhawi to write the first book dedicated to medical ethics. By eighteenth and nineteenth centuries, the concept of medical ethics had emerged as a more self-conscious discourse. In England, Thomas Percival, a physician and author, crafted the first modern code of medical ethics. In 1803, he coined the terms 'Medical Ethics' and 'Medical Jurisprudence'. In 1815, the Apothecaries Act was passed by the parliament of United Kingdom. This was the beginning of regulation of medical profession in U.K. But the issue of the ethics became more prominent after the Nuremberg code in 1947. In fact this is the result of Nazi's atrocities in the name of research. The shocking details of the post second world war (1939-45) trial of German medical practitioners accused of conducting inhuman experiments on human participants without their consent and exposing them to grave risk of death or permanent impairment of their faculties raised grave concern about subjecting human subjects to medical research. This resulted into Nuremberg code in 1947.

Ancient India's contributions to ethics are remarkable and, almost 3000 years later, continue to have great relevance in modern times as well. In this era of enormous technical advances and innovative therapies, the influence and power of crass materialism and rampant commercialization grows ominously. Sadly, the benefits of advanced technology are far from available to all, and the business of health care becomes increasingly venal. Doctors are better informed about their conditions of service and their career opportunities than the rights and welfare of their patients. It is inevitable, under such circumstances, that deviant practices and tendencies will come to taint ethical medical practice and training.

In *Ayurveda* great emphasis has been put on the practice of ethics to strengthen the bond of therapeutic relationship between the patient and the physician. It also improvises the quality of professional life of the physician. *Ayurvedic* code of conduct and ethics should be endorsed with zeal in the present medical practice.

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Clinical Study

Role of *Agni Karma* in the Management of Tennis Elbow

*Dr. Pooja Arya, **Dr. Rahul Sharma, ***Prof. Sanjeev Sharma, ****Prof. Hemant Kumar Kushwah

Abstract:

Introduction: Tennis elbow is a common painful condition of elbow joint. Common extensor tendons (Extensor carpi radialis brevis and Extensor digitorum communis) originating from the lateral epicondyle of the humerus get inflamed by repetitive trauma and cause considerable pain. It has become a challenging medical condition now-a-days because it affects the daily routine activities of a person. **Materials and Methods**: Patients fit under inclusion criteria with sample size 100 were included in the study in two groups i.e. 50 patients in each group i.e. *Agnikarma* and LATC (Local anaesthesia and Triamcinolone 10 mg) respectively. **Results**: Both the selected interventions i.e. *Agnikarma* and Steroidal infiltration gave statistically significant results in their own groups but intergroup comparison revealed that steroidal infiltration has an upper edge in relieving the symptoms. **Conclusion**: LATC is better than *Agni-Karma* in providing immediate relief. However, *Agnikarma* can also prove a better treatment modality for Tennis elbow if some oral medication and modifications in *Agni Karma* technique are done.

Key words: *Agnikarma, Snayu Vikara,* Tennis Elbow.

सारांश-

टेनिस एलबो कोहनी की एक सामान्यत: होने वाली दर्दनाक व्याधि है। कोहनी के पार्श्व से संलग्न एक्स्टेंसर कार्पी रेडियलस और एक्स्टेंसर डिजीटोरम कोम्यूनिस मांसपेशियों के बार-बार आघात से सूजन और काफी दर्द हो जाता है। यह एक चुनौतीपूर्ण चिकित्सा स्थिति है क्योंकि यह व्यक्ति की दैनिक गतिविधियों को प्रभावित करती है। वर्तमान अध्ययन 100 रोगियों में किया गया है। इन 100 रोगियों को दो अलग-अलग समूहों में विभाजित किया गया। अर्थात प्रत्येक समूह में 50 रोगी थे। पहले समूह के रोगिं की चिकित्सा अग्निकर्म द्वारा और दूसरे समूह के रोगियों का स्थानीय स्टेरॉयड इंजेक्शन (स्थानीय संज्ञाहरण औषधि और 10 मिलीग्राम) द्वारा उपचार किया गया। परिणामत: चयनित दोनों चिकित्सा विधियों, अर्थात अग्निकर्म और स्टेरायड़ इंजेक्शन ने अपने अपने समूहों में सांख्यिकीय रूप से कारगर परिणाम दिए, लेकिन अंतर-समूह की तुलना में पता चला कि स्टेरॉइड इंजेक्शन विधि टेनिस एलबो के लक्षणों से राहत प्रदान करने में अधिक प्रभावी है।अंतत: यह निष्कर्ष निकाला गया कि स्टेरॉइड इंजेक्शन विधि टेनिस एलबो में अधिक प्रभावी है। यद्यपि, अग्निकर्म विधि के साथ कुछ मौखिक दवाएं और अग्निकर्म विधि में कुछ परिवर्तन या संशोधन किए जाएं तो अग्निकर्म टेनिस ऐल्बो के लिए एक बेहतर उपचार साबित हो सकता है।

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Clinical Study

Role of *Agni Karma* in the Management of Tennis Elbow

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Introduction:

Tennis Elbow is the most common insertional tendinopathy of the human body resulting due to specific occupations or repeated low intensity trauma. Overuse of tendons of extensor origin or sudden trauma leads to Tennis elbow. Cardinal symptom of Tennis Elbow is pain on the outer aspect of elbow joint which may radiate to forearm and hand and affects the daily routine work. On examination localised tenderness is felt over lateral epicondyle[1] and pain is aggravated by dorsiflexion of the wrist[2]. Pathogenesis of Tennis Elbow is still debated but at the histopathological level it is found that it is a degenerative disorder. As far as management of Tennis Elbow is considered, no standard, safest, or perfect treatment is available. Patients are generally managed conservatively by NSAIDs and physical therapy; refractory patients are given steroid injections which have their side-effects in long run. Patients who do not respond to injections may also have to go for surgical interventions[3], which is a costly affair and can also lead to various complications like postero-lateral instability of elbow joint. Present study is a sincere effort to find out an effective *Ayurvedic* treatment modality for Tennis Elbow in the form of *Agni-Karma* therapy, a para-surgical procedure mentioned for the treatment of *Vata Vyadhi* and *Ssnayu Vikara* in the classics of *Ayurveda*[4]. *Agni-karma* (cauterisation) is in practice as a therapeutic measure since *Vedic* period and gained supremacy during the period of *Acharya Sushruta*. Even in *Charaka Samhita*, which is a main treatise of medicine, *Agni karma* has been employed for various ailments as a line of treatment[5,6]. Considering pain due to *Vata dosha* and Tendons as *Snayu*, *Agni-karma* was selected for the present study.

Aims and objectives

1. To estimate the efficacy of *Agni karma* in Tennis Elbow.
2. To provide a better modality of treatment to the patients suffering from Tennis elbow.

Materials and methods:

All the patients fit under inclusion criteria attending the O.P.D. of Shalya Tantra Department. of Rajiv Gandhi Govt. Post Graduate Ayurvedic College & Hospital, Paprola H.P. were selected and registered.

Ethical clearance

Proposed protocol was submitted to the Institutional Ethics Committee and the clearance of the IEC obtained before starting the trial.

Inclusion criteria

Willing patients for trial between the age of 25-60 years of either sex having Pain *(Vedna)* on the outer (lateral) side of the elbow joint with radiation towards forearm or hand, tenderness (*sparshashyata*) over the lat. condyle of humerus and positive Cozen's test & Mill's manoeuvre test were selected.[7, 8].

Exclusion criteria

Non-willing patients, below 25 years and above 60 years of age, *Pitta* dominating *Prakriti, Alpa Satva, Antah Shonita, Vranita,* unfit for *Swedana,,* with *Anuddhrita Shalya*, *Avara Samhanana*, *Bhiru,*[9] pregnant women and Patients having joint disorders viz. rheumatoid arthritis, osteoarthritis, gouty arthritis of elbow joint, tuberculosis, diabetes or having other constitutional disorders were excluded.

Study Design

Patients included in the study were divided in two groups and assessment was done on the basis of the specified parameters (before and after the treatment). Sample size was 100 patients i.e. 50 patients in each group i.e. (*Agnikarma* and LATC groups respectively).

Interventions

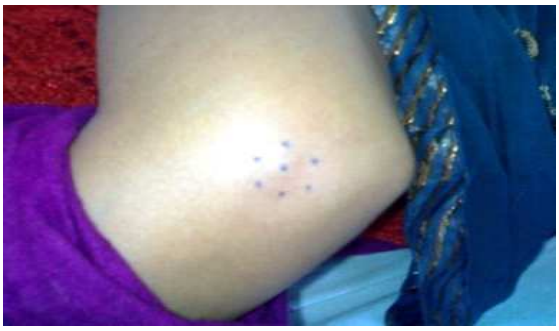
a) Agni karma (Trial Group)

Total 4 sittings of *Agnikarma* were done with the interval of 7 days between subsequent sittings. *Bindu* type therapeutic *Dagdha* in rosette manner and 7 in number were done.

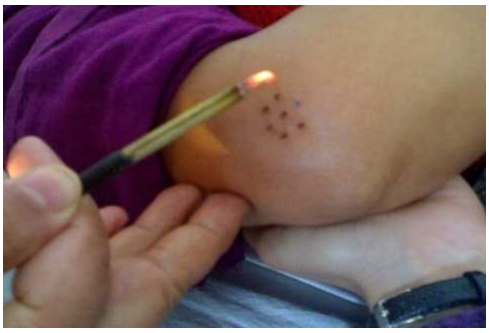
b) LATC (Standard Group)

Standard treatment of Tennis elbow i.e. Local Anaesthetic with Triamcinolone was given to the patients in 3 sittings. The interval between subsequent sittings was of 10 days.

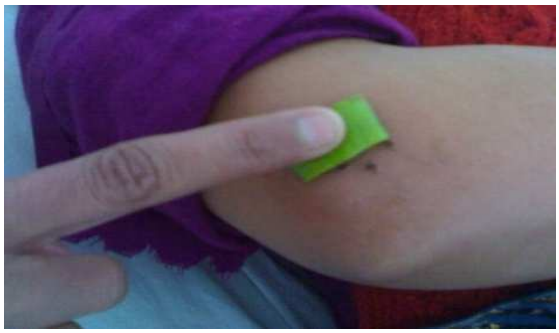
Agnikarma Methodology: Patients were well counselled and explained about the procedure. Written, informed and witnessed consent was taken before the procedure and patients were advised to take some *Pichhila* diet in previous night[10]. *Agropaharaniya* - Before starting the procedure, a standardized electric cautery with round but pointed copper tip for *Bindu type Dagdha* , artery forceps, sponge holding forceps, gauze pieces, cotton, *Ghritkumari* pulp, murchhit til-taila, adhesive tape, Cotton bandage etc. were kept ready. Most tender spot of elbow joint was thoroughly cleansed and gentle *Abhyanga* was done with *murchhit til-taila* for 10 minutes in the direction of hairs. This served the purpose of both *Snehana* and *Swedana,* as *til-taila* provides *snehana* (oleation) as *abhyanga* (massage) is a variety of *Anagani Swedana*. Patients were kept in supine position with elbow flexed at 90° across the chest. Electric Cautery with illumination source adjusted properly for timing and voltage and heated up to red-hot and seven *Bindu* (dot) type of *Varna* were made in rosette pattern centralising most tender spot of the elbow joint i.e. lateral condylar area, till the appropriate features of superficial theraputic burns *(samayaka twaka dagdha lakshanas)* appeared i.e. *shabda pradurbhava* (sound production), *durgandhata* (foul smell)[11]. Immediately after completion of the procedure *Ghritkumari (Aloe vera) pulp* applied over the *Vrana* and gauze impregnated with *Madhuyasti (Glycyrrhiza glabra) churna* kept and bandaged. Patient was advised to take rest for about 10 minutes and assured. During the procedure patient was carefully observed for any untoward complications. Patients were advised to keep the area dry, clean, avoid exertion, trauma and unwholesome diet.



Therapeutic burn by electric cautery



Marking of area to be burn



Alovera gel application

Methodology of Local Anaesthetic with Triamcinolone:

The tender most area was infiltrated with the Triamcinolone 1 ml (10mg) with Lignocaine 1 ml (2% plain) by 23 gauze needle after antiseptic painting and sterile draping. Total 3 sittings with the interval between subsequent visits of 7 days *i. e.* on the 8th post procedure day the same procedure was repeated.

Criteria for Assessment

Criteria for assessment was on subjective and objective parameters. Subjective parameters were

Pain, Pricking sensations, Loss of function, Radiation of pain and objective parameters were Tenderness, Cozen's test and Mill's manoeuvre.

A. Subjective criteria

1. Pain (*Ruja*)

a)	No Pain	-	0
b)	No Pain at rest but occurs after physical work	-	1
c)	Pain also present at rest but mild	-	2
d)	Pain also present at rest but moderate	-	3
e)	Pain also present at rest but severe	-	4

2. Pricking sensation (*Toda*)

a)	No pricking sensation	-	0
b)	Occasional pricking sensation	-	1
c)	Constant mild pricking sensation	-	2
d)	Constant moderate pricking sensation	-	3
e)	Constant severe pricking sensation	-	4

3. Loss of function

a)	Can actively do all the routine work	-	0
b)	Can do daily routine work but have to take rest intermittently	-	1
c)	Can do daily routine work but have to take rest very oftenly	-	2
d)	Can't do daily routine work	-	3

4. Visual Analogue Scale

In this pain assessment tool patient indicates intensity of pain on a 10 cm. line marked from no pain (0) at one end to pain as bad as it could possibly be (10) at he other end.

I	I	I	I	I	I	I	I	I	I	I
0	1	2	3	4	5	6	7	8	9	10

5. Verbal descriptive scale (VDS) /Verbal rating scale (VRS) for pain

a)	Can actively do all the routine work	-	0
a)	No pain	-	0
b)	Mild pain	-	1
c)	Uncomfortable	-	2
d)	Distressing	-	3
e)	Horrible	-	4
f)	Excruciating	-	5

6. Radiation of pain

a)	No radiation of pain	-	0
b)	Pain radiates up to forearm occasionally	-	1
c)	Pain radiates up to forearm continuously	-	2
d)	Pain also radiates up to hand.	-	3

B. Objective criteria

7. Tenderness

a)	No pain on palpation	-	0
b)	Pain occurs on deep palpation	-	1
c)	Pain occurs on light palpation	-	2
d)	Patient does not allow touching the affected part	-	3

8. Cozen's test

When the patient is asked to extend the clenched fist against resistance, considerable pain is experienced at the lateral epicondyle.

a)	No pain against any resistance	-	0
b)	Pain felt against hard resistance	-	1
c)	Pain felt against moderate resistance	-	2
d)	Pain felt against light resistance	-	3

9. Mill's manoeuvre

Patient's wrist is passively flexed when his forearm is pronated. This gives rise to tremendous pain on the attachment of common extensor tendons i.e. lateral epicondyle.

a)	Not positive	-	0
b)	Pain at full palmer flexion	-	1
c)	Pain in the middle of palmer flexion	-	2
d)	Pain at just beginning of palmer flexion	-	3

Null Hypothesis (H)

Agni Karma is not effective in the treatment of selected disease conditions.

Alternate Hypothesis (H_1)

Agni Karma is as effective as local infiltration of Local anesthetic with Triamcinolone.

Results - Comparative Study

Table No. 1 Table showing the comparative study of the results in both groups

Sr. No.	Assessment parameter	Trial Group			Standard Group		
		Mean score		% relief	Mean Score		% relief
		BT	AT		BT	AT	
1.	Pain	3.08	0.42	86.36	3.04	0.18	94.08
2.	Pain Radiation	1.96	0.28	85.71	2.06	0.14	93.20
3.	Pricking sensation	2.44	0.36	85.24	2.48	0.12	95.16
4.	Tenderness	2.72	0.36	86.76	2.72	0.14	94.85
5.	Loss of function	2.34	0.36	84.61	2.18	0.14	93.58
6.	Cozen's test	2.54	0.50	80.31	2.66	0.16	93.98
7.	Mill's manoeuvre	2.52	0.36	85.71	2.66	0.16	93.98
8.	VAS	6.92	0.78	88.72	6.84	0.32	95.32
9.	VDS	3.58	0.48	86.59	3.84	0.18	95.31

Table No. 4 Table showing the comparison of study in both the groups

Sr. No	Assessment Parameter	Trial Group				Standard Group			
		±SD	±SE	't'	'P'	±SD	±SE	't'	'P'
1.	Pain	0.894	0.126	21.02	<0.0001	0.782	0.110	25.83	<0.0001
2.	Pain Radiation	0.712	0.100	16.67	<0.0001	0.600	0.084	22.60	<0.0001
3.	Pricking sensation	0.778	0.110	18.89	<0.0001	0.963	0.136	17.31	<0.0001
4.	Tenderness	0.631	0.089	26.44	<0.0001	0.574	0.081	31.74	<0.0001
5.	Loss of function	0.714	0.100	19.60	<0.0001	1.029	0.145	14.01	<0.0001
6.	Cozen's test	0.807	0.114	17.87	<0.0001	0.580	0.082	30.46	<0.0001
7.	Mill's manoeuvre	0.650	0.919	23.48	<0.0001	0.543	0.076	32.49	<0.0001
8.	VAS	1.565	0.221	27.74	<0.0001	1.328	0.187	34.70	<0.0001
9.	VDS	0.952	0.134	23.00	<0.0001	0.894	0.126	28.92	<0.0001

Table No. 5 Table showing the comparative mean score of assessment criteria

Sr. No.	Assessment parameter	Mean scores AT		'z'	'P'
		TG	SG		
1.	Pain	0.42	0.18	2.68	0.0074
2.	Pain Radiation	0.28	0.14	2.73	0.0063
3.	Pricking sensation	0.36	0.12	2.24	0.0251
4.	Tenderness	0.36	0.14	3.03	0.0024
5.	Loss of function	0.36	0.14	3.11	0.0019
6.	Positive Cozen's test	0.50	0.16	3.65	0.0003
7.	Positive Mill's maneuver	0.36	0.16	2.31	0.0209
8.	VAS	0.78	0.32	2.46	0.0058
9.	VDS	0.48	0.18	1.72	0.0854

Findings on Follow-up

Patients were followed up for three months after the completion of the trial at monthly visits to see the status of *Agni Karma* scars and other complications. At the end of the 3rd month follow up it was noticed that there was recurrence of the features in 46% cases in Trial Group whereas the recurrence in standard group was only in 18 % cases. In 6 % cases the white discoloration was noticed at injection site in Standard Group.

Discussion

Inter group comparison:

i. Pain: In the trial group %age of relief was 86.36% in comparison to 94.08% in standard group. Percentile improvement is less in trial group however; both the results are statistically significant at 1% confidence level in their own groups. But inter group comparison reveals that the difference is real i.e. 'z' score is 2.68 (p =0.0074) and alternate hypothesis (H_1) *(Agni Karma* is as effective as local infiltration of Local anaesthetic with Triamcinolone.) is rejected.

ii. Pain Radiation: In the trial group %age of relief was 85.71% in comparison to 93.20% in standard group. Percentile improvement is less in trial group however; both the results are statistically significant at 1% level in their own groups. But inter group comparison reveals that the difference is real i.e. 'z' score is 2.73 (p = 0.0063) and alternate hypothesis (H_1) *(Agni Karma* is as effective as local infiltration of Local anaesthetic with Triamcinolone.) is rejected.

iii. Pricking sensation: In the trial group %age of relief was 85.24% in comparison to 95.16% in standard group. Percentile improvement is less in trial group however; both the results are statistically significant at 1% level in their own groups. But inter group comparison reveals that the difference is real i.e. 'z' score is 2.24 (p 0.0251) and alternate hypothesis (H_1) *(Agni Karma* is as effective as local infiltration of Local anaesthetic with Triamcinolone.) is rejected

iv. Tenderness: In the trial group %age of relief was 86.76% in comparison to 94.85% in standard group. Percentile improvement is less in trial group however; both the results are statistically significant at 1% level in their own groups. But inter group comparison reveals that the difference is real i.e. 'z' score is 3.03 (p = 0.0024 0.001) and alternate hypothesis (H_1) *(Agni Karma* is as effective as local infiltration of Local anaesthetic with Triamcinolone.) is rejected.

v. Loss of function: In the trial group %age of relief was 84.61% in comparison to 93.58% in standard group. Percentile improvement is less in trial group however; both the results are statistically significant at 1% level in their own groups. But inter

group comparison reveals that the difference is real i.e. 'z' score is 3.11 (p =0.0019) and alternate hypothesis (H_1) *(Agni Karma* is as effective as local infiltration of Local anaesthetic with Triamcinolone.) is rejected.

vi. Cozen's test: In the trial group %age of relief was 80.31% in comparison to 93.98% in standard group. Percentile improvement is less in trial group however; both the results are statistically significant at 1% level in their own groups. But inter group comparison reveals that the difference is real i.e. 'z' score is 3.65 (p = 0.0003) and alternate hypothesis (H_1) *(Agni Karma* is as effective as local infiltration of Local anaesthetic with Triamcinolone.) is rejected.

vii. Mills maneuver: In the trial group %age of relief was 85.71% in comparison to 93.98% in standard group. Percentile improvement is less in trial group however; both the results are statistically significant at 1% level in their own groups. But inter group comparison reveals that the difference is real i.e. 'z' score is 2.31 (p=0.0209) and alternate hypothesis (H_1) *(Agni Karma* is as effective as local infiltration of Local anaesthetic with Triamcinolone.) is rejected.

viii. Visual Analog Scale: In the trial group %age improvement was 88.72% in comparison to 95.32% in standard group. Percentile improvement is less in trial group however; both the results are statistically significant at 1% level in their own groups. But inter group comparison reveals that the difference is real i.e. 'z' score is 2.46 (p =0.0058) and alternate hypothesis (H_1) *(Agni Karma* is as effective as local infiltration of Local anesthetic with Triamcinolone.) is rejected.

ix. Verbal Descriptive Scale: In the trial group %age improvement was 86.59% in comparison to 95.31% in standard group. Percentile improvement is less in trial group however; both the results are statistically significant at 1% level in their own groups. But inter group comparison reveals that the difference is not real i.e. 'z' score is 1.72 (p = 0.0854) and alternate hypothesis (H_1) for this variable *(Agni Karma* is as effective as local infiltration of Local anesthetic with Triamcinolone.) is accepted.

It shows that the %age of cured or improved patients is higher in Standard Group than Trial group and on the other hand none of the patients was unchanged in standard group in comparison to Trial group where some patients were still unchanged. It is revealing the fact that the local steroidal infiltration is more effective than *Agni karma*.

Discussion on Follow-up examination

In the first follow-up visit there was stability in the features i.e. no further increase or decrease in the symptoms was recorded. On 2nd visit an increase or recurrence in the features was noted in some patients and it was more in trial group than standard group. On the third visit also there was further increase in the features in both the groups but comparatively more in trial group. This reveals the fact that recurrence of features by both the treatments was there. Literature of modern medical science also says that recurrence after steroidal injection is common. But recurrence after *Agni Karma* is contrary to the textual references that "diseases cured by *Agni Karma* do not recur"[12]. Hence, some sort of modification in the procedure, oral medication and prevention of the causative factors is essentially required. Hence, it can strongly be stated that this therapeutic procedure not only subsides the symptoms but also cures the disease.

Conclusion

It is a disease caused by Vitiated *Vata* affecting the *Snayu* situated near *Koorpara Sandhi* (elbow joint). Statistically both the therapies are equally effective in the management of Tennis Elbow. No untoward effect of either *Agni Karma* or LATC could be recorded. This disease is more common in people involved in occupation involving manual work, females and age group 36-40 yrs. They should adopt such measures so that the disease can be prevented. It can be concluded that LATC is better than *Agni-Karma*. However, *Agni karma* can also prove a better treatment modality for Tennis elbow if some oral medication and modifications in *Agni Karma* technique are done.

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Clinical Study

Efficacy of *Kalpit Triphaladi Ghana Vati* on *Medodhatu Vriddhi*

*Dr. Pankaj Kothari, **Dr. Anupama Shukla, ***Dr. Mahendra Prasad, ****Dr. Hemraj Meena

Abstract:

In *Ayurveda,* health has been defined as equilibrium of *Dosha, Agni, Dhatu & Mala*, including well being at the level of *Mana* and *Atma*. The living body can function normally only when it's *Dosha, Dhatu,* and *Mala* are in a state of equilibrium. *Meda* is the main *Dushya* and *Kapha* is the main *Dosha* of *Medodhatu Vriddhi*. *Medodhatu Vriddhi* is a *Dushya* dominant *Vyadhi* Therefore, it was expected that proposed drug *Kalpit Triphaladi Ghana Vati*, check the pathogenesis of *Medodhatu Vriddhi* and act on the basic root cause of the disease and arrest the progress of the disease *Medodhatu Vriddhi* effectively.

Key Words: *Dosha, Dhatu, Mala, Medodhatu Vriddhi, Dushya, Kapha*

सारांश–

आयुर्वेद मतानुसार दोष, धातु, मल एवं अग्नि की साम्यावस्था के साथ–साथ आत्मा, इन्द्रिय एवं मन की प्रसन्नता को स्वास्थ्य कहा जाता है। जीवित शरीर तभी सामान्य रुप से कार्य कर सकता है जब उसके दोष, धातु और मल सामान्य अवस्था मे रहे। मेदो धातु वृद्धि अर्थात मोटापा मे मेद मुख्य दूष्य एवं कफ़ मुख्य दोष होता है। मेदो धातुवृद्धि एक दूष्य प्रधान व्याधि है इसलिए यह अपेक्षित किया गया था कि प्रस्तावित औषधि कल्पित त्रिफलादि घन वटी मेदो धातु वृद्धि के आधारभूत कारण का शमन कर व्याधि के सम्प्राप्ति विघटन मे मुख्यरुप से सहायक होगी।

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Introduction

In this modern era of science and technology, man has become more and more physically inactive along with this dietary habits has changed towards unhealthy food like fast foods, cold drinks, liquors, smoking etc. and hence now a days the code and conduct narrated in the ancient texts of *Ayurveda* have been ignored. By exposing on self to all these factors human beings unknowingly invited number of diseases, out of which obesity is one which disturbs physical, mental as well as social health of individual.

According to the surveys, obesity has reached epidemic proportions in India in the 21st century, affecting about 120 million of the country's urban population. India ranks amongst top ten obese nations, with morbid obesity affecting 5% of the country's population.According to National Family Health Survey 2007 in India 12.1% male was obese and their world wide ranking 14 and female have 15 ranking and the obese percentage of female is 16%.[1]

The following figures and many other studies show that Obesity has been not only in India while around the World increasingly cited as a major health issue in recent decades. Overweight and obesity are the fifth leading risk for global deaths.

Abnormal accumulation of *Meda Dhatu* in body is known as *Medodhatu Vriddhi*. The disease *Medodhatu Vriddhi* i.e. *Sthaulya* is a well recognized disease from the *Samhita* period. It has been mentioned by *Acharya Charaka* in *Ashtaunindita Purushadhyaya*.[2] As we see the *Samprapti* of *Sthaulya*, due to *Meda-Dhatwagni Mandya* there is excessive accumulation of *Meda* that leads to obstruction of *Medovaha Strotasa*. Due to this, there is *Vimargagamana* of *Vata Dosha*. The *Vimargaga Vayu* in *Koshta* ultimately increases the *Jatharagni* leading to an increase in appetite. This cycle goes on and on. Due to obstruction created by *Medovaha Strotasa*, all other *Dhatu* remains malnourished and only *Meda Dhatu* increases[3].

Many theories have been put forward with new hypotheses describing this disorder in *Ayurveda* as well as in other systems of medical sciences; still there is enough scope to work out on management aspect of the *Sthaulya*. Therefore, Present Research work has been undertaken with the following Aims and Objectives-

- To study Aetiopathogenesis of *Medodhatu Vriddhi* i.e. Obesity and work out their probable modern/Ayurvedic correlations.
- To evaluate clinical efficacy of *Kalpit Triphaladi Ghana Vati* in the management of *Medodhatu Vriddhi* w.s.r. to Obesity.

Material And Methodology

A) Selection Of Patients-

For the clinical trial 52 Patients has been selected from the OPD & IPD Arogyashala of National Institute of Ayurveda & Seth Surajmal Bombaiwala Hospital, Jaipur. Six patients were dropped out.

B) Inclusion Criteria-

1. Age between 16-70 yr.
2. Sex Either.
3. Patient having clinical sign and symptoms of *Medodhatu Vriddhi* as per classical *Ayurvedic* literature.
4. B.M.I. criteria were also followed for selection of patient.

C) Exclusion Criteria-

1. Patient suffering from obesity due to hereditary indisposition.
2. Patients with Hypothyroidism.
3. Patients suffering from drug induced Obesity.

4. Patients with evidence of Renal, Hepatic and Cardiac involvement.
5. Patients with Diabetes Mellitus.
6. Pregnant and Lactating women.

D) Withdrawal Criteria-

1. Patients developing any threatening complication during this trial. If any adverse effects will be found then it will be withdrawn from the study and informed to nearby Pharmacovigilance cell.
2. Any other acute illness.

Trial Drug

Table No. 1

Contents of *Kalpit Triphaladi Ghana Vati*[4]

Sr.No.	Drug Name	Latin Name	Family	Part used	Proportion
1	*Haritaki*	*Terminalia chebula*	Combretaceae	*Phala*	1 Part
2	*Vibhitaki*	*Terminalia bellirica*	Combretaceae	*Phala*	1 Part
3	*Amalaki*	*Emblica officinale*	Combretaceae	*Phala*	1 Part
4	*Palash*	*Butea monosperma*	Fabaceae	*Beeja*	1 Part
5	*Dhava*	*Anogeissus latifolia*	Combretaceae	*Kastha*	1 Part
6	*Chitraka*	*Plumbago zeylanica*	Plumbaginacee	*Moola*	1 Part
7	*Kutaja*	*Holarrhena antidysenterica*	Apocynaceae	*Twaka*	1 Part
8	Shinshpa	*Dalbergia sissoo*	Fabaceae	Kastha	1 Part

Method Of Preparation:- Useful part of all the above ingredient herbs were taken as *YavakutaChurna* in same ratio and boiled in water to prepare *Kwatha. (Sha. Sam Madhyam Khanda 2/ 1)* Filtrate of this *Kwatha* was again boiled to prepare *Ghana Satva* then which was dried and tablets weighing 500 mg each were prepared and packed well in air tight container. This formulation was done in *Rasashala*, i.e. Pharmacy National Institute of Ayurveda, Jaipur.

- **Drug Doses:** *Kalpit Triphaladi Ghana Vati* 500 mg twice a day before meal.
- **Anupana:** Luke warm water
- **Time Period of Clinical Trial**: Duration of medication completed at least for 60 days and according to condition of patient.
- **Follow Up:** Total four (every 15 day) follow ups were recorded during 60 days of treatment period.
- ***Pathya pathya* :** Patient has been made to follow *Pathya pathya* while taking medication.

Parameters Of Evaluation:

The effect of trial drug will be assessed in terms of Subjective, Anthropometry parameters.

A. Subjective parameters: All the patients were registered for clinical trial and were looked for any changes, in their clinical manifestations. For subjective parameters following symptoms will be assessed *Angachalatva, Atiksudha, Atipipasa, Javoprodh, Daurgandhya, Swedadhikya, Daurbalya, Nidradhikya, Krichchavyavayta, Gaurava, Kshudraswasa, Angasada, Krathana,* and *Snigdhangata*[5]. Grading was done for all symptoms & clinical trial was conducted by making a special research Proforma.

B. Anthropometry Measurements: Following measurements were done; Height, Weight, BMI, Hip circumference, Waist circumference,

Midthigh circumference, Midarm circumference.

Observation:

All the 52 patients have been studied by noting down their demographic profile including their age, sex, address, occupation, socio-economic status, marital status, dietary habits etc. Observation & results obtained were computed statistically and various conclusions were drawn accordingly.

- Majority of patients belong to age group 21-30 years (53.84%)
- Majority of 36 patients were female (84.62 %)
- Maximum patients were Hindu (91.17%) followed by Muslim (9.61%).
- Maximum patients were Student (44.23%) followed by Housewife (36.54%).
- In the present study maximum no. of patients i.e. 38 patients (73.08%) were Unmarried whereas 14 patients (26.92%) were unmarried
- In the present study maximum number of patients i.e. 31 patients (59.61%) were of middle socioeconomic status.
- In the present study maximum number of patients i.e. 25 patients (48.01%) were Higher Secondary Educated followed with 21 patients (40.38%) were Graduate.
- Maximum 30 patients (57.69%) had Vegetarian diet followed with 22 patients (42.31%) with mixed diet.
- Maximum 30 patients i.e. 57.69% were of *KruraKoshtha*.
- Majority of patients i.e. 27 patients (51.92%) were having *Vishamagni*, whereas 13 patients (25%) were having *Samagni*, 8 patients (15.38%) were having *Mandagni*.

Results - Results were divided into two steps:

Table No. 2 - Effect Of Therapy In 46 Patients Of *medodhatu Vriddhi* (Subjective Parameters) (Wilcoxon matched paired single ranked test is used)

Sr. No	Variable	Mean Score			% Relief	SD ±	SE ±	Sum of all signed Ranks	P	S
		BT	AT	Diff.						
1	***Cala Sphik - Udara –Stana***	2.37	1.87	0.5	21.1	0.50	0.07	276	.001	**HS**
2	***Krichhavyavayta***	0.56	0.52	0.04	7.14	0.20	0.03	3	.500	**NS**
3	***Angagandha***	1.30	1.19	0.10	7.69	0.31	0.04	15	.062	**NS**
4	***Swedadhikya***	2.04	2.13	-0.09	-4.41	0.81	0.12	-54	.530	**NS**
5	***Kshudhadhikya***	1.28	1.52	-0.24	-18.75	0.82	0.12	-187	.057	**NS**
6	***Pipasadhikya***	1.20	0.89	0.30	25	0.55	0.08	133	.02	**S**
7	***Kshudrashwasa***	2.04	1.30	0.74	36.27	0.49	0.07	561	.001	**HS**
8	***Gaurava***	1.93	1.11	0.83	43	0.52	0.07	630	.001	**HS**
9	***Daurbalya***	1.67	0.98	0.69	41.32	0.55	0.08	465	.001	**HS**
10	***Javoprodh***	1.15	0.65	0.50	43.48	0.69	0.10	171	.001	**HS**
11	***Krathana***	1.09	0.89	0.19	17.43	0.40	0.06	45	.03	**S**
12	***Snigdhangata***	1.72	1.80	-0.87	-50.58	0.66	0.10	-42	.452	**NS**
13	***Nidradhikya***	0.86	0.54	0.33	38.37	0.47	0.07	120	.001	**HS**
14	***Angasada***	1.46	0.98	0.48	32.88	0.62	0.09	190	.001	**HS**

Table No. 3 Effect Of Therapy In 46 Patients Of *medodhatu Vriddhi* (Physical Parameters)
(For Parametric Data **Paired 't'** Test is used)

Sr. No	Variable	Mean Score			% Relief	SD ±	SE ±	"t"	P	S
		BT	AT	Diff.						
1	Body Weight (kg)	74.36	69.91	4.45	5.98	1.61	0.24	18.77	0.001	HS
2	B.M.I. (kg/m^2)	29.92	28.11	1.81	6.05	0.66	0.10	18.62	0.001	HS
3	Mid arm Circumference (cm)	32.39	31.72	0.67	2.06	0.84	0.12	5.41	0.001	HS
4	Mid thigh Circumference (cm)	59.08	57.80	1.27	2.16	1.28	0.19	6.71	0.001	HS
5	Waist Circumference (cm)	100.83	96.04	4.78	4.74	2.58	0.38	12.57	0.001	HS
6	Hip Circumference (cm)	108.93	105.38	3.55	3.26	2.20	0.32	10.94	0.001	HS
7	Waist Hip Ratio	0.93	2.83	-1.90	-204.3	12.99	1.91	0.99	0.326	NS

Discussion

Table No.4. - Comparative Pharmacodynamic properties of the *Kalpita Triphaladi Ghana Vati*

Rasa	**Total**	**%**	**Guna**	**Total**	**%**	***Veerya***	**Total**	**%**
Kashaya	7/8	87.5	*Ruksha*	8/8	100	*Ushna*	5/8	62.5
Katu	5/8	62.5	*Laghu*	6/8	75	*Sheeta*	3/8	37.5
Tikta	5/8	62.5	*Tikshna*	1/8	12.5	***Vipaka***	**Total**	**%**
Madhura	3/8	37.5	*Sheeta*	1/8	12.5	*Katu*	5/8	62.5
Amla	2/8	25	*Madhura*	3/8	37.5			

Dohsakarma	**Total**	**Percentage**
Tridosha shamaka,	4/8	50
Kaphapitta shamaka	3/8	37.5
Kaphavata shamaka, Pitta vardhaka	1/8	12.5

Probable Mode of Action of Drug:

Above Pharmecodynemic Study of *Kalpit Triphaladi Ghana Vati* reveals that it have dominance of *Kashaya, Katu & Tikta Rasa; Ruksha, Laghu Guna; Ushna Veerya; Katu Vipaka* & *Tridosha shamaka* specially *Kapha pitta shamaka Karma* are present in Maximum *Dravyas*. These drugs have *Medoghna Prabhava* thereby pacifying the *Dosha* & there by relieves the symptoms in *Medo dhatu Vriddhi*. The effect of the study drugs can be attributed to the above mentioned properties of its ingredients.

Effect Of Trial Drugs On Subjective Parameters

1. Effect on *Chala Sphik - Udara –Stana:*

The percentage relief on *Chala Sphik - Udara –Stana* symptom was 21.1% which is statistically

Highly significant (p‹0.001)

This might be due to *Sphik - Udara –Stana* are the main site of excess *Medo* deposition and maximum contents of *Kalpit Triphaladi Ghana Vati* have *Medohara* and *Srotoshodhaka* properties which lead to reduction of excess *Medo Dhatu* from these sites. Along with this *Kashaya Rasa* of the drug causes *Sthambhana* i.e. increases the tone of these sites.

2. Effect on *Krichhavyavayta* :

The percentage relief on *Krichhavyavayta* symptom was 7.14% which is statistically Insignificant (p‹0.500).

This might be due to maximum of patients were unmarried (73.08%) and were not indulged in sexual life.

3. Effect on *Swedadhikya:*

The percentage relief on *Swedadhikya* symptom was -4.41% which is statistically Insignificant(p‹0.530).

Sweda is stated as *Mala* of *Meda*. The trial drugs have properties like *Ushna veerya*, *Strotoshodhan-Pachana* etc. *Pachana* of *Sara Dhatu* Produces *Utarottara Dhatu* and *Mala,* so *Pachana* of excessive *Medodhatu* produces *Utarottara Asthi Dhatu* and *Sweda*. which enhances the above symptom.

4. Effect on *Kshudhadhikya:*

The percentage relief on *Kshudhadhikya* symptom was -18.75% which is statistically Insignificant (p‹0.057).

This might be due to maximum content of trial drug have *Dipana Pachana* Properties with *Kashaya, Katu* and *Tikta Rasa*. These are *Kapha Shamaka* and *Ama Pachaka*, as a result *Jatharagni* and *Dhatvagni* are normalized. By virtue of *Jatharagni* appetite got raised while *Dhatvagni* enhances *Medopachana*.

5. Effect on *Pipasadhikya :*

The percentage relief on *Pipasadhikya* symptom was **25%** which is statistically **significant** (p‹0.02).

This might be due to, as in patients of obesity *Pipasadhikya* is because of *Ama Dodha (Amaj Trishna),* the trial drug has *AmaPachana* properties the symptom got reduced.

6. Effect on *Kshudrashwasa :*

The percentage relief on *Kshudrashwasa* symptom was **36.27%** which is statistically **Highly significant** (p‹0.001).

Increased *Medodhatu* in the body increases the weight of the person, along with this in obese person lean body mass are reduced and sedentary habits remaining muscles are also not trained to bear the load of physical activities. All these are the prime cause for *Kshudra Shwasa*. This is evidenced in classics as well as observed in previous studies. Modern science has also accepts obesity as one of the causes for dyspnoea.

The *Medohara, Strotoshodhak & Amapachaka* property of trial drugs may have helped in minimizing this symptom.

7. Effect on *Gaurava :*

The percentage relief on *Gaurava* symptom was 43% which is statistically Highly significant (p‹0.001).

In Obesity main vitiated *Dhatu* is *Meda* which is *Prathivi* and *Aap Mahabhuta Pradhana*. Increase in *Medo Dhatus* will increase the *Guru, Snigdha* and *Sheeta Gunas* leading to the *Gauravta*. Moreover *Medodhatu* produced in *Sthaulya* condition is in *Amavastha* which causes *Angagaurava*.

The trail drug is *Laghu, Ruksha Guna* and *Ushna Virya Pradhna* along with *Ama Pachaka & Stroto shodhak* property which might helped in minimizing this symptom.

8. Effect on *Daurbalya :*

The percentage relief on *Daurbalya* symptom was 41.32% which is statistically Highly significant (p‹0.001).

Due to *Srotorodha* of different (*Rasa & Meda*) *Srotas*by *Ama,* nourishment of rest of *Dhatu* are diminished, thus it will not transport nutrient to *Uttar Dhatu*. Hence, it causes *Dhatu Kshaya* which results in to *Daurbalya*.

The trial drug has *Dipana, Pachana, & Stroto shodhak* property which causes *Ama Pachana* by virtue of which *Uttar Dhatu* got nourishment.

9. Effect on *Javoprodha :*

The percentage relief on *Javoprodha* symptom was 43.48% which is statistically Highly significant (p‹0.001).

The *Shaithilya* (flabbiness), *Saukumarya* (delicacy) and *Guruta* properties of *Meda Dhatu* causes *Javoparodh along* with raised *Alasya* because of vitiated *Kapha*. Thus these persons are slow to initiate the work.

Due to *Ama Pachana Kapha Nashaka* and *Medohara* effect of trial drug helped in minimizing this symptom.

10. Effect on *Snigdh angata:*

The percentage relief on *Snigdh angata* symptom was-50.58% which is statistically Insignificant (p‹0.452).

The trial drugs have properties like *Ushnaveerya*, *Stroto shodhan-Pachana* etc. leads to the *Pachana* of excessive *Medodhatu* which enhances the *Sweda,* because of which skin is more moist then previous this is the reason behind raised *Snigdh angata*.

11. Effect on *Nidradhikya :*

The percentage relief on *Nidradhikya* symptom was 38.37% which is statistically Highly significant (p‹0.001).

In etiology of Obesity *Kapha, Meda* & *Ama Dosha* plays important role, these all leads to *Nidradhikya*. The trial drugs have properties of *Kapha Shamak*, *Medohara* & *Ama Pachana* which might helped in minimizing this symptom.

12. Effect on *Angasada:*

The percentage relief on *Angasada* symptom was 32.88% which is statistically Highly significant (p‹0.001).

In obese person incomplete metabolic process leads to accumulation of lactic acid in body tissue this may cause *Angasada*. In other way incomplete digestion of *Ahara Rasa* leads to *Ama Rasa Utpatti* which causes *Angasada*.

The trial drugs have properties like *Ushnaveerya*, *Strotoshodhan-Pachana* etc. which leads to completion of metabolic process i.e. complete digestion of *Aahara Rasa,* which might helped in minimizing this symptom.

Conclusion

Orally *Kalpit Triphaladi Ghana Vati* in the dose of 500mg twice a day before mealswith the *Anupana Ushnodaka* can be used as safe and main 'Therapeutic Agent' in the management of Obesity.

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Clinical Study

Agni Chikitsa; Folklore Therapy, Scientific Validation

*Praveen B S, **Kashinath Samagandi

Abstract:

A unique preparation of *Lepa* is been used by folklore practitioners in southern Karnataka to treat various conditions successfully. Patients suffering with acute cerebrovascular accidents (CVA) are frequent visitors to these practitioners for cure. *Kshudragnimantha (Clerodendrom phimoidis)*, *Nirgundi* (*Vitex negundo*), *Krishna Tulasi* (*Ocimum sanctum*), *Bandha (Bridelia scandens)* and *Papata* (*Pavetta indica*) leaves; *Maricha* (*Piper nigrum*), *Sarshapa (Brassica campestris)*, *Lashuna* (*Alium sativum*), *Lavanga (Syzygium aromaticum)* and *Haridra* (*Curcuma longa)* are mixed together to prepare paste and this is applied all over the body and administered internally as well. Most of the patients receive this treatment benefited with fruitful outcome. This treatment is often called as *Agni Chikitsa*. The ingredients of *Agni Chikitsa* are having *Ushna* (hot), *Ruksha* (dry), *Teekshna*, properties; *Ushna Veerya*; specific actions like *Kaphavatahara* (mitigates *Kapha* and *Vata*), *Vedanasthapaka* (Analgesic), *Shothahara* (cure oedema) are anticipated. *Agni Chikitsa* possess combined effect of *Deepana* (increasing digestive capacity), *Pachana* (digestive), *Aatapa* (perspiration therapy by exposing to hot sun), *Aalepa* (application of pasty medicaments) and *Upanaha* (poultice) treatment measure. Ironically all these measures are categorized under *Langhana* (depletion therapy) measures either *Niragni Sveda* or *Shamana roopi Langhana*. Research conducted by *Patanjal, Shreekanth U* (2006) and *Pratima Adiga, Gurdip Singh* (2006) has confirmed the efficacy of *Agni Chikitsa* in Cerebro vascular accident and Rheumatoid arthritis respectively. The researches substantiated the efficacy of this treatment in reducing symptoms of *Ama.* Moreover, the symptoms also got reduced considerably which validate this folklore treatment.

Keywords: *Agni Chikitsa, Niragni Sveda, Upanaha Sveda, Vedanasthapana, Deepana, Pachana, Shotahara.*

सारांश–

एक अद्वितीय औषधि लेप जो दक्षिण कर्नाटक के देशीय चिकित्सकों द्वारा उपयोग में सफल पाया गया। cerebrovascular accidents (CVA) के रोगी चिकित्सा हेतु निरन्तर इनके पास आते हैं। क्षुद्रअग्निमंथ, निर्गुण्डी, कृष्ण तुलसी, मरीच, सर्षप, लहसुन, लवङ्ग, पर्पट पत्र एवं हरिद्रा का मिश्रण का लेप समस्त शरीर पर लगाया जाता है तथा इसे आन्तरिक रूप से भी उपयोग किया जाता है। इसके घटक ऊष्ण, रूक्ष, तीक्ष्ण गुण युक्त है तथा कफवातहर, वेदना स्थापक तथा शोथहर भी है। अग्नि चिकित्सा नामक इस उपचार को लाभदायक पाया गया है। यह चिकित्सा दीपन, पाचन, आतप, आलेख, उपनाह उपचार का मिश्रण है। लंघन, निरग्नि स्वेद या शमन रूपी लंघन में इस चिकित्सा का समावेश किया जा सकता है। पातांजल, नाकान्थ यू (2006) प्रतिमा उड़िगा, गुरुदीप सिंह (2006) द्वारा किया गया शोध कार्य इसका प्रमाण है कि यह चिकित्सा cerebrovascular accidents (CVA) व आमवात में लाभदायक है। यह आम के लक्षणों को घटाने में लाभदायक है तथा अन्य लक्षणों में भी लाभदायक है इसलिए ये उत्तम देशीय चिकित्सा है।

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Clinical Study

Agni Chikitsa; Folklore Therapy, Scientific Validation

Praveen B S, Kashinath Samagandi

Introduction:

Lepa Chikitsa (external application of pasty medicaments) is one of the frequently used therapeutic measures in various disorders like *Vruna* (wound), *Kushtha* (skin manifestations) and painful musculoskeletal as well as neurological disorders to get fruitful outcome. *Ayurveda* classics enumerated many *Lepa* based on various variables viz *Pralepa, Pradeha* and *Aalepa*.[1] Based on the contents and purpose they are categorized in to *Snaihika Lepa* (*Lepa* prepared with oil), *Nirvapana Lepa* (*Lepa* with cold potency), *Prasadana Lepa* (nourishing *Lepa*), *Stambhana Lepa* (styptic *Sheeta Lepa*) *Vilayana Lepa (Lepa* used to dissolve the hardness of swelling), *Pachana Lepa (Lepa* to promote suppuration), *Peedana Lepa (Lepa* used for squeezing the inflammatory site), *Shodhana Lepa (Lepa* for cleansing inflammatory lesion), *Ropana Lepa (Lepa* for healing), *Savarneekarana Lepa (lepa* to normalize the skin colour).[2]

A unique preparation of Lepa is been used by folklore practitioners in *Ankola* of *Uttara Kannada* district, southern Karnataka to treat various conditions successfully. Patients suffering with acute cerebrovascular accidents (CVA) are frequent visitors to these practitioners for cure. *Kshudragnimantha (Clerodendrom phimoidis), Nirgundi (Vitex negundo), Krishna Tulasi (Ocimum sanctum), Bandha (Bridelia scandens) and Papata (Pavetta indica) leaves; Maricha (Piper nigrum), Sarshapa (Brassica campestris), Lashuna (Alium sativum), Lavanga (Syzygium aromaticum) and Haridra (Curcuma longa)* are mixed together to prepare paste and this is applied all over the body and administered internally as well. Most of the patients receive this treatment yield fruitful outcome. This treatment is often called as *Agni Chikitsa*. This preparation comprises of drugs possessing *Ushna Veerya*. As this preparation has *Kaphavatahara* property due to *Ushnaveerya,* hence the name.

Research Validation:

Various researches are carried out to validate the folklore practice as, evidence based studies contribute a lot to the science. Research conducted by *Patanjali, Shreekanth U* (2006) and *Pratima Adiga, Gurdip Singh* (2006) has proved the efficacy of *Agni Chikitsa Lepa* in Cerebrovascular accident and Rheumatoid arthritis respectively. The research outcomes are encouraging.

Patanjali, Shreekanth U (2006)[3]

Methodology and results: 21 diagnosed subjects of *Pakshaghata* (hemiplagia) were treated in a single group observational study. In this study, patients were subjected to *Agni Chikitsa Lepa* which was applied all over the body except face and neck. Patients were asked to retain the *Lepa* till next morning. 5 gms of Paste was also administered internally twice a day on empty stomach. Patients were treated with this protocol for one week. Patients were asked to consume either rice gruel or green gram soup during the period of treatment. Patients were followed for 15 days after the treatment to assess the sustained relief. Patients got 100% of relief on *Sama Vata Lakshana viz Gourava* (heaviness), *Apakti* (indigestion), *Aruchi* (tastelessness), *Agni Nasha* (loss of appetite), *Tandra* (torpor), *Antrakoojana* (gurgling in abdomen) and marked improvement in symptoms viz *Anila moodata* (flatulence) (76%), *Vibhanda* (constipation)(71%), *Vedana* (pain) (89%), *Shotha* (swelling) (64%), *Anga Peedha* (generalized body ache) (87%). Significant improvement was observed on Power of upper limb and lower limb, lifting arms at shoulder, lifting of legs at hip joint, sitting from lying down postures, standing from sitting postures, tone in upper and lower limb, hand grip power, foot pressure and paper holding capacity. Insignificant results were observed in Biceps reflex, triceps reflex, brachio radialis reflex, knee reflex, ankle reflex, loss of speech, walking time. *Samyak Svinna Lakshana* like *Mardhava* (softness) (21), reduction in symptoms (21), *Bhakta Shraddha*

(interest towards food) (21), *Agni Deepti* (increased appetite) (21), *Tvak Prasada* (skin glow) (21) were observed in all the patients. Whereas, other symptoms like *Sthambha* (stiffness) (18), reduction of *Gaurava* (heaviness) (11), Relief from *Tandra* (torpor) (7), movement in *sthabdha Sandhi* (joint stiffness) (16) were observed in maximum number of patients.

Pratima Adiga, Gurdip Singh (2006)[4]:

Methodology and results:

20 diagnosed patients of *Amavata* who were fulfilling the diagnostic criteria of RA enlisted by ARA 200 version were included in this single group observational study. These patients were applied with the fine paste of *Bandhadi Yoga (Agni Chikitsa)* in a thickness of 0.5cm all over the body except head and neck for 14 days. This was removed either after the drying or after 3hrs. Same paste was administered internally in a dose of 10gm twice daily on empty stomach. Patients were assessed after 7days and 14 days of treatment. After completing 14 days treatment patients were asked to attend the OPD every week for duration of 1 month. *Bandhadi Yoga (Agni Chikitsa)* provided significant relief in cardinal signs and symptoms such as Joint pain (56.4%), tenderness (77%), stiffness (72.7%), redness of joint (100%), joint swelling (18.8%), range of joint movement (24.1%), Warmth (94.4%) and Knuckle swelling (22.2%).14 days of treatment with *Bandhadi Yoga (Agni Chikitsa)* provided significant relief in general symptoms of *Amavata* (RA) and *Ama* like *Balabhramsha* (reduced strength) (58.1%), *Gaurava* (heaviness) (57.5%), *Malasanga* (constipation) (43.6%), *Aruchi* (tastelessness) (88.5%), *Apakti* (indigestion)(85.3%), *Alasya* (leathergy)(78.9%), *Klama* (tiredness)(58.1%), *Angamarda* (generalized body ache)(69.4%), *Agnimandya* (reduced appetite) (61.5%), *Bahumootrata* (polyuria) (50%), *Nidraviparyaya* (insomnia) (58.3%), *Vibandha* (constipation) (42.9%), symptoms of *Saamavata* (55.1%), symptoms of *Saamapitta* (56.3%) and symptoms of *Saamakapha* (72.1%).Treatment with *Bandhadi Yoga* showed significant improvement in clinical tests like hand grip strength (52.8%), foot pressure (28.8%) and general functional capacity (60.05%) and significantly reduced the ESR level (15.7%). After the treatment RA factor titer was reduced to 25 IU in one patient and it remained unchanged in other patients. After the 14 days treatment with *Bandhadi Yoga (Agni Chikitsa)* significant reduction in disease activity stage (22.2%) was found. In this series 50% patients got major relief and 50% patients had minor relief.

Discussion:

Agni Chikitsa is one of the folklore treatment widely used in treating cerebrovascular accidents with positive outcome. A unique combination of five wet drugs and five dry drugs are made in to paste and administered internally and applied externally till next morning. Approximately 550 gms of *Lepa* is essential to apply all over the body. Most of the bulk of *Lepa* needs to be prepared by wet drugs as, dry drugs possess too hot potency. So it can be concluded that powder of *Maricha, Lavanga, Sarshapa, Haridra* and *Lashuna* are taken in 10 gm each and fresh leaves of *Kshudragnimantha, Bandha, Papata, Krishna Tulasi* and *Nirgundi* in the quantity of 100gm each mixed together and *Lepa* is prepared by adding sufficient quantity of water. As *Banda* and *Papata* are available in *Uttara Kannada* dist locality, it might be replaced with some other *Svedopaga Dravya*[5] like *Shigru* and *Eranda* for the convenience so as to meet the principle. In folklore practice patients were advised to expose to hot sun after applying the *Lepa*. This protocol is not been followed in either of the researches. *Atapa* being one variety of *Niragni Sveda* brings *Langhana* effect. Standardizing the thickness of application of *Agnichikitsa* is essential. *Sushruta* opines that thickness of *Lepa* is equal to the thickness of live skin of buffalo.[6] As per veterinary science thickness of buffalo skin is 0.4-0.8cm. Considering all relevant references it can be concluded that thickness of *Pradeha* may be approximately 0.6cm, *Pralepa* thickness may be kept to 0.4cm.Generally 0.5 cm may be considered as the thickness of *Alepa*. So, Agni Chikitsa being an Aalepa, the thickness of 0.5 cm may be kept as standard.

Both the researches had different time duration of application of *Lepa*. Earlier researcher opted to keep the *Lepa* for whole night whereas; later researches have asked the patient to keep it for three hours. An attempt was made by later researchers to analyze the body temperature before, during and

after the study and had a conclusion. In later research oral and axillary temperatures of 4 patients were noted during the treatment procedure at interval of 20 minutes. The Body temperature slightly rose ranging from 0.3° F to 0.35° F in first hour of the Lepa. Then it fell down to the initial level within the next 20 minutes and there after it remained at that level for some time. Thus it can be concluded that the *Agni Chikitsa* may be applied and kept for one hour as, maximum increase in body temperature is observed in that period. Moreover, later the body temperature declined and became consistent. Patients too experience coldness after one hour practically; this treatment may be confined to maximum of one and half hour and removed.

Agni Chikitsa, though seems to be a simple treatment like *Lepa* it is difficult to confine this treatment to only *Lepa* as, the outcome of treatment is manifold due to its complexity. Internal administration of combination mitigates the *Ama*[7] and thus produces *Nirama Lakshana* at the level of *Koshtha*. *Agnichikitsa* posses *Ushna, Teekshna Sookshma Guna* and *Ushna Veerya*. So it can be inferred as *Deepana* and *Pachana*.[8] This fact is also been proved in both the researches that *Agni Chikitsa* combination when administered internally not only increased digestion but also provided significant improvement in symptoms of *Koshthagata Ama* and *Shakhagata Ama*. Moreover it also successfully reduces symptoms of *Saama Vata, Pitta* and *Sama Kapha*.[9]In earlier research, the dosage of combination are administered in the quantity of 5 gms twice daily whereas, in later research it was 10 gms. As later research has not reported untoward effect of administration of combination in dosage of 10 gms, it may be considered as standard. However quantity may be decreased in patients possessing *Pitta Prakruti* anticipating possible complication.

Due to the resemblance in treatment protocol it also can be considered as a variety of *Upanaha Sveda* and *Alepa* as a sub division of *Sankara Sveda.* Thus *Agni Chikitsa* can be understood as *Deepana, Pachana, Aatapa, Aalepa* and *Upanaha* treatment measure. Ironically all these measures come under *Langhana* measures either *Niragni Sveda* or *Shamana roopi Langhana*.[10][11] So this treatment can be prescribed in *Koshthagata Aama* condition in order to digest the *Aama* and stimulate the digestive power. So *Ajeerna, Agni Mandhya* and related condition like *Grahani Roga* are invariably considered as its indication for internal administration. On the contrary other condition where, Patient possess *Alpa Bala* and suffering with *Kapha* disorders where *Svedana* is considered as treatment of choice then *Agni Chikitsa* can be executed. *Sama Vata* which is characterized by *Vibhanda* (constipation), *Aantrakoojana* (gurgling sound in abdomen), *Agni Saada* (decreased digestive capacity), *Tandra* (torpor), *Vedana* (pain), *Shopha* (swelling), *Nistoda* (pricking pain) and pain all over the body are successfully treated with *Agni Chikitsa* as this treatment is a combination of *Deepana Pachana, Aatapa Svedana* and *Upanaha*. All these treatments combine and contribute in fruitful outcome as all are advised as treatment for vitiated *Vata*.

Hemiplagia is a condition which is frequently treated with *Agni Chikitsa*. It is necessitated to understand the stage in which *Agni Chikitsa* can be considered. *Ayurveda* emphasizes on vague treatment principles like *Snehana* (oleation therapy), *Svedana* (sudation therapy), *Snigdha Virechana* (purgation with oily medicaments), *Upanaha* (poultice) and *Moordhni Taila* (various treatments performed over scalp) as treatment principles of *Pakshaghata*.[12][13] *Sushruta* stresses on the treatment of *Pakshaghata* as early as possible. Cerebrovascular accidents are frequently confronted disease in Ayurveda clinical practice. Cerebrovascular accidents manifests as a result of three major pathologies, viz Thrombosis, thromboembolism and hemorrhage. Thrombosis or cerebral infarcts are the commonest cause for CVA. Though hemiplagia is observed in every condition, an associated feature decides the principle of treatment need to be adapted. CVA manifested as a result of infarction gives raise to symptoms like constipation, heaviness in the affected limbs, decreases appetite and lethargy which confirms the *Saama lakshana* of *Vata Dosha*. CVA manifested as a result of hemorrhage often gives raise to symptoms either like *Mada* (altered sensorium), *Moorcha* (unconsciousness) and *Sanyasa* (coma).[14] All these are the features infer the involvement of *Rakta*.CVA manifested as a result of thromboembolism and transient ischemic attack often mimic symptoms of

Avarana Vata. Thus in acute stage of CVA the treatment principle varies based on the pathology. Though in later stage of *Pakshaghata, Panchakarama* and para *Panchakarma* plays an important role in rehabilitation, acute stage management plays the key in anticipating the possibility and extent of recovery. *Agni Chikitsa* is readily considered as the treatment of choice in cases of CVA which either manifested as a result of thrombosis, thromboembolism or Transient ischemic attack. But it has maximum benefits when selected in acute stage not in chronic CVA which is also been proved in the research conducted on CVA.

Some other condition like musculoskeletal disorders where, joint effusion and joint pain are presenting symptoms, *Agnichikitsa* plays a major role in mitigation the *Ama* and *Kapha Anubhanda* and supports the cure. Thus *Agni Chikitsa* may be selected where *Shamana Roopi Langhana* viz. *Deepana, Pachana, Aatapa Sevana* and *Upanaha* are considered for the treatment to yield better improvement. *Agnichikitsa* may not be a complete treatment in all the conditions but in certain stage of disease this plays an important role in curing disease. The research conducted on Rheumatoid arthritis has proved the benefits of *Agni Chikitsa* on various parameters.

Probable Mode of Action:

The ingredients of *Agni Chikitsa* are having *Ushna, Ruksha, Teekshna*, properties; *Ushna Veerya*; specific actions like *Kaphavatahara, Vedanasthapaka, Shothahara* are anticipated. *Agni Chikitsa* applied externally might have been absorbed into the system through sweat ducts and hair follicles. The reduction in the joint pain may be due to the *Vedanasthapaka* action along with the *Vatahara* property of the drugs. The specific action of the *Svedana* process might have increased the quantum of reduction in pain. Swelling might get reduced due specific action of the drug by *Shothahara* and *Kaphavatahara* properties. The ingredients of *Agni Chikitsa* posses *Ushna Veerya, Teekshna, Laghu* and *Ruksha Guna*, which might have lead to the *Ama Pachana* at that particular area. This reduction in the *Ama* may be responsible for the reduction in the stiffness of the joint and heaviness of body. The gain in the range of movement in the stiffened joint and improvement in range of movement might be due to the *Svedana* process. The reliving of *Srotorodha* at joints might have been achieved by specific action of *Sveda* and *Sroto Shodhka* action of *Maricha* and *Lashuna* with the help of *Ushna* and *Teekshna* properties of drugs used. This may be the cause for the reduction in the symptoms related with joints.

Flavanoids present in the fresh leaves of *Nirgundi* (V.nigundo) proved to have anti-inflammatory action, which may be due to the prostaglandin synthesis inhibition and antioxidant activities. [15] Linolinic acid in the leaves of *Tulasi* (O. sanctum) is responsible for the anti-inflammatory action.[16] Leaf extracts of *Papata* proved to have anti-inflammatory effect in proliferative stage of inflammation.[17] *Maricha* (P. nigrum) proved to be beneficial in the acute inflammation.[18] These might be responsible for the reduction in the signs and symptoms of inflammation. *Agni Chikitsa* given internally might have added to the effects achieved by *Lepa* by acting as *Abhyantara Svedana* due to its *Ushna, Teekshna, Ruksha Guna*. The *Katu Rasa* and *Vipaka* of this compound might have reduced the *Aruchi*, increased the *Agni* there by leading to *Ama Pachana*. *Ushna Veerya, Katu Vipaka, Teekshna Guna* might have lead to the reliving of *Srotorodha* all over the body with the help of *Sara Guna* of *Lavanga*. In addition to this the drug applied might got absorbed in to the systemic circulation. This might be responsible for the correction of the *Srotorodha, Ama Pachana* along with pacifying the *Vata* to some extent in deeper tissues of the body. These, in total might have lead to the reduction in the systemic features of *Amavata*. Thus the treatment might have reduced the symptoms of *Amavata* and *Pakshaghata* by doing the *Ama Pachana* along with pacifying *Vata*.

Conclusion:

Ayurveda medicinal science has contributed a lot in treating various diseases. Many medicinal herbs are used in treating various health issues by folklore practitioners. As certain herbs are located in specific area they can be used to best possible way. *Agni Chikitsa* is one such unique medicinal combination of classical and local herb which is highly appreciated in managing cerebrovascular

accidents and Rheumatoid arthritis. This treatment may be carried out for maximum of one and half hour and 0.5 cm may be considered as the thickness of lepa. Along with external application 10 gms of the combination may be administered internally twice daily. In absence of drugs like *Bandha* and *Papata, Svedopaga* herbs available locally may be substituted. 0.35c of increase in body temperature is anticipated during treatment. The indications of folklore treatment are scientifically validated by researches. Thus Agni Chikitsa may be considered in managing cerebrovascular accidents and Rheumatoid arthritis with maximum benefits.

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Clinical Study

Clinical Evaluation of *Kanchnaar Shigru Churna & Panchkol Phanta* in Hypothyroidism

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Abstract:

Introduction: Hypothyroidism is a clinical syndrome resulting from deficiency of thyroid hormones which in turn results in a generalized slowing down of the metabolic processes. Though any disease condition is not described in *Ayurveda* which is similar to Hypothyroidism yet, several references are scattered in various texts. Eight types of *Nindita Purushas* and *Avarana* can be described on the basis of various hormonal disorders. **Objective:** The aim of the present study was to treat hypothyroidism by means of *Ayurveda* and to clinically evaluate the therapeutic potential of *Kanchnaar Shigru Churna* & *Panchkola Phanta* in Hypothyroidism. **Method**: In present study, 80 clinically diagnosed cases of hypothyroidism were registered and divided into two groups of 40 patients each on random basis. Group A was administered *Kanchnaar Shigru Churna* while Group B was given *Kanchnaar Shigru Churna* along with *Panchkol phanta*. Hematological and biochemical parameters were observed. Subjective parameters like puffiness on face, loss of appetite, altered sleep patterns, menstrual disturbances, weight gain etc. were taken into consideration. **Result & Conclusion:** In Group A increase in Sr.T3, Sr.T4 was 22.05%, 15.21% respectively & Sr.TSH was decreased by 20.57% while In Group B increase in Sr.T3, Sr.T4 was 34.79% and 30.88% & Sr.TSH was decreased by 35.67% which proves higher efficacy of *Kanchnaar Shigru Churna* along with *Panchkola Phanta* in Hypothyroidism. As the results obtained were found to be highly significant with p (<0.001) which states hypothyroidism can be easily managed by *Ayurveda*.

Key Words: Thyroid Disorders, Hypothyroidism, *Nindita Purusha*, *Galaganda*, *Avatu*, *Agni*, Metabolism, *Kanchnaar Shigru Churna*, *Panchkol phanta*

सारांश–

अवटु अल्पक्रियता ग्रन्थि स्राव की अल्पता के कारण उत्पन्न सिन्ड्रोम है जिसके कारण शरीर में चयापचय की क्रिया धीमी हो जाती है। आयुर्वेद में स्पष्ट एवं पृथक रूप से अवटु अल्पक्रियता का वर्णन नहीं मिलता है। विभिन्न ग्रन्थों में यत्र तत्र संदर्भ मिलते हैं यथा अष्टनिन्दित पुरुष एवं आवरण के रूपों को ग्रन्थि स्राव के विकारों के आधार पर परिभाषित किया जा सकता है।

प्रस्तुत अध्ययन का उद्देश्य अवटु अल्पक्रियता का आयुर्वेदिक उपचार एवं अवटु अल्पक्रियता में काँचनार शिग्रु व पंचकोल फाण्ट की चिकित्सीय क्षमता का चिकित्सीय प्रयोग द्वारा आंकलन करना है। शोथ कार्य में लक्षणों के आधार पर रोग का विनिश्चय करके अवटु अल्पक्रियता के 80 रोगियों का पंजीकरण कर निर्पेक्ष रूप से 2 भागों में विभाजित किया गया। एक ग्रुप को काँचनार चूर्ण एवं अन्य को काँचनार चूर्ण के साथ पंचकोल फाण्ट का प्रयोग करवाया गया। लाक्षणिक एवं जैवपरक मानकों का अध्ययन किया गया। व्यक्ति परक मानक यथा चेहरे पर सूजन, भूख न लगना, नींद में बदलाव इत्यादि का अध्ययन किया गया। शोथ के अंत में परिणाम स्वरूप ग्रुप A में Sr. T_3 व Sr. T_4 में क्रमशः 22.65% व 15.21% की वृद्धि तथा Sr. TSH में 35.65% की कमी दर्शित हुई जबकि ग्रुप B में Sr. T_3 व Sr. T_4 में क्रमशः 34.79% व 30.88% की वृद्धि तथा Sr. TSH में 35.67 की कमी मिली जिससे यह विदित होता है कि काँचनार चूर्ण के साथ पंचकोल फाण्ट का प्रयोग अधिक लाभप्रद है। प्रस्तुत अध्ययन में परिणाम highly significant (with P<0.001) मिले अतः यह निष्कर्ष रूपेण कहा जा सकता है कि अवटु अल्पक्रियता की आयुर्वेदीय चिकित्सा द्वारा सफल चिकित्सा संभव है।

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Clinical Study

Clinical Evaluation of *Kanchnaar Shigru Churna & Panchkol Phanta* in Hypothyroidism

Nellufar, Konica, Dr. Baldev Kumar, Dr. Rajni Sushma

Introduction:

Ayurveda is one of the oldest known medical science which is recognized by the W.H.O. popularly known for its side effect free treatment.Along with the technological revolutions, sedentary lifestyles have followed though uninvited but inevitably, hence leading to disorders of altered life patterns. Thyroid disorders rank among the most widely known lifestyle disorders, hence demand thorough study and critical evaluation. Human being is the conglomeration of body, mind and spirit[1] and *Ayurveda* is the only science which follows the concept of mind and body in relation to the health[2] and diseased condition.[3] *Ayurveda* could be best defined as pure unbiased knowledge which possess a set of concrete rationale which when pertinently applied in accordance to the circumstance, would yield accurate intended results in every period. Today the mode of treatment of any disease is not complete until it works at the level of the mind as the modern man is constantly facing symbolic stress. Thyroid gland is one of the most important and sensitive endocrine gland. As it easily responds to stress and stimuli, hence the global incidence of hypothyroidism is increasing day by day in today's world. It is not only confined to metropolitan population but also extends to rural areas.

Hypothyroidism refers to any state that results in a deficiency of thyroid hormone Hypothyroidism results from under secretion of thyroid hormone from the thyroid gland. In the United States, the most common cause of primary hypothyroidism is chronic autoimmune thyroiditis (Hashimoto's disease). Other causes are surgical removal of the thyroid gland, thyroid gland ablation with radioactive iodine, external irradiation, a biosynthetic defect in iodine organification, replacement of the thyroid gland by tumor (lymphoma), and drugs such as lithium or interferon. Secondary causes of hypothyroidism include pituitary and hypothalamic disease.[4]

Though any disease condition is not described in *Ayurveda* which is similar to Hypo thyroidism yet, several references are scatteredin varioustexts. Eight types of *Nindita Purushas*[5] and *Avarana*[6] can be described on the basis of various hormonal disorders.

If we try to have a keen in sight to the pathogenesis of hypothyroidism according to the principles of *Ayurveda*, we find that it is basically caused due to dysfunctioning of the *Agni*. Hypo functioning of *Jatharagni*, which in turn, affects *Dhatvagni,* eventually, brings out pathological sequence & ultimately, the diseased condition is developed.[7]

Looking into its *Doshika* dominance, *Kapha* associated *Pitta Dushti* with vitiation of *Vayu* due to *Margavarana* and predominantly *Annavaha, Rasavaha* and *Medovaha Srotodushti* can be considered as cause of the disease.

Thyroid diseases are, arguably, among the commonest endocrine disorders worldwide. India too, is no exception. According to a projection from various studies on thyroid disease, it has been estimated that about 42 million people in India suffer from thyroid diseases out of which hypothyroidism is most common with prevalence of 5.4%. Incidence is more common in women than in men. Its prevalence is reported in 3-5% of the population (1: 1000). It is much more common in females with reports of prevalence 2-8 times higher than males.

The analysis of the symptomatology of hypothyroidism in the light of *Ayurvedic* principles showed that in this disease, *Kaphaprakopa, Dhatv agnimandya* and *Rasa Dhatudushti* are the main features. The pathogenesis and manifestations of hypothyroidism occurs due to dysfunction of *Agni*. The hypo functioning at the level of the *Jatharagni* in turn vitiates the *Dhatvagni* which eventually

brings out the pathological sequence of *dosha dushyasammurchna* & ultimately, the diseased condition.

Here, an attempt has been made to establish a proper a etiopathogenesis of hypothyroidism through classical knowledge of *Ayurvedic* principles, select a drug from the vast literature which could probably break the pathogenesis and hence treat the disease and to clinically establish the effect of the selected drug on hypothyroidism. Herbal drugs, selected for the study from various classical authentic texts, are supposed to have their effect at the level of the *Agni* and directly on the endocrine functions of the thyroid gland. Drugs possessing characteristics such as *deepana, pachana, lekhana, anulomana, srotoshodhaka, kapha-vatashamaka* & *shothahara* were selected for the trial.

Aims & Objectives

1. To evaluate the efficacy of *Kanchnaar Shigru Churn*a in the management of hypothyroidism.
2. To evaluate the efficacy of *Kanchnaar Shigru Churna* along with *Panchkol Phanta* in the management of hypothyroidism.

Materials & Methods

80 clinically diagnosed fresh cases having signs and symptoms of hypothyroidism were selected by simple random sampling method from out patient department of *Kayachikitsa*, A. & U. Tibbia Hospital, Karol Bagh, New Delhi (India) (during period of Dec. 2013 to Mar. 2015). At the time of registration written consent for becoming a volunteer of this study was taken from each patient.

1. Collection Of Drugs

All the raw materials were procured & purchased from reliable Ayurvedic raw material vendor who was GMP certified.

2. Preparation Of Drug

A. Kanchnaar Shigru Churna

Drugs namely *Kanchnaar* (*Bauhinia variegate Blume*) *twak* and *Shigru* (*Moringa oleifera Linn.*) mool twak were cleaned and dried properly, finely powdered and sieved separately. Each one of them (powder) was weighted separately, and mixed well together.

B *Panchkola Phanta* - The method of preparation of *Phanta* (described in *Sharangdhara Samhita Madhyamakhanda* 3/2) was followed. 10 grams of coarse powder of *Panchkola (Pippali, Pippalimula, Chavya, Chitraka, Shunthi)* was added to 150 ml of boiled water. After it cooled down slightly, the powder was well meshed & the liquid was filtered at last.

3. Inclusion Criteria

- Age between 20 to 60 yrs.
- Patient of hypothyroidism with the features mentioned in subjective parameter.
- On the basis of deranged Thyroid Profile i.e. Serum TSH, Serum T_4& T_3.
- Patient able to participate in the study & ready to follow the instructions & sign the Consent form.

4. Exclusion Criteria

- All complicated cases of hypothyroidism or associated with other endocrine disorders.
- Congenital Hypothyroidism, Pregnant & lactating mothers, Patient associated with any other systemic diseases.
- Patient who fail to give consent

5. Withdrawal Criteria

- Failure to consume less than 70% of drugs.
- Failure to come for follow up.
- Any adverse drug reaction or adverse event.

6. Drug Adminitration

All the registered cases were categorized in 2 groups for the study after confirming by thyroid profile and various routine investigations as follows:

Group-A:40 randomly selected patients diagnosed with hypothyroidism were orally administered 6 gm of *Kanchnaar Shigru Churna* twice daily with lukewarm water in between meals for 90 days.

Group-B: 40 randomly selected patients diagnosed with hypothyroidism were orally administered 6 gm of *Kanchnaar Shigru Churna* twice daily along with 5gm *Panchkol phanta* in between meals for 90 days.

7. Assesment Criteria

Grade	Score
Absent	0
Mild	1
Moderare	2
Severe	3

Clinical features and Sr.TSH, Sr.T3 & Sr.T4 levels were assessed before starting treatment, & after completion of 90 days of treatment. The other investigations like Hb% etc. were also compared. Various symptoms were assessed before, during and after the treatment. The clinical symptomatology was divided into four grades (0-3) (as listed below) as per their severity and changes in the gradations of each symptom was recorded to assess the effect of treatment provided.

Subjective & Objective parameters were assessed as listed in table number 3, 5, 6, 8

Laboratory Parameters

The objective assessment of the patients was done on the basis of laboratory investigations done before and after the completion of clinical study.

Following investigations were performed in all the registered patients of study:-

Blood: Complete blood count with ESR, L.F.T., K.F.T., Blood Sugar, Thyroid Profile (Sr. T3, Sr .T4, Sr. TSH)

Urine: Routine and Microscopic Examination.

8. Statistical Analysis:

Group A & Group B were compared with independent sample't' test, intragroup comparison was done with paired't' test. The results were interpreted at $p < 0.05$ (non-significant), $p < 0.05$ (significant) and $p < 0.01$(highly significant) significance levels.

9. Criteria For Overall Effect Of Drugs:

a. Excellent improvement (>75%)

b. Marked improvement (51%-75%)

c. Moderate improvement (25%-50%)

d. Mildly improvement (10%-24%)

e. Unchanged (0%)

Observations & Results:

Results were assessed on the basis of differences in percentage before & after treatment.

Table 2: Depictingthe Observations

S.No.	Observations	Predominance	Percentage
1	Age	31-40	33.75
2	Sex	Female	91.25
3	Habitat	Urban	77.50
4	Lifestyle	Sedentary	68.75
5	Dietary habits	Mix diet	71.25
6	Marital status	Married	90
7	Occupation	House wife	71.25
8	Socio-economic status	Upper	65
9	Koshtha	Madhyama	58.75
10	DehaPrakriti	KaphaVataj	51.25
11	Manas Prakriti	Rajas	83.75
12	Agni	Manda	63.75
13	Mansika nidana	Atichintana	73.75

Drug Effect On subjective Parameters

Group A (40 patients with *Kanchnaar shigru churna):-* All the 12 subjective parameters showed highly significant results where puffiness of face was best relieved by 63.27% while forgetfulness showed 31.82% of improvement which was least among all. (Table-3)

Table 3: Effect of Drug in Group-A

Sr. No	Chief complaints	Mean BT	Mean AT	Mean Diff.	% Imp.	SD ±	SE ±	"t" Value	P Value	S
1	Puffiness of face	1.60	0.25	1.35	87.10	0.80	013	10.64	<0.001	HS
2	Constipation	1.725	0.20	1.525	92.42	0.99	0.16	9.77	<0.001	HS
3	Weakness	1.575	0.50	1.075	69.35	0.94	0.15	7.20	<0.001	HS
4	Sluggishness	1.6	0.30	1.3	83.87	0.52	0.08	15.92	<0.001	HS
5	Generalized pain	1.30	0.425	0.875	67.31	0.72	0.11	7.66	<0.001	HS
6	Loss of appetite	1.75	0.30	1.45	85.29	0.85	0.13	10.84	<0.001	HS
7	Dryskin to hair	1.025	0.25	0.775	77.50	0.70	0.11	7.03	<0.001	HS
8	Hoarseness of voice	0.75	0.40	0.35	46.67	0.58	0.09	3.82	<0.001	HS
9	Cold intolerance	1.075	0.25	0.825	76.74	0.84	0.13	6.18	<0.001	HS
10	Menstrual Irregularities	1.2	0.70	0.5	41.67	0.85	0.13	3.73	<0.001	HS
11	Forgetfulness	0.75	0.475	0.275	36.67	0.51	0.08	3.44	<0.001	HS
12	Altered sleep pattern	1.675	0.475	1.2	71.64	0.85	0.13	8.89	<0.001	HS

Group B *(40 patients with Kanchnaar shigru churna & Panchakola Phanta)* all the parameters showed highly significant results where constipation was markedly relieved by 92.42% while forgetfulness showed least improvement of 36.67% (Table-4)

Table 4: Effect of Drug in Group-B

Sr. No	Chief complaints	Mean A	Mean B	SD ± A	SD ± B	SE± A	SE± B	"t" Value	P Value	S
1.	Puffiness of face	0.775	1.35	0.70	0.80	0.11	0.13	-3.42	<0.001	HS
2.	Constipation	0.70	1.525	0.52	0.99	0.08	0.16	-4.68	<0.001	HS
3.	Weakness	0.725	1.075	0.60	0.94	0.09	0.15	-1.98	<0.05	S
4.	Sluggishness	0.725	1.30	0.55	0.52	0.09	0.08	-4.80	<0.001	HS
5.	Generalized pain	0.575	0.875	0.50	0.72	0.08	0.11	-2.16	<0.001	HS
6.	Loss of appetite	0.675	1.45	0.57	0.85	0.09	0.13	-4.80	<0.001	HS
7.	Dry skin to hair	0.450	0.775	0.55	0.70	0.09	0.11	-2.31	<0.05	S
8.	Hoarseness of voice	0.20	0.35	0.41	0.58	0.06	0.09	-1.34	>0.05	IS
9.	Cold intolerance	0.40	0.825	0.50	0.84	0.08	0.13	-2.75	<0.001	HS
10.	Menstrual irregularities	0.45	0.50	0.75	0.85	0.12	0.13	-0.28	>0.05	IS
11.	Forgetfulness	0.175	0.275	0.38	0.51	0.06	0.08	-1.00	>0.05	IS
12.	Altered sleep pattern	0.65	1.20	0.58	0.85	0.09	0.13	-3.37	<0.001	HS

Effect Of drugs On objective Parameters

Group A marked 5.47% increase in hemoglobin percentage while Group B showed 6.71% rise (Table-5). In Group A Increase in Sr.T_3, Sr.T_4 was 22.05%, 15.21% respectively while Sr.TSH decreased by 20.57% (Table-6) while in Group B Increase in Sr.T_3, Sr.T_4 was 34.79% and 30.88% while Sr.TSH decreased by 35.67% (Table-7). In Group A, Weight and BMI decreased by 3.31% and 3.68% while they decreased by 6.86% and 6.76% (Table-8).

Table 5: Effect of Drugs on Hemoglobin % in Group A and Group B

Group	Investigation (n-=15)	Mean Value		Mean Diff.	% Change	SD ±	SE ±	"t"	P	S
		BT	AT							
Group A	Hb gms%	10.37	10.94	0.567	↑ 5.47	0.39	0.06	9.19	<0.001	HS
Group B	Hb gms%	10.35	11.05	0.695	↑ 6.71	0.39	0.06	11.26	<0.001	HS

Table6: Effect on Thyroid function test in Group-A

Investigation	Mean Value		Mean Diff.	% Change	SD ±	SE ±	"t"	P	S
	BT	AT							
T_3	86.852	106.007	19.1555	↑ 22.05	11.75	1.86	10.31	<0.001	HS
T_4	5.292	6.097	0.805	↑ 15.21	0.66	010	7.73	<0.001	HS
TSH	11.897	9.45	2.4475	↓ 20.57	1.32	0.21	11.70	<0.001	HS

Table-7:Effect on Thyroid function test in Group-B

Investigation	Mean Value		Mean Diff.	% Change	SD ±	SE ±	"t"	P	S
	BT	AT							
T_3	80.82	108.937	28.12	↑ 34.79	4.73	0.75	37.63	<0.001	HS
T_4	5.132	6.717	1.585	↑ 30.88	0.35	0.05	28.90	<0.001	HS
TSH	13.322	8.57	4.752	↓ 35.67	2.16	0.34	13.93	<0.001	HS

Table-8:Effect of drug on weight (in kg) and BMI (in kg/m²) in Group-A & B

Group	Investigation (n-=15)	Mean Value		Mean Diff.	% Change	SD ±	SE ±	"t"	P	S
		BT	AT							
GROUP A	Weight	65.25	63.07	2.1625	↓ 3.31	1.72	0.27	7.94	<0.001	HS
	BMI	26.25	25.67	0.9825	↓ 3.68	0.68	0.11	9.15	<0.001	HS
GROUP B	Weight	63.87	59.50	4.375	↓ 6.85	4.42	0.70	6.25	<0.001	HS
	BMI	27.55	25.70	1.862	↓ 6.76	0.97	0.15	12.11	<0.001	HS

On comparing the effect of drugs in both the groups by it was found that there is

1. Highly significant difference (<0.001) in the effect of therapies in group A *(Kanchnaar Shigru Churna),* and B *(Kanchnaar shigru churna* with *panchkola phanta),* on Altered sleep pattern, Puffiness of face, Constipation, Sluggishness, Generalized pain, Loss of appetite, Cold intolerance.
2. Significant difference (<0.05) in the effect of therapies in group A *(Kanchnaar Shigru Churna),* and B *(Kanchnaar shigru churna* with *panchkola phanta*), on Weakness and Dry skin to hair.
3. Insignificant difference (>0.05) in the effect of therapies in group A *(Kanchnaar Shigru Churna), and B (Kanchnaar shigru churna* with *panchkola phanta*), on Menstrual abnormalities, Forgetfulness and Hoarseness of voice.

Comparative effect of drugs on subjective & objective parameters in Group-A and Group-B is shown in Figure 1-4.

Fig. 1
COMPARATIVE EFFECT OF DRUGS ON SUBJECTIVE PARAMETERS

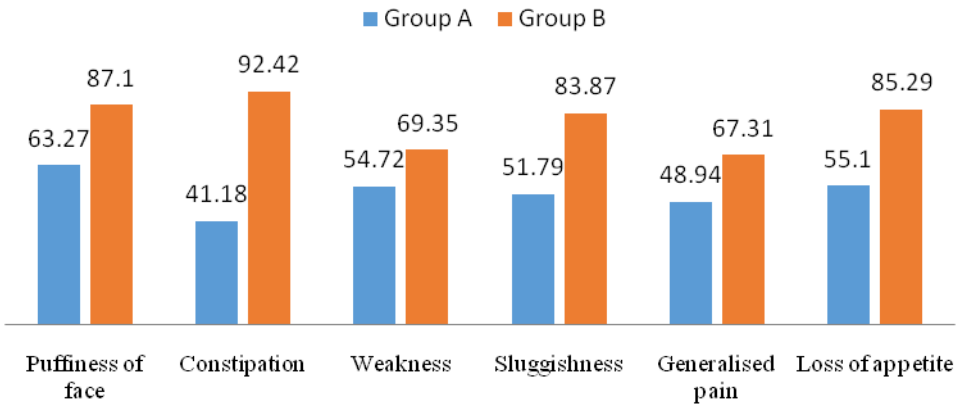
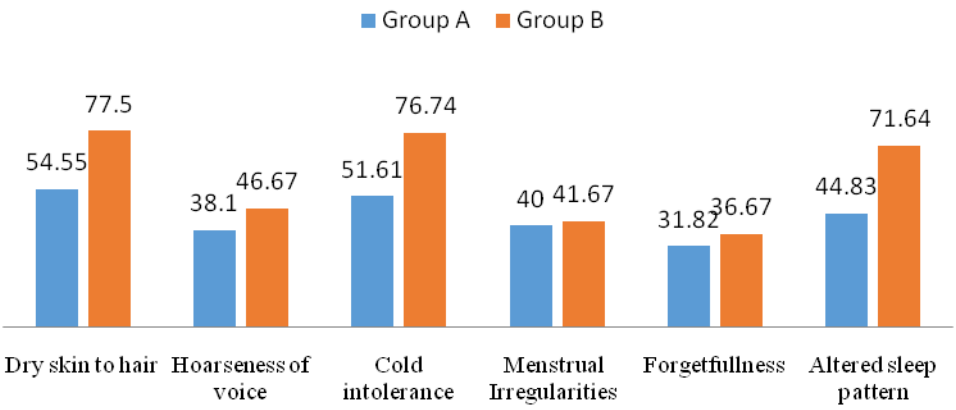


Fig. 2
COMPARATIVE EFFECT OF DRUGS ON SUBJECTIVE PARAMETERS



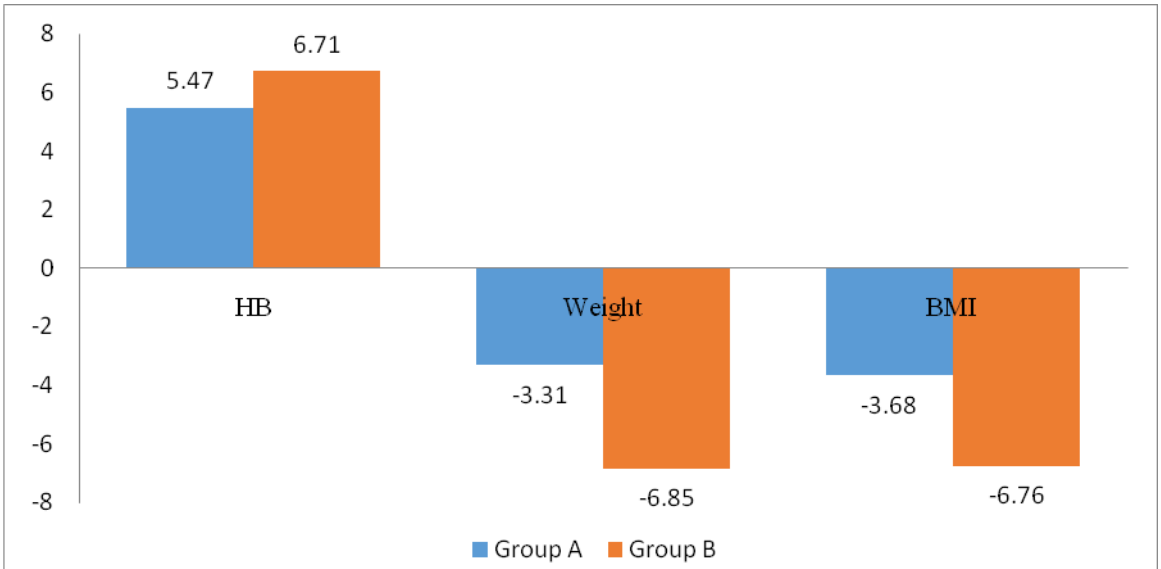


Fig. 3
COMPARATIVE EFFECT OF DRUGS ON Hb, Weight & BMI

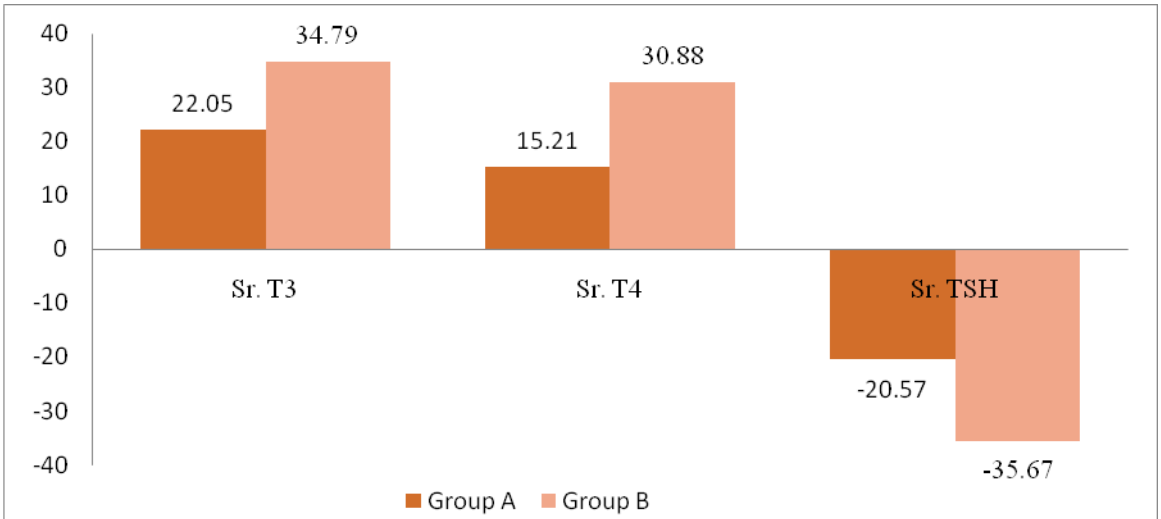


Fig. 4
COMPARATIVE EFFECT OF DRUGS ON THYROID PROFILE

It shows that, Group B *(Kanchnaar shigru churna with panchkola phanta)* was found more effective in decreasing Sr.TSH & increasing Sr.T_3 and Sr. T_4 than Group-A (*Kanchnaar Shigru Churna).*

Discussion

- Deficiency of thyroid hormonesis called hypothyroidism, and this can affect the function of virtually every system of the body.
- Thyroxine - Aniodine - containing hormone secreted by the thyroid gland that increases the rate of cell metabolism and regulates growth.

We can think of the thyroid as the central gear in a sophisticated engine. If that gear breaks, the entire engine goes down with it.

Clinical presentation of hypothyroidism show resemblance with different clinical conditions

described in Ayurvedic classics upto some extent. These include *Kaphavritta Udana Vata, Kaphavritta Samana Vata, Kaphaja Pandu, Kaphaja Grahani, Bahu doshavastha* etc.

1. Thyroxine and *Agni*:

Due to *Nidana Sevana* (etiological factors), derangement of *Jatharagni* takes place which leads to derangement of *Dhatvagni* and *Bhutagni* which finally triggers the disease hypothyroidism.

- Iodine can be considered as *Tejomahabhut amsha*[9] and it is main content of thyroid hormones. So it can be said that thyroid hormones have *Agni Amsha*.
- Without thyroid hormones from thyroid gland, almost all the chemical reactions of the body would becomes luggish. So they can be considered aspart of *Kayagni* on which the entire metabolic activities depend on.[10]
- More over the functions of the *Agni* are *Dahana, Pachana* and *Satmikarana* which can be correlated with metabolic activities in the body. Thyroid hormones control all metabolic activities of the body.

Every cell in the body has receptors for thyroid hormone. Hence thyroid hormones can be considered as *Kayagni Amsha*.

2. Probable mode of action of drug:

The aim of the *Chikitsa* is to keep *Dhatu* in *Samavastha*. In order to keep *Dhatu* in *Samavastha, Shamana drug* should be administered.

- In hypothyroidism there is impaired anabolism and catabolism resulting indecreased nutrition and immunity. Thyroid hormones increase the excretion of metabolic wastes from the tissues. Thus deficiency of thyroid hormones will impair excretion of waste products leading to *Mala sanchaya*. All these leads to formation offre eradicles, causing tissue damage. In such conditions *Srotoshodhana* is essential which will be effectively done by *Shamana*.
- ***Kanchanara*** is *Katu* in *vipaka*, and its *kapha pittahara* property along with vipaka helps in the breakdown of the pathology of hypothyroidism.
- ***Shigru*** leaves are rich in iodine, appears to provide t with the nutrition and substrates required by the thyroid gland. Iodine is an essential component of thyroid hormones, T3 and T4.
- ***Panchkola*** is predominantly having *ushna, tikshna, laghu, ruksha guna, katu rasa, katu vipaka* & *ushna virya*. Hence it exhibits *kapha-vata shamaka, dipana, pachana, rochana, lekhana, sroto vishodhana* & *shothahara* properties.
- ***Panchkola*** is considered as one of the best drugs to treat the condition of *mandagni*, *gulma, ama, aruchi* and *kapha-vata* disorders.

In the present study, *Kanchnaar Shigru churan* along with *Panchkola phanta* was found more effective statistically than *Kanchnaar Shigru churana* in relieving the symptoms of the disease. This might be on account of the additive effect of the *deepana-pachana* properties of *panchkola phanta*. On comparing the effect of Drugs it was found that there is significant difference in the effect of drugs in group-A and B on Sr. TSH, Sr.T_3 & T_4. It shows that, Group-B was found effective in decreasing Sr.TSH & increasing in Sr.T_3, & T_4 than Group A.

In follow upperiod, recurrence of many symptoms was noted in both the groups which denotes the *Gadha Avastha* of the disease.

Two female patients within fertility (first one with primary infertility & another with secondary infertility) conceived by the end of the trail period in group-B i.e. *Kanchnaar Shigru churana* along with *Panchkola Phanta* group. This may be because of *Sroto shodhana*, *Agni deepana* properties of *Panchkola* along with *Kaphavatahara* property of *Shigru & Rasayana* properties of *Pippali*.

Conclusion

In spite of many advances, the modern management of Hypothyroidism still remains unsatisfactory. As all the drugs used in this condition are well known for their side effects a need arises to search a safer drug with similar efficacy.

- Due to inadequate success in combating the disease with modern medications, there is an

increasing demand to treat the diseases with *Ayurvedic* system of medicine.

- Though any disease condition is not described in *Ayurveda* which is similar to Hypothyroidism, it can be correlated with some conditions like *Kaphaja Grahani,*[11] *Kaphaja Pandu,*[12] *Bahu-doshavastha*[13] described in the classics.
- Pathogenesis of hypothyroidism according to the principles of *Ayurveda* can be interpreted by dysfunctioning of the *Agni* particularly *Dhatvagni.*
- Hypothyroidism is a psychosomatic disease & one of the most triggering factor of the disease is over-worry (*Atichintana).* There is strong correlation between aetiopathogenesis of disease & over-worry.
- *Kanchnaar Shigru churna* along with *Panchkola phanta* showed double results in percentage reduction of Weight & BMI reduction compared to plain *Kanchnaar Shigru Churna.*
- Group B with *Panchkola Phanta* showed better results than Group A in relieving all the symptoms but there was a marked difference in results of symptoms like constipation, sluggishness and loss of appetite.
- *Kanchnaar Shigru Churna* & *Panchkola Phanta* showed synergistic effects when used together.

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Clinical Study

Role of *Alambushadi ghanavati* in The Management of *Amavata* With Special Reference To Rheumatoid Arthritis

*Dr. Sasane PU, **Dr. Saroj UR, ***Prof. Joshi RK

Abstract:

Context: *Ayurveda* being a 'science of life' is not an exception for it. It is not just a curative medicine but also teaches the ways to live a healthy long life with the purpose of attaining it. *Amavata*, which can be compared with Rheumatoid arthritis due to its clinical appearance. Due to wide spectrum of disease, much prevalence in the society and lack of effective medicine, so disease being chosen for the study. Prevalence of approx 0.8% of the population. **Aims:** To study the efficacy of *Alambushadi Ghana Vati* in the management of *Amavata* (Rheumatoid Arthritis). **Study Design:** Single centre and Open Clinical study. **Material and method :** 15 clinically diagnosed patients were selected and treated with *Alambushadi Ghana Vati* in dose of 2 tab. (each 500 mg.) three times in a day with luke warm water after meal for 30 days. **Results:** Statistically significant result was found in Hb (gm%) & ESR and highly significant result was found in symptoms of *Amavata* when *Alushadi Ghana Vati* was used and excellent relief was seen in 6.66% of patients, 46.66% patients got significant relief, moderate relief in 33.33% whereas mild relief was found in 13.33% of patients. **Conclusions:** Therapy in the form of administration of *Alambushadi Ghanavati* was more effective in the management of *Amavata (*Rheumatoid Arthritis).

Keywords: *Amavata, Alambushadi Ghana Vati,* Rheumatoid arthritis.

सारांश–

प्रसंग:आयुर्वेद जीवन का विज्ञान होने के नाते इसके लिए कोई अपवाद नहीं है। यह सिर्फ एक रोगहर चिकित्सा ही नहीं है, बल्कि इसे प्राप्त करने के उद्देश्य के साथ एक स्वस्थ लंबा जीवन जीना सिखाता है। नैदानिक उपस्थिति के कारण आमवात (गठियावात) कि तुलना रुमाटाईड आर्थराइटिस के साथ की जा सकती है। इस रोग की व्यापकता के कारण, समाज में ज्यादा प्रसार और प्रभावी दवा की कमी के कारण, इस रोग को अध्ययन के लिए चुना है। जनसंख्या का लगभग 0.9 प्रतिशत की व्यापकता है। **उद्देश्य:** आमवात (रुमाटाईड आर्थराइटिस) के प्रबंधन में अलम्बुषादि घनवटी के प्रभाव का आकलन करने के लिए अध्ययन। **डिजाइन:** एकल केंद्रित और खुली नैदानिक अध्ययन। **सामग्री और विधियाँ:** आमवात के चिकित्सकीय निदान रोगियों में अलम्बुषादि घनवटी को 2 टैब (प्रत्येकमिग्रा.) दिन में तीन बार गुनगुने पानी के साथ भोजन के बाद 30 दिनों के लिए दिया गया । **परिणाम :** सांख्यिकीय विश्लेषण के आधार पर जब अलम्बुषादि घनवटी का प्रयोग करने के बाद हिमोग्लोबिन और ईएसआर में सांख्यिकीय अत्यधिक महत्वपूर्ण सुधार पाया गया और आमवात के लक्षणों में अत्यधिक महत्वपूर्ण परिणाम पाये गये है। और 6.66 प्रतिशत रोगियों में उत्कृष्ट राहत देखी गई, 46.66 प्रतिशत रोगियों में महत्वपूर्ण राहत, 33.33 प्रतिशत रोगियों मध्यम राहत मिल गई और 13.33 प्रतिशत रोगियों को हल्की राहत मिली है। **निष्कर्ष:** आमवात (रुमाटाईड आर्थराइटिस) के चिकित्सा प्रबंधन में अलम्बुषादि घनवटी प्रभावी है।

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Clinical Study

Role of *Alambushadi ghanavati* in The Management of *Amavata* With Special Reference To Rheumatoid Arthritis

Dr. Sasane PU, Dr. Saroj UR, Prof. Joshi RK

Introduction:

In the today's era, due to modern life style, incidence of disease are increasing,one of them is *Amavata*, which can be compared with Rheumatoid Arthritis due to its clinical appearance. Due to wide spectrum of disease, much prevalence in the society and lack of effective medicament, the disease is being chosen for the study. Prevalence of approx. 0.8% of the population, About 80% of people developed between age 35–50 yrs[1].

According to the nature of disease, it is essential to work on such therapy which has *Ama* and *Vatahara* properties. Here has tried to study the various aspects of the disease in the perspective of *Shamana* drug The line of treatment described for the disease as "*Langhanam Swedanam Tiktham…….*" mention in *Chakradatta Amavatachikisa Prakarana* 25/1[2]. So, in the study, *'Alambushadi Ghana Vati'* had been selected as *Shamana Yoga*.

Aims & Objectives:

1. Conceptual and clinical studies on *Amavata* w.s.r.to Rheumatoid Arthritis and its management with time tested *Ayurvedic* principle.
2. To establish the Ayurvedic treatise in the management of *Amavata*.
3. Clinical evaluation of the efficacy of *Alambushadi Ghana Vati* in management of *Amavata*.

Materials & method:

Selection of patient-

15 patients of *Amavata* were selected regard less of age, sex, occupation and socio-economic conditions. Both acute and chronic phase of *Amavata* patients were taken for the study, following the criteria of the diagnosis of Rheumatoid arthritis in modern science and the clinical features of *Amavata* described in *Madhava Nidana Amavata nidana* 25/6.[3]

Study Design- Single centre and Open Clinical study.

Inclusion criteria -

1. Patients between the age group of 16 to 70 years in either sex presenting with clinical features of *Amavata*.
2. Pre-diagnosed patient of *Amavata*. (chronicity< 10 years)
3. Patient willing to sign the consent form.

Exclusion criteria –

1. Patients of age below 16 years and above 70 years of either sex.
2. Chronicity of *Amavata* more than 10 years.
3. Patients having severe crippling deformities.
4. Patients suffering from paralysis.
5. Patients having Neoplasm of spine, Gout, Ankylosing Spondylysis, Traumatic Arthritis and Pyogenic Osteomylitis etc.
6. Patients having associated Cardiac disease, Pulmonary Tuberculosis, Diabetes Mellitus, Malignant Hypertension, Renal Function Impairment, etc
7. Pregnant women and lactating mother.

Grouping –

Group I – 15 clinically diagnosed and registered patients of *Amavata* treated by *Alambushadi Ghana Vati*2 tab. (each 500 mg.) three times in a day with lukewarm water, after meal for 30 days.

Trial Drugs-

Alambushadi Ghana Vati

The proposed formulation selected in this trial was chosen from *Chakradutta Amavata chikitsa prakarana* 25/41-42[4] & Contents of ***Alambushadi Ghana Vati***-

Table no. 1-showing the contents of *Alambushadi Ghana Vati*-

SrNo.	Sanskrit Name	Botanical Name	Part Used	Quantity
1.	*Alambusha*(*Lajjalu*)	*Mimosapudica* Linn.	Whole plant	1 part
2.	*Gokshura*	*Tribulusterrestris* Linn.	Root	2 part
3.	*Haritaki*	*Terminalia chebula* Retz.	Fruit	3 part
4.	*Bibhitaki*	*Terminalia bellerica* (Gaertn.) Roxb.	Fruit	4 part
5.	*Amalaki*	*Embilica officinalis* Gaertn.	Fruit	5 part
6.	*Shunthi*	*Zingiber officinale* Linn.	Rhizome	6 part
7.	*Amrita*	*Tinospora cordifolia* (Thunb.) Miers	Stem	7 part
8.	*Trivrutta*	*Operculina turpethum*Linn.	Root	28 part

Alambushadi Ghana Vati made up in the form of 500 mg each tablet & prepared in pharmacy of the institute. (Drug Batch no.A0281)

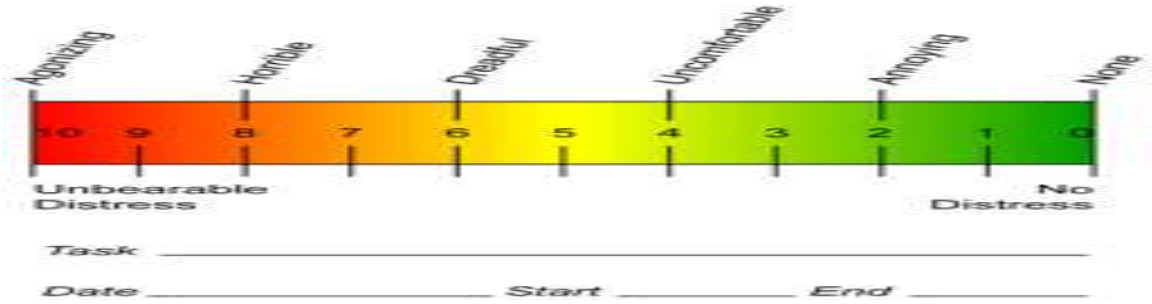
Duration of clinical trial and follow up study:-

1. 30 days for oral drug.
2. All patients followed up fortnightly for 1 month.

Criteriafor Assessment-

1. Subjective parameters-.

1.Pain in joint : Assessment of pain will be done by Visual Analogue Scale-



Assessment of sign and symptoms was done pre and post trial on severity grading scale developed by Prof. Ram Kishor Joshi et. al.

Sr. No.	Severity	Grading	Percentage
1.	Absent	0	0%
2.	Mild	1	1-25%
3.	Moderate	2	26-50%
4.	Severe	3	51-75%
5.	Agonising	4	76-100%

2. Stiffness in joint:

Sr. No.	Symptoms	Grading
1	No stiffness	00
2	< 15 min.	01
3	< 30 min.	02
4	< 1 hrs.	03
5	> 1 hrs	04

3. Swelling of joint.

Sr. No.	Symptoms	Grading
1	No swelling	00
2	Feeling of swelling	01
3	Feeling of swelling + Heaviness	02
4	Apparent swelling	03
5	Huge (Synovial effusion) swelling.	04

4. Restriction of movement

Sr. No.	Symptoms	Grading
1	No symptoms / Free movement of joint.	00
2	Mild restriction of movement	01
3	Moderate restriction of movement	02
4	Severe restriction of movement	03
5	Uable to do movement of joint	04

5. Tenderness at joint :

Sr. No.	Symptoms	Grading
1	No tenderness	00
2	Says tender	01
3	Patient winces	02
4	Winces and withdraws	03
5	Not allowed to be touched	04

***6. Angmarda* (Bodyache) :**

Sr. No.	Symptoms	Grading
1	No bodyache	00
2	Generalized bodyache of and on during the day	01
3	Generalized bodyache during most part of the day not affecting any work	02
4	Generalized bodyache throughout the day but person is able to do normal routine	03
5	Generalized (*sarvanga*) bodyache/pain enough to affect routine work for all the day	04

***7. Aruchi* (Anorexia):**

Sr.No.	Symptoms	Grading
1	Willing toward all *Bhojya Padarth*	00
2	Unwilling toward some specific *Ahara* but less than normal	01
3	Unwilling toward some specific *rasa* i.e. *Katu/Amala/Madhura* food	02
4	Unwilling for food but could take the meal	03
5	Totally unwilling for meal	04

***8. Trishna* (Excessive thirst):**

Sr. No.	Symptoms	Grading
1	Feeling of thirst (7–9 times/24 hours) & relieved by drinking water	00
2	Feeling of moderate thirst (>9-11 times/24 hours) & relieved by drinking water.	01
3	Feeling of excess thirst (>11–13 times/24 hours) not relieved . by drinking water	02
4	Feeling of sever thirst (>13 times) not relieved by drinking water	03

***9. Alasya* (Lazyness/ Absence of enthusiasm) :**

S N.	Symptoms	Grading
1	No *Alasya* (doing satisfactory work with proper vigor & in time)	00
2	Doing satisfactory work/late initiation, like to stand in comparison to walk	01
3	Doing unsatisfactory work/late initiation, like to sit in comparison to stand	02
4	Doing little work very slow, like to lie down in comparison to sit.	03
5	Don't want to do work/no initiation, like to sleep in comparison to lie down	04

10. *Gaurava* (Heaviness):

Sr. No.	Symptoms	Grading
1	No feeling of heaviness	00
2	Occasional feeling of heaviness	01
3	Continuous feeling of heaviness, but patient does usual work	02
4	Continuous feeling of heaviness which hampers usual work	03
5	Unable to do any work due to heaviness	04

11. *Jwara* (Fever):

Sr. No.	Symptoms	Grading
1	No fever	00
2	Occasional fever subsides by itself	01
3	Dailyonce subsides by itself	02
4	Dailyonce subsides by drug	03
5	Continuous fever	04

***12. Apaka*(Indigestion of food)-**

Sr. No.	Symptoms	Grading
1	No *Apaka* /Indigestion	00
2	Indigestion / prolongation of food digestion period occasionally	
	related to heavy meal	01
3	*Avipaka* occurs daily after each meal takes four to six hour	
	for *Udagarashuddhi* etc. *Lakshana*	02
4	Eat only once in a day and does not have hungery by evening	03
5	Never gets hungery always feeling heaviness in abdomen	04

12. *Bahumootrata* (frequency of micturition per 24 hours):

Sr. No.	Symptoms	Grading
1	Less than 4 times/24 hrs	00
2	4 - 6 times/24 hrs.	01
3	6-10 times/24hrs	02
4	> 10 times/24 hrs	03

Criteria for Assessment of Overall Effects of Therapy- For assessment of improvement in clinical manifestations following grading developed by Prof. Ram Kishor Joshi et. al used.

Sr. No.	Observation	%
1.	No relief	0%
2.	Mild relief	1-25%
3.	Moderate relief	26-50%
4.	Significant relief	51-75%
5.	Excellent relief	76-100%

➢ **Objective parameters-**

a. Haematological- Hb gm%, TLC, DLC, ESR, Sr. Uric acid, BSL (F),RA Factor, CRP test, ASLO titre.

b. Urine R/M

c. Radiological-X-ray of appropriate joints.

In this study, Sr.Uric Acid, was used to exclude the other conditions which mimic the RA symptoms like Gouty Arthritis, and BSL (F) was used for screening the DM.

Observation:

Study had shown that overall 53.33% patients belong to 3rd to 5th decade of life.Incidence of disease wasfound notably higher in females (80%) than in males (20%) i.e. (4:1) Majority of the patients(73.33%) Hindu religion,(73.33%) married. Out of which, maximum (46.66%) housewives; about (60%) belonged to middle class; max. (46.66%) *Vata-Kaphaj Prakriti*, (53.33%) *Madhyama Sara*, (46.66%) *Madhyama Samhanan*, (53.33%) patients of *Madhyama Satmya*, (53.33%) *Madhyama Satva*, (53.33%) *Madhyama Ahara Shakti,* (46.66%) *Avara Vyayamashakti,*(46.66%) *madhyam Vyayama-shakti,* (53.33%) *Madhyama Koshtha* whereas (33.33%) *Kroora Koshtha,* max. (66.66%) *Mandagni* & (33.33) *Vishamagni*. In this type of *Kostha* & *Agni* there is predominance of *Vata & Kapha Dosha*, which may play important role in developing the pathogenesis of *Amavata*. Max. (86.66%) duration of illness < 4yrs, max. *Ati guru Aharasevan*(93.33%) then *Singdha Ahara* (93.33%), *Ati Madhura (*46.66%), *Adhyashana* (66.66%), *Vishamashana* (73.33%), *Divasvapna* and *Nishchalata* (80%), *Bhojanottara Vyayama* (53.33%) *& Ratri Jagarana (*60%), *Chinta* (53.33%), *Bhaya* (20%), *Shoka (*13.33%), (46.66%) patients have positive family history of the disease, (100%) patients had pain in joint, stiffness of joint, swelling of joint, *Angamarda* and *Jwara*, (93.33%) tenderness at joint, (93.33%) *Aruchi* and *Apaka*, (86.66%)) restriction of movement and *Bahumutrata*, (73.33%) *Alasya,* (66.66%) *Gaurava* & (46.66%) *Trishana* before the treatment, Max.(93.33%) wrist joint, then (86.66%) patients were had proximal interphalengeal (hand) joint involvement, (80%) Metacarpophalengeal, (80%) distalinterphalengeal (hand) joint, (53.33%) elbow joint, (46.66%) shoulder joint, (46.66%) ankle joint, (46.66%)knee joint involvement, (86.66%) Metatarsophalengeal and (20 %) had tempo - mandibular jointinvolvement.

Results:

Effect of therapy in subjective Parameters-

Table No. OR- 1: Showing effect of Therapy in Subjective Parameters of Group I. (Wilcoxon matched paired single ranked test)

Variable	Mean		Mean	%	SD	SE	P	S
	BT	AT	Diff.	Relief	±	±		
Pain in joint	5.26	1.66	3.6	68.35	0.7368	0.1902	<0.0001	HS
Stiffness of joint	2.13	0.93	1.2	56.26	0.5606	0.1447	<0.001	HS
Swelling of joint	1.66	0.53	1.13	67.97	0.7432	0.1919	<0.001	HS
Restriction of movement	1.46	0.80	0.66	45.45	0.4880	0.1260	<0.01	HS
Tenderness at joint	1.66	0.66	1.00	59.99	0.5345	0.1380	<0.001	HS
Angmarda	2.20	0.93	1.27	57.59	0.7988	0.2063	<0.001	HS

Aruchi	1.53	0.60	0.93	60.88	0.5936	0.1533	<0.001	HS
Trishna	0.66	0.53	0.13	19.99	0.7432	0.1919	>0.05	NS
Alasya	1.20	0.66	0.54	44.44	0.6399	0.1652	<0.05	S
Gaurava	1.20	0.66	0.54	44.44	0.6399	0.1652	<0.05	S
Jwara	1.60	0.53	1.07	66.69	0.4577	0.1182	<0.001	HS
Apaka	1.66	0.66	1.00	59.99	0.5345	0.1380	<0.001	HS
Bahumutrata	1.66	0.66	1.00	59.98	0.6547	0.1690	<0.001	HS

(Gr.:Group,BT:Before treatment, AT: After treatment, Diff.: Difference, SD: Standard Deviation, SE: Standard Error, P: P value,S:Significance level,HS: Highly Significant, S: Significant)

In Group I showed highly significant results regarding subjective parameters – pain in joint, stiffness of joint, swelling of joint, restriction of movement, tenderness at joint, *Angamarda, Aruchi, Gaurava, Jwara, Apaka* & *Bahumutrata* with % relief of 68.35%, 56.26%, 67.97%, 45.45%, 59.99%, 57.59%, 66.88%, 44.44%, 66.69%, 59.66% & 59.98% respectively. In case of other subjective parameters i.e. *Alasya* there was significant result (P <0.05) with% relief of 44.44% and *Trishna* there were not significant results (P>0.05) with % relief of 19.99%.

Effect of therapy in Objective parameters (Lab Investigations)-

Table No.OR- 2: Effect of Therapy on Lab Investigations (Paired 't' Test)

Variable	Mean		Mean	%	SD	SE	*"t"*	P	S
	BT	AT	Diff.	Relief	±	±			
Hb% (gm %)	11.84	12.24	0.40	3.376	0.6803	0.1757	2.277	<0.05	**S**
TLC	7466	7240	226	3.03	1649	425.77	0.532	>0.05	NS
ESR	49.73	32.26	17.47	35.12	24.354	6.288	2.778	<0.05	**S**

(Hb-Haemoglobin; TLC-Total leucocytes count; ESR-Erythrocyte sedimentation rate, Gr.: Group, BT: Before treatment, AT: After treatment, Diff.: Difference, SD :Standard deviation, SE: Standard Error, P : P value, S :Significance level, HS: Highly Significant S: Significant, NS: Non Significant)

In Objective parameters of Group I-, in Hb% & ESR has shown significant result (P <0.05) with an improvement of 3.37% & an improvement of 35.12%, respectively, while in case of TLC has shown not significant results (P >0.05) with an improvement of 3.03%. In other laboratory parameters, there were no significant findings.

Overall effect of therapy -

Effects	Group I	
	No.Of Patients	Percentage
No relief (Unchanged)	00	00
Mild relief	02	13.33
Moderate relief	05	33.33
Significant relief	07	46.66
Excellent relief	01	6.66

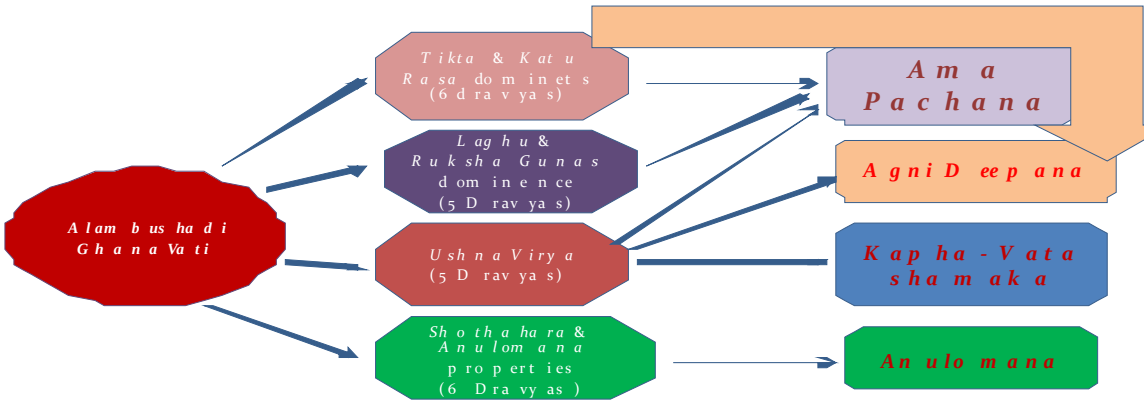
In group I-Excellent relief was found in 6.66% of patients, while significant relief in 46.66%, moderate relief in 33.33% whereas 13.33 % were found mild relief.

Discussion:

Ingredients of *Alambushadi Ghana Vati* are *Alambhusha* (*Lajjalu*), *Gokshura, Haritaki, Bibhitaki, Amalaki, Shunthi, Amrita, Trivrutta*, in the proportion of 1:2:3:4:5:6:7:28 i.e. having highest concentration of *Trivrutta* with their *Kapha Vata Shamaka* and *Virechana* properties[6] help in reducing the swelling in the joints.

In this combination, *Katu, Tikta* dominant *Rasa* in this formulation thus help in digestion of *Ama* & finally in breakage of pathogenesis of Disease. Besides this, there is dominancy of *Laghu, Ruksha Gunas* in the *Alambhushadi Ghana vati* which also helps in *Kaphaghna* property. 5 *Dravyas* out of 8 in the formulation possesses *Laghu* & *Ruksha Guna*. This formulation is also dominantly has 5 *Dravyas* with *Ushna virya* which also helps to pacify the *Vata Dosha*. 6 *Dravyas* with *Shothahara* & *Anulomana* property. With these properties of *Alambushadi Ghana Vati*to digest the *Ama &* to control the *Vata Dosha*.

Guduchi is also proved to have anti-rheumatic, anti-inflammatory and immune-modulatary properties[7]. *Sunthi* is also proved beneficial for in terms of rheumatic and musculo-skelatal disorders provided relief from pain and swelling[8]. *Triphala* having *Rasayana, Tridoshahara & Virechana* properties[9] helps in reducing the swelling in the joints. *Gokshura* with their diuretic properties, help in reducing the swelling in the joints, so it is *Vata Shamaka*[10].



Probable mode of action of *Alambushadi Ghana Vati*

Conclusion:

- *Amavata* can be concluded that hypo-functioning of *Agni* termed as *Mandagni*, largely responsible fortheformation of *Ama* which chief pathogenic factor of the disease.
- It is observed that symptomatology of *Amavata* very closely resembles with the disease Rheumatoid Arthritis. From this study, it is concluded that non-compliance of code of healthy diet, selection and eating plays a major role incausation of disease. Hence, we can say that code and conduct of healthy eating must be followed to achieve early and better results of the disease.
- **Finally, it can be concluded that the effect of therapy i.e. *Alambushadi Ghana Vati* provided better relief in most of the signand symptom of the disease at significant level. It also considerably prevents the relapse.**

Future Recommendation for the Study:

1. In the present study the size of sample was small and period of study was limited .Hence it is difficult to draw a definite conclusion regarding this study. In this context, it is suggested that the study should be continued with large sample and treatment for longer duration.

2. Objective parameters like CRP, RA Factor, etc. should be measured by quantitative method i.e. titration for the better assessment of response of therapy.

3. In further studies estimation for IgE level should be measured before and after treatment to prove its efficacy on immune system.

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Clinical Study

Effectiveness of Healing Energy on significantly lowering Blood Glucose in Diabetic patients: a pilot study report

*Dr. Namrata Redkar

Abstract:

In a double blind, single treatment, multiple dose (*multiple treatments with Healing Energy*), clinical trial inclusive of a Control Group, effect of Healing Energy was studied on 15 diabetic patients over a period of two weeks. The study was designed in such a way that the enrolled subjects will undergo at least six full day energy healing treatments during the clinical trial. Both male and female patients in the age group of 33 years to 70 years with long diabetic history were enrolled in the study. Six full day energy healing sessions, with a gap of two days in between, were conducted for all the enrolled patients. Blood Glucose and other vitals like blood pressure, oral temperature and pulse rate were measured before and after the sessions. Evaluation of the data shows a typical pattern indicating interaction of Healing Energy with Blood Glucose level. The data also shows that there is a washout effect of Healing Energy. Partial contribution of Healing Energy on controlling the random sugar after breakfast, was established in comparison to control group.

Keywords: Diabetes mellitus, Healing energy, Blood Glucose

सारांश-

15 डायबिटिज के रोगियों पर 2 सप्ताह तक रोपण ऊर्जा के प्रभाव का अध्ययन किया गया। यह एक डबल ब्लाइंड बहुआयामी मात्रा वाला चिकित्सकीय परीक्षण था। इस पूरी समयावधि में जिनको नामांकित किया गया उन्हें कम से कम 6 दिन रोपण ऊर्जा चिकित्सा दी गई। जिसके लिए 33-70 साल वाले स्त्री व पुरुष नामांकित किये गये। जिनका लम्बे समय से डायबिटिज का इतिहास था। चिकित्सा के पूर्व व पश्चात् उनका रक्त में शर्करा तथा अन्य रक्तचाप, तापमान आदि नापे गये। जो परीक्षण प्राप्त हुए उनका अध्ययन करने पर वह रक्त शर्करा तथा अन्य रक्तचाप, तापमान आदि नापे गये। जो परीक्षण प्राप्त हुए उनका अध्ययन करने पर वह रक्त शर्करा के स्तर को नियन्त्रित करने में रोपण ऊर्जा का कन्ट्रोल ग्रुप के साथ तुलनात्मक अध्ययन किया गया।

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Clinical Study

Effectiveness of Healing Energy on significantly lowering Blood Glucose in Diabetic patients: a pilot study report

Dr. Namrata Redkar

Introduction:

Shariram satvasanyam cha vyadhinam ashrayo matah : Cha. Su. 1

According to *Acharya Charak* both body and mind are the shelter to disease and both are influenced by one another i.e. if disease is in body its effects are seen on mind and if in mind the body is also affected. But if one closely observes the manifestation of any disease it is seen that symptoms first appears in the mind and then are observed in the body.

For example in an cohort study in cancer patients it was seen that the subjects had depressive thoughts and suicidal tendency around six months before cancer symptoms were manifested in their body. This means that the mind is first effected than the body. Diabetes is a condition which effects both the body and mind.

The cells in the living body has a specific charge (voltage)which produces an electric field around the cell. This electric field produces an magnetic field which causes an electromagnetic effect around the cell. Every cell every tissue and organ has its specific magnetic field which can be measured as the cells energy. If this frequency decreases the cells are unhealthy causing disease to manifest. Thus disease is nothing but cells vibrating at a lower energy level. If by any means the energy of the cell is increased, the cell will vibrate at higher frequency making it healthy.

Diabetes mellitus is a chronic disease, which causes imbalance in both the body and the mind and for which there is no known cure. Today's medical science believes that diabetes is treatable with proper medication but to reverse diabetes is difficult. Management of Diabetes concentrates on keeping blood sugar levels as close to normal with a healthy diet, exercise and weight loss in addition to use of appropriate medications. Thus, most of the efforts are focused on the symptom, which is to control the high blood glucose level. There are several alternative Healing techniques for Diabetes[1]. According to these techniques, Diabetes is a result of energy imbalance in our body. As per Diana Guthire and Maureen Gamble[2], the potential for the use of energy- based therapies in diabetes is great and they have given a detailed descriptions of energy based therapies used for diabetes control. The energy healing therapies such as Healing Touch (HT), Therapeutic Touch (TT), Reiky, Acupuncture[3], Acupressure, *Yoga*, Meditation etc. have shown tremendous potential in improving management of diabetes. Zimmerman[4], with the help of SQUID discovered that a huge pulsating biomagnetic field emanated from the hands of a Therapeutic Touch (TT) practitioner. The frequency of the pulsations ranged from 0.3 to 30 Hz, with most of the activity in the range of 7-8 Hz. Hu H.[5] in a review which appeared in the Journal of Traditional Chinese Medicine found that acupuncture has a 2 fold benefit on diabetes. Firstly, it increases insulin synthesis in the pancreas, secondly, increases the utilization of glucose by increasing the number of receptors on target cells, resulting in the lowering of blood sugar. Though the literature is full of references claiming how one or other healing technique is useful for control of diabetes and other diseases by energy Healing techniques, there are no or few reports of a clinical trial which is scientifically designed and documented as per requirements of GCP[6]. Since Diabetes is affecting a large population all over the world, any attempt to find a solution to control of Diabetes will help millions of people regain their health back and live a happy life. We report here our findings of a small but significant pilot clinical trial, which was designed and conducted as per requirements of GCP, on effect of healing energy on control and possible management of diabetes in human subjects.

Experimental:

Study design:

The study design was kept simple. The study was a double blind, single treatment, multiple dose (*multiple treatments with Healing Energy*), clinical trial inclusive of a No Treatment Control Group. The study was designed in such a way that the enrolled subjects will undergo atleast six full day Energy Healing treatments (will also be referred as referred as 'treatment') during the clinical trial. Randomization (except for sixth treatment as described later) was not possible because all the subjects were housed in the same room and received the treatment from the healer at the same time. The treatments were scheduled every third day. Each full day treatment was planned to have three 1 to 1.5 hour interval treatments, two such treatments before lunch and one such treatment after lunch. Subjects enrolled in the trial were requested to report between 8 am to 8:30 am during the study. Since the objective of the present study was to investigate if Healing Energy is able to control the blood Glucose level, the blood glucose was measured for all patients before beginning of the treatment, in between the healing treatment sessions and at the end of treatment. Ambulatory blood Glucose was also measured for two days following the treatment. For first seven days, which included three treatments, subjects were requested to report after consuming their regular breakfast and taking their regular medication. Random blood glucose was measured for all subjects in between 8:00 and 9:00 hours. This was approximately one hour after breakfast. After vitals and blood glucose measurement, subjects attended the treatment session. After completion of treatment, blood Glucose level was measured for all subjects. The Data analysis was carried out to evaluate if treatment with Healing Energy had any effect on subjects' blood Glucose level. From eighth day to sixteenth day, subjects were requested to report fasting. Breakfast was served on these days after recording vitals and blood Glucose.

Patient population:

Patient population enrolled in the clinical trial included both male and Female patients in the age group of 35 to 75 years and suffering from Diabetes Mellitus since one to ten years. Patients with average fasting sugar level of more than 150 mg/dL and average PP sugar level of more than 200 mg/dL were enrolled in the study. The patient population included male and female patients, smokers, non-smokers, vegetarian and non-vegetarian, alcoholics and non-alcoholic, thus representing general population. A total of 21(15 for treatment group and 6 for Control group) patients, who were willing to participate, were enrolled in the study. The inclusion & exclusion criteria followed in enrolling the patients is given below:

Inclusion Criteria:

i. Patients who were diagnosed to have Type II diabetes were eligible for inclusion in the trial.

ii. Patients who were 18 years or above were eligible for inclusion

iii. Patients who were ready to participate in the trial on their own will and who signed the 'Informed consent form' were eligible for participating.

Exclusion criteria:

Patients were excluded from participating in the study if they meet any of the following criteria

i. Patients participating in other clinical trial concomitantly

ii. Patients who participated in this clinical trial previously

iii. Patients reporting HIV positive or active hepatitis or active infectious disease

iv. Pregnant and lactating women

v. Patients who cannot sit on chair for longer duration for the Healing Energy treatment, approximately 1 to 1.5 hours.

Removal of Patients from therapy or assessment:

Patients who could not attend three or more consecutive sessions were excluded from assessment.

Control group:

Control group consisted of six randomly selected patients from a total of 21 enrolled patients who fulfilled the inclusion / exclusion criteria. The

control group was housed in a separate facility.[#]

Type of energy:

The healing energy was a type of *Chakra* healing energy.

The pilot study was conducted after approval from Ethics committee.

The average age of the subjects enrolled in the study was 53.47 + 10.7 years, average weight was 64.27 + 9.29 kg and average BMI was 25.09 + 4.24. Patients were requested not to discontinue their regular medications during the study.

[#]**Note 1:** Earlier observations indicated that the Healing Energy is effective up to a radius of approximately 1.5 km (unpublished data). Hence the control group was housed in a facility which was at a distance of ~5 km from the facility where Treatment group was housed.

Results and discussion:

Previous unpublished data had indicated that blood Glucose level of a Diabetic person attending the Energy Healing treatment shoots up initially. During subsequent treatments, the blood Glucose level at the end of the treatment session exhibits a maximum, starts decreasing slowly and over a period of time (days) reaches a constant low value. This typical pattern was attributed to the interaction of Healing Energy with human body. It was postulated that as a result of this interaction there is a short duration of hormonal imbalance in the body, which results in the observed high blood glucose levels. Upon subsequent healing sessions, this hormonal imbalance slowly decreases and body starts controlling the blood glucose level more efficiently. To verify this earlier observation, blood glucose level was measured for all subjects, enrolled in the present study, at the end of each treatment session. The data is tabulated in Table 1.

Table 1

Session	#Blood glucose levels (random) in mg/dL of subjects at the end of each healing session				N
	Minimum	Maximum	Average	± SD	
Session 1	132.0	358.0	251.9	63.6	15
Session 2	147.0	405.0	230.0	65.7	15
Session 3	128.0	340.0	239.2	59.4	15
Session 4	138.0	425.0	243.1	71.7	15
Session 5	175.0	386.0	234.4	53.4	15
Session 6	149.0	288.0	224.8	42.9	14

A plot of average blood glucose vs healing session indeed showed a typical profile (fig. 1).

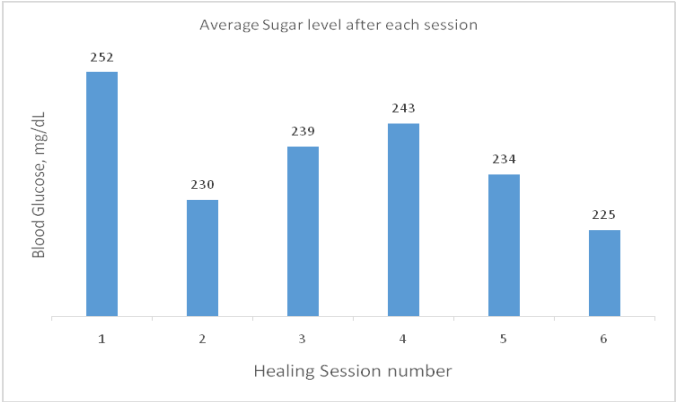

Fig. 1 Plot of average blood Glucose in mg/dL level at the end of each session

After all six sessions were complete, data analysis showed that the average value observed at the end of first healing session was higher than the average values observed at the end of other sessions. It was also observed that, except for session 1, the average blood glucose levels of the patients show increase from 230 mg/dL to 243 mg/dL and then decrease from 243 mg/dL to 225 mg/dL on 6th healing session (treatment). This trend was similar to the one observed earlier (unpublished data) and this trend is typical in that, it shows the healing energy interacting with the body. This data and the trend also shows that the Healing sessions in the present study are not sufficient and additional healing sessions are required to control the blood glucose level and bring it within normal range. No such pattern was observed in control group.

Washout effect: When subjects reported on the first day, none of the enrolled subjects were exposed to Healing energy. Hence, the random blood Glucose level of these subjects was considered as the baseline values, just for reference. The average random blood Glucose value prior to the first Energy healing session was 239.6 mg/dL. The average blood Glucose showed a decreasing and increasing pattern on treatment and ambulatory days of the study as shown in table 2.

Table 2

Healing session / Day	#Blood glucose levels (random) in mg/dL of subjects on Healing session and no Healing Session days				N
	Minimum	Maximum	Average	+ SD	
Healing session 1	129.0	367.0	239.6	77.6	15
Day 2	152.0	289.0	227.8	39.0	15
Day 3	144.0	339.0	220.7	56.2	15
Healing session 2	108.0	413.0	229.8	86.0	15
Day 5	112.0	324.0	215.1	55.9	15
Day 6	99.0	396.0	206.3	89.5	15
Healing session 3	106.0	370.0	217.7	69.7	15

This pattern of decreasing of blood glucose levels for two days after the healing session and an increase on third day shows that there is a washout effect of healing energy. This means that the Healing Energy does interact with the body and shows the desired effect, but the effect does not remain for a longer period. Such a behaviour is observed during other types of Energy healing treatments as well. From this observation, it can be inferred that, the Energy Healing sessions should be scheduled every alternate day to ensure continuous effect of Healing Energy on controlling blood Glucose.

To evaluate whether the Healing Energy has any effect on controlling the random sugar after breakfast, on the 6thhealing session day, seven subjects from treatment group were selected randomly. After recording their fasting blood glucose (along with other subjects), and breakfast, the subjects attended one hour healing session. At the end of the one hour healing session, blood glucose was measured. The resulting average blood glucose levels were compared with the corresponding values for Control group. The average fasting sugar of these seven subjects on the 6th Healing session (day 16) was 163 mg/dL. After breakfast and one hour healing session, the average random sugar of these seven subjects was 173 mg/dL. The average fasting blood glucose level for Control group was 254 mg/dl and the average random blood glucose level, 1 Hr after breakfast was 347.6mg/dl.The t-test for random blood glucose level between treatment and control groups 1Hr after breakfast, gave a value of 0.00026 when tested at 0.05 significance. The data is tabulated in Table 3 and is plotted in Fig. 2.

Blood Glucose testing condition	Blood Glucose, mg/dL (+SD)	
	Treatment	Control
Ave. Fasting	163 (16)	250 (39)
Ave. Random after breakfast	246 (47)	291 (37)
Ave. fasting before session	165 (38)	270 (45)
Random 1 hour after breakfast	173 (30)	348 (77)

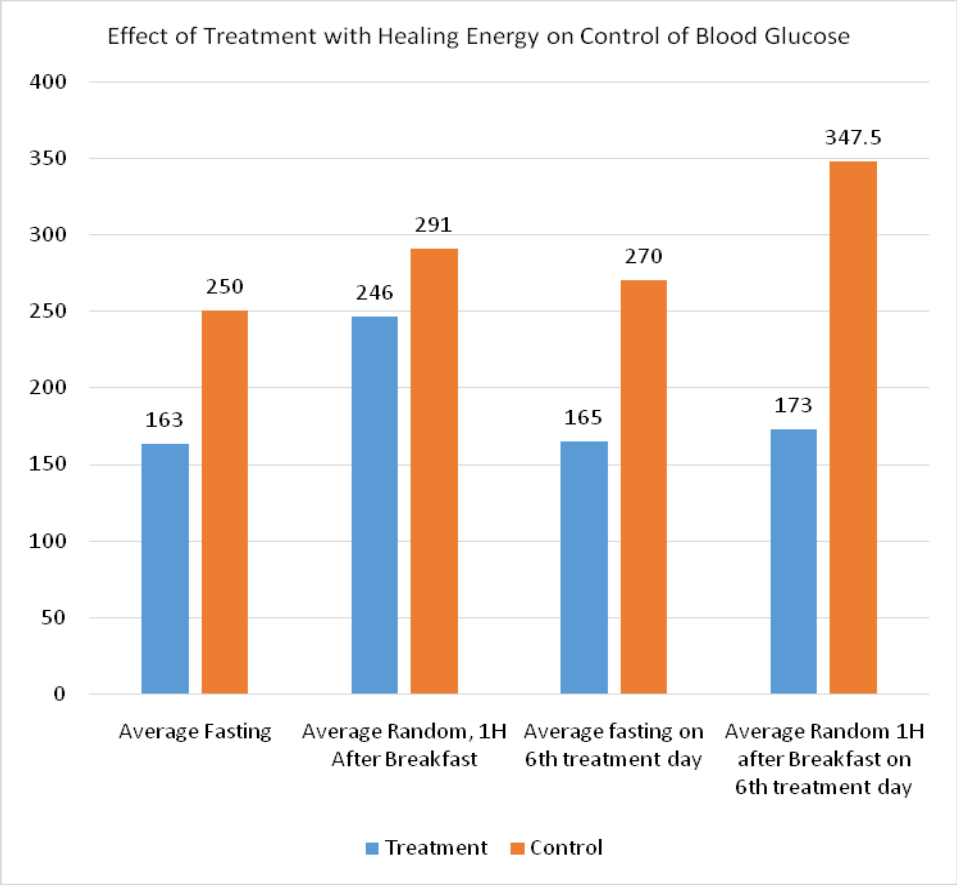

Fig. 2: Average Blood Glucose levels, in mg/dL,for Treatment and Control group before and after 1 Hour Energy healing session on 6th treatment day

The significant lower blood glucose levels in Treatment group as compared to the Control group indicate that treatment with Healing Energy is contributing to controlling the Blood glucose levels more effectively than the regular medication alone.

The effect of attending the healing sessions was also evident from the feed back which revealed that the overall wellbeing of the subjects improved as they attended the Healing sessions. It was also interesting to note that there were no dropouts from the study.

Long term effect:

Long term (1 year after the study) effect of the treatment with healing energy is very encouraging. Three out of 15 treatment group patients have completely stopped taking any medication. Their blood glucose levels are normal. This in itself is very significant finding. Details of the follow up and related data will be published separately soon.

Conclusion:

The study conducted showed that the Healing Energy does interact with the body and shows a pattern resulting in initial increase and then decrease in average blood glucose levels of the subjects. Extrapolation of the data on the increase and decrease pattern shows that the subjects need to attend atleast 15 full day Energy healing sessions to effectively control blood glucose levels. It was an important observation that there is a washout effect of the Healing energy and hence the Healing sessions have to be spaced on alternate days as against after every two days in the present study. After five Energy Healing sessions, in comparison to the control group, the control of Blood Glucose could be partially attributed to interaction of Healing Energy. A pivotal study is planned on larger patient population and several more tests to understand the mechanism of interaction of Healing energy with Human body resulting in lowering of Blood Glucose in Diabetic Patients.

Acknowledgement:

The author are indebted to Mr. Manoj Jain, who conducted the Healing sessions during the study. The author also acknowledge the help of Dr. Adwait Desai, Bhakti Kulkarni, Saurabh Kulkarni, Sandeep Kudav, Sanjana Kudav during the clinical trial. This research was funded by Pharma Edge Centre (I) Pvt. Ltd.

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Clinical Study

Role of *Ayurvedic* drugs in the management of *Tundikeri* w.s.r. to Tonsillitis

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Abstract:-

Normal tonsils prevents the body from different types of organisms to infect it. When they fail to do this job, the disease tonsillitis occurs. *Tundikeri* is such a notorious disease whitch prevent the child to eat and drink, ultimately failing to thrive. To prevent the patients from hazards and side effects of recurrently used antibiotics the present study was planed. Total 30 patients were registered under three groups and were given *Peetak Churana* 3 gms. with honey and ghee locally twice a day, *Katukadya Kashaya Ghana Vati* 500 mgs. with water orally thrice a day singly in group I, II and both in group III for 15 days. All the patients have completed the trial. It was found that the overall improvement was observed in all the groups. In total, out of 30 patients 40% were markedly improved, 53.3% were moderately improved, 3.3% were improved and 3.3% were unimproved.

Key Words:- *Tundikeri, Peetak Churna* and *Katukadya Kashaya Ghana Vati.*

सारांश–

सामान्यत: तुण्डीकेरी शरीर को विभिन्न प्रकार के जीवाणुओं से बचाकर रखते है। जब ये अपना काम नहीं कर सकते तब तुण्डीकेरी रोग उत्पन्न होता है। तुण्डीकेरी एक ऐसी भयावह बीमारी है जिसके कारण से बच्चे का खाना पीना ठीक से नहीं हो पाता और उसका शारीरिक विकास नहीं हो पाता। रोगी के लिये बार बार एंटीबायटिक देने के दुष्प्रभावों को देखते हुये यह शोध विषय चुना गया। कुल 30 रोगियो को चुना गया और तीन गणों में पंजीकृत किया गया। पीतक चूर्ण 3 ग्राम मधु और घी के साथ दिन में दो बार स्थानिक प्रयोग और कटुकाद्य कषाय घन वटी 500 मि.ग्रा. पानी के साथ खाने के लिये दिन में तीन वार प्रथम और द्वितीय गण में अलग अलग और तीसरे गण में संयुक्त रूप से 15 दिन प्रयुक्त किया गया। सभी रोगियों ने औषध काल को पूर्ण करा और सभी गणों में औषध प्रभाव देखा गया। कुल 30 रागियों में से 40 प्रतिशत रोगियों में अत्यन्त अच्छा 53.3 प्रतिशत रोगियों में बहुत अच्छा, 3.3 प्रतिशत रोगियों में अच्छा और 3.3 में कोई प्रभाव नहीं देखा गया।

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Clinical Study

Role of *Ayurvedic* drugs in the management of *Tundikeri* w.s.r. to Tonsillitis

Dr. Vijayant Bhardwaj, Dr. Rajani Thakur

Introduction

Tundikeri means the size of cotton bud [1]. This disease is mentioned among the diseases of *Talu* by *Sushuruta*[2] and in *Kantha gata roga* by *Vagbhatta*[3]. *Tundikeri* is the most common ailment found now-a-days, which not only cripples children from majority of their enjoyable and learning moments but also makes adults to feel uneasy, restless and even bedridden if complication occurs. Further, keeping in mind the havoc done by the disease and limited measures in modern medicine and surgical complications, the disease has been selected. In view of modern sciences, the disease Tundikeri can be correlated with Tonsillitis as both the terminologies have similar features. Today, in light of modern medicine, there is one standard line of management of the disease "*Tundikeri*" (Tonsillitis), i.e. antibiotic and anti-inflammatory therapy or other wise surgical removal of lymphoid tissue[4]. But, the medicinal and surgical, both managements have their own hazards[5], as antibiotics have their own specific side effects in the body and secondly Tonsils being first barrier to pathogens and site of antibody production[6], their removal put a straight forward attack on our respiratory and gastrointestinal part and further more surgical procedure has its own complication also[7].

But as yet no such standard line of management could be made which can lessen the agony felt by the patients of *Tundikeri* (Tonsillitis). Currently in the modern era, new avenues are being explored for treating the disease, yet the disease has not been dominated. Taking the above mentioned facts in mind and to bring out patient from uneasiness, frustration, pain and productive for the society, a sincere effort has been made in the present study.

To find out the best available in *Ayurvedic* texts, the critical review of *Ayurvedic* literature was done and among many formulations, two formulations were selected. One of them is *Peetaka Churna*[8] (Ch. Chi. Ch. 26/196-197) and the other one *Katukadya kashaya*[9] (Ch. Chi. Cha. 26/201) which has been made in the form of Vati. These formulations have been mentioned in almost all the *Ayurvedic* texts. So to know the effectiveness of these very drugs over *Tundikeri*, these two formulations have been selected for the present trial. Drugs in the formulation have properties like *Rakshoghana*, *Vednahera*, *Ojkara*, *Vishhara*, *Jvarhara, Shothhara, Lekhana* etc. with the *Dosha Karma* of *Pitta Kaphahara*, which could be very beneficial in the *Kapha-Rakta* dominating disease[10].

Aims and Objective

- To explore the pathogenesis of disease on the basis of classical texts and modern literature.
- To study the management of disease on the basis of classical texts.
- To study the effectiveness of the drug selected at both the levels i.e. local and systemic.
- To study the side effects or hypersensitivity of the drugs if any.
- To do the comparative study of effect of trial drugs in different trial groups.

Selection of Disease

Following criteria were taken into mind while selecting the disease.

1. No work in this institution has been carried out on Tundikeri as yet.
2. Availability of patients in good no.
3. Recurrence of the disease is very often and no antibiotics are available which totally root out the disease. Surgery is also life threatening, more so refusal from the patient's side for it.

Materials and Methods

Clinical study has been carried out in 3 trial groups TG-I, TG-II and TG-III. Thirty patients were registered ten in each group from E.N.T, O.P.D., R.G.G.P.G.A.Hospital and all have completed the trial. Complete description regarding the details of each research case was recorded in the proforma.

Criteria of selection of Patient

Patients above age group of 5 years suffering from features described in *Tundikeri* disease, in *Ayurvedic* texts and in Tonsillitis in modern texts, were selected for the trial with out any complications irrespective of sex, caste etc.

Exclusion Criteria -

Unilateral enlargement of Tonsil.

Complication regarding Tonsillitis:

Specific Tonsillitis like Tubercular:

Method of study

After taking written consent of the patients, they were divided into three groups.

Mode of Administration and Dose of Trial Drugs

In Trial Group I- *Peetaka Churna* locally with Honey and Ghee in dose of 3 gm twice a day in 10 patients.

In Trial Group II- *Katukadya Kashaya Ghan Vati* orally in the dose of 500 mg thrice a day with Luke warm water in 10 patients.

In Trial Group III- *Katukadya Kashaya Ghana Vati* orally 500 mg three times a day with luke warm water and *Peetaka Churna* locally with Honey and Ghee 3 gm twice a day in10 patients.

Duration of time - 15 days.

Follow up - After completion of trial every week for 3 weeks.

Criteria of Assessment of Results

1. Subjective
2. Objective

Subjective:

Grading and scoring system was adopted for assessing each sign and symptom before the commencement of trial and after completion of trial. In the present research work following sign/ symptoms were recorded.

Sore Throat; Odynophagia, Dysphagia, Tonsil Enlargement, Congestion in Tonsils and Pillars, Congestion in Post. Pharyngeal wall, Earache, Cough, Fever, Debris over tonsil, Jugulodigastric Lymphadenopathy, Halitosis, Dyspnoea, Snoring & Change in Voice.

Statistical Analysis:

The information gathered regarding demographic data was given in percentage. The scoring of criteria of assessment was analysed statistically in terms of B.T.(Before Treatment), A.T.(After Treatment), X (BT-AT), S.D.(Standard Deviation), S.E.(Standard Error). Paired 't' test was carried out at level of $p<0.05$ and $p<0.001$.

Overall results were adjudged in terms of percentage relief obtained in signs/symptoms:

a) Cured 100% relief

b) Markedly improved- >76% < 99% relief

c) Moderately Improved - >51% < 75% relief

d) Improved - >26% <50% relief

e) Unimproved - < 25% relief

Objective Criteria

a) Haematological Examination: - T.L.C, D.L.C. - E.S.R. Hb% B. Sugar (Fasting)

b) Urine Examination.

Observations and Results

Sore throat was observed in 100% patients, Dysphagia in 96.57% patients, Congestion over Tonsils and Pillars in 100% patients, Odynophagia in 93.24% patients, Tonsil Enlargement in 93.24% patients, Congestion in mucosa of Posterior, Pharyngeal Wall in 89.91% patients, Jugulodigastric lymphadenopathy in 100% patients, Fever in 39.96% patients, Debris over crypts in 23.31% patients, Cough in 23.31% patients.

Effect of Therapy in Group-I :

The efficacy of the first Therapy i.e. *Peetaka Churna* locally in Group I with 10 patients was adjusted on varied parameters and results were derived after execution of statistical methodology. The effect of therapy on criterias assessed has been presented here as under:

Signs & Symptoms	n	Mean		X (d)	%	SD	SE	"t"	p
		BT	AT	BT-AT	Relief	+	+	Value	Value
1. Sore Throat	10	1.5	0.5	1	66.66	0.47	0.148	6.75	<0.001
2. Odynophagia	10	1.5	0.4	1.1	73.33	0.56	0.177	6.20	<0.001
3. Dysphagia	9	1.3	0.4	0.9	69.23	0.56	0.17	5.02	<0.001
4. Tonsil Enlargement	2.2	1.7	0.5	22.7	0.72	0.22		2.19	>0.05
5. Congestion over Tonsils and Pillars	10	1.7	0.6	1.1	64.70	0.316	0.1	11	<0.001
6. Debris over crypts/ Yellow spots	2	0.3	0.1	0.2	66.6	0.42	0.13	1.5	>0.05
7. Congestion in Mucosa of posterior Pharyngeal Wall	7	0.8	0.2	0.6	75	0.51	0.16	3.7	<0.001
8. Earache	2	0.3	0.1	0.2	66.6	0.42	0.13	1.5	>0.05
9. Cough	2	0.1	0	0.1	100	0.42	0.13	1.5	>0.05
10. Fever	1	0.1	0	0.1	100	0.316	0.10	1	>0.05
11. Jugulodigastric lymphadenopathy	10	2.0	1.1	0.9	47.36	0.56	0.17	5.07	<0.001
12. Change in Voice	-	-	-	-	-	-	-	-	-
13. Dyspnoea	-	-	-	-	-	-	-	-	-
14. Halitosis	1	0.1	0	0.1	100	0.42	0.13	1.5	>0.05
15. Snoring	-	-	-	-	-	-	-	-	-

Effect of Therapy in Group-II:

The efficacy of the Second therapy i.e. *Katukadya Kashaya Ghana Vati* in Group-II with 10 patients was adjusted on varied parameters and results were derived after execution of statistical methodology. The effect of therapy on criterias assessed has been presented here as under:

Signs & Symptoms	n	Mean		X (d)	%	SD	SE	"t"	p
		BT	AT	BT-AT	Relief	+	+	Value	Value
1. Sore Throat	10	2.3	0.2	2.1	91.30	0.73	0.22	9	<0.001
2. Odynophagia	10	1.7	0.1	1.6	94.11	0.69	0.22	7.2	<0.001
3. Dysphagia	10	2	0.3	1.7	85	0.67	0.21	8.01	<0.001
4. Tonsil Enlargement	9	1.8	1.3	0.5	27.7	0.52	0.164	3.03	<0.05
5. Congestion over Tonsils and Pillars	10	2	0.6	1.4	70	0.69	0.21	6.4	<0.001
6. Debris over crypts/ Yellow spots	3	0.5	0.2	0.3	60	0.48	0.15	1.9	>0.05
7. Congestion in Mucosa of posterior Pharyngeal Wall	10	1.5	0.4	1.1	73.3	0.56	0.17	6.2	<0.001
8. Earache	-	-	-	-	-	-	-	-	-
9. Cough	2	0.3	0	0.3	100	0.67	0.21	1.41	>0.05
10. Fever	6	0.9	0.1	0.8	88.8	0.78	0.24	3.3	<0.001
11. Jugulodigastric lymphadenopathy	10	2.1	0.6	1.5	71.4	0.52	0.16	9.11	<0.001
12. Change in Voice	-	-	-	-	-	-	-	-	-
13. Dyspnoea	-	-	-	-	-	-	-	-	-
14. Halitosis	-	-	-	-	-	-	-	-	-
15. Snoring	-	-	-	-	-	-	-	-	-

Effect of Therapy in Group-III:

The efficacy of both the therapies i.e. *Peetaka Churna* locally and *Katukadya Kashaya Ghana Vati* orally in Group-III with 10 patients was adjusted on varied parameters and results were derived after execution of statistical methodology. The effect of therapy on criterias assessed has been presented here as under:

Signs & Symptoms	n	Mean		X (d)	%	SD	SE	"t"	p
		BT	AT	BT-AT	Relief	+	+	Value	Value
1. Sore Throat	10	2.4	0	2.4	100	0.51	0.16	14.8	<0.001
2. Odynophagia	9	1.7	0.2	1.5	88.23	0.70	0.22	6.8	<0.001
3. Dysphagia	10	2.1	0.3	1.8	85.7	0.62	0.19	9.17	<0.001
4. Tonsil Enlargement	9	1.9	1.3	0.6	31.57	0.51	0.16	3.71	<0.001
5. Congestion over Tonsils and Pillars	10	1.7	0.4	1.3	76.4	0.48	0.15	8.5	<0.001
6. Debris over crypts/ Yellow spots	8	2	0.5	1.5	75	1.08	0.34	4.4	<0.001
7. Congestion in Mucosa of posterior Pharyngeal Wall	10	1.7	0.4	1.3	76.4	0.67	0.21	6.13	<0.001
8. Earache	3	0.4	0	0.4	100	0.69	0.22	1.8	>0.05
9. Cough	3	0.5	0.1	0.4	80	0.69	0.22	1.8	>0.05
10. Fever	5	0.8	0	0.8	100	0.91	0.29	2.7	<0.05
11. Jugulodigastric Lymphadenopathy	10	2.6	0.7	1.9	73	0.73	0.23	8.2	<0.001
12. Change in Voice	-	-	-	-	-	-	-	-	-
13. Dyspnoea	-	-	-	-	-	-	-	-	-
14. Halitosis	-	-	-	-	-	-	-	-	-
15. Snoring	-	-	-	-	-	-	-	-	-

Effect on Laboratory parameters:

Hb%: The result was significant statistically in G- II at the level of p<0.001, and improvement is 36.7% in G-II 26.7% in G-III and 21.03% in G-I.

T.L.C.: The result was significant statistically in G-I at G-III at the level of p<0.001 with % relief of 1.69% in G-I 3.62% in G-II and 1.9% in G-III

E.S.R.: The result was significant statistically in G-I, G-II and G-III at the level of p<0.001 with fall of 46.9% in G-I, 40.1% in G-II and 45.6% in G-III.

Among all above, Group-III has been most effective for the treatment of Tundikeri in which there is 78% relief in the criteria's taken for the assessment in comparison to Group-I which gives 57% relief and Group-II 74.8% relief.

Overall Effect of All Groups in 30 patients under Trial

Assessment	Group-I		Group-II		Group- III		Total	
	No.pt.	%	No.pt.	%	No.pt.	%	No.pt.	%
Cured	0	0	0	0	0	0	0	0
Markedly improved	1	10	5	50	6	60	12	40
Moderately improved	7	70	5	50	4	40	16	53.3
Improved	1	10	0	0	0	0	1	3.3
Unimproved	1	10	0	0	0	0	1	3.3

In Group-I One patient was markedly improved, seven were moderately improved, one was improved & one was unimproved.

In Group-II Five patients was markedly improved & five were moderately improved.

In Group-III Six patients were markedly improved, four were moderately improved.

In total, out of 30 patients 40% were markedly improved, 53.3% were moderately improved, 3.3% were Improved And 3.3% Were Unimproved.

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Clinical Study

A Clinical Study to assess the Efficacy of *Suktyadi Yog* in Rickets

*Dr.Vinod Kumar Swami, **Dr. Rakesh Kumar Nagar, ***Prof. Ajay Kumar Sharma

Abstract:

Rickets is defective mineralization or calcification of bones due to deficiency of vitamin D and calcium. Rickets is among the most frequent childhood diseases in many developing countries, due to lack of adequate calcium in the diet may also lead to rickets. The majority of cases occur in children suffering from severe malnutrition, or starvation during the early stages of childhood.

A clinical study was carried out to evaluate the efficacy of "*Suktyadi Yog"* (hypothetical drug compound) as a Calcium Supplement. The clinical study was done in 61 patients selected from OPD & IPD of Balroga Department, N.I.A. Jaipur. The drug was administered in the form of tablet at a dose of 10mg/kg/day in 2 divided doses for 3 months in both Groups. After 3 months of treatment, in Group A statistically highly significant results were found; improvement in all clinical symptoms like Pain in Limbs, Bow Leg, Knock Knee, Dental Deformity, Tooth Discoloration and Irritability. Grop B also showed significant improvement in laboratorial parameters; Serum Calcium and Serum Alkaline Phosphatase. Therefore we can use *Suktyadi Yoga* as a good alternative for the Calcium Supplement.

Key words- Calcium, Rickets, *Suktyadi yog,* Calcium supplement

सारांश-

कैल्सियम और विटामीन डी की कमी के कारण अस्थियों में विकृति आ जाती है, जिसे रिकेटस कहते है। विकाशील देशो मे बाल्यावस्था मे सबसे अधिक पाया जाने वाला रोग रिकेटस है, जो कि पोषण की कमी के कारण होता है।

प्रस्तुत अध्ययन में बालको की कैल्सियम की कमी को दूर करने के लिये औषधि शुक्त्यादि योग(काल्पनिक योग) का कैल्सियम पूरक के तौर पर प्रयोग करके देखा गया है। ग्रुप (ए) एवम् ग्रुप बी मे 61 बच्चौं को औषधि (शुक्त्यादि योग) को गोली के रुप में 10 मि.ग्रा./कि.ग्रा. मात्रा प्रतिदिन दो बार में विभाजित करके दिया गया। तीन महिने की चिकित्सा के बाद ग्रूप ए में हाथ-पावौं में दर्द अस्थियों एवं दांतौ की विकृति और् चिड़चिडापन आदि लक्षणों में सार्थक सुधार देखा गया। जबकी तीन महिने के ईलाज़ के बाद ग्रूप बी में सीरम कैल्सियम और् सीरम अल्केलाइन फोस्फटेज में सार्थक सुधार प्राप्त हुआ। इस प्रकार से शुक्त्यादि योग बालको मे कैल्सियम पूरक के तौर पर एक बहुत अच्छा विकल्प हो सकता है ।

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Clinical Study

A Clinical Study to assess the Efficacy of *Suktyadi Yog* in Rickets

Dr.Vinod Kumar Swami, Dr. Rakesh Kumar Nagar, Prof. Ajay Kumar Sharma

Introduction:

Childhood period is considered as a period of maximum growth, this growth is achieved when child is supplied with proper balance diet/nutrition and free from disease. But the nutritional status is very poor in developing countries. Nutritional status plays an imperative role in deciding the health status of children. Deficiencies of micronutrients afflict more than 50% of the world population, result in increased morbidity and mortality rates, loss of productivity and sometimes permanent impairment of cognitive development in infants and children[1]. The micronutrient deficiency is one of the aspects of child malnutrition and India has 1/3rd of global 2 billion people suffering from vitamin and micronutrient deficit; calcium deficiency.

Calcium, most important micro nutrient component of diet, most ample mineral which help in vascular contraction and vasodilatations, muscular functions, nerve transmission, intracellular signaling, hormonal secretion and supporting to bone and teeth in the body[2].

Asthi Kshaya was taken for the present study in relation to Calcium deficiency, which is a degenerative/metabolic disorder of the bone. It is a condition in which there is decrease in the *Asthi Dhatu* (Bone tissue) leading to many undesirable effects. The important point to be noted is that, the signs and symptoms of *Asthi Kshaya*[3] i.e. *Asthi-Sandhi Shula, Kesha, Roma, Nakha, Danta Vikara/ Pata and Daurbalya* are exactly the same as the updated signs and symptoms of Calcium deficiency mentioned in the contemporary science. Recently, modern scientists have agreed that there is definite association between hair, nails and teeth pathology and Calcium deficiency.

Many drugs of *Ayurveda* which are described in *Sudha Varga* holds the maximum calcium element. Which used after well purification and modification, these drugs could be use as calcium supplement to the human.

Aims And Objectives

The Present research study has been planned to conduct with following main objectives.

- To minimize the sign & symptoms of rickets by using of study drug.
- To find out a better option for Calcium Supplementation in children.

Material And Method

Following materials and methods were adopted for conducting the present clinical trial.

Clinical Study

For this study, calcium deficient children and normal children of age Group between 1-10 years were selected from OPD and IPD of Bal-roga department of NIA Jaipur. Total 65 cases were registered for the study, which of them 4 patient left the trial in between, so rest 61 fall into two Groups; 30 cases in Group A and 31 cases in Group B.

Group A: **Trial drug in Ca- deficient children.**

Group B: **Trial drug in Normal children.**

Trial Drug

The drug (*Suktyadi Yog*) was prepared in the pharmacy of N.I.A., Jaipur, in tablet form in order to enhance its palatability for easy administration in children. *Sukti Bhasma* and *Godanti Bhasma* are the main content of *Suktyadi Yog,* known as good source of calcium which increases Calcium in body hence relieve in clinical features of calcium deficiency.

Suktyadi Yog is a herbo-mineral preparation containing following ingredients-

Table No. 1: Composition of the *Suktyadi Yog*

Name	Scientific Name	Use Part	Quantity
* *Sukti Bhasma*	Oyster Shell	*Bhasma*	4.5 Part
* *Godanti Bhasma*	Gypsum Calx	*Bhasma*	4.5 Part
* *Yashad Bhasma*	Calcined Zincum	*Bhasma*	3 Part
* *Sonth*	Zingiber officinale	Rhizome	1 Part
* *Marich*	Piper nigrum	Fruit	1 Part
* *Pippali*	Piper longum	Fruit	1 Part

Dose And Duration

The proposed drug ***Suktyadi Yog*** was prescribed in doses according to body weight of children (10mg/kg/day) for 3 months.

Follow-Up

All patients were followed on an interval of 15 days i.e. on day 15, day 30, day 45, day 60, day 75, and day 90 after registration. A window period of +3 days was given to allow for holidays and weekends.

Criteria To Be Adopted

A. Inclusion Criteria

1. Age between 1-10 years
2. Calcium deficient children

B. Exclusion Criteria

1. Hypocalcaemia (Serum calcium level below 5mg/dl)
2. Congenital Anomalies.
3. Endocrinal disorder related to growth
4. Metabolic disorders.
5. Mal absorption Syndrome.

C. Discontinuation Criteria

1. Appearance of complication during trial,
2. Any parent not willing to continue with the medicine,
3. Presence of any other acute illness.

D. Assessment Criteria

Clinical Assessment:

Clinical assessment done by a pre designed Performa based on clinical sign and symptoms of Ca deficiency; Pain in limbs, Knock Knee, Bow Legs, Dental deformity, Tooth Discoloration and Irritability. Above mentioned clinical features were used to evaluate the morbidity pattern of the child and drug effect also.

Laboratory Assessment

In the laboratory assessment Serum-Calcium, Serum Phosphorus and Serum Alkaline Phosphatase tests were done in both Groups. These investigations carried out to rule out the underlying illness and for establishment of the efficacy of trial drug *Suktyadi Yog* in calcium deficient patients.

Radio- logical Assessment

X-ray of wrist Joint done in both groups

E. Adverse effect evaluation criteria

Clinical criteria were adopted to rule out possible side effects of the study drugs. It included the documentation of information related to change in appetite, sleep, abdominal features, drowsiness, irritability etc.

F. Analysis and Statistical methods to be used.

Observation data of study period were analyzed & findings evaluated by using statistical analysis to establish the efficacy of trial drug.

Observations

- In the present study highest numbers of patients (39.34%) were in 1to 4 year's age Group with male predominance (55.73%) over females.
- Maximum numbers of patients (67.22%) belongs to nuclear family in compare to joint family and majority of patients were from low socioeconomic status families (41%).
- Hindu constitutes 67.21% in comparison of 31.14% Muslims and majority of patients (81.96%) in present study belongs to urban region.
- In present study maximum patients (47.54%) having Vata-*Kapha Prakriti* whereas 27.86% patients were from *Vata-Pitta Prakriti.*
- Present study holds maximum number of patients from *Avara satva* in 71% and *Manda-Agni* in 93.33% patients in Group A and 48.38% in Group B.
- Out of registered 61 patients 25 (40.98%) of them consuming 250 to 500 ml milk per day while 18 (31.14%) patients were consuming below 250ml milk per day and 17(27.86%) patients were taking more than 500ml milk per day and 26 (42.62%) children having sunlight exposure between 1 to 2 hours per day whereas 21 (34.42%) having sunlight exposure more than 2 hours per day.
- It was observed that out of 30 enrolled patients in Group A, maximum 28 (93.33%) patients were suffered from Pain in limbs, followed by 21(70%) with Tooth discoloration, 16 (53.33%) with difficulty in walking, 46.66% with bow Legs and Dental deformity. Only 11(36.66) patients were suffered from Knock knee.
- The mean serum calcium was found 8.95mg% in Group A and 9.59 mg% in Group B.

Statistical Analysis

Table No.2 : Showing Statistical Analysis of Clinical Symptoms in Group A

Symptoms	Mean			N	%	SD ±	SE ±	't' Value	'p' Value	Remark
	BT	AT	Diff.							
Pain in limbs	2.75	1.35	1.39	28	50.90	0.91	0.17	8.04	<0.0001	H.S.
Knock Knee	2.72	1.90	0.82	11	30.14	0.60	0.18	4.50	<0.0011	H.S.
Bowing Leg	2.28	1.64	0.64	14	28.15	0.49	0.13	4.83	<0.0003	H.S.
Dental Deformity	2.07	1.50	0.57	14	27.53	0.51	0.13	4.16	<0.0011	H.S.
Tooth Discoloration	2.42	1.76	0.66	21	27.56	0.48	0.10	6.32	<0.0001	H.S.
Irritability	2.16	1.41	0.75	12	34.72	0.45	0.13	5.74	<0.0001	H.S.

The statistically highly significant result was observed in Group A as improvement in all clinical symptoms with the drug *Suktyadi Yoga as* calcium supplement in calcium deficient.

Table No.3 Showing Statistical analysis of improvement in Serum Alkaline Phosphatase after Treatment

Group	Mean S. Alk. Phosphatase.			N	%	SD ±	SE ±	't' Value	'p' Value	Remark
	BT	AT	Diff.							
Group A	584.93	541.53	43.40	30	7.41	21.81	3.98	10.89	<0.0001	H.S.
Group B	207.10	203.10	4.00	31	1.93	8.57	1.54	2.59	0.014	S.

The statistically highly significant result was observed in Group A as improvement in Serum Alkaline Phosphatase with 'p' value<0.0001, whereas this is significant in Group B with 'p' value 0.01 with the drug *Suktyadi Yoga as* calcium supplement.

Table No.4 Showing statistical analysis of improvement in Serum Calcium after Treatment in both Groups

Groups	Mean T.S.Ca. (mg)			N	%	SD ±	SE ±	't' Value	'p' Value	Remark
	BT	AT	Diff.							
Group A	8.95	9.23	-0.27	30	3.07	0.27	0.50	5.46	<0.0001	H.S.
Group B	9.59	9.62	0.03	31	0.31	0.01	0.03	2.25	<0.02	S.

The statistical analysis shows that improvement in Serum Calcium after treatment is highly significant in Group A with 'p' value<0.0001 and significant in Group B with 'p' value<0.02.

Table No.5 Showing Statistical analysis of gain in Serum Phosphorus after Treatment in both Groups

Groups	Mean T.S.P. (mg)			N	%	SD ±	SE ±	't' Value	'p' Value	Remark
	BT	AT	Diff.							
Group A	3.21	3.40	-0.19	30	5.91	0.15	0.02	6.36	<.0001	H.S.
Group B	3.32	3.34	-0.02	31	0.60	0.08	0.01	1.29	0.20	N.S.

The statistical analysis result shows that gain in serum phosphorus after treatment is highly significant in Group A with 'p' value<0.0001 and insignificant in Group B with 'p' value>0.20.

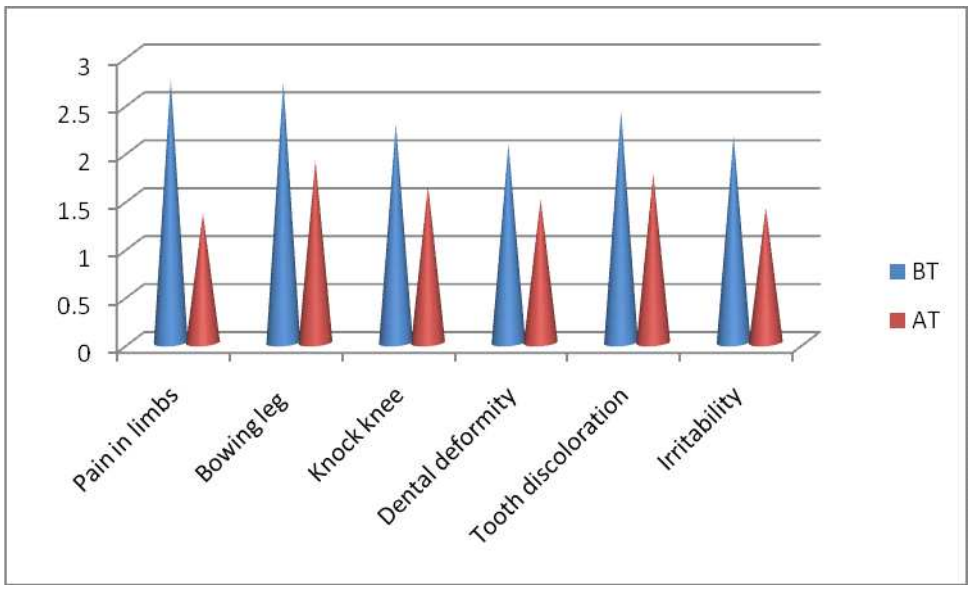
Table No.6 Showing Statistical analysis of X-ray of Wrist Joint after Treatment

Groups	Mean			N	%	SD ±	SE ±	't' Value	'p' Value	Remark
	BT	AT	Diff.							
Group A	1.30	1.20	0.10	30	7.69	.40	.07	1.36	0.1841	N.S.

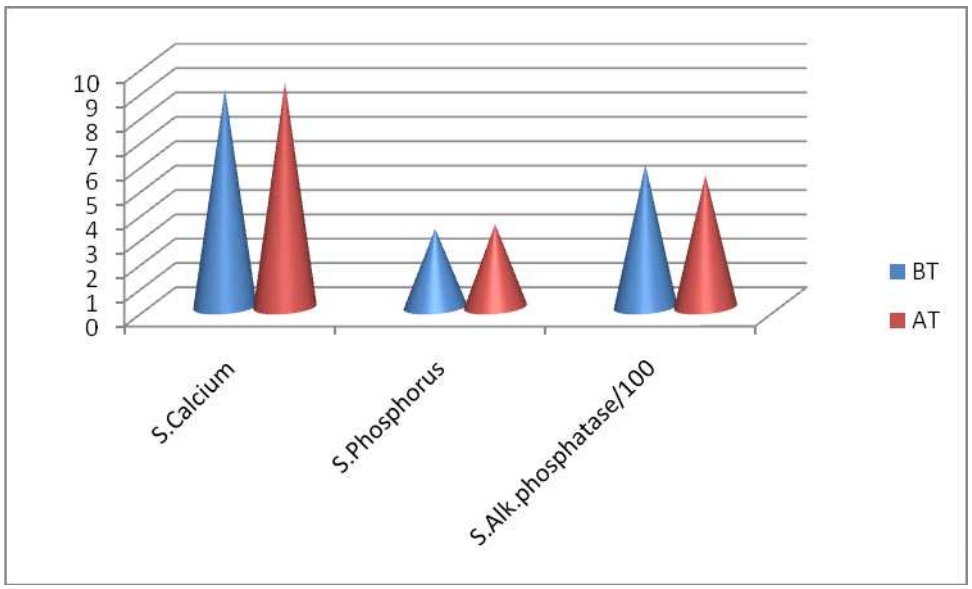
Statistical analysis of changes in X-ray of Wrist joint after treatment is not significant in Group A with 'p' value 0.1841 and no change observed in Group B (healthy group).

- After treatment in Group A; improvement observed in all clinical features with highly significant result, significant improvement in serum phosphorus level, highly significant in total Serum Calcium and serum Alkaline Phosphatase level whereas significant improvement noticed in Serum Calcium and Serum Alkaline Phosphatase in Group B.

Graph no.1Showing Comparison of Clinical Symptoms (BT V/s AT) in Group A



Graph no.2 Showing Comparison of Lab Parameters (BT V/s AT) in Group A



Discussion

- **Age-** Out of 61 registered patients, 39.34% patients were present in between 1-4 years age and 32.78% in 4-7 years age range. The high incidence in 1-7 yrs age may be attributed to be improper weaning, poor feeding habits, imbalance diet and poor care by parents along with may be less exposure to sunlight (minimum outdoor playing activity in children).
- **Sex-** male predominance with 60% was observed over 40% females in Group A. *S. Chakraborty et al 2006* also reports higher incidence of nutritional deficiency in males. The higher incidence may be due to much awareness' of parents for the male child in Indian culture.
- **Type of Family-** Majority of patients 67.22% from nuclear family in compared to 32.78 % from joint. This is may be due to less care of children in nuclear families in the case of working parents, if no older person or absence of care taker for children in the family or home.
- **Socio-Economic Status-** In study majority of patients 25 (40.98%) found from lower class and

34.42%, 18.03% were from middle lower class & middle class respectively. High incidence of malnutrition in lower Socio Economic status due to poverty, poor purchasing capacity, illiteracy, poor hygiene, poor mother health, less exposure to sun light, improper diet and higher risk of infections.

- **Age of Weaning –** In the majority of patients weaning were done between the age of 6 to12 months i.e. 62.29% and after the age of 12 months in 22.95% patients. Late weaning is one of the major reasons of Calcium deficiency in children.

- **Dietary Pattern-** Out of 61 registered patients, 54.09% patients consuming Vegetarian diet where as 45.91% patients having mixed dietetic history. This present data shows that dietary pattern is not significantly related to calcium deficiency in patients.

- ***Prakriti-*** Maximum 47.54% patients having *Vata-Kapha Prakriti* and *Vata-Pitta Prakriti* in 27.86 patients. The main *Dosha* in both *Prakritis* are *Vata* and *Vataja Dusthi*/etiologies are the main causes in malnutrition *(Dhatu Kshaya*).

- ***Satva-*** This study data showing that maximum number of patients i.e. 71% from *Avara Satva* and remaining are from *Madhyama Satva.*

- ***Sara-*** Maximum 56.66% patients were found with *Twak Sara* and 14.75% in *Mamsa Sara*. Only one patient i.e. 3.33% of total in Group A present with *Asthi Sara and* not a single patient were found with *Shukra Sara*.

- **Status of *Agni-Manda* -** *Agni* was most common type of *Agni* in overall 70.49% patients in both Groups. In Group A 93.33% patients and 70% patients in Group B have *Manda-Agni* at the time of registration. This study also indicates the most popular principal of *Ayurveda* that *Manda-Agni* is the root cause of *Dhatu Kshaya*.

- **Status of Milk Intake-** Overall 50% patients in Group A were consuming between 250 to 500ml milk per day and 33.33% patients taking less than 250 ml milk per day. Milk plays an important role in calcium supplementation of body due to its rich calcium concentration; less intake of milk will cause calcium deficiency.

- **Status of Exposure to Sun light-** In Group A 36.66% patients given history for Sun Light exposure in the range between 1 to 2 hours per day, followed by less than 1 hour per day Sun Light exposure in 30% patients. Sun light exposure plays the key factor role in calcium absorption by conversion and activation of Vit.D, so less exposure to sun light can cause calcium deficiency.

Discussion On The Effect Of Therapy

In present study patients were treated in two individual Groups i.e. Group A - calcium deficient and Group B - healthy children, with *Suktyadi Yog* tablet. The clinical efficacy of the drug was analyzed statistically on all parameters mentioned in the assessment criteria. A scoring structure was employed to evaluate the effectiveness of therapy. Scoring of chief clinical features was done before and after treatment.

Thus the obtained results in each Group were statistically analyzed by using "Student's paired't' test" for the variation and significance of effect seen in individual Groups. More specific quantification of the percentage improvement in each feature the formula BT-AT/BT x 100 was applied.

All the parameters adopted i.e. Clinical Features; Laboratorial Values and Radiological findings were statistically analyzed and after getting the result of every parameter being discussed at this juncture.

On overall evaluation the patients of Group A has better outcome in comparison to Group B, this result may be because of action of drug compound which acts on the pathogenesis of *Asthi Kshaya* and maintaining the homeostasis the status of *Agni* in patient. There is rapid recovery found in Group A, it may be due to formation of *Prasahasta Dhatu* in patients with the trial drug *Suktyadi Yog* but no any major significant change reported at the end of study in Group B (only healthy children).

- **Pain in limbs-** The effect of the drug on pain in limbs was slow in starting but in the end of study 51% improvement noticed in affected patients with *p* value <0.0001 in Group A. The

drug compound contains *Shoolhar* and *Jwarhar* properties like *Godanti* and *Sukti Bhasma,* which decreases the pain in limbs[4].

- **Knock knee-** 30.14% improvement found in the condition of Knock knee at the end of study with trial drug *Suktyadi Yog*; statistically highly significant for Group A (*p* value <0.0011).
- **Bowing leg-** 28.15% improvement noticed in Bow Legs with highly significant result (*p* value <0.0003) for Group A; which indicate good response of trial drug *Suktyadi Yog*. The calcium as major component of trial drug increases the bone mass and responsible for normalizing the bone's curvature & strong bones.
- **Dental Deformity:** In the end of study trial drug show the 27.53% improvement in affected patients, statistically highly significant in Group A (*p* value <0.0011) and reflecting good response of drug on Dental deformity.
- **Tooth Discoloration:** In the end of the study 27.56% improvement in tooth discoloration noticed in total number of affected cases, this result is Statistically highly significant in Group A (*p* value <0.0001) and reflecting good response of drug on Tooth discoloration. Calcium also works as a chelating agent which decreases the staining toxicity of metals[5].
- Irritability in the end of study there are 34.72% improvement noticed in irritability incidence, it's statistically highly significant in Group A (*p* value <0.0001). The trial drug *Suktyadi Yog* ingredients' contain *Tikta Rasa*, which mainly contain *Vayu* and *Akaash Mahabhoot* and as per *Ayurveda* principals *"Akaash Satva Bahulo", Satva Guna* decreases the irritability and play an important role at the level of CNS. A clinical study results also indicate that calcium prevents the loco motor behavioural disorder *(P.Ekamboram et Al 2001).*

Mode of Action of the Drug

सर्वदा सर्वभावानाम् सामान्यम वृद्धिकारणम्।

The main ingredients of *Suktyadi Yog* are *Sukti Bhasma* and *Godanti Bhasma*. *Mukta-sukti Bhasma and Godanti* placed in *Sudha Varga* are the natural source of trace element i.e. Fe and minerals (calcium) having similarities with bone and its components of human body. So these drugs can fulfill the calcium requirement of human being, in such a way these drugs can be used in nutritional/mineral deficiency. Mode of action of the drug can be attributed to the various pharmacodynamic properties of the contents of "*Suktyadi Yog"*. The trial drug possesses three *Rasa* excluding *Amla, Lavana* and *Kashaya Rasa* but mainly *Madhura, Katu* and *Tikta Rasa*, *Madhura* and *Katu Vipak, Sheeta* as well as *Ushna Veerya*. The properties of contents are balancing each other by having *Laghu, Snigdha, Ruksha,* and *Sheeta Guna*. They are mainly *Kapha-Vatta Shamak* and holds therapeutic properties like *Deepana, Pachana, Rochana, Shoolprashamana, Vattanuloman, Srotoshodhak, Jwaraghana* and *Shothahara* etc. therefore these properties are helpful in breaking the *Samprapti/* pathogenesis of *Asthi Kshaya*, balancing *Doshas* and qualitative as well as quantitative increase in the *Asthi Dhatu.*

- Calcium is the main component of chemical composition of *Sukti Bhasma* and *Godanti Bhasma*, about 50% of total ash value. In calcium deficient children all symptoms of calcium deficiency relieved after the using of trial drug as a Calcium supplement.
- Antioxidant activity of *Yashada Bhasma* (*Santosh et Al.2013*) has detoxified the body's toxins[7].
- *Pippali*, *Marich* and *Shunthi* are both digestive and increase bioavailability of various nutrients at GIT & plasma level as well as tissue & cellular level. (*QAZI, et al, 2002*)

Conclusion

Following conclusion can be drawn from the present research work:

- Low socioeconomic status, nuclear family, lack of exposure to sunlight, poor hygiene, late introduction of solid food items or diary products and acute infectious diseases are the chief predisposing factors for calcium deficiency along with poor nutrition.
- Children with *Vata* predominant *Sharirika Prakriti* are more prone to develop nutritional disorder (*Dhatu Kshaya*).

- Present research work shows that trial drug; *Suktyadi Yog* can provide better calcium supplement in mild to moderate calcium deficiency condition.
- Study drug; *Suktyadi Yog* show highly significant improvement in clinical features of rickets like Tooth discoloration, Painful bones, Knock-Knees, Bowing Leg, Irritability and Dental Deformity.
- No adverse effects of the drug were observed during the study period; therefore the study drug can be advice as a calcium supplement in calcium deficient as well as in healthy children.

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Pharmacological Study

Organoleptic Study of *Sariva* and its Market Samples

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Abstract

Adulteration may be defined as mixing or substituting the original drug material with other spurious, inferior, defective, spoiled, useless other parts of same or different plant or harmful substances or drug which do not confirm with the official standards. Adulteration in market samples is one of the greatest drawbacks in promotion of Ayurvedic products.*Sariva* i.e. root of *Hemidesmus indicus* (Linn.) R.Br is among those drugs which are commonly used in the indigenous system of medicine. This study was based on author's thesis work "Phytochemical study of certain genuine medicinal plant and their market samples" and after studying market samples of *Sariva* it was found that all samples were adulterated and no any market sample had genuine drug *Sariva. (Decalepishamiltonii W. & A.l)* is most common adulterant of *Sariva* in all major market of India. Organoleptic, microscopic, phytochemical and chromatographic investigations were carried out on genuine and market sample of *Sariva* & other drugs. In this article efforts have been made to focus organoleptic identifying features of genuine sample of *Sariva* and its markets samples which help to common physician for easy identification of genuine drug with adulterants.

Key Words–Adulteration, *Sariva*, Market samples, *Decalepishamiltonii*

सारांश–

किसी भी प्रमाणिक औषधि के स्थान पर समानाभासी, त्रुटिपूर्ण अथवा अन्य किसी भी प्रकार के निम्नस्तरीय गुणवत्ता वाले द्रव्यों के सम्मिश्रण को औषधीय अपमिश्रण कहते हैं। जो समान पादप व्युत्पत्ति के या फिर किसी अन्य पादप के अंग हो सकते हैं। जो निर्धारित मानकों का पालन नहीं करते, आयुर्वेदीय उत्पादों के प्रगति के बाधक कारणों में प्रधान है। सारिवा का प्रयोग बहुतायत रुप से आयुर्वेद में परंपरागत तरीकों से होता आया है। कुछ प्रमाणिक विशिष्ट द्रव्यों तथा उनके बाजार नमूनों के पादप रासायनिक विश्लेषण पर आधारित है। विभिन्न औषधि बाजारों के सर्वेक्षण के उपरान्त यह ज्ञात हुआ कि किसी भी बाजार में प्रमाणिक सारिवा (Hemidesmus indicus) उपलब्ध नही है, और एक अन्य पादप Decalepishameltonii का इसमें प्राय: अपमिश्रण हो रहा है। प्रस्तुत शोधपत्र सारिवा तथा उसके बाजार नमूनों के विभेदक नाम रुप ज्ञान पर आधारित है।

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Pharmacological Study

Organoleptic Study of *Sariva* and its Market Samples

Singh Rahul Kumar, Murthy A Rama, Nathani Sumit, Singh Amrita, Santosh pal

Introduction

The authentic source of the drug is root of *Hemidesmusindicus* (Linn.) R.Br. (Fam. Asclepiadaceae). It is aprostrateorsemi-erectshrub found through out India fromupper Gangetic plains eastwards to Assam, through out Central, Western and Southern India up to an elevation of600 m. (API Part I Vol. I Page no. 148).

Sariva has been used in the indigenous system of medicine since a long time. This drug is very frequently used in our classics for the disorders like wounds, bronchial asthma, fevers, intrinsic haemorrhage; *kushtha* (skin diseases), erysipelas and poisoning (like insect bite). This is used in children for promotion of strength, intellect & vitality i.e. *Bal Rasayana* and during pregnancy to stabilise foetus i.e. prevent abortion.[1]

*Hemidesmusindicus*is commonly known as Indian Sarsaparilla, it has been successfully employed in *venereal diseases (like syphilis) and also as blood purifier*. Indian Sarsaparilla preparations are employed for treatment of Peptic ulcer diseases (PUD), antioxidant, anti-inflammatory. The plant serves various purposes in improving mucin content, inhibiting *H*. pylori, improving gastric defensive factors and decreasing offensive factors, nephro-protective, anti tumour and anticarcinogenic.[2]

*Sariva is*an important medicinal plant and commonly used in different preparation of Ayurvedic medicines. Due to increased demand there is concerning reduction in availability, it is adulterated by roots of *Decalepishamiltonii W. & A*.It is not the fact that the adulteration of *Hemidesmusindicus* is due to extinction of this plant. Even today plant of *Sariva* are commonly available inconsiderable quantity, but it's less aroma and difficulty in harvesting that has prompted the traders and collectors to adulterate with *Decalepis* that has got good yield per plant,has more but exactly similar fragrance and easy harvesting method. In fact the task forcereports this plant (*Decalepis*) is at verge of extinction because of over exploit.

Since both the industry and the individual physician use these plants in a dry form, so there is an urgent need to evolve exclusive identifying features of raw drugs at multiple levels so as to serve as a ready reference for all physicians and pharmaceuticals units in identification of genuine medicinal plant raw materials. Therefore quality assurance of medicinal plant starting materials is of paramount importance to offer predictable efficacy of the Ayurvedic formulations.

The chief methods employed in evaluating drugs are Organoleptic i.e. practical & on the spot tool, Physical & Phytochemicals – Lab based tools, Experimental and Clinical-final confirmative tools.Drugs are used by various stake holders at different levels eg. individual physician at clinic level, small pharmacies, Ayurvedic hospitals and big pharmaceutical houses. Each stake holder has their own level of infrastructure, man power and requirement. Therefore a single tool of identification might not be feasible for application of all the stake holders. Organoleptic tools are more beneficial for smaller pharmacies and for individual physician at clinic level.

Material and Methods

- All the literary materials about the drug that have been taken for study with their adulterant/ substitute were collected from different ancient and contemporary modern books from all types of sources – print, electronic, folklore, etc. and was studied & analyzed thoroughly.
- The genuine sample was collected from Western Ghatat Khandala, Distt –Pune, Maharashtra after identifying the source of plant as per standard description.
- The dried specimen was pasted on the herbarium sheets of standard size with proper

labelling.The authentication of plant material collected for study was done at Botanical Survey of India, Allahabad U.P. (Certificate No. B.S.I./ C.R.C./2013-14/TEC./185)

- The market samples were also collected from four major raw drug selling markets of India namely Kolhapur, Jaipur, Delhi and Kochi.
- Above collected genuine sample studied organoleptically in dried condition. The market samples and its adulterant/ substitutes drugs were also examined organoleptically and compared with the authentic genuine sample.

Botanical Description [Fig no. 1]

Fig 1. Genuine sample of *Sariva*

Leaves **Fresh Root** **Dry Root**

Hemidesmus indicus is a perennial, prostrate or twining shrub, belonging to family Apocynaceae& subfamily Asclepiadoideae but in older classification to family Asclepiadaceae. *Hemidesmusindicu s*exists with two variant namely var. *indicus* & var. pubescens. Both varieties have similar habit and more or less, same morphological features. They differ by the nature of the stem and branching pattern and presence and absence of pubescent hairs.

Distribution: In India, the plant meets within almost throughout all parts. It is found from the upper Gangetic plain eastwards to Assam and throughout central, western and southern India. The Moluccas and Sri Lanka are the other places of its distribution.

Root-Slender root, with few ramifications, covered with rust-colored bark, marked with longitudinal furrows and transverse fissures, with aromatic smell.

Stem- deep purple or purplish brown colour twine anti-clockwise are profusely lactiferous, elongate, narrow and wiry.

Leaves- simple, short petioled or exstipulate, opposite or in apparent whorls of four, leathery, entire, shape varies from linear or lanceolate to elliptic oblong or ovate, even in the same plant. 5-15 cms about 0.5-0.8 cms wide, and dark or deep green with a characteristics whitestreak along the mid-rib.

Flowers- greenish- yellow to greenish purple outside, dullyellow to light purplish inside, 0.6-0.8 cms in diameter, borne crowded on short-stalkedcondensed auxiliary, monochasial cymes.

Fruits- two straight slender narrow lycylindrical widely divergent follicles, 12 cms long and 0.6 cms in thickness having manyseeds with long tuft of silky hairs.

Organoleptic Study of Sariva and its market samples

Organoleptic identification features of *Sariva*–*Sariva i.e.***root of *Hemidesmus indicus* (Linn.) can be identified organoleptically on following basis:-

- Root the useful part of the drug, is aromatic (*sugandhamula*), having aroma like that of lotus (*utpalsariva*), sandal (*chandansariva, chandana*) or camphor (karpurilatika).
- Leaves like serpent's tongue (*phanajihvika).* Flowers appear in autumn (*saaradi) and* fruits are dehiscent (*sphota*)[4].
- Externally brownish or dark brown, white inside. Fresh roots covered with glistering coppery red bark and when peeled exposes creamy yellow inner part.
- Root bark is brownish, corky, and thin, about ½ -1 mm, marked with transverse cracks, easily detachable from the hard central core. On scrapping the external skin, the cambium of light brown colour gets exposed.

Macroscopic Features of *Hemidesmus indicus* (Root)

In collected sample of *Sariva,* originally roots are very long & often reach a length of twelve feet or more, hence termed as *Anantamula.* But in market samples (as described in API Part I Vol. I Page no. 144) it occurs in pieces, about 30 cm longand 3-8 mm in diameter. Roots are cylindrical, thick, hard, somewhat tortuous, sparsely branched, provided with few thick rootlets and secondary roots, external appearance dark brown, sometimes with violet grey tinge, centre yellow, woody, surrounded by a mealy white cortical layer, bark brownish, corky, marked with transverse cracks and longitudinal fissures and easily detachable from the hard central core, odour, characteristic, taste, sweetish, slightly acrid and aromatic.

Study of Market Samples [Fig no. 2 & Table no. 1] - After analyzing the organoleptic characters of samples of*Sariva* brought from the major markets of India with the genuine, collected and authenticated *Sariva,* it is concluded that no one sample of any market matches with the genuine drug.

Fig 2. Market sample of *Sariva*

Kochi

Kolhapur

Delhi

Jaipur

Table -1: Summarized Macroscopic Features

S. No	Appearance	*Hemidesmus indicus* (Root)	*Decalepishamiltonii* (Root) (i.e. Sample of Kochi, Kolhapur & Delhi)	Jaipur sample of *Sariva*
1.	Size	It is found about 15-30 cm long, originally the roots are very long and often reach a length of 12 feet or more hence termed as *Anantmool*. Fresh roots of 6mm thickness will become all most 3 mm thick when dried.	Varies 3 mm to 1.2 cm but on average about 8 mm thick, thickness of little finger. Fresh roots of 12 mm thickness will become all most 4mm thick when dried.	About 4-8 cm long and 8 – 16 mm in thickness.
2.	Shape	Nearly uniformly cylindrical, though in most cases they are irregularly bent, curved or slightly twisted, slightly woody and rigid.	Markedly fleshy and cylindrical. Smooth surface shows a thin cork and a hard white wood.	The thick cylindrical cut stem pieces
3	Colour	Externally brownish or dark brown, white inside. Fresh roots covered with glistering coppery red bark and when peeled exposes creamy yellow inner part.	Externally dark brown with brownish yellow woody central portion. Fresh roots are dull reddish brown colour and when peeled exposes dull white inner part.	Brownish yellow in colour.
4.	Bark	Brownish, corky, and thin, about ½ -1 mm, marked with transverse cracks, easily detachable from the hard central core. On scrapping the external skin, the cambium of light brown colour gets exposed.	Thick about 2-4 mm, externally covered dust brown coloured, wrinkled skin with longitudinal ridges, that cannot be easily peeled off. On scraping the skin it exposes cambium of dark reddish brown colour, which becomes lighter at the exposed cut surface.	Thin & almost smooth
5.	Texture	Surface generally smooth in young roots but becomes slightly rough in matured ones due to formation of warty lenticels.Roots thick, hard with woody central core.	Not smooth on account of the presence of the many small rootlets.	Smooth
6.	Odour	Mild, pleasant characteristic fragrance only in root part, more pronounced in fresh roots but very faint in dried ones. The central woody core does not emit fragrance even when fresh.	Strong, odour strikingly similar to Hemidesmus roots, more pronounced when dry, not so much pleasant in comparison with Hemidesmus. Central woody core do not emit any fragrance.	Odour-Less

7.	Taste	Sweet, on eating dry roots does not yield camphor like felling in mouth. The central woody portion is tasteless or mildly sweet.	Slightly sweet, on eating dry roots yield cooling camphor like feeling. The central woody portion is quite bitter and slightly alkaline taste.	Taste slightly sweater initially but later little bitter.
8.	Fracture	Breaks with sharp sound. Fracture is short & splintery.	Only thin roots break with dull sound. Stout small piece of root is unbreakable. Fracture short and splintery but often fibrous. The central woody rind is soft and breaks with short fracture.	Stout piece of sample is unbreak-able

1. Kochi market

In Kochin market, the drug *Sariva* is being sold under the name of *Narunendi and* is sold at a cost 270/- rupees per kg. Average size of the sample was 3-10 cm. long in length and 03-012 mm. in thickness. Sample was adulterated with pieces of thick stem of the same plant.

2. Kolhapur market

In the Kolhapur market, the drug *Sariva* is being sold under the name of *Sariva* and is sold in this market at the rate of Rs.410/- per kg. Average size of the sample was 3-12 cm. long in length and 02-12 mm. in thickness. Sample was admixture with lot of pieces of thick stem of the same plant.

3. Delhi market

In Delhi market, the drug *Sariva* is being sold under the name of *Anant Mool* and is cost Rs. 350/- per kg. Average size of the sample was 3-12 cm. long in length and 02-12 mm. in thickness. Sample was admixture with lot of pieces ofthick stem of the same plant.

4. Jaipur market

In Jaipur market, the drug*Sariva* is being sold under the name of *Anant Mool* and is cost Rs.120/- per kg. Average size of the sample was 5-10 cm. long in length and 08-16 mm. in thickness. Actually it is not root & look like stem piece of an unknown plant.

Discussion

The above collected market sample is to be matched with drug sample of National Repository of Authentic Drugs, N.I.A. Jaipur & organoleptic characters were also correlate with related studies (like Upadhyaya & Khemani 2011, N.I.A. Jaipur) and also discussed with local *Vaidyas* for first hand information of concerned market area. For confirmation of identity of samples TLC and other related phytochemical tests were also be done in *Dravyaguna* laboratory of N.I.A. Jaipur. On the above basis it was concluded as follows

The samples taken from all the major Ayurvedic drugs whole sale markets were having all diagnostic characters & same appearance as that of root of the drug *Decalepishamiltonii W. & A,* except in Jaipur market where unidentified stem pieces of a plant is sold. *Hemidesmus indicus* is not found in any of the market sample.

Only on the basis of organoleptic features, smaller pharmacies and individual physician at clinic level are able to easily differentiate between *Sariva* and its market samples. Jaipur sample was odourless stem pieces of unknown plant. Root of *Decalepishamiltonii* have strong odour strikingly similar to *Hemidesmus* roots, more pronounced when dry, not so much pleasant in comparison with *Hemidesmus*. But this (*Decalepis)* root is easily differentiated by its bark having longitudinal ridges while bark of *Hemidesmus indicus* has transverse furrows.

Conclusion

- ✓ After studying market samples of *Sariva* it was found that all samples were adulterated & no one market sample was found as genuine drug.
- ✓ After studying of market samples of *Sariva*, it had been observed that, the samples taken from all the major Ayurvedic drugs whole sale markets were having all diagnostic characters & same appearance as that of root of the drug *Decalepishamiltonii W. & A,* except in Jaipur market where unidentified stem pieces of a plant is sold.
- ✓ *Decalepishamiltonii W. & A,* has strikingly similar fragrance to that of genuine drug.

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Pharmaceutical Study

Evaluation of Antibacterial Activity of *Vyadhividhwansana Rasa*

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****Dr.Basant Kumar Sharma

Abstract

Now a day's infectious diseases are posing problem for human beings. In order to avoid different infections, production and use of antibiotics is on rise. The widespread misuse of antimicrobial agents is responsible for emerging microbial resistance. The development of bacterial resistance and adverse effect to presently available antibiotics has necessitated the search for new antibacterial agents in different systems of medicine. So *Vyadhividhwansana Rasa* a traditional medicine has been selected for this study. The antibacterial activity of the *Vyadhividhwansana Rasa* was tested against pathogenic bacterial strain Streptococcus pyogenes, Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli, and Salmonella typhi. In order to, *In-vitro Study* of *Vyadhividhwansana Rasa* was done by Kirby Bauer & Stroke method / well diffusion method. During this study *Vyadhividhwahsana Rasa* was trailed with above said common pathogenic bacteria. To correlate the result control solution were prepared by streptomycin. Experimental groups were compared with control groups and observations were noted.

Key words – *Vyadhividhwansana Rasa*, Antibacterial study, Bacteria etc.

सारांश –

वर्तमान समय में संक्रामक व्याधियाँ मनुष्य के लिये खतरा उत्पन्न कर रही है। अत: इन संक्रामक व्याधियों से बचने के लिये निरन्तर जीवाणुनाशक औषधियों का निर्माण और उपयोग हो रहा है। बडे पैमाने पर इन जीवाणुनाशक औषधियों के दुरूपयोग के कारण जीवाणु इनके प्रति प्रतिरोधी हो रहे है, अत: कुछ नयी प्रकार के जीवाणुनाशक औषधियों की खोज की आवश्यकता है। अत: व्याधि विध्वंसन रस जो कि एक पारम्परिक मेडिसिन है को इस बाबत् चुना गया है। व्याधिविध्वंसन रस की जीवाणुनाशक क्षमता का स्ट्रेप्टोकोकस पायरोजन्स, स्टेफाईलोकोकस ओरियस, स्यूडोमोनास ओरोजिनोसा, ई.कोलाई और सालमोनिला टाइफी जीवाणुओं पर परीक्षण किया गया हैं।

अत: व्याधिविध्वंयन रस की किरबी बॉयर्स एण्ड स्ट्रॉक्स मैथॅड जो कि वेल डिफ्यूजन मैथॅड के नाम से भी जाना जाता है, के द्वारा इन विट्रो स्टडी की गई है। इस अध्ययन में व्याधिविध्वंसन रस का ऊपर कहे गये बेक्टेरिया पर परीक्षण किया गया है। व्याधिविध्वंसन रस के परिणामों का तुलनात्मक अध्ययन करने के लिये स्ट्रेप्टोमाइसिन को कन्ट्रोल ग्रुप में लिया गया है। व्याधिविध्वंसन रस के परिणामों की कन्ट्रोल ग्रुप के परिणामों से तुलना करके निष्कर्ष निकाला गया है।

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Pharmaceutical Study

Evaluation of Antibacterial Activity of *Vyadhividhwansana Rasa*

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Introduction

Now a day's infectious diseases are posing problem for human beings. In order to avoid different infections, production and use of antibiotics is on rise, which derived from the microbial sources in synthetic manner.

However all synthetic antimicrobial agents are local irritants & are responsible for hypersensitivity reactions. Second important thing is this; the widespread misuse of antimicrobial agents responsible for emerging microbial resistance.

The development of bacterial resistance and adverse effect to presently available antibiotics has necessitated the search for new antibacterial agents in different systems of medicine.

Thus the idea of less intrusive alternative is alluring so to overcome the problem like adverse effect and limited shelf life etc, the mixture of traditional drugs are currently underway to look for natural origin.

Number of *Ayurvedic* classical preparations is being used in cases of infections, and they are found to be effective clinically. Therefore, to make our treatment scientifically more validated, we can assess the antimicrobial activity of such preparations *In vitro* (i.e. culture and sensitivity Tests). So *Vyadhividhwansana Rasa* a potent traditional medicine was selected for this study.

Vyadhividhwansana Rasa" is one of Herbomineral compound mentioned in the classical text "Rasa Raj Laxmi" Jwara chikitsa 1/189-195. It is a Herbomineral Preparation mentioned for the management of *Gulma* (Phantom tumor), *Udara Roga* (Abdominal disorder), *Pleehodara* (Splenic enlargement), *Shool* (Colic pain), *Aam-Jwara* (First stage of fever), *Visama-jwara* (Irregular Fever) and generally in all types of *Jwara* (fevers).

For present study Formula of *Vyadhi-vidhwansana Rasa* described in *Ras-raj Laxmi*, has been selected. It contains – *Abhraka Bhasma* (Mica), *Gandhaka* (Sulphur), *Vatsanabha* (Aconitum chasmanthum), *Sunthi* (Zinziber officinale), *Marich* (Piper nigrum), *Pippli* (Piper longum), *Parada* (Mercury), *Tankana* (Borax) and *Jayapala* (Croton tiglium). All the ingredients are in equal proportion except *Jayapala*, (it is 16 times in quantity) and *Bhringraja Swarasa* for trituration.

Minerals like Abhraka (Mica), Parada (Mercury), Gandhaka (Sulphur), Tankana (Borax) and herb like Vatsanabh (Aconitum Chasmanthum), Jayapala (Croton tiglium) were subjected to shodhana procedure as per the reference[1,2,3,4,5,6].

Abhraka bhasma was prepared as per reference[7]. Kajjali was prepared by Shuddha Parada and Shuddha Gandhak[8].

Shunthi (Zingiber officinale), Pippali (Piper longum), Marich (Piper nigrum) were made into fine powder.

Measured quantity of all ingredients were taken in Khalva Yantra triturated seven times with Bhringraj Swarasa for making pills.

Aims and Objectives:

To evaluate the antibacterial activity of *Vyadhividhwansana Rasa* against common pathogenic bacteria.

Materials And Method:

The compound *Vyadhividhwansana Rasa* was resuspended in DMSO (Di Methyl Sulfoxide) in mass concentration (w/v)

To correlate the result positive control Streptomycin [5 mg (w/v)] and negative control (DMSO) Di Methyl Sulfoxide was also prepared.

Micro-organisms[9,10]:

Micro-organisms selected for the present

research work are those which cause general infections along with fever. The pathogenic strains of different species of bacteria used for study were maintained on the following media as mentioned in table given below-

Table no: I- Showing five common pathogenic strains of bacteria.

S. No.	Species	ATCC No.	Media Used
I	Staphylococcus aureus	29213	Mueller-Hinton Agar
II	Streptococcus pyogenes	19615	Mueller-Hinton Agar
III	Pseudomonas aeruginosa	27853	Mueller-Hinton Agar
IV	Escherichia coli	25922	Mueller-Hinton Agar
V	Salmonella typhi	6539	Mueller-Hinton Agar

In-vitro studies were undertaken to assess the antibacterial activity at "Dr.B.Lal Institute of Biotechnology", Jaipur. All techniques were taken according to "Indian Pharmacopeia 1996 vol.II.

Culture Media: Mueller Hinton test agar

MH agar is considered the best medium to use for routine susceptibility testing of non-fastidious bacteria.

Formula for Mueller-Hinton agar per litre of purified water (4)

Beef, Infusion from	300.0 g
Casamino acid, technical	17.5 g
Starch	1.5 g
Agar	17.0 g

Preparation of inoculums

Each culture to be tested, were streaked onto a non inhibitory agar medium to obtain isolated colonies. After incubation at 35°C overnight, 4 or 5 well-isolated colonies were selected with an inoculating needle or loop, and transferred the growth to a tube of sterile saline or nonselective broth (Mueller-Hinton broth, peptone water) and vortex thoroughly. The Bacterial suspension was then compared to the 0.5 Mc Farland standards. The turbidity standard was agitated on a vortex mixer immediately prior to use. If the bacterial suspension does not appear to be the same density as the Mc Farland 0.5, the turbidity can be reduced by adding sterile saline or broth or increased by adding more bacterial growth.

Antimicrobial susceptibility testing : Kirby-Bauer and Stokes' methods

Recording and interpreting results

After the sample was placed on the plates, plates were inverted and incubated at 35°C for 16 to 18 hours. After incubation, diameters of the zones of complete inhibition (including the diameter of the antibiotic) were measured and recorded it in millimeters. The measurements can be made with a ruler on the undersurface of the plate without opening the lid. The zones of growth inhibition were compared and recorded as susceptible, intermediate, or resistant to drug tested. Colonies growing within the clear zone of inhibition may represent resistant variants or a mixed inoculums. The distance from the colonies closest to the antibiotic to the outer clear zone was recorded as well an interpretation recorded for each diameter. .

Note: DMSO (negative control) did not show any activity against test organism.

Streptomycin [5mg(w/v)per well] served as a positive control.

Sample (*Vyadhividhwansana Rasa*) [50mg/well (w/v)]

Diameter of well was 8 mm.

Zone of inhibition- 13-18mm	:	sample is Intermediate (I)
<13mm	:	sample is Resistant (R)
>18mm	:	sample is Susceptible (S)

Discussion & Results - Antimicrobial sensitivity was performed for *Vyadhividhwansana Rasa* on Mueller-Hinton Agar against *Escherichia coli* (ATCC 25922), *Pseudomonas aeruginosa* (ATCC 27853), *Staphylococcus aureus (ATCC 29213), Streptococcus pyogenes* and *Salmonella typhi* by Well Diffusion Method, following were the results obtained using Streptomycin 5mg(w/v) as antibiotic as reference and (DMSO) Di Methyl Sulfoxide.

Table II : Showing zone of inhibition of sample & positive control

S. No	Micro-organism		Positive Control Zone of Inhibition (mm)	Sample Zone of inhibition(mm)		
	Antibacterial sensitivity Streptomycin [5mg (w/v)]					
I	*Escherichia coli*	Sample I	39.5	30.5	32	34.4
II	*Pseudomonas aeruginosa*	Sample I	41.5	25.5	24	25.5
III	*Streptococcus pyogenes*	Sample I	31.5	19.5	20	21.5
IV	*Staphylococcus aureus*	Sample I	36.5	30	30.5	30
V	*Salmonella Typhi*	Sample I	36	14	14.5	15.5

Note: Diameter of the zone of inhibition is given.

According to these results:

- At the given concentration sample was found bioactive against all micro-organisms.
- All the bacteria except Salmonella typhi were found Susceptible (S) against Vyadhividhwansana Rasa compared to standard.
- Salmonella typhi was found Intermediate sensitive against Vyadhividhwansana Rasa compared to standard.
- DMSO (negative control) did not show any activity against test organism.

CONCLUSION -

In the present study, it has been observed that *Vyadhividhwansana Rasa* inhibits different microbes. The nature of this antimicrobial activity cannot be categorized in a fixed format. But the exact clarification of this behavior will be available only after detailed analysis with modern sophisticated equipments and techniques. The encouraging results obtained from antimicrobial study of *Vyadhividhwansana Rasa* are purely based on *in vitro* experimental methods.

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Conceptual Study

Symposium on Taste of *Charaka* - Scientific Validation of Theories Through Debate In Ancient India

*Dr. Sudipta Kumar Rath, **Prof. Mita Kotecha

Abstract :

There exists an understanding gap among the current global scientific fraternity about Ayurvedic knowledge owing to the different Socio-Cultural-Academic background in which *Ayurveda* was conceived and built. This gap has been the main reason for lot of the prevailing misconceptions regarding the scientific contour of *Ayurveda*. Needless to say, that *Ayurveda* operates within its own scientific framework, but these are not fully known and understood by scholars from other sciences. At a time when the popularity of *Ayurveda* is on rise globally, it is incumbent upon the practitioners and protagonists of *Ayurveda* to increase awareness about its core scientific basis along with its unique holistic approach to therapeutics. This will help in removal of the misconceptions and building logical confidence about *Ayurveda* among various scientific fraternities. Symposiums have been an important part of scientific debate, learning and knowledge dissemination in *Ayurveda*. The subject matter, participant profiles, approach of debate and the overall background of the *rasa sambhasha* (Symposium on taste) of *Charaka Samhita*, when analyzed in contextual perspective reveals the robust scientific credentials of *Ayurveda*, which can help dispel many of the misconceptions regarding *Ayurveda*.

Key words : Scientific Debate, Scientific Rigor, *Ayurveda, Charaka, Rasa, Sambhasha.*

सारांश–

जिस सामाजिक सांस्कृतिक पृष्ठभूमि में आयुर्वेद विकसित हुआ उस आयुर्वेदिक ज्ञान को वर्तमान वैश्विक परिपेक्ष्य में समझना मुश्किल है। आयुर्वेद के वैज्ञानिक दृष्टिकोण के बारे में कई तरह की भ्रान्तियाँ होना इसका मुख्य कारण है। आयुर्वेद के सिद्धान्त पूरी तरहर से वैज्ञानिक है लेकिन दूसरे विज्ञान से संबन्धित अध्येताओं को उसकी पूरी तरह से समझ नहीं है। इस समय जब आयुर्वेद की वैश्विक पहचान बढ़ रही है। आयुर्वेद चिकित्सकों की यह जिम्मेदारी है कि उसके चिकित्सकीय प्रयोगों को वैज्ञानिक ढंग से भी समझायें। यह विभिन्न वैज्ञानिकों के बीच में आयुर्वेद से सम्बन्धित भ्रान्तियों को दूर कर एक नया विश्वास पैदा करेगा। संगोष्ठि किसी भी विषय को समझने के वैज्ञानिक मत को सिद्ध करती है। तथा आयुर्वेद से संबन्धित भ्रान्तियों को भी दूर करती है।

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Conceptual Study

Symposium on Taste of *Charaka* - Scientific Validation of Theories Through Debate In Ancient India

Dr. Sudipta Kumar Rath, Prof. Mita Kotecha

Charaka Samhita, a timeless classic

Charaka Samhita is the most authoritative and comprehensive compendium of Ayurvedic knowledge covering almost each and every aspects of health care. This treatise despite being the oldest available literature of *Ayurveda* (the currently redacted version available is estimated to be documented in 200 B.C.)[1], is truly a versatile classic and still manages to attract brains from myriad backgrounds other than *Ayurveda* like modern biomedicine, physicists, chemists, software and even patent attorneys. The richness of *Charaka Samhita* lies in its liberal and flexible approach, but independent scientific contour.

Charaka Samhita, and for that matter *Ayurveda* evolved around the other branches Hindu Systems of knowledge – the Vedas and the *darshans*, which are philosophical master pieces. But *Charaka Samhita* had the tough task of bringing the philosophical underpinnings from these knowledge bodies to the practical canvas of health care. It was natural therefore that *Charaka Samhita* and Indian Philosophies could not have convergent views in all matters. But, while reconciling the conflicting view points *Charaka Samhita* chose not to confront the traditions head on, but it has managed to modify and develop its own concepts within the context of health care to crave a distinct place for itself. *Charaka* knew that philosophical contour needed to be incorporated into it to make it an eternal epic. It borrowed freely from the Indian philosophies but this borrowing was not a passive process, rather the concepts were analyzed and duly modified from healthcare point of view before being incorporated.[2]

Symposiums–A tool for establishing Theories

In the ancient era, Indian scholars used symposiums and debates therein as one of the primary tools of science to discuss the validity of a hypothesis, to resolve scientific differences and thus to draw conclusive theories. *Charaka Samhita* refers to some *sambhasha* (Symposiums / Seminars), which were held at different geographical locations of the then India and attended by the popular Ayurvedic experts to deliberate upon contentious issues in order to draw rationalized consensual conclusions. There are descriptions on seven such symposiums in *Charaka Samhita* ,[3-9] but it seems these are only examples and symposiums were frequent during those times and formed an integral tool of learning and knowledge dissemination. This is evident from the detailed description on all aspects of symposiums in *Vimana sthana* of *Charaka Samhita* and indicative references found elsewhere.[10,11] These symposiums reflect the prevailing scientific contour of *Ayurveda* because it reveals that difference of opinions were not only existed but were actually debated on a common platform to seek a rational consensus on the issue before establishing a theory. These symposiums in one way negate the accusation hurled at *Ayurveda* for being legendary and empiric in nature. It is worthwhile to mention here that till the time of Galileo, European scholars were in the habit of settling issues by philosophical debates rather than experimental demonstration.[12]

The Symposium on *RASA*

Such a symposium is referred to on *Charaka Samhita Sutrasthana* 26th Chapter,[13] the *Atreya-bhadrakapiya Adhyaya*, the chapter that deals with the basic concepts of *Dravyagun* (Ayurvedic pharmacology). This symposium popularly known as the *Rasa Sambhasha* in Ayurvedic parlance deals with deliberations on the total number of primary *Rasas*.

Before proceeding further, the concept of Rasa deserves a mention here. Ayurvedic explains pharmacological basis in terms of five fundamental concepts known as *Rasa, Guna, Virya, Vipaka and Prabhava*.[14]

Taste is the nearest available equivalent to the term *Rasa*, but here the term *Rasa* and taste are not interchangeably used as it causes more confusion in understanding *Rasa* owing to our default understanding of taste. *Rasa*, in *Ayurveda* is defined as the total subjective knowledge acquired through the tongue when a substance comes into effective contact with it.[15]

As per Ayurvedic theories five basic particles, known as *Pancha Mahabhutas*, form the material basis of all substances of this universe.[16] Although, all the five *Mahabhutas* are present in each and every substance, but specific *Mahabhutas* gain predominance in specific substance owing to a typical composition and alignment. This state of predominance enables *Mahabhutas* to manifest qualities and actions attributed to them in the substance.[17] *Rasa* is also such a manifestation of these *Mahabhutas* in a state of predominance and different combinations of *Mahabhutas* give rise to different *Rasas*.[18] Thus, based on the *Rasa* the structural basis of the substance can be deduced and subsequently the pharmacological profile also can be assessed. In other words, a substance of a particular *Rasa* is expected to have certain predominant *Mahabhutas* out of the five and also is expected to pharmacologically behave in a certain pattern. Thus, *Ayurveda* uses *Rasa* of a substance to hypothesize and explain the pharmacological profile of the substance.

As described above *Rasa* is the total subjective knowledge complex resulting from the effective contact of the substance with the tongue and there could be several such distinctive perceptory knowledges. *Rasa* in *Ayurveda* is not limited to only taste sensation through the taste buds, rather it includes other perceptory interactions within oral cavity.[19] This subjective and totalitarian complexity of *Rasa* had been a focal point of divergent views on total number of *Rasas*. Several authorities of *Ayurveda* had held different views regarding this and to remove this confusion, need must have been felt to bring forth all the views to a common debating table in a symposium and try to reach at a rational consensus.

The *Rasa* symposium as the name suggests after deliberation on the various views on the total number of *Rasas*, which varied from one to innumerable, successfully arrived at a consensus that there are only six primary *Rasas*, namely *Madhura* (Sweet), *Amla* (Sour), *Lavana* (Salty), *Katu* (Pungent), *Tikta* (Bitter) and *Kashaya* (Astringent). Academically and practically this symposium is referred to by Ayurvedic scholars only in context of determination of the total number of primary *Rasa*, but this article endeavours to decipher certain different perspectives, which are cryptically embedded in this symposium. These points hold huge relevance in the current contemporary scenario to answer some of the unfounded allegations and misconceptions regarding *Ayurveda*.

Ayurveda as seen by critics

While the popularity of *Ayurveda* is on significant rise as traditional systems of medicines like *Ayurveda* are carving out their due space in the global health care arena, at the same time many a number of misconceptions are prevailing regarding their core scientific concepts due to an obvious understanding gap. This gap could be attributed to the different socio-cultural-scientific framework under which *Ayurveda* was developed. It should be registered in mind that it would call for some time and open minded thinking before finding a framework to reconcile the facts of yore in terms of the contemporary paradigms. But, critics use this situation to propagate the misconceptions, as *Ayurveda* is a legendary and empirical knowledge body lacking scientifically verifiable underpinnings. The hype created are (a) *Ayurveda* is a rigid knowledge system, which claims everything was known to it, (b) nothing in it can be contested and (c) *Ayurveda* is impervious to change with time. All of these make the claims of *Ayurveda* as a science debatable. It is also advocated what *Ayurveda* knew was incomplete and it comprises up of lot of imagination than solid scientific theories, because the people who developed *Ayurveda* lacked many scientific tools that are available today.[20] But, *Rasa* symposium reflects a complete different view as analyzed in this article.

Overview of the *Rasa Sambhasha*

The *Rasa* symposium was held to determine the total number of *Rasas*. The symposium was chaired by *Punarvasu Atreya,* the propounder of

Charaka Samhita and many authoritative scholars of *Ayurveda* like *Bhadrakapya, Shakunteya, Maudgalya, Kaushika, Bharadvaja, Vayorvida, Nimi, Dhamargava, Kankayana* participated and deliberated upon this subject to form a conclusive and consensual opinion. Each presented own hypothesis, which were discussed in detail with rigorous logic to draw the conclusion that there exists only and only six primary *Rasas*.[21]

Pertinent Points : Critical analysis of the topic, participants and approach of this *sambhasa* present certain perspectives, which can be interpreted as given below:

1. Ayurveda is liberal

It is clear from this symposium that difference of opinion was not only allowed but also flourished till their logical end. All the participants held a different view on the same subject within the context of their rational understanding. This reflects a very scientific and liberal mindset amongst the protagonists of Ayurveda. A rigid and legendary knowledge body would impose its theories to be accepted and practiced as such without being debated.

2. Hypotheses are observed for a long duration before being accepted and rejected

If one looks at the profile of these participants, it says they were *sruta* and *vayovrddha* meaning they were highly educated, well-informed and experienced people.[22] Thus, they carried the hypotheses for a long time and quite naturally must have put their hypotheses to practical observations often.

3. Logic, not ignorance or prejudice was the basis of different hypotheses

The profiles of these people read as *shruta* (highly educated), *vayovriddha* (immensely experienced) and *Jitatmana* (free from prejudice),[22] which explains that they did not build their hypotheses on basis of ignorance, inexperience and prejudice, rather they had their own logic in different frameworks, which they did place before the symposium. This proves the robust character of the system which enabled people to have diversified and independent thinking.

4. Acceptance or rejection of hypotheses was done on basis of rigorous logic

The viewpoints were debated in detail backed by logic and counter logic. The hypotheses were not rejected by the presiding chair, arguably the most knowledgeable and commanding authority, without stating logic for doing so. If *Ayurveda* were to be legendary and empirical, then *Atreya* would have rejected the hypotheses of others without discussing them and imposed his view on others.

5. Misconceptions can be fostered among the best

The participants of this symposium were highly successful in their domain and authorities of *Ayurveda* in their own right. Therefore, it is evident that misconceptions can be fostered even amongst the best and ironically their success might not be affected by the misconception. There is a satirical observation that comes from the critics of *Ayurveda* that the scholars of yore were inadequately equipped and their knowledge was incomplete as the critics cannot prove those notions by using sophisticated modern tools of verification. Thus the knowledge that prevails today is correct in comparison to the ancient knowledge. But, they ought not ignore that misconceptions can be present even with sophisticated tools of knowledge at disposal and it is misleading to reject theories of yore as wrong just because they are yet to be proved in frameworks that are prevailing today.

Conclusion :

These above perspectives extrapolated from the *Rasa Sambhasha* present the basis that *Ayurveda* is as good a science as any other branch of science, considering that science is characterized by rationality, liberal thinking and amenability to rigorous logical experimentation. It is therefore, would be a huge loss to the mankind in quest of better health to dismiss *Ayurveda* and its theories as empirical imagination and legendary intuition and ignore such a rich science that was developed and practiced by supremely intelligent people.

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Conceptual Study

Conceptual Study of *Medovaha Srotas* in *Ayurveda*

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Abstract-

Ayurveda is the most ancient science of life. It is also a philosophy of life that aims at maintenance of good health & prevention of diseases. *Srotas* is an important entity without which even the *Dosha*, *Dhatu* & *Mala* are rendered dysfunctional. The concept of *Srotas* is amongst the fundamental concept of *Ayurveda*. *Srotas* constitute the internal transport system of the body & are specially related to the fine channels of circulation & pathways carrying out all the vital functions of the body. *Srotas* are the channels conveying the *Parinama Prapta Dhatu*. Therefore *Srotas* have great importance to maintain the equilibrium, development of body & in application of treatment to the patients.

Among the types of *Srotas*, *Acharya Charaka* explains it as a seventh *Srotas*. As this *Srotas* give rise to *Medo Dhatu* proper. Therefore it helps to provide unctuousness, stability & nourishment to the body[3].

Keywords - *Srotas, Medovaha Srotas, Medo dhatu, Mula Sthana, Medo Dhatu Karma, Sroto Dushti.*

सारांश-

आयुर्वेद में स्त्रोतस का महत्वपूर्ण स्थान है। स्त्रोतस के अभाव मे दोष धातु तथा मल निष्क्रिय है। स्त्रोतस आयुर्वेद का एक प्रमुख विषय है। यह शरीरस्थ वह रचना है जिनके द्वारा स्त्रवण कर्म संपादित होता है तथा यह शरीर के महत्वपूर्ण कर्मो का निर्वाह करता है। जिनके द्वारा परिणाम प्राप्त धातुओं का वहन समस्त शरीर मे होता है। यह शरीर के विकास तथा साम्यावस्था के लिए महत्वपूर्ण है।

आचार्य चरक ने मेदोवह स्त्रोतस का वर्णन करते हुए उसे मेद धातु की उत्पत्ति का कारण माना है। यह मेदो धातु शरीर को स्निग्धता, स्थिरता तथा पोषण प्रदान करता है।

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Conceptual Study

Conceptual Study of *Medovaha Srotas* in *Ayurveda*

Dr. Chhaju Ram Yadav, Dr. Garima Raj, Dr. Ramesh Naik

Introduction

Medovaha Srotas are channels in the body through which the *Poshaka Dhatu* & *Mala* pass to form the *Sthayi Dhatu*. According to *Charaka*, nutrients substances which nourishes the *Dhatu* undergo *Paka* by the *Ushma* of *Dhatu*. They are made available to the *Dhatu* through their own *Srotas*[1].

The channels which give nutrition to the *Medo Dhatu* can be considered as *Medovaha Srotas*.

According to C. Dwarkanath, the channels through which nutrition to the adipose tissue is transported are to be termed as the *Medovaha Srotas*[2].

Dr. Ghanekar considered the *Medovaha Srotas* as the capillaries of the perinephric tissue & omentum.[3]

The fat cells are held together mainly by the network of the capillary blood vessels which are distributed to them[4]. *Medovaha Srotas* are the channels through which the *Poshaka* or the *Asthayi Medo Dhatu* circulates in the whole body mixed with *Rasa* & *Rakta*, thereby nourishing the *Sthayi Medo Dhatu*.

Vitiation of *Medovaha Srotas* takes place in *Medo Dushti* or *Medo roga*.

Srotas

According to *Charaka*, *Srotas* is defined as the channel or structure through which *Sravanam* karma i.e flowing, moving, oozing & permeation of different constituents & nutrients of the body takes place[5].

Charaka again describes *Srotas* as the channels of circulation which carry the transforming ("*Parinamamapdhapmananama*") tissues from one place to another places[6]. They work as communicating channels for nutrient tissues-temporary tissues (*Asthayi Dhatus*) which are to be utilized for formation of permanent *Dhatus* (*Sthayi Dhatus*). They also carry *Prana*, *Udaka* & also three types of *Malas*[7].

Srotamsi have been stated by *Charaka* to behave like *Ayana Mukhani* (external orifice) for the *Malas* as well as *Dhatus*, they are responsible for supplying nourishment to each & every *Dhatu* in a appropriate quantities[8].

The term *Srotas* refers in particular to microscopic channels of transportation.

Sushruta describes that *Srotas* are the channels of the body having originated from vacant spaces (hollow organs) spread throughout the body, but at the same time they are different from Sira & Dhamani & compared the *Srotas* with the fine channels present in the stem of lotus, through which water & nutrients circulate & exude. So it is clear that *Dhamani*, *Sira* & *Srotas* (capillary arrangement) are quite different from each other having got their own anatomical structures, physiological functions & biochemical & pathological activities[9].

Dalhana the commentator of *Sushruta Samhita* has accepted in his commentary that all the structures through which *Prana, Anna, Udaka, Rasa, Rakta, Mamsa, Medo* etc circulate are called *Srotas*[10].

Vagbhata has compared *Srotas* with extremely fine passages & pores present in the stem of a lotus flower. He observes that *Rasa* spreads throughout the body through very fine *Dwaras* (pores) of *Srotamsi* which are distributed extensively in the body very much like minute channels present in the lotus stem[11].

According to *Indu*, the commentator of *Ashtanga Sangraha*, all the channels, responsible for transportation of *Rasa* are known as *Srotas*[12].

Types of *Srotas*

Atreya Sampradaya-

According to *Charaka*, the types of *Srotas* are as many as corporeal entities. All corporeal

entities do not arise or decay without *Srotas*. The body is only aggregation of *Srotas* because of their pervasiveness & diffusiveness of agents aggravating & pacifying *Doshas*. This is not so because that which *Srotas* belong to, which they carry, nourish & where they are situated different from *Srotas* themselves. Other *Acharyas* state that *Srotas* are innumerable because they are uncountable but other says that *Srotas* are innumerable[13].

According to *Vagbhata*, *Srotas* are innumerable. He told that *Purusha* (male) has nine *Srotas* one of mouth, rectum & urethra, two in eyes, ear & nose. *Stree* (female) has three more *Srotas*, two in breasts & one in vagina. The internal *Srotas* are thirteen in number i.e. *Prana, Anna, Udaka, Dhatus & Malas*[14].

According to *Kashaya*, *Srotas* are of two types, *Sukshma* & *Mahan*. He mentioned *Nabhi* & *Romakoopa* are *Sukshma* where as *Mahan Srotas* are present in head region & lower part of body[18].

According to *Bhavamishra* & *Sharangadhara*, *Srotas* are innumerable in the human body but the *Purusha* has ten & *Stree* has thirteen *Srotas* in their body[16].

Dhanwantari Sampradaya-

According to *Dhanwantari* School *Srotasas* are innumerable in the body.

According to *Sushruta, Srotas* are two types *Bahirmukha* (external opening in the body) & *Anatarmukha* (internal opening in the body) *Srotas*. The *Srotas* are nine in male & three extra in female. The internal *Srotas* are eleven pairs & they are also known as *Yogvahi* (microscopic) *Srotas*[17].

Mula of *Medovaha Srotas* - According to *Brihatrayee*

Acharya Charaka mentioned *Vrikka* & *Vapavahana* as mula of *Medovaha Srotas*[19]. *Acharya Sushruta*, mentioned *Vrikka* & *Kati* as mula of *Medovha Srotas*[1] & *Acharya Vagbhata* mentioned *Vrikka* & *Mansa* as mula of *Medovaha Srotas*[20].

The *Medovaha Srotas* mula means the organs which may be closely related to *Medo Dhatu* functions or which are important sites related to beginning or ending of the channels of *Medo Dhatu*.

In *Brihatrayee, Vrikka* has been considered unanimously as one of the mula of *medovaha* srotas but *vapavaha, kati* & *mansa* are mentioned as second *mula* separately.

Vrikka- It is one of the *koshthanga* formed by the *Rakta* & *Sara* of *Medo dhatu*[21]. There are 2 *Vrikkas* situated in both sides of the Mid vertebral line inside the abdominal cavity.

Sharangadhara says that they nourish the *Medo Dhatu* inside the stomach area of the abdominal cavity[22] while *Charaka* has considered them as mula so these structures must be directly related with fat metabolism. But there is no clear evidence of this concept. If we take into consideration of 2 structures situated above the kidneys i.e. suprarenal glands as *Vrikka* as they will fulfil the aspects of fat metabolism.

Vapavhana- It is also a *koshthanga* & another mula of *Medovaha Srotas*. *Chakrapani* has interpreted it as *Snigdhavartika*[23] while Dr. Ghanekar has considered it as omentum where the maximum *Meda* is stored[24].

Kati- *Acharya Sushruta* has clearly pointed out the exact site of the *Kati* but normally *Kati* is the place where fat accumulates.

Mansa- *Vagbhata* has considered *Mansa* as the mula of *Medovaha Srotas*. It may be correlated with *Vasa* (*Mansagata Sneha*) below the skin & as such the entire skin might be considered as mula of *Medovaha Srotas*.

Meda- It is the 4th *Dhatu* of the body, the oleaginous substance of *Mansa*, the essence of *Mansa Dhatu*[25].

Sthana & Swarupa of Medo Dhatu [29] - It is considered as *Sneha* dominant *Drava Dhatu* which is having *Guru*, *Snigdha* properties & dominance of *Prithvi, Apa* & *Teja mahabhuta*.

Meda is a yellowish, greasy, soft, solid material, innumerable globules of fat form a thick, spongy layer under the skin.

Karma of Medo Dhatu - Functions of *Medo Dhatu* are *Snehana* (oilyness), *Sweda* (sweat), *Dridhatva* (strength), *Asthipushti* (strengthening of bones) & *Netra Gatra Snigdhata* (oilyness of eyes & body)[27]

Snehana- *Sneha* quality helps to keep luster of skin, hairs & eyes etc. *Snigdhagatrata* arise in *Medoroga* may be due to increased *Snehana* function of *Meda*.

Sweda- Function of *Meda* is to produce *Sweda* which is mentioned as *Mala* of *Meda*[28]. According to *Acharya Sharangadhara, Sweda* is *Updhatu* of *Medo Dhatu*.

Asthi Pushti- It is nourishment of further *Dhatu* i.e. *Asthi* & its *Updhatu Snayu* & *Sandhi*.

Dridhatva- It is possible with the help of *Snayu* the *Updhatu* of *Meda*. Both *Snayu* & *Sandhi* are directly related to *Asthi Dhatu*. *Medas* provide support to various organs & help in binding of important organs. The fat tissue deposits as a layer over underlying organ thereby providing it protection from outside pressure & frictions. If *Dridhatva* is considered as energy then it is a great energy conserver, providing almost double energy than other nutrients, carbohydrates & proteins.

Netra & Gatra Snigdhata - Both are symptoms of *Sthaulya* & may arise through increased *Snehana* function of *Meda*.

Causes of vitiation of *Medovaha Srotas*- Absence of exercise, day time sleep, eating of excess & oily food stuffs & excess intake of alcohol vitiate *Medovaha Srotas*[29].

The *Dushti* of *Medovaha Srotas* leads to pathogenesis of *Medoroga*. *Sthaulya* is one such condition arising due to pathology of *Medo Dhatu* which has origin from *Medovaha Srotas*.

As *Medovaha Srotas* give rise to *Medo dhatu* therefore *Kshaya* & *Vriddhi* of *Medo Dhatu* can be correlated with its *Srotas* as it is responsible for origin of the *Dhatu*.

According *to Acharya Sushruta* due to increased *Medodhatu* entire body becomes oily, abdomen & flanks becomes obese, individual suffers from cough & asthma & he smell very bad[30].

In waning of *Medodhatu Acharya Charaka* explains that joints of body becomes dry due to lack of *Medo Dhatu*, which stays outside the bones. Since *Medo Dhatu* is responsible to offer certain type of power to body, Since its *Mala* is excreted through eyes & keeps eyes soft & lustrous, waning of *Medo Dhatu* is bound to give strain on eyes. Abdomen & entire body is location of *Medo Dhatu* therefore with waning of *Medo Dhatu* body & abdomen is bound to get thin[31].

Meda Sara Purusha- An individual with *Medo Dhatu Sarata* have features like lustrous skin, deep & appealing voice, shiny eyes, nails, hairs, glistening teeth unctuous & moist lips, oily urine & faeces etc. He achieves wealth, richness, happiness, feeling of well being, offering of cordiality & he is tender[32].

Discussion- The term *Dhatu* means *Dharana* 'to support' & *Poshana* 'to nourish'[33]. All the seven *Dhatus* stay firm & support the human body. *Meda* is one of the seven components of the body. It is considered as *Sneha* dominant *Drava Dhatu* responsible for oilyness (*Snigdhata*) & heaviness (*Guruta*) property. *Medo Dhatu* is originating from *Prasadabhaga* of *Mansa Dhatu* as a result of *Mansagni Paka*. This entire process along with carrying the nutritive material upto the site of *Medo Dhatu* can be considered as *Medovaha Srotas*[34].

According to *Ashryashrayebhava, Meda* can be considered as a location of static *Kapha*, since *Meda* plays a major role in nutrition of next one *Dhatu*. *Kapha* & *Meda* homogenous to each other so vitiation of *Kapha* leads to *Meda* vitiation & vice versa[35]. *Nidana Sevana* leads vitiation of *Medovaha Srotas* resulting in its *Dushti*.

Therefore by understanding the concept of *Srotas* we can understand the origin, development, nourishment, increase, waning of *Dhatu* along with *Dhatu Sarata* & its applicability in treatment.

Conclusion-

Srotas institute the internal transport system of the body & are especially related to fine channels of circulation & pathways, carrying out all vital functions of the body. The health & disease depends on the proper structure & function of these channels of the body. *Medovaha Srotas* holds an important aspect for nutrition, development & strengthening of body.

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Conceptual Study

Risk Factors of *Madhumeha* And Its Prevention According To *Ayurveda*

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Abstract

Diabetes mellitus is one of the burning health problems of present era resulting in serious long term complications such as heart disease, neuropathy, nephropathy, retinopathy and even death. Therefore, it is important to make diabetes prevention a priority, especially for them who are at increased risk of diabetes. In *Ayurveda, Madhumeha* is mentioned one of the main diseases in which quantity and frequency of urination increases. This is a cardinal feature of Diabetes Mellitus too. So, Diabetes mellitus can be equated with *Madhumeha*. Diabetes mellitus is a perfect example of life style disorders. Sedentary life style and stressful mental conditions are considered as the main cause of life style disorders including DM. *Ayurvedic* literature contains a treasure of knowledge about causes, risk factors, prevention and treatment of *Madhumeha*.

सारांश–

डायबिटिज मेलाईटस वर्तमान युग की ज्वलन्त स्वास्थ्य समस्याओं में से एक है। इस व्याधि के गंभीर दुष्परिणामों से हृदय रोग, तन्त्रिका रोग, वृक्क रोग, नेत्र विकार और मृत्यु तक हो सकती है। इसलिये यह आवश्यक है कि डायबिटिज के ऐसे रोगी जो कि डायबिटिज के कारण जोखिम भरे है। उनकी रोकथाम करना आवश्यक है। आयुर्वेद में मधुमेह एक मुख्य व्याधि है जिसमें मूत्र की मात्रा एवं प्रवृत्ति बढ़ जाती है। यह मधुमेह का प्रत्यात्म लक्षण है। इसलिए डायबिटिज मेलाईट्स की मधुमेह से तुलना की जा सकती है। डायबिटिज मेलाईटस जीवन शैली से होने वाली व्याधियों में से एक है। विलासिता पूर्ण जीवन व तनावयुक्त मानसिक स्थिति मधुमेह के मुख्य कारणों में से एक है। आयुर्वेद साहित्य में मधुमेह रोग के निदान, जोखिम, रोकथाम और चिकित्सा का विशेष वर्णन है।

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Conceptual Study

Risk Factors of *Madhumeha* And Its Prevention According To *Ayurveda*

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Introduction

Madhumeha is a disease known to mankind since *vedic*period. The word '*madhumeha*' is a combination of two terms '*madhu*' and '*meha*' meaning 'honey' and 'excessive flow' respectively.On clinical manifestation, *madhumeha* can be co-related with diabetes mellitus which is the most common endocrinal disorder marked by high level of blood glucose resulting from insulin insufficiency mainly.

Madhumeha is a global health problem alarming the world as a non-infectious pandemic. Changing life style, lack of exercise, fast foods, improper unbalanced diet and sedentary life style are showing upward trend in India.

WHO estimates that diabetic population is expected to increase to 78 million by 2030 in India? Serious chronic complications of DM can be prevented by proper medications and life style changes. Even the prediabetic individuals can also avoid progression to diabetes by adopting healthy dietary habits and life style. So, it is very important to identify the risk factors and to prevent the disease as early as possible.

Material And Method

Different *Ayurvedic* classical books, research papers and journals were referred to fulfil this part. It comprises subsections dealing with *nidan*, *purva-rupa*, *rupa*, *samprapti*, *chikitsa* and various concepts of *madhumeha* according to *acharyas*.

Nidan (etiological factors)

Diabetes Mellitus is one of the main life style disorders. The main cause of DM is lack of exercise and improper food habits. Many similarities are found between causative factors of DM mentioned in modern science and *nidan* explained for *madhumeha* in *Ayurvedic* science.

The etiological factors described in *Charaka samhita* are *asyasukham* (sedentary living), *swapnasukham* (excessive sleep), Excessive indulgence in *dadhini*(various preparation of curd in excess quantity), *gramya, audaka, anupa Mamsa* (meats of animals of different habitats), *payansi* (excessive use of milk and its different products), *nav annapanam* (Newly harvested grains in daily diet and drinks), *gudavaikrutam* (various preparation of sugar and jiggery) and other substances which increases *kapha dosha* may cause *Prameha*.[1] If *Prameha* is left untreated, it leads to *madhumeha*.[2] According to *Acharya Vagbhatta*, anything which increases *Meda, Mutra* and *Kapha* are supposed to be additional causes of *Prameha*.[3]

As per the WHO, Diabetes mellitus is defined as a heterogenous metabolic disorder characterised by common feature of chronic hyperglycaemia with disturbance of carbohydrate, fat and protein metabolism. DM is expected to continue as a major health problem owing to its serious complications, especially end stage renal diseases, IHD, gangrene of the lower extremities and blindness in the adults.[5]

Purva-rupa

Purva-rupa of *Prameha* mentioned by *Acharya Charak*a are[4]

- *Sweda* (excessive sweat)
- *Anga-gandha* (pungent smell of body)
- *Shithila-angata* (lethargy),
- *Shayya, asana, swapanasukha rati* (excessive urge of sitting and sleeping)
- *Hrita, netra, shravan updeha* (heaviness due to increased secretion of sensory organs)
- *Ghanangata* (over weight)
- *Kesha, nakha ativriddhi* (excessive growth of hairs and nails)

- *Gala, talu shosha* (dryness of mouth and throat)
- *Mukha madhurta* (sweet taste in the mouth)
- *Kara, pada daha* (burning sensation in palms and soles)
- *Mutre pipilaka* (ants attracted to urine)

Almost all the classical texts have mentioned the same *purva-rupa* of *madhumeha*.In DM, early symptoms are not observed in the pre-diabetic patients so there is need to monitor the blood sugar level of patients of age above 40 years or those who have the family history of diabetes regularly.

Rupa (Signs & Symptoms)

A majority of the *lakshana* explained in *Ayurveda* for *Madhumeha* is described in the modern science too.

1. *Prabhut-avila mutrata* is considered as a *samanya lakshana* of *Prameha*.[5] The same has been given in the modern science as Polyuria as a result of the osmotic diuretic effect of glucose in the kidney tubules.
2. *Madhusama mutra* or *madhura mutra*, explained in *Ayurveda* can be taken as glycosuria.[6]
3. *Bahavashi* has been mentioned as a *lakshana* in the *apathya nimittaja madhumeha*, the same is mentioned in modern science in term of polyphagia.[7]
4. Polydipsia is mentioned as one of the symptom related to hyperglycaemia. In *Ayurveda*, *pipasa* is not mentioned as a *lakshana* but included under *purva rupa*. *Bhrish-pipasa* is a symptom included by *Acharya Sushruta* in the *Sahaja Madhumeha*.[7]
5. *Krisha* body has been mentioned as a *lakshana* in the *sahaja madhumeha,*[7] the same is mentioned in modern science in term of lean body or weight loss in Type I DM.
6. *Sushruta* has mentioned different conditions for delayed healing and *madhumeha* is one among them.[8] Even in modern science, delayed healing of wounds has been mentioned as a symptom of DM and the reasoning they give is the deficient formation of granulation tissues.

Bheda [Classification]

Almost all the classical texts have described 20 types of *Prameha* based on *dosha:*

1. *Vataja Prameha*– There are totally four *VatajaPrameha*.
2. *Pittaja Prameha*– There are totally six *Pittaja Prameha*.
3. *Kaphaja Prameha*– There are totally ten *Kaphaja Prameha*.

Out of these, diabetes mellitus is termed as *madhumeha*. It is one of the four *Vataja Prameha*.

Prameha is classified aetiologically into two types:

1. *Sahaja* (Hereditary)
2. *Apathya nimittaja* (due to unhealthy food habits and life style)

Acharya charaka has given a classification on the basis of management of *prameha*:[9]

1. *Krisha pramehi*
2. *Balwana pramehi*

Acharya Vagbhatta has mentioned 2 types of *madhumeha*:[11]

1. *Dhatukshaya janya*
2. *Dosha-avaran janya*

Samprapti (Aetiopathogenesis)

Aparipakva vata, pitta, and *kapha* formed due to various etiological factors, mixed with *medadhatu* and then go to *vasti* through *mutravaha strotas* and cause *prameha*.[12]

When agitated *vata* carries the *ojus* to the *vasti*, it manifests *madhumeha*.[13]

Risk factors

In *Ayurveda*, *Acharya Charaka* has mentioned the risk factor of diabetes

मन्दोत्साहमतिस्थूलमतिस्निग्धं महाशनम् ।
मर्त्युः प्रमेहरूपेण क्षिप्रमादाय गच्छति ॥ च नि 4/51

According to this, following individuals are at greater risk to diabetes than the other individuals:

मन्दोत्साह	Sedentary life style,
अतिस्थूल	Obesity
अतिस्निग्ध	Hyperlipidaemia
महाशन	Over eating/ faulty dietary habits

Almost all these factors are mentioned under constitutional factors affecting pathogenesis of the disease. Obesity, hypertension and level of physical activity plays contributory role and modulate the phenotyping of the disease.[13]

Chikitsa (Management)

Madhumeha can be managed by a collaboration of following 4 methods:

1. *Nidana parivarjana*
2. *Aahara*
3. *Vihara*
4. *Aushadha*

According to *Ayurveda,* the line of treatment of *prameha* is strictly based on individual's constitution. It is based on an entire change in the lifestyle of the person, along with medication and diet, the patient is also advised to lead a healthy lifestyle and live an active life. Even mental aspects of the disease are stressed.

The role of *aahara* and *vihara* are equally or even more important to control blood glucose level and to prevent complications of the disease.

Prevention

Type 2 DM is preceded by a period of IGT(Impaired Glucose Tolerance) and a number of lifestyle modification and pharmacological agents prevent and delay the onset of DM. The Diabetes Prevention Programme (DPP) demonstratethat intensive change in lifestyle (diet and exercise for 30 min/day five times/ week) in individual with IGT prevent or delay the development of type 2 DM. Individual with a strong family history of type 2 DM and individuals with IFG or IGT should be strongly encouraged to maintain a normal BMI and engage in regular physical activity. [14]

Acharya Charaka has also described the ways to prevent the diabetes.

यस्त्वाहारं शरीरस्य धातुसाम्यकरं नरः ।
सेवते विविधाश्चान्याश्चेष्टाः स सुखमश्नुते ॥ च.नि.4/52

According to this, one who takes balanced diet and indulges in various physical activities, lives a healthy life and does not suffer from illness.

Yava (Barley) are the best for diabetic patient. *Goduma* (Wheat), *purana shali*, *mudga*, *chanaka*, *kulattha*, *adhaki*, *karela*, *methi*, *patola*, *rasona*, *udumbara*, *jambu*, *amalaki*, *kapitta*, mustard oil etc. should be given in diet to diabetic patients. Along with them, regular exercise should be done such as walking, cycling etc. These can decrease the risk of disease to a great extent.

Discussion And Conclusion

Although the prevalence of both type I and type II DM is increasingly worldwide, the prevalence of type 2 DM is rising much more rapidly, presumably because of increasing obesity, reduced activity level and increased stress. Diabetes is a major cause of mortality. So it is very important to prevent diabetes and its complications. As there are no symptoms in prediabetic phase, so they need regular monitoring. Prediabetes is a risk factor for mortality because health complication associated with type 2 DM often occur before the medical diagnosis of diabetes is made.

So, *purva-rupa* of the disease, described by *acharya charaka* and others can be used for diagnosis of Prediabetes. Then various methods such as *nidan parivarjana*, *aahara* and *vihara* should be used to prevent diabetes.

The various risk factors of diabetes mentioned by *Ayurveda* and modern science such as sedentary life style, obesity, hyperlipidaemia and family history of diabetes should be screened regularly and frequently. Fasting blood glucose screening should begin at age 30-45 years and should be repeated every threeyears.Earlier and more frequent screening should be conducted in at risk individuals and healthy dietary habits and life style should be adopted to prevent the disease and its complication.

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Conceptual Study

Understanding the role of *vata dosha* in the functionality of Insulin and insulin-receptors

*Sneha Shinde, **D. V. Kulkarni

Abstract

In *Ayurveda*, Diabetes mellitus is described in the classification of *vataj prameha*, as "*Madhumeha*", in which the increase in blood glucose is mainly due to the deficiency of insulin. Actually insulin communicates with the insulin-receptors placed on the cell membrane and activates them. This act of stimulation is the prime key in the opening of the glucose transporters. Unless and until these glucose receptors are activated, glucose is unable to cross the cell membrane.

As per *Ayurveda*, any activity related to the movements of any entity, is delegated to the attributes of *vata dosa*. In the verse "*prerane cala*", *Hemadri* has explained the cala quality as responsible for any type of stimulation.

Not only the structure of insulin, but the structure of insulin-receptors also, have revealed the fact that they belong to that category, which is controlled by *vata dosa*. In this work, we have clearly demonstrated that the structure and functionality of insulin and its receptors obviously come under the umbrella of functions of *vata dosa*. To prove the similarity of function of insulin with the *chala* quality of *vata dosa*, mainly in relation with its stimulating activity, we have considered the widely used *Momordica charantia*.

Similarly, comparison of the mis sense mutations in the tyrosine kinase portion of the insulin receptor gene that have found in patients with NIDDM, with the activity of *vata dosa*, are also correlating with our conclusion that structure and functionality of insulin is totally controlled by *vata dosa*.

सारांश–

आयुर्वेद में डायबिटिज मेलाइटस को वातज प्रमेह के एक भेद मधुमेह के रूप में वर्णित किया गया है। इस व्याधि में इंसुलिन का स्तर कम होने से रक्त में शर्करा का स्तर बढ़ जाता है। इंसुलिन कोशिका झिल्ली पर स्थित इंसुलीन रिसेप्टर के साथ जुड़कर क्रियाशील होते है। इस सक्रियता से ही ग्लूकोज का उपयोग होता है। जब तक ये ग्लूकोज के रिसेप्टर सक्रिय नहीं होते ग्लूकोज कोशिका झिल्ली को पार कर कोशिका में प्रवेश नहीं कर पाता। आयुर्वेद में किसी भी गति के लिए वात को कारण माना है। सिर्फ इन्सुलीन बल्कि इंसुलिन रिसेप्टर भी वात दोष से नियन्त्रित होते है। इंसुलिन के कार्य तथा उसकी वात दोष के चलगुण से साम्यता दिखाने के लिए हमने करेले का उदाहरण लिया है। इंसुलिन रिसेप्टर का एक भाग डायरोसिन काइनेज जिसमें उत्परिवर्तन होता है उसकी तुलना भी वात दोष से की गई है।

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Conceptual Study

Understanding the role of *vata dosha* in the functionality of Insulin and insulin-receptors

Sneha Shinde, D. V. Kulkarni

Introduction: -

Diabetes Mellitus is well-known for its mortality and morbidity since centuries. Since thousands of years, Indians are well aware of the *prameha*, especially *vataj prameha* or *Madhumeha*. There are hundreds of medicinal herbs known for their antidiabetic activity. *Caraka* has described 20 types of *Prameha*. He has also emphasized on the fact that all the *prameha* are converted in to *Madhumeha*, if untreated. As India is becoming a hometown for the diabetes mellitus, it is a big challenge for the medical fraternity to cope with the disease. In this review, we have considered the famous *ayurvedic* herb *Momordica charantia* for the interpretation of the insulin function and it co-relation with activity of *vata dosha*.

i) Understanding the herbal drug *Momordica charantia:* -

Karvellaka is the Sanskrit name of the *Momordica charantia*, which is in possession of *tikta rasa* and *laghu*, *ruksa* attributes. *Bhavprakash* has described it as "*mehahara*". It is cultivated all over India for its fruits. The claim of its hypoglycaemic activities is found in fruits and seeds mainly.

Lolitkar, M.M.et.al, (1966) demonstrated that "charantin" isolated from *Momordica charantia* bears a similarity to insulin activity for lowering the blood glucose level in rabbits.[1] Khanna P. and others (1981) also established the fact that compounds isolated from the fruit and seeds of *Momordica charantia* contribute to its hypoglycaemic activity. They also proved that "charantin" and "polypeptide p" have a resemblance with insulin.[2] Ojewole and others established that the mechanism of action of hypoglycaemic effect of *Momordica charantia* are due to an insulin like peptide (polypeptide p-insulin). They also claimed that aqueous extract of *Momordica charantia* mimics insulin action not only at cellular level but at extra-pancreatic level also[3]. Tayyab F. and others (2012) isolated insulin like hypoglycaemic protein (p-insulin) from fruit, seeds, and leaves of *Momordica charantia.* This polypeptide was found to lower blood glucose levels in humans when injected subcutaneously.[4] Paul A. and Raychaudhari SS (2010) also demonstrated that p-insulin derived from *Momordica charantia* works by imitating the action of human insulin and can be used as plant based insulin replacement in patients with type 1 diabetes mellitus.[5] Baldwa V. S.et.al. (1997) also isolated an insulin-like compound from fruit and tissue culture of *Momordica charantia*. They demonstrated that, this plant insulin has 17 amino acids in two chains bound together with sulphide bond. They also established the fact that the infrared spectrum of this plant insulin super imposes on standard zinc crystalline bovine insulin.[6] Zhang Q C also established the p-insulin structurally and pharmacologically comparable to bovine insulin and its subcutaneous and intramuscular administration produces hypoglycaemic effect in diabetic patients for more than 6 hrs., as compare to 2hrs., for bovine insulin.[7] Yibchok-Anun S. and others (2006) isolated a slow acting protein extract from fruit pulp of *Momordica charantia* and it showed insulin secreting and insulin-like activities.[8] Pitipanapong J.et.al., (2007) also demonstrated that sitosteryl-glucoside and stigma steryl glucoside from "charantin" can be used as a replacement therapy for insulin.[9] Paul A, Raychaudhari SS.(2010) established that plant insulin found in seeds and fruits of *Momordica charantia* is in possession of similarity to the composition of insulin. They demonstrated the use of this plant-insulin in the therapy of type 1 diabetes mellitus.[10] In updating the anti-diabetic plants, and their active constituents Marles, R. and Farnsworth, N. (1997) established that *Momordica charantia* is one of the most popular anti-diabetic plant worldwide and it is referred as "vegetable-insulin" in Asia.[11] Parkash A et.al.,(2002) showed

To understand the working of insulin properly, we must have to look a structure of insulin which is shown in fig.2. Insulin consists of two polypeptide chains, namely chain A and chain B. Both A and B chains are attached together by disulphide bonds. Actually insulin is synthesized in beta cells of islets of Langerhans as a single polypeptide called 'pre-proinsulin'. This pre-proinsulin contains a 24 residues signal peptide which is cleaved as polypeptide and translocated into lumen of the rough endoplasmic reticulum forming proinsulin. This proinsulin is folded into correct conformation and 3 disulphide bonds are formed after 5 minutes of this assembly. Then this proinsulin is transported to trans-golgi network. Here in the trans-golgi network, immature granules of insulin are created. Two cellular endopeptidases, known as PC1 and PC2, cleave the proinsulin at two positions resulting in release of fragment called C-peptide and leaving by 2 disulphide bonds. This way proinsulin is converted into mature insulin which is packaged inside mature granules and is made available to be exocytose from cell into the circulation on metabolic signals.

Structure-function studies have indicated that amino acids essential for binding to the insulin receptor, include A1Gly, A2Ile, A3Val, A19Tyr, B6Leu, B12Val, B23Gly, B24Phe and B25Phe[15, 16, 17]. Out of these 9 amino acids essential for the binding, except Tyrosine remaining all 8 amino acids, being hydrophobic, are in possession of *ruksa* [रूक्ष], *laghu* [लघु], *khara* [खर], *suksma* [सूक्ष्म], *cala* [चल] qualities of *vata dosa* [वात दोष].

Considering the fig.2 we can observe that, in the A chain there are 6 out of 21 (29%) such amino acids and in the chain B there are 15 out of 30 (50%) such amino acids, which are hydrophobic in nature. We know that those entities, which are hydrophobic in nature, are in possession of *vayumahabhuta* [वायु महाभूत] and *akasamahabhuta* [आकाश महाभूता] in their *paancabhautika* [पञ्चमहाभौतिक] constitution. So in the long run, they are in possession of *ruksa* [रूक्ष], *laghu* [लघु], *khara* [खर], *suksma* [सूक्ष्म], *cala* [चल] qualities of *vata dosa* [वात दोष].

If we try to understand the meaning from table no.1, which shows some of the regular protein rich food particles of an Indian diet, we can make two observations from this diet. First we can see that the average % of the hydrophobic amino acids is nearly 38% of the total proteins in the food particles, second thing is that all this food items, which are having 38% average hydrophobic amino acids are actually in possession of *ruksa* [रूक्ष] and *laghu* [लघु] attributes and are recognise as "*vatakara* [रूक्ष]". So one can conclude that the diet containing excess amount of

Approximately 100 Gm serving	**[रूक्ष] *ruksa***	**[लघु] *laghu***	**[शीत] *shita***	**[वातकर] *vatakara***	**Alanine (in mg)**	**Glycine (in mg)**	**Proline (in mg)**
Peanut[19]	Yes	Yes	Yes	Yes	1.04	0.94	1.14
Lentil pink[20]	Yes	Yes	Yes	Yes	1.05	1.01	1.05
Flat beans[21]	Yes	No	No	Yes	0.98	1.01	0.88
Bengal gram[22]	Yes	Yes	Yes	Yes	0.83	1.55	0.80
Red Gram[23]	Yes	Yes	Yes	Yes	1.08	0.82	0.95
Red kidney beans[20]	Yes	Yes	Yes	Yes	0.99	0.92	0.95
Kidney bean aconite leaved [24]	Yes	Yes	No	Yes	0.98	1.02	0.97
Mung beans [25]	Yes	Yes	Yes	Yes	1.04	0.95	1.09
French beans [30]	Yes	Yes	Yes	Yes	0.79	0.73	0.79

food particles showed in above table, results in the increase in the percentage of hydrophobic amino acids in body, causing enhancement in the *ruksa* [रूक्ष] and *laghu* [लघु] attributes throughout the body. As increase in the *ruksa* [रूक्ष] and *laghu* [लघु] attributes represents the increase in the activities of *vatadosa* [वातदोष]. So these food particles are labelled as *"vatakara* [वातकर]".

When hydrolysed, most food proteins set free bitter tasting peptides. Hydrolysates of hydrophilic proteins such as gelatine, are less bitter that the hydrolysates of hydrophobic protein such as caseins and soya proteins. The bitterness is mentioned in *Ayurveda* as *tikta rasa*, which is the result of the combination of *vayu mahabhuta* and *akasa mahabhuta* in their *paanca bhautika* constitution. So basically, the entities having *vayu mahabhuta* and *akasa mahabhuta* as main components can labelled as coming underthe classification of hydrophobic entities. On the otherh and, the entities having *pruthvi mahabhuta* and *jala mahabhuta* as the main component in their *paamca bhautika* constitution, can be recognised ascoming under the classification of hydrophillic substances.

Now we have a clear understanding that the hydrophobic amino acids come under the umbrella of *vatadosa*. So when in a constitution of an entity, amino acids belonging to the hydrophobic class are in excess percentage, then we can have labeled the entity belonging to *vatakara* class.

This discussion leadsus to the conclusion that insulin can be classified as an instrument for the functionality of *vata dosa*. As we are aware of the fact that in the glucose metabolism, insulin only have an act of stimulation to facilitate the entry of glucose into the cell. Once insulin has facilitated the entry of glucose into the cell, then after, insulin has no role into the production of ATP from glucose.

So fundamentally, insulin only is a stimulator for specific activity. This stimulation can be labelled as an activity of *cala* quality of *vata dosa*. Then the question arises, how we can compare the stimulation activity of insulin with the work done by *cala* qualities of *vata dosa*. For this, we should again have a look at the structure of insulin. In the constitution of insulin, we can see that 21 out of 51(41%) amino acids belong to the hydrophobic class and ultimately are in possession of the combination of *vayu mahabhuta* and *akasa mahabhuta* definitely resulting in the possession of *vatakara* property with itself. This is the cause we say that insulin is in possession of *cala* quality of *vata dosa* and works as a stimulator. *Hemadri* has also said that *"preranecala"*. This *prerana* means stimulation by *vata dosa*.

iii) Understanding the Insulin-receptor

We know that many enzymes are synthesized as inactive precursors. After wards they are triggered by cleavage of one or a few specific peptide bonds. Cleavage means the act of splitting or dividing. In the creation of an insulin-receptor, a proteolytic cleavage of polypeptide-chain precursor

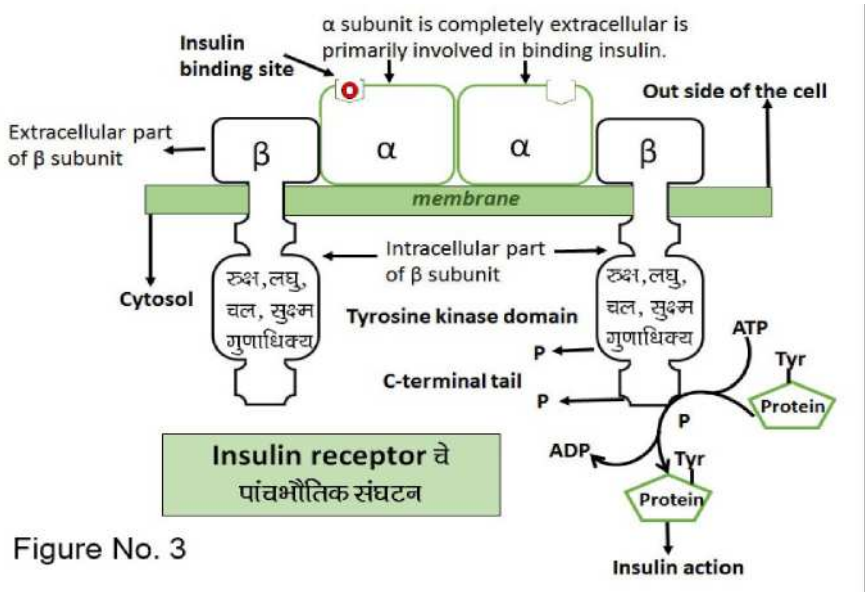

Figure No. 3

2. As we know Aspartate, being a negatively charged and polar amino acid, is in possession of these qualities, which are due to the combination of to *pruthvi mahabhuta* and *Jala mahabhuta* in its *paamca bhautika* constitution. Normally, Alanine 1048Cß, an amino acid belonging to *vayumahabhuta* and *akasa mahabhuta* are in possession of *ruksa* and *laghu* qualities and is seated in the hydrophobic pocket. So when in the missense mutation, Asparatatetakes place of Alanine 1048Cß, it is not accomodated inthat pocket due to its larger size.
3. Threonine and Glutamic acid, both amino acids are also in possession of attributes belonging to *pruthvi mahabhuta* and *Jala mahabhuta*. So in the mutation when theses two amino acids take place of Alanine 1134 and Alanine 1135 respectively in the catalytic loop, which belong to *vayu mahabhuta* and *akasa mahabhuta*, there is a steric clash in between them, causing destabilisation of the hydrophobic packing in the C-terminal lobe.

When the insulin binds to the extracellular alpha chain, it originates a change within the insulin-receptor structure, resulting in autophosphorylation of particular tyrosines in the cytoplasmic part of the beta chains. This change causes the recruitment of intracellular signalling molecules, which then initiate a multifaceted cascade of phosphorylation and de-phosphorylation reactions. This results in the spread of metabolic effects of insulin. One of the important result is the activation of the phosphatidylinositol-3'-kinase (PI-3-kinase) pathway. After activation this pathway motivates translocation of glucose transporters (GLUT4) to cell surface. This translocation is very important for glucose uptake by the cell.

Conclusion: -

It has been well established that insulin like hypoglycaemic protein, labelled as p-insulin is available in the fruit, seeds and leaves of Momordica charantia. The most amazing thing about Momordica charantia is that p-insulin is structurally and pharmacologically analogous to bovine insulin. It is also demonstrated that subcutaneous and intramuscular administration of p-insulin produces prolongs hypoglycaemic effect in comparison with bovine insulin. We have established in this work that the ayurvedic description of Momordica charantia and its *paamca bhautika* attributes are equivalent to the *paamcabhautika* structure of insulin. In addition, we have demonstrated that the mutations in tyrosine kinase portion of insulin receptor gene found in the patients of NIDDM, are actually the derangement in the *ruksa, laghu* attributes, which are due to the combination of *Vayu mahabhuta* and *akash mahabhuta*. We have also concluded that the replacement of *Vayu mahabhuta* and *akash mahabhuta* by *prithvi mahabhuta* and *jala mahabhuta*, is the backbone of the pathology in NIDDM. So administration of Momordica charantia has a definite impact on the activity of vata dosa, which showing a relationship with our conclusion that structure and functionality of insulin is totally controlled by vata dosa.

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19 कलाय:कुरुतं वातं पित्तदाहकफापह: । रुचिपुश्टिप्रद: षीत कशायष्च आमदोशकृत् । राजनिघण्टु-षाल्यादीवर्ग-97

20 मुद्गआढकीमसुरादीषिम्बिधान्यांविबन्धकृत्। कशायंस्वादुसंग्राहीकटुपाकंहिमं मधु ॥ योगरत्नाकर धान्यादिफलकन्दषाकगुण:-04 पान 21

21 निश्पावो मधुरोरुक्षोविपाके अम्लो गुरु सर:। कषाय: स्तन्य पित्तास्त्रमूत्रवातविबन्धकृत् । भावप्रकाश धान्यवर्ग 46

22 चणक: शीतलो रुक्ष: पित्तरक्तकफापह: । लघु: कषायोविश्टम्भिवातलोज्वरनाषन: । भावप्रकाश धान्यवर्ग 53

Literary Review

Role Of *Pathya* In *Madhumeha* –An *Ayurvedic* Review

*Dr. Saroj Choudhary, **Dr. Rameshwar Lal, ***Dr Sisir Kumar Mandal

Abstract:

Diabetes mellitus is a common and very prevalent disease affecting about 25 % of world population. India has the largest Diabetes population in the world with an estimated 41 million people, amounting to 6% of the adult population. Diabetes mellitus (DM) is a chronic progressive metabolic disorder characterized by hyperglycemia mainly due to deficiency of insulin hormone. The needs of diabetic patients are not only limited to adequate glycemic control but also correspond with preventing complications; disability limitation and rehabilitation.

It can be correlated with *Madhumeha* in *Ayurveda*.In *charaka samhita, Madhumeha* has been described as a type of *vataja prameha* which is characterized by passing of honey like urine in excess amount. It is said to be a incurable disease in *Ayurveda*. *Madhumeha* which can be correlated with Type-2 DM that cannot be treated by mere medicine but proper *pathya ahara* and *vihara* regimens helps to live long life,healthy(*sukhaya*) and will be useful to society (*hitayu*) and also help in preventing the complications.

Diabetes one among 10 lifestyle disorder hence proper *Ahara* (diet), *Vihara* (lifestyle) is essential in order to prevent to Diabetes. In *Ayurvedic* classics food is mentioned as one among the *tree Upasthamba* (pillar) which supports the body. So proper consumption of the food by proper *Pathya* and *Apathya* is beneficial in preventing the disease like Diabetes.

Keywords: *Ahara*, Diabetes Mellitus, diet, lifestyle, *Madhumeha*,, *Vihara*

सारांश–

मधुमेह एक सामान्य और बहुत प्रचलित व्याधि है। जिससे विश्व की लगभग 25 प्रतिशत जनसंख्या प्रभावित हो रही है। भारत में मधुमेह के रोगी सबसे ज्यादा है। जो लगभग 41 मिलीयन है। जिसमें से 6 प्रतिशत युवा है। मधुमेह पुराना प्रगतिशील चयापचय विकार है। जिसमें इन्सुलिन हार्मोन की कमी की कारण रक्त में शर्करा की मात्रा बढ़ जाती है। मधुमेह के रोगीयों को न केवल शर्करा की मात्रा को सामान्य रखने की आवश्यकता है, अपितु मधुमेह से होने वाले उपद्रव व विकलांगता से बचाव तथा पुनः स्वास्थ्य लाभ की भी आवश्यकता है।

डीएम का सामान्जस्य आयुर्वेद में मधुमेह से कर सकते है। चरक संहिता में मधुमेह को वातज प्रमेह का प्रकार बताया है। इसका लक्षण अधिक मात्रा में मधु सम मूत्र का त्याग करना बताया है। आयुर्वेद में इसे असाध्य व्याधि में माना है।

मधुमेह का सामन्जस्य टाईप–2 डीएम से कर सकते है। जिसका उपचार बिना पथ्य आहार विहार सेवक के केवल औषध से नहीं कर सकते। जो सुखायु व हितायु में सहायता करते है, तथा मधुमेह के उपद्रवों से बचाते है। मधुमेह जीवन शैली आधारित विकार है। इसलिए पथ्य आहार व विहार का पालन करने में इससे बचा जा सकता है। आयुर्वेद संहिता में आहार को त्रिउपस्तम्भ में से एक उपस्तम्भ माना है। इस प्रकार आहार के पथ्य अपथ्य का विचार करके तथा कौनसा आहार लाभकारी है। यह विचार करके आहार लेने से मधुमेह से बचा जा सकता है।

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Literary Review

Role Of *Pathya* In *Madhumeha* –An *Ayurvedic* Review

Dr. Saroj Choudhary, Dr. Rameshwar Lal, Dr Sisir Kumar Mandal

Introduction-

All polyuric diseases in *Ayurveda* are described under '*Prameha'*, and *Madhumeha* is one amongst them, equated to Type 2 Diabetes Mellitus. The description of the acquired form of *Prameha*; refered to as *Apathya nimittaja Prameha*, is very similar to type 2 diabetes. *Apathya Ahara* (dietetic incompatibilities) and *Apathya Vihara* (lifestyle incompatibilities) both are the major risk factors for *Madhumeha*.[1] In *Charak Samhita*, *Madhumeha* has been described as a type of *Vataja Prameha*, which is characterized by passing of honey like urine in excess amount.

***Nidana* (Etiological Factors) of *Madhumeha* in *Ayurveda*-** excessive intake of heavy, unctuous and saliva taste foods, new cereals and fresh wine consumption in large quantity, sedentary lifestyle, not indulging in any kind of physical and mental exercise and not undergoing any kind of bio-purification of body (*Shodhana*), are said to be etiological factors for *Madhumeha*.[2]

***Samprapti* (Aetiopathogenesis) of *Madhumeha*-** *Kapha* undergoing increase by the etiological factors, reaches various *dooshyas* like *rasa* (plasma), *rakta* (blood) etc., As there is a *shaithilyata* (looseness) in the body and it being fluid predominant, spreads all over the body and gets vitiated, while spreading it gets mixed with *medas* (fat–adipose tissue), *mamsa* (muscle) and *kleda* (body fluids). Body fluids which got vitiated draw them to the urinary bladder and produces prameha; similarly the *Pitta* affects them, *Vata* also brings about vitiation in them and produce *prameha*.

***Lakshana* (Symptoms)-** Includes the passage of urine having sweet taste and smell of body resembling like honey.[3] The urine is astringent, sweet, pale and unctuous.[4]

***Bheda* (Types)-**It is of two types- *Dhatukshayajanya* and *Margaavaranajanya*. In both the types, *Vata* is aggravated which results into *Madhumeha*.[5]

Prognosis (*Sadhy-Asadhyata*)-*Charak* describes the prognosis in three categories:[6]

1. *Sadhya- Kaphaja Prameha,* early- diagnosed patients, *Sthoola* (obese) and the origin of their disease is *Apathyaja*.
2. *Yapya – Pittaja Prameha*
3. *Asadhya – Vataja Pramaeh* is incurable and inherited *Madhumeha*, a *Krusha* (lean) patient who is suffering with *Sahaja* variety.

***Chikitsa* (Management)** The principles of treatment in a diabetic patient may be classified as under-1. *Sthoola Pramehi* (Obese) 2. *Krusha Pramehi* (Lean)

Treatment According to Body Constitution:

***Sthoola Pramehi*:** In *Sthoola* patient we have to apply *Shodhana* (purification process) and *Apatarpana Chikits*a - reduction in body weight by way of diet control or drugs, *vyayama* etc. Again the treatment modalities described for *Medo Roga* can be applied here too.[7] ***Krusha Pramehi*:** In *Krusha* patient, such foods should be used which are going to increase the strength of patient without increasing the vitiation and after proper strength gaining, mild purificative measures can be used along with herbal medicine. For the *Krusha Pramehi* patient the *Brimhana* therapy is to be done with *Aushadha* and *Ahara*.[8]

Concept Of Diet In *Ayurveda*

Ayurveda deals with the diet very broadly. All classical texts of *ayurveda* such as *Charaka samhita*, *Susruta samhita*, *Astanga samgraha, Astanga hriday, Bhaisajyaratnawali* deals exclusive chapters on nourishment and nutrition values of food, balanced diet, daily diet, seasonal diet, disease wise diet,diet during pregnancy, lactation and

menstruation, grouping of diet and drinks, incompatible dietary rules and a list of most unwholesome and wholesome foods. *Acharya Susruta* clearly mentioned that diet is the primary source of *Bala* (strength), *Varna* (complexion), and *Ojas* (immunity). The concept of *Charaka* is noteworthy here. The life of living being is food and all the people of the world seek food. Whatever is beneficial for happiness, whatever pertains to the *Vedic* sacrifices and whatever is established to spiritual salvations said to be established in food. In most of the golden classics of *Ayurveda*, emphasis is made on the diet that will not produce *Ama* and protect *Jatharagni* and promote *Dhatwagni* is considered an ideal diet.

Importance of *Pathya* In *Madhumeha*

Madhumeha is mainly caused due to *Apathya Aahar* and *Vihar sevana*, while describing the *chikitsa* for *Madhumeha*, all *Acharyas* have focused on *Pathya Aahara* & *Vihara* in management of *Madhumeha*. A *Chikitsa Granth* of medieval period "*Vaidya Jivanam*" *by Lolimbaraja* has stated the importance of *Pathya* and *Apathya* in *Chikitsa as*,

"Pathyeasatigadartasyakimaushadhanishevane,
pathyesatigadartasyakimaushadhanishevane."

If a person follows the dietary rules for particular disease there is very little significance of drug treatment and when a person is exposed to *Apathya* the drug treatment has no value, because without *Pathya Sevana* taken drug can't cure the disease.[9]

Definition of *Pathya*:

"Pathyampathoanpetamyadyachauktamman-sahpriyam,
yachchapriyamapathyam cha niyatamtannalakshayeta".[10]

In *Charaka Samhita*, *Pathya* is defined as, the wholesome *Aahara*, which do not adversely affect the body channels i.e.; *Patha* & which is very pleasant to mind.[11]

***Pathya* In *Madhumeha*;**

The role of *Aahar* and *Vihar* are equally or even more important in diabetes to control blood sugar as well as to prevent the complication of the disease. In all the classics, *Aahar Dravyas* are described in detail, such as:

1. Cereals: *Yava* (*Hordeum vulgare* - Barley) are the best, different preparations of food, prepared from Barley can be given e.g. *Mantha*, *Odana*, *Appopa*, bread, Roti etc. This is the subject of pharmaceutics and food stuffs. So the method of preparations of barley is not dealt with here. Wheat (*Godooma*) can also be given. Rice: - *Ayurveda* prescribed old rice (*purana shali*), as one of the cereals, which can be prescribed to the diabetic patients.

2. Pulses: *Mudga (Vignaradiata Greengram*), *Chanaka (Cicer arietinum Linn.* – Bengal gram), *Kulattha (Dolichos biflorus) , Adhaki (Cajanus cajan* - Pigeon pea) etc, can be taken.

3. Vegetables: All types of bitter vegetables (*Tikta shaka*) e.g. *Karela (Momordica charantia* - Bitter gourd), *Methi (Trigonella foenum-graecum* - Fenugreek), *Patola (Vietnamese luffa*, Vietnamese gourd, or Chinese okra), *Rasona (Allium sativum Linn.* – Garlic), *Udumbara (Ficus racemosa* - Cluster Fig Tree, Indian Fig *Treeor Goolar (Gular*) Fig), etc. should be given

4. Fruits: *Jambu (Syzygium cuini* - Black berry), *Amalaki (Phyllanthus emblica* - Nepalese/ Indian gooseberry,or *Dhatrik* (in *Maithili*) or *amla*), *Kapitta (Limonia acidissima* - Wood Apple, Elephant Apple, Monkey Fruit or Curd Fruit), *Tala phala (Borassus flabellifer* - the Asian Palmyra palm, Toddy palm, Sugar palm, or Cambodian palm), *Kharjura (Phoenix sylvestris* –Date Sugar Palm), *Kamala (Nelumbo nucifera* Indian lotus, sacred lotus, bean of India, or simply lotus,), *Utpala (Nymphoea Stellata)* etc., can be allowed to take.

5. Seeds: *Kamala, Utpala* seeds can be allowed to take.

6. Flesh: *Harina mamsa* (Deer flesh), *Shashaka mamsa* (Rabbit), birds like *Kapotha*, *Titira* etc., can be taken.

7. Liquor: Old *sura* (old wine) may be given.

8. Oils: Mustard oil (*Sarshapa taila*) is best. *Ingudi* (*Balanitis aegypotiaca*) *Ghritha* may be used in *pitthaja prameha*. But according to *Ayurveda* one

should start with light diet (*laghu bhaksha, laghu ahara*) and then gradually increase the quantity of food. It is a rule that one should keep complete attention on the condition of Agni i.e. digestion

10) Others: *Takra* etc.

According to *Ayurveda*, one should start with light diet (*Laghu ahara*) and then gradually increase the quantity of food. Diabetes being a disease of deranged metabolism, special attention should be kept on the conditions of digestion (*Agni*) and metabolism.

***Pathya Vihar* (Exercise):**

Hard exercises have been prescribed for Diabetics and obese persons. This is meant for proper utilization of fat and to consume the glucose in the body. The methods can be changed in the present time according to habitat (*Desha*), and time (*Kala*). Some of the hard, productive exercises prescribed by *Acharya Sushruta* are as under:

(1) Vyayama (exercise), (2) *Niyuddha* (fighting), (3) *Kreeda* (Games), (4) *Gajacharya*, *Turagacharya*, *Padacharya* to ride an elephant, horse, cart riding, walking etc. There are other exercises according to the financial position and also according to their community.

These are:

1. For poor class - the diabetic should walk for about 100 *yojan* (miles), bare footed, not staying more than one night in the settled place, should only eat the things available by begging and keeping restraint on his sense organs (adopt the lifestyle of *Aptapurusha*).

2. For rich class- they should eat only *Shyamaka* (*Echinochloa frumentacea*), *Kodrava* (*Paspalumscro biculatum*), etc., *Amalaka* (*Phyllantus emblica*), *Kapitha* (*Limonia acidissima*), etc, and reside with the cattle. The foodstuff for them should be *Ruksha* or they may stay with the cows and eat the above, which comes with the cow dung.

3. For others- either farming or digging the well etc. From the above, in short for diabetics exercise serves the purpose of (1) utilizing the fat and (2) metabolizing sugar, fat, carbohydrates and proteins. In the present day civilization, when these type of exercises are not possible, one should regularly play some out-door games, do some productive work, or the best is some yogic exercises.

4. *Yoga, Asana* & *Pranayam:* *Asanas* like *Suryanamaskar*, *Dhanurasana*, *Sarvangasana*, *Halasana* etc; it improves all sort of metabolism in the body. So Diabetics should perform different types of *yoga*. *Yoga* will definitely help Diabetes mellitus patients.

Conclusion-

Madhumeha which can be correlated with Type-2 DM that cannot be treated by mere medicine but proper *pathya aahar* & *vihar* regimen should also be followed. In present era, hurry, worry, curry and continuous exposure to psychosocial stress lead to compromise or an unhealthy life style. An unhealthy life style leads to *Agni-Bala Vaishamya* (impaired digestion and metabolism), *Oja-Bala Dosha* (immune deregulation) and *Srotodushti* (deregulation of body channels), which in turn lead to a variety of lifestyle disorders. *Ayurveda* does not regard diabetes mellitus as a disease that can be treated by mere medicine or by a dietary regimen. Though it is a *yapya* (not totally curable / difficult to cure) disease.

Ayurveda provides great options in the form of dietary modification, *Dincharya, Ritucharya*, *Satvavajaya Chikitsa, Sadvratta* and pharmacological and non-pharmcological *Rasayana* for prevention and management of lifestyle disorders. *Pathyapathya* (do's and don'ts regarding diet and lifestyle) is an important component of every prescription in *Ayurvedic* clinical practice. *Ayurvedic* lifestyles are concerned primarily with way for better living.

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Literary Review

Role of Pathya In *Madhumeha* (Type-2 Diabetes Mellitus) - An *Ayurvedic* Review

*Dr. Varun Bhati, **Dr. Priyanka Singh

Abstract

The word Diabetes has been derived from two words, *Diabetes* (Greek) which means 'siphon like' and *Mellitus* (Latin) which means 'sweetened with honey'. WHO lists life style diseases as the number one silent killer group in present era. Life style disorders are associated with our environment, way of life, dietary habits etc. a global transition in the disease pattern has been observed, where the relative impact of infectious diseases is decreasing while chronic diseases like CVA and Diabetes are increasingly dominating the disease pattern. India is going to be the diabetic capital of world by the year 2035. Type -2 DM can be correlated with *Madhumeha* in *Ayurveda* due to similarity in etiology, pathology, symptoms and prognosis. In *Charak Samhita*, *Madhumeha* has been described as a type of *Vataja Prameha*, which is characterized by passing of honey like urine in excess amount. In the present scenario of Diabetic treatment medicines are working only up to the level of managing hyperglycemia and not to a level of preventing long-term complication. The role of *Aahar* and *Vihar* are equally or even more important in diabetes to control blood sugar as well as to prevent the complication of the disease. *Madhumeha* is mainly caused due to *Apathya Aahar* and *Vihar sevana*, while describing the chikitsa for *Madhumeha,* all *Acharyas* have focused on *Pathya Aaharas* & *Viharas* in management of *Madhumadhu.*

Keywords: Diabets mellitus, *Madhumeha, Pathya*

सारांश–

मधुमेह शब्द दो शब्दो से प्राप्त किया गया है, डायबिटिज जिसका अर्थ है 'सायफन की तरह' और मेलाइटस जिसका अर्थ है 'शहद जैसा मधुर' वर्तमान युग में विश्व स्वास्थ्य संगठन ने जीवनशैली संबंधी विकारों को सायलेंट किलर (मन्दगति घातक) समूह में प्रथम क्रमांक में सूचीबद्ध किया है। जीवनशैली संबन्धी विकार, पर्यावरण, जीवन के तरीके, आहार संबन्धी आदते आदि जुड़े है। रोगो के पैटर्न में एक वैश्विक परिवर्तन देखा गया है कि जहाँ संक्रामक रोगों का सापेक्ष प्रभाव कम हो रहा है और सी.वी.ए. और डायबिटिज जैसी पुरानी बिमारियाँ तेजी से हावी हो रही है। भारत 2035 तक विश्व की डायबिटिज युक्त राजधानी होने जा रहा है। टाईप–2 डायबिटिज के निदान, सम्प्राप्ति लक्षण में समानता होने के कारण टाईप–2 डायबिटिज को आयुर्वेद में मधुमेह को वातज प्रमेह के प्रकार के रूप में वर्णित किया गया है। जिसमें शहद जैसे मूत्र का अतिरिक्त मात्रा में निर्माण होता है। वर्तमान में मधुमेह के उपचार की दवायें केवल हायपरग्लायसेमिया के प्रबन्धन के स्तर पर काम करती है। न कि दीर्घकालिक उपद्रव को रोकने के स्तर पर। आहार और विहार की भूमिका समान रूप से रक्तशर्करा के नियन्त्रण के लिए और मधुमेह के उपद्रव को रोकने के लिए महत्वपूर्ण है। मधुमेह मुख्य रूप से अपथ्य आहार विहार सेवन के कारण होता है, जबकि सभी आचार्यों ने मधुमेह की चिकित्सा का वर्णन करते हुए पथ्य आहार और विहार पर ध्यान केन्द्रित किया है।

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Literary Review

Role of Pathya In *Madhumeha* (Type-2 Diabetes Mellitus) - An *Ayurvedic* Review

Dr. Varun Bhati, Dr. Priyanka Singh

Introduction

Type-2- Diabetes mellitus is a metabolic disorder, a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of insulin. The word Diabetes has been derived from two words, *Diabetes* (Greek) which means 'siphon like' and *Mellitus* (Latin) which means 'sweetened with honey'. In *Charak Samhita*, *Madhumeha* has been described as a type of *Vataja Prameha*, which is characterized by passing of honey like urine in excess amount.

Nidana (Etiological Factors) of *Madhumeha* in *Ayurveda*, excessive intake of heavy, unctous and salive taste foods, new cereals and fresh wine consumption in large quantity, sedentary lifestyle, not indulging in any kind of physical and mental exercise and not undergoing any kind of bio-purification of body (*Shodhana),* are said to be etiological factors for *Madhumeha*[1].

Samprapti (Aetiopathogenesis) of *Madhumeha* includes the etiological factors aggravate *Kapha*, *Pitta*, *Meda* and *Mamsa* and obstruct the normal pathway of *Vata*. Agitated *Vata*carries the *Ojas* to *Basti* (urinary bladder) & manifest *Madhumeha,* which is difficult to cure.[2]

Lakshana (Symptoms) includes the passage of urine having sweet taste and smell of body resembling like honey[3]. The urine is astringent, sweet, pale and unctuous[4].

Bheda (Types)-It is of two types- *Dhatukshayajanya* and *Margaavaranajanya.* In both the types, *Vata* is aggravated which results into *Madhumeha.*[5]

Prognosis (*Sadhy-Asadhyata*) - *Charak* describes the prognosis in three categories:[6]

1. *Sadhya- Kaphaja Prameha*, early-diagnosed patients, *Sthoola* (obese) and the origin of their disease is *Apathyaja.*
2. *Yapya – Pittaja Prameha*
3. *Asadhya – Vataja Prameha* is incurable and inherited *Madhumeha*, a *Krusha* (lean) patient who is suffering with *Sahaja* variety.

Chikitsa (Management)

The principles of treatment in a diabetic patient may be classified as under:

1. *Sthoola Pramehi* (Obese)
2. *Krusha Pramehi* (Lean)

Treatment According to Body Constitution:

1. Sthoola Pramehi:

In *Sthoola* patient we have to apply *Shodhana* (purification process) and *Apatarpana Chikitsa* - reduction in body weight by way of diet control or drugs, *vyayama* etc. Again the treatment modalities described for *Medo Roga* can be applied here too.[7]

2. Krusha Pramehi:

In *Krusha* patient, such foods should be used which are going to increase the strength of patient without increasing the vitiation and after proper strength gaining, mild purificative measures can be used along with herbal medicine. For the *Krusha Pramehi* patient the *Brimhana* therapy is to be done with *Aushadha* and *Ahara.*[8]

Importance Of *pathya* In *madhumeha*

Madhumeha is mainly caused due to *Apathya Aahar* and *Viharsevana*, while describing the chikitsa for *Madhumeha,* all *Acharyas* have focused on *Pathya Aaharas* & *Viharas* in management of *Madhumadhu.*

A *Chikitsa Granth* of medieval period "*Vaidya Jivanam*" by *Lolimbaraja* has stated the importance of *Pathya* and *Apathya in Chikitsa* as,

"*Pathye asatigadartasya kimaushadha nishevane, pathye satigadartasya kimaushadha nishevane.*"

If a person follows the dietary rules for particular disease there is very little significance of drug treatment and when a person is exposed to *Apathya* the drug treatment has no value, because without *Pathya Sevana* taken drug can't cure the disease.[9]

Definition of *Pathya*:

"Pathyampathoanpetamyadyachauktamman-sahpriyam, yachchapriyamapathyam cha niyatamtannalakshayeta" (Ch. Su.45/25).

In *Charaka Samhita*, *Pathya* is defined as, the wholesome *Aahara*, which do not adversely affect the body channels i.e.; *Patha* & which is very pleasant to mind.[10]

Pathya* In *Madhumeha

***Pathya Aahra* (Diet):**

The role of *Aahar* and *Vihar* are equally or even more important in diabetes to control blood sugar as well as to prevent the complication of the disease. In all the classics, *Aahar Dravyas* are described in detail, such as:

1) ***Dhanyavarga*(Cereals):** *Yava* (Hordeumvulgare) are the best, different preparations of food, prepared from *Yava* can be used eg. *Mantha* (drink prepared of roasted corn flour), *Odana* (boiled rice), *Apoopa* (sweet made by wheat flour and sugar fried in ghee), bread, *Roti* etc. *Gehu*(wheat), different varieties of rice such as *Kangu* (Setariaitalica), *Shyamaka* (Echinochloa frumentacea), *Kodrava* (Paspalumscrobiculatum), can also be given. Ayurveda prescribes old rice (*Jirna* or *PuranaShali*) as one of the cereals, which can be given to the diabetic patient.

2) ***Shimbivarga* (Pulses):** *Mudga* (Vignaradiata Green gram) is the best, *Chanak* (Cicerarientium), *Kulattha* (Dolichosbiflorus), *Adhaki* (Cajanuscajan) etc. can be taken.

3) ***Shakavarga* (Vegetables):** All the types of bitter vegetables (*Tikata Shaka*) eg. *Karela* (Momordica charantia), *Methi* (Trigonella foenum- graecum), *Patol*a (Vietnamese luffa), *Rasona*(Allium sativum), *Udumbara* (Ficusracemosa) etc. can be allowed to take.

4) ***Haritavarga* (Leafy vegetables)**: *Katillaka* (Momordica charantia), *Shigrupatra* (Moringaoleifera), *Lonika* (Portulacea oleracea), *Dronapushpipatra* (Leucascephalotes), *Guduchipatra* (Tinospora cardifolia), *Kakamachipatra* (Solanumnigrum), *Vastuka*.

5) ***Phalavarga*(Fruits):** *Jambu* (Syzygiumcumini), *Amalaki* (Phyllantusemblica), *Kapitha*(Limoniaacidissima), *Talaphala* (Borassus-fiabellifer), *Kharjura* (Phoenix sylvestris) etc. can be given.

6) ***Beeja*(Seeds):***Kamala* (Nelumbonucifera), *Utpala* (Nymphoea stellate) seeds can be allowed.

7) ***Mamsavarga*(Flesh):** *AjaMamsa* (Goat), *Harina* (Dear), *Shashaka* (Rabbit), birds like *Kapota*,*Titira* etc. flesh can be given.

8) ***Sura*(Liquor):** old *sura* can be given.

9) ***Tailavarga*(Oils):** *SarshapaTaila* (Mustard oil) is best, *Tilataila* can also be given.

10) ***Others:*** *Takra* etc.

According to *Ayurveda*, one should start with light diet (*Laghuahara*) and then gradually increase the quantity of food. Diabetes being a disease of deranged metabolism, special attention should be kept on the conditions of digestion (*Agni*) and metabolism.

***Pathya Vihar* (Exercise):**

Hard exercises have been prescribed for Diabetics and obese persons. This is meant for proper utilization of fat and to consume the glucose in the body. The methods can be changed in the present time according to habitat (*Desha*), and time (*Kala*). Some of the hard, productive exercises prescribed by *Sushruta* are as under:

(1) Vyayama (exercise),

(2) *Niyuddha* (fighting),

(3) *Kreeda* (Games),

(4) *Gajacharya, Turagacharya, Padacharya* to ride an elephant, horse, cart riding, walking etc. There are

other exercises according to the financial position and also according to their community.

These are:

i. For poor class - the diabetic should walk for about 100 *yojan* (miles), bare footed, not staying more than one night in the settled place, should only eat the things available by begging and keeping restraint on his sense organs (adopt the lifestyle of *Aptapurusha*).

ii. For rich class- they should eat only *Shyamaka* (Echinochloafrumentacea), *Kodrava* (Paspalumscrobiculatum), etc., *Amalaka* (Phyllantus-emblica), *Kapitha* (Limoniaacidissima), etc, and reside with the cattle. The foodstuff for them should be *Ruksha* or they may stay with the cows and eat the above, which comes with the cow dung.

iii. For others- either farming or digging the well etc.

From the above, in short for diabetics exercise serves the purpose of (1) utilizing the fat and (2) metabolizing sugar, fat, carbohydrates and proteins. In the present day civilization, when these type of exercises are not possible, one should regularly play some out-door games, do some productive work, or the best is some *yogic* exercises.

***iv. Yoga, Asana & Pranayam*:** eg, *Suryanamaskar, Dhanurasana, Sarvangasana*, Halasanaetc, it improves all sort of metabolism in the body. So Diabetics should perform different types of yoga. Yoga will definitely help Diabetes mellitus patients.

Conclusion:

Madhumeha which can be correlated with Type-2 DM, that can not be treated by mere medicine but proper *pathyaaahar* & *vihar* regimen should also be followed. Though it is a *yapya* (difficult to cure) disease, but these things help to live long life (*Deerghajeevanam*), healthy (*sukhayu*) and will be useful to society (*hitayu*) and also help in preventing the complications.

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Literary Review

Ayurvedic Approach For The Management Of The Diabetic Nephropathy

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Abstract:

Diabetic Nephropathy is a specific form of renal complication of Diabetes Mellitus (DM), a major cause of death and disability among diabetics. This is also a major cause of chronic renal failure The Diabetic Nephropathy is the pathology of the nerves due to the disease diabetes.The common sign and symptoms are Swelling under your eyes, feet and legs, Weak appetite, Difficulty in sleeping, Frequent urination and foamy urine, Itching, Weight loss, and anaemia etc.. Diabetic nephropathy can affect people with both type 1 and type 2 diabetes. According to *Ayurveda*, nephropathy is a disease of *Mutravaha Srotas*. *Ayurvedic* system of medicine is an ancient Indian system of medicine that uses the inherent power of herbs to help diseases in a natural and healthy way. The Ayurvedic herbs for Diabetic Nephropathy help a person to improve his vitality in a natural way. The herbs help improve the diabetes and the nervous disorders related to diabetes in a natural and healthy way. The person suffering from diabetes improves his strength and the body and blood sugar levels become normal. The Ayurvedic herbs for the management of diabetic Nephropathy like Punarnava *(Boerhavia Diffusa),. Gokshura (Tribulus Terrestris), Amalaki (Emblica Officinalis), Haritaki (Terminalia Chebula), Vibhitaki (Terminalia Belerica*) etc. other treatment includes a healty diet, life style modification (physical activity, exercise), Ayurvedic Formulation (Punarnavadi kashayam, G*okshuradi Guggulu)* and yoga Therapy.

Key word : Diabetic Nephropathy, *Punarnava, Gokshuradi Guggulu*

सारांश:

डायबिटिक नेफ्रोपैथी जिसे मधुमेह अपवक्कृता भी कहा जाता हे, वृक्क की वह बीमारी है, जो मधुमेह के कारण पैदा होती है। वृक्क की खराबी का यह सबसे बड़ा कारण भी है। हालाकि शुरुआत में, डायबिटिक नेफ्रोपैथी का पता नही चल पाता, और जैसे–जैसे इनकी स्थिति बिगडती जाती है, वैसे–वैसे इनके लक्षण आगे आने शुरू होते है जैसे– हाथ–पैर और चेहरे की सुजन, ध्यान लगाने और सोने में परेशानी, अपर्याप्त भूख, मतली, दुर्बलता खुजली और अत्यंत शुष्क त्वचा, उनीदापन, अनियमित धडकन, मांसपेशियों में ऐठन आदि जैसे–जैसे वृक्क अपनी बुरीस्थिति में पहुँचती जाती है उनके कार्य की स्थिति बिगडती जाती है। आयुर्वेद चिकित्सा भारतीय चिकित्सा पद्धति की प्राचीन पद्धति है आयुर्वेद के अनुसार डायबिटिक नेफ्रोपैथी मधुमेह का उपद्रव स्वरूप है, जिसके लक्षण मूत्रवह स्त्रोतस व्याधियों से मिलते जुलते है आयुर्वेद चिकित्सा के द्वारा हम मधुमेह अपवक्कृता के रोगी की जीवन क्षमता बड़ा सकते है। मधुमेह अपवक्कृता की चिकित्सा में उपयोगी आयुर्वेदिक शुष्क द्रव्य जैसे– पुनर्नवा, गोक्षुर, आमलकी, विभितकी, हरीतकी आदि; उपयोगी आयुर्वेदिक योग जैसे–पुनर्नवादि कषाय, गोक्षुरादि गुग्गुलू, आदि आहार–विहार में बदलाव, पथ्य–अपथ्य चिकित्सा ओर योग चिकित्सा आदि के द्वारा हम मधुमेह अपवक्कृता के रोगी की आयु बढ़ा सकते है।

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Literary Review

Ayurvedic Approach For The Management Of The Diabetic Nephropathy

Gupta Payal, Mishra Pramod Kumar, Soni Anamika

Introduction:-

Diabetic nephropathy is a specific form of renal complication of Diabetes Mellitus (DM), a major cause of death and disability among diabetics. It is observed that even the patients having well-controlled diabetes suffer from diabetic nephropathy. Diabetic nephropathy accounts for approximately 14% of all deaths in diabetic patients, and some 25% of those developing diabetes under the age of 30 die from renal failure due to diabetic nephropathy.This is also a major cause of chronic renal failure as it accounts for 20-40% patients of chronic renal failure. Diabetic nephropathy can affect people with both type 1 and type 2 diabetes.Diabetic nephropathy is divided into five stages of deterioration, with the final one being ESRD.It commonly takes over 20 years for patients to reach stage 5.Diabetic nephropathy (nephropatia diabetica), also known as Kimmelstiel-Wilson syndrome, or nodular diabetic glomerulosclerosis and intercapillary glomerulonephritis, is the condition that occurs when diabetes causes the kidneys to lose their ability to function properly. It is characterised by high levels of protein in the blood. High blood sugar caused by diabetes can cause problems in many parts of the body, including the kidneys. Kidneys contain many small blood vessels. With diabetes, these small blood vessels can be injured throughout the body, including the kidneys. When diabetes damages the small blood vessels in the kidneys, this is called diabetic nephropathy. If this occurs, kidney cannot filter the blood properly and this causes the body to retain more water and salt than it should. Also, waste material accumulates in the body. Diabetes can also lead to nerve damage which can be another cause of diabetic nephropathy. It may be difficult to empty the bladder, which can back up and injure or infect the kidneys. Diabetic nephropathy is an important cause of morbidity and mortality, and is now among the most common causes of end-stage renal failure (ESRF) in developed countries. Pathologically, the first changes seen at the time of microalbuminuria are thickening of the glomerular basement membrane and accumulation of matrix material in the mesangium. Subsequently, nodular deposits are characteristic, and glomerulosclerosis worsens (heavy proteinuria develops) until glomeruli are progressively lost and renal function deteriorates. Microalbuminuria is an important indicator of risk of developing diabetic nephropathy (Progressively increasing albuminuria accompanied by hypertension, is much more likely to be due to early diabetic nephropathy The Indian word for diabetes is *madhumeha,* from *madhu,* meaning "sweet/sweetness," and *meha,* meaning excessive urination. Classical Ayurvedic therapy for *madhumeha* (diabetes) begins with an assessment of the dosha imbalance. In all types of *pramehas* (urinary disorders), *kapha* is vitiated, but in *madhumeha, vata* is often aggravated as well. According to the principles of *Ayurveda*, .It can not be exactly Correlated with any specific disease but according to sign and symptoms it can be described as "*Mutravaha SrotasVyadhi"*.

Cardinal clinical feature of the diabetic nephropathy:-

Main symptoms of diabetic nephropathy include an increase in blood pressure (hypertension) and fluid retention in the body. Other complications include arteriosclerosis of the renal artery and proteinuria. Diabetic nephropathy has no symptoms throughout its early course. They develop in late stages and may be a result of excretion of high amounts of protein in the urine or due to renal failure:

1. **edema:** swelling, usually around the eyes in the mornings; later, general body swelling may result, such as swelling of the legs
2. Foamy appearance or excessive frothing of the urine(caused by the proteinuria)

3. Unintentional weight gain (from fluid accumulation)
4. Anorexia (poor appetite)
5. Nausea and Vomiting
6. Malaise (general ill feeling)
7. Fatigue
8. Headache
9. Frequent hiccups
10. Generalized itching.

Risk factors for developing diabetic nephropathy

1. Poor control of blood glucose
2. Long duration of diabetes
3. Presence of other microvascular complications
4. Pre-existing hypertension
5. Family history of diabetic nephropathy
6. Family history of hypertension

Ayurvedic Management of the Diebetic Nephropathy:-

Ayurvedic system of medicine is an ancient Indian system of medicine that uses the inherent power of herbs to help diseases in a natural and healthy way . The Ayurvedic herbs for Diabetic Nephropathy help a person to improve his vitality in a natural way. The herbs help improve the diabetes and the nervous disorders related to diabetes in a natural and healthy way. The person suffering from diabetes improves his strength and the body and blood sugar levels become normal.

1.Recently Advocated & Researched Ayurvedic herbs :

Some of the herbs reported to be effective in diabetic nephropathy are:

(1) Andrographis Paniculata (Family: Acanthaceae; Common name: Kalmegh) :

Chronic administration of A. paniculata to alloxan-induced diabetic rats for four weeks produced significant blood glucose reduction. Chloroform extract significantly inhibited the induction of albuminuria, proteinemia and uremia. The studies clearly indicated a significant anti-diabetic activity with the chloroform extract of A paniculata roots and supports the traditional usage of the plant by Ayurvedic physicians for the control of diabetes. Also the extract is useful in preventing the incidence of long-term complication of diabetic nephropathy [1]

(2) Benincasa cerifera (Family: Cucurbitaceae; Common name: Kusmanda)

Fruits of Benincasa cerifera have free-radical scavenging property . They are widely used as a vegetable in India and other tropical countries. They are also used in urinary infections, epilepsy, peptic ulcer and haemorrhages from internal organs. Benincasa cerifera prevents lipid peroxidation and protects the kidneys from severe increase of reactive oxygen species and depletion of superoxide dismutase and reduced glutathione

(3) Cinnamomum zeylanicum (Family: Lauracaeae; Common name: Dalchini)

The ameliorative effect of the cinnamon oil upon early stage diabetic nephropathy [2]due to its antioxidant and antidiabetic effect has been studied against alloxan (150 mg/kg I.P) induced diabetic nephropathy. Histological studies of the kidney revealed the protective effect of cinnamon oil by reducing the glomerular expansion, eradicating hyaline casts and decreasing the tubular dilatations. The results indicated that the volatile oil from cinnamon contained more than 98% cinnamaldehyde and that it confers dose-dependent significant protection against alloxan induced renal damage. The maximum decrease in fasting blood glucose has been achieved at the dose of 20 mg/kg

(4) Curcuma longa (Family: Zingiberaceae; Common name: Turmeric)

Chronic treatment with Curcumin obtained from Curcuma longa significantly attenuates both renal dysfunction and oxidative stress in streptozotocin induced diabetic rats. The results confirmed evidence of oxidative stress in diabetic nephropathy and point towards the possible anti-oxidative mechanism being responsible for the nephroprotective action of curcumin

(5) Linum usitatissimum (Family: Linaceae; Common name: Common Flax or Linseed)

Dietary protein substitution with flaxseed meal has been shown to reduce proteinuria and glomerular and tubulointerstitial lesions in obese spontaneous hypertensive rats. Flaxseed meal is more effective than soya proteins in reducing proteinuria and renal histologic abnormalities. The reduction in proteinuria and renal injury is independent on the amount of protein intake and glycaemic control (Velasquez et al., 2003).

(6) Terminalia chebula (Family: Combretaceae; Common name: Black Myroblans)

It has anti-oxidant and free radical scavenging properties [4]and mainly used in Ayurveda in the treatment of diabetes, asthma, sorethroat, vomiting, hiccough, diarrhoea, bleeding, piles, gout, heart and bladder diseases. Triphala is a popular traditional medicine containing Terminalia chebula. It has renoprotective effects . Terminalia chebula is widely used as a traditional medicine by diabetic patients in India. Although the fruits are known for their anti-diabetic properties, the whole powder of dried fruits is also being widely used for the control of diabetes. The seed extract has indicated a potent action in short term study and a prolonged duration of anti-diabetic action in long term study and this could be due to multiple sites of action possessed by the active principle. Chloroform extract has shown significant antidiabetic and reno-protective effects.[3]

(7)Glycine max (Family: Fabaceae; Common name: Soyabean)

Soyabean decreases the progression of diabetic nephropathy (Irritani et al., 1997). It prevents morphological destruction of the kidney associated with diabetes mellitus. Soyabean feeding is known to enhance the conversion of polyunsaturated fatty acids to docosahexaenoic acid. Increased production of this complex lipid has been linked to benefit in a variety of inflammatory models and diseases including renal disease (Young et al.,2008). Soyabeans have been shown to reduce urinary albumin excretion and total cholesterol in non-diabetic patients with nephritic syndrome. They may prevent the weight loss and morphological disruption of the kidney associated with diabetes mellitus. A soyabean diet improves serum glucose and insulin levels, as well as insulin sensitivity in diabetes.

Other herbs use in Diebetic Nephropathy:-

*1.**Punarnava(Boerhavia Diffusa),.***

Punarnava is a wonderful Ayurvedic herb with diuretic properties and increases the renal blood flow. It has astringent, bitter, anti-inflammatory and carminative properties. It is an excellent kidney and heart tonic.it act as a rejuvenator and can be used in relieving impaired urinary condition.

2. Gokshura (Tribulus Terrestris):-

Tribulus is a wonderful herb for strength and stamina. It helps improve the immunity which enhances the self esteem and self confidence in men. Tribulus herb for prostate health and power helps improve erectile dysfunction.

3. *Amalaki (Emblica Officinalis)*

The herb is known for its rejuvenating properties. It is a natural antioxidant that removes free radicals from the body and helps in regeneration of cells. Amla helps in increasing the body vitality and strengthening immunity.Amla has aphrodisiac, antipyretic, cardio-tonic, anti-diabetic, cerebral and gastrointestinal properties.

4. *Vibhitaki (Terminalia Belerica)*

A very important herb in the Ayurvedic world, Vibhitaki is famous for its wonderful use in the formation of Triphala. It has numerous health benefits on the human body. Its action on the heart makes it an excellent heart tonic. It helps in purifying blood, thinning of blood, and removing toxins. It is used in cases of low RBC count and low haemoglobin. Vibhitaki helps cases of anemia of any origin and help regain healthy haemoglobin count and form

Ayurvedic Formulation:-

Punarnavadi kashayam, G*okshuradi Guggulu*

Diet and life style modification:-

diet plays an important role in managing the disease. An ideal diet plan not only can maintain

good the nutritional status, but also can slow the disease progression and reduce the incidence of complications. A proper diet plan for diabetic nephropathy is as follows .As diabetic nephropathy patients need to limit the intake of proteins and sugar, to guarantee ample nutritional supplement, the patients should have enough calorie intake. In the intake of calorie, 55~60% is from carbohydrate, 20~25% from fat and 15~20% from proteins

***Yoga* Thearpy:-**

Yoga is an original & ancient holistic art of living that include physical, mental, moral, spiritual spheres. The *Sanskrit* word yoga means to "join or union" and the practice of yoga beings this union to all levels of one's self. The eight limbs of yoga - *Yama, Niyam, Aasana, Pranayama, Pratyahar, Dharana, Dhyana, Samadhi*. The most commonly performed yoga practices are postures (*Aasana)*, controlling breathing *(Pranayama*) & Meditation (*Dhyana*).

(1) Sun Salutation

Sun Salutation is very good exercise for people suffering from diabetes, it increases the blood supply to various parts of body, improving insulin administration in the body, it gives all the benefits of exercise if practiced at 4 rounds per minute. If practiced at slow speed, it offers the benefits of asanas.

(2) *Asanas*

Asanas are beneficial in treatment of diabetes. Important aspect of *Asanas* is stability and comfort experienced in the position. After attaining the position, one needs to relax all the muscles and try to maintain the positions for long. Due to various twists, stretches and strains in the body, the internal organs are stretched and subjected to strain. This increases the blood supply, oxygen supply to the organs increasing the efficiency and functioning of the organ. Stretching various glands result in increased efficiency of the endocrine system. *Asanas* like *Dhanurasana* (Bow pose in prone position), *Ardhamatsyendrasana* (Half spinal twist), *Vajrasana Yoga Mudra, Pavan Muktasana, Sarvangasana, Halasana, Matsyasana* have been found useful in diabetes. These *asanas* have positive effect on pancreas and also insulin functioning. But to get this result, one needs to maintain the *asana* for longer duration while relaxing the muscles.

(3) *Pranayama*

There are 8 types of *Pranayama* mentioned in *Hatha Yoga*. One of the basic preparations for *Pranayama* is *Nadi Shodhan Pranayama* or alternate nostril breathing, this type is found useful in diabetes as Alternate nostril breathing has calming effect on nervous system, which reduces stress levels, helping in diabetes treatment. Also research has shown that *Bhramari* and *Bhasrika Pranayama* help in diabetes. *Bharamari* has calming effect on mind, brain and nervous system. *Bhasrika Pranayama* is revitalizing *Pranayama*, which increases oxygen levels and reduces carbon dioxide levels in the blood. In bhasrika Pranayama, the abdominal muscles and diaphragm are used which puts pressure on the internal organs. But before practicing these *Pranayama*, one must learn and practice deep breathing, fast breathing, alternate nostril breathing, *Bandhas* (*Jalandhar bandha* or chin lock, *moola bandha* and *Uddiyan bandha* or abdominal lock) from expert *Guru*.

(4) Meditation

Practice of meditation is especially useful in management of stress. Relaxed and Concentrated state of mind is the aim of any form of meditation which creates calming effect on nervous system, brings balance between Sympathetic and Parasympathetic nervous systems. Initially meditation may be difficult, and one can practice Omkar Chanting, concentration on breathing. Especially for diabetes, concentration on pancreas during the meditation practice has shown positive effects on sugar levels. One can even visualize the proper functioning of pancreas, proper insulin administration in the body can help in treatment of diabetes.

(5) *Yoga Nidra*

Yoga Nidra is very important process of deep relaxation, it helps alleviate the stress and has very good positive effects on the entire body - mind complex.

Conclusion:-

Dibetic Nephropathy is the condition that

occurs when diabetes causes the kidneys to lose their ability to function properly. It is characterised by high levels of protein in the blood. High blood sugar caused by diabetes can cause problems in many parts of the body, including the kidneys. Classical Ayurvedic therapy for *madhumeha* (diabetes) begins with an assessment of the dosha imbalance. In all types of *pramehas* (urinary disorders), *kapha* is vitiated, but in *madhumeha, vata* is often aggravated as well. According to the principles of *Ayurveda*. It can not be exactly Correlated with any specific disease but according to sign and symptoms it can be described as "*Mutravaha Srotas Vyadhi*. The herbs that can be used or have been used to treat diebetic nephropathy are summarized here like as *Punarnava, Gokkshur, Aamlaki, Vibhitaki* etc. *Ayurvedic* management comprise *Yoga & Pranayama practices, Sattvik* food intake and life style (*sadvritta*). *Ayurvedic* formulations, yoga therapy (*yogasna, pranayama* & meditation) can serve as beneficial management strategies for the treatment of diebetic Nephropathy.

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Literary Review

Traditional Recipes in Sri Lanka for *Madumeha* (Diabetes mellitus): A Literature Survey

*H.G.S.P. Hewageegana, **L.D.A.M. Arawwawala, ***L.S.R. Arambewela

Abstract

Traditional Medicine (also known as folk or indigenous medicine) comprises of knowledge systems that developed over generations within various societies before the era of modern medicine. According to *Ayurveda*, etiological factors, clinical features, and the complications of *'Madhumeha'* are very much similar to Diabetes mellitus. It is a common chronic metabolic disorder prevails all over the world and it has turned out to be, the fastest growing disease and the biggest "silent killer" today. The incidence of Type 2 diabetes is increasing worldwide and it results from the interaction between a genetic predisposition and behavioral and environmental risk factors. Subjects with impaired glucose tolerance have an increased risk of type 2 diabetes. Recipes of the traditional medicinal system contain number of medicinal plants and the traditional practitioners are successfully control type 2 Diabetes mellitus through the herbal recipes. However, documentation of these recipes in a proper manner is still in a preliminary level. Therefore, an attempt has been carried out to collect the common traditional recipes which are used by *Ayurvedic* physicians to control *Madumeha* from Ola leaves, traditional texts and by interviews with traditional practitioners in Sri Lanka. According to the survey, 76 recipes were collected. Among them, medicinal plants such as *Terminelia chebula* Retz., *Philanthus emblica* Linn., *Cyperus rotundus* Linn., *Strychnos potatorum* Linn., *Coscinium fenestratum* Colebr., *Curcuma longa* Linn., *Terminalia belarica* Roxb., *Cassia auriculata* Linn., *Terminalia arjuna* Wight., *Cissampelos pareira* Linn. are found to be used frequently in the treatment of *Madumeha*.

Key words: *Madumeha*, Diabetes mellitus, Traditional recipes, Medicinal plants

सारांश–

आधुनिक चिकित्सा विज्ञान के युग से पूर्व के कई हजार वर्षों पहले ज्ञान की जो पद्धति विकसित थी वह पारम्परिक चिकित्सा पद्धति है। आयुर्वेद के मतानुसार मधुमेह निदान, लक्षण जो संहिताओं में वर्णित किये गये है वे लक्षण डायबिटिज मेलाईटस से साम्य रखते है। यह एक सामान्य चयापचय से संबन्धित जीर्ण व्याधि है जो कि पूरे विश्व में तेजी से बढ़ने वाली तथा सबसे घातक बन गई है। विश्व में टाइप–2 डायबिटिज की घटनाएँ पर्यावर्णीय कारक, व्यवहारिक कारक तथा जीन संबन्धी कारकों से बढ़ रही है। आयुर्वेदिक औषधियों के द्वारा इस व्याधि पर नियन्त्रण किया जा सकता है। परन्तु इन सब का डाटा उचित तरीके से तैयार करने की आवश्यकता है। यहाँ पर उन सभी औषधियों को एकत्रित करने का प्रयास किया गया है जो श्रीलंका में पारम्परिक चिकित्सकों द्वारा उपयोग की जाती है। सर्वे में 76 रेसिपी एकत्रित की गई जिसमें हरीतकी, आमलकी, मुस्कत, कतक, हल्दी, विभीतक, आवर्तकी, अर्जुन, पाठा आदि औषधियाँ मधुमेह में प्रयोग की जाती है।

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Literary Review

Traditional Recipes in Sri Lanka for *Madumeha* (Diabetes mellitus): A Literature Survey

H.G.S.P. Hewageegana, L.D.A.M. Arawwawala, L.S.R. Arambewela

Introduction

Sri Lanka is a middle income country with a population of 20.7 million people[1]. The Diabetes Association of Sri Lanka (DASL statistics reveals that there are nearly 4 million diabetics in Sri Lanka. The prevalence of diabetes in the country had dramatically increased from around 16% in 2009 to 20% in 2014. The diabetes prevalence among the people over 20 years in the urban population was 16% and among the rural population it was 8%. Under the age of 20 years it was 8.2%. According to the World Health Organization (WHO) about 347 million people worldwide had diabetes and it was predicted to become the 7th leading cause of death in the world by the year 2030. In 2012 diabetes was the direct cause of 1.5 million deaths. Overweight and lack of exercise were the main causes of diabetes among children, while family history, food habits and obesity were the main causes among adults[2].

Traditional Medicine (also known as folk or indigenous medicine) comprises of knowledge systems that developed over generations within various societies before the era of modern medicine. According to *Ayurveda*, etiological factors, clinical features, and the complications of '*Madhumeha*' are very much similar to Diabetes mellitus. It is a common chronic metabolic disorder prevails all over the world and it has turned out to be, the fastest growing disease and the biggest "silent killer" today. However, documentation of these recipes in a proper manner is still in a preliminary level. Therefore, an attempt has been carried out to collect the common traditional recipes which are used by *Ayurvedic* physicians to control *Madumeha* from Ola leaves and by interviews with traditional practitioners in Sri Lanka.

Materials and Methods

Recipes were collected from Ola leaves, traditional texts and by interviews with traditional practitioners of Sri Lanka.

Data Collection

According to the results, 76 recipes were collected from Ayurvedic texts and traditional physicians. Among the recipes we found decoctions, pastes powders and juices which recommended for Diabetes mellitus. Most of the decoctions are mixed with bees honey and occasionally mixed with castor oil or powders. Moreover, most of powders and pastes are mixed either with butter milk (Moru) or sesame oil or bees honey. Some examples are as follows:

Table 1. Decoction with bees honey[3]

Plant Name	Family
Phyllanthus emblica Linn	Euphorbiaceae
Tinospora cordifolia Hook. f. & Thoms	Menispermaceae
Decoction with bees honey	

Table 2. Decoction with bees honey[4]

Plant Name	Family
Adhatoda vasica Nees	Acanthaceae
Cassia fistula Linn	Fabaceae
Tinospora cordifolia Hook. f. & Thoms	Menispermaceae

Take 20 g from each and prepare the decoction. Add Thiressavalu (*Ipomea turpethum*) powder, castor oil or bees honey.

Table 3. Powder with bees honey and fresh milk[4]

Plant Name	Family
Cassia auriculata Linn	Leguminosae
Strychnos potatorum Linn	Leguminosae
Terminalia chebula Retz	Combretaceae
Gossypium herbaceum Linn	Malvaceae

Take equal amounts from each and grind properly. Then mix it with bees honey and stir with fresh milk.

Conclusion

Terminalia chebula is the most frequently used medicinal plant among the collected recipes followed by *Phyllanthus emblica* and *Cyperus rotundus*. Bees honey is added in most of the recipes which are prescribed for *"Madumeha"*. Furthermore, some recipes contain 1 medicinal plant and most of the time they are used in powder form and sometimes as fresh juice or in paste form. Most of recipes of polyherbal preparations contain 5 to 8 plants.

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Case Study

Effect Of Classical *Vamanottara Virechana Karma* Followed By Some *Ayurveda* Medicine In The Management Of Psoriasis: A Case Study

*Dr. Nirmal Bhusal, **Dr. Amrita Bhattarai, ***Dr. Gopesh Mangal

Abstract

Psoriasis is a non-infectious, chronic inflammatory disease of the skin, characterized by well-defined erythematous plaques with silvery scales and a chronic fluctuating course. Psoriasis is one of the most common dermatologic diseases affecting up to 1% of the world's population. In *Ayurveda,* Psoriasis cannot be exactly correlated with any type of Kustha but has more similarity with *Ekakushtha*. *Ayurveda* treatment includes *Shodhana* (purification), *Shamana* (palliative medicine), *Nidana Parivarjana* (abstaining from etiology) and *Rasayana* (Rejuvination). A male patient aged 20 years with itching and scaly patches over different parts of body was managed by *Vamanaottara Virechana Karma* (therapeutic Purgation after therapeutic emesis) followed by certain *Ayurvedic Shamana Aushada* (palliative medicine). *Sodhana* administered properly pacifies the disease, destroys the disease and increases the Strength and complexion. Patient had marked improvement (75% relief) in signs and symptoms. There was no itching and scaly patches were reduced. Skin colour of patches were returning to normal. Psoriasis though difficult to manage, but *Vamanottara Virechana Karma* followed by internal medicines can be good option for better management.

Key Words: Psoriasis, *Ayurveda, Vamanaottara Virechana Karma*, *Ekakushtha*.

सारांश–

सोरायसिस एक गैर–संक्रामक, त्वचा की पुरानी सूजन संबंधी बीमारी है। सोरायसिस दुनिया की आबादी के 1 प्रतिशत तक प्रभावित करने वाला आम त्वचा रोगों में से एक है। आयुर्वेद में, सोरायसिस एक कुष्ठ से सम्बंधित हो सकता है। आयुर्वेद उपचार में शुद्धिकरण, उपशामक चिकित्सा, निदान परिवर्जन और रसायन शामिल हैं। आयुर्वेदिक शमन औषध द्वारा 20 वर्ष की आयु के एक पुरुष रोगी को शरीर के विभिन्न हिस्सों में हुई खुजली और स्केल पैच को वमनोत्तर विरेचन कर्म द्वारा ठीक किया गया था। रोगी के संकेतों और लक्षणों में सुधार (75 प्रतिशत राहत) आया था। कोई खुजली नहीं थी और स्केल पैच कम हो गए थे। त्वचा का रंग सामान्य में लौट रहा था। सोरायसिस हालांकि प्रबंधन करना मुश्किल है, लेकिन वमनोत्तर विरेचना कर्म लिए अच्छा विकल्प हो सकता है।

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Case Study

Effect Of Classical *Vamanottara Virechana Karma* Followed By Some *Ayurveda* Medicine In The Management Of Psoriasis: A Case Study

Dr. Nirmal Bhusal, Dr. Amrita Bhattarai, Dr. Gopesh Mangal

Introduction

Psoriasis is a non-infectious, chronic inflammatory disease of the skin, characterized by well-defined erythematous plaques with silvery scales and a chronic fluctuating course[1]. Psoriasis is one of the most common dermatologic diseases affecting up to 1% of the world's population[2]. Psoriasis still stands as a challenge to different medical systems. Hence it is the need of time to find out safe and effective treatment for Psoriasis. In *Ayurveda,* Psoriasis cannot be exactly correlated with any type of *Kustha* but has more similarity with *Ekakushtha*[3]. *Ayurveda* treatment includes *Shodhana* (purification), *Shamana* (palliative medicine), *Nidana Parivarjana* (abstaining from etiology) and *Rasayana* (Rejuvination). Due to *Sodhana* (bio-purification) vitiated *Dosha* are eliminated, the power of digestion and metabolism is enhanced, diseases are cured, normal health is restored, sense organs, mind, intelligence and complexion become clear, and person is not affected by old age and lives long without any disease[4]. If *Sodhana* is administered properly it pacifies the disease, destroys the disease and increases the *Bala* and *Varna*[5]. *Vamana* is considered the best line of treatment for *Kaphaja* disorders[6]. *Virecana Karma* is mentioned as a *shodhana* in *Dushti* of *Rasa, Rakta, Mamsa, Asthi, Majja* and *Shukra Dhatu*[7]. Drug administration after taking the proper course of *Shodhana* provides additional relief and thus helps in management of the Psoriasis.

Patient Information

A male patient aged 20 years came to the *Panchakarma* OPD at National Institute of *Ayurveda* Jaipur, India with complaint of Silvery Scaly Patches and Itching at different parts of the body. As per patient, he was asymptomatic before 20 months and then he developed Itching and scaling over elbow and gradually the itching and scaly patches appeared over limbs and trunk. Patient did not get proper relief in last 20 months from different Allopathic treatments so came for *Ayurveda* Treatment. No history of any addiction was found. No personal and family history of any major systemic illness was present. Stress regarding the disease was present.

Clinical Findings

On physical examinations patient was found afebrile with Blood pressure - 110/70 mm of Hg, Pulse rate - 72/minute, R.R. - 20/minute. On Systemic examination no abnormality was found in respiratory, cardiovascular and central nervous system activity. On skin examination lesions were visible rough silvery shiny and different shaped patches with well demarcated borders and Auspitz Sign was positive. The patient was *Pitta Kapha prakruti,* having *Madyam Koshtha* and *Madyam Bala. Rasavaha, Raktavaha, Medovaha, Purishavaha* and *Swedovaha Srotodushti Lakshanas* were observed.

Therapeutic Intervention

Patient was admitted having I.P.D. NO.1180. Patient was treated with Classical *Vamanattora Virechana Karma* followed by certain *Ayurveda* medicines and *Pathya Aahar*.

Vamana Karma

Pre- Procedure: *Deepana Pachana* done with *Panchakola Churna* 3gm twice a day with lukewarm water for 3 days till *Samyak Niram Lakshanas.* Administration of *Shodhananga Snehapana* was done with *Mahatikta Ghrita*[8] (Medicated ghee) on the escalating dose upto *Samyak Snigdhata Lakshanas* in the dose of 30, 60, 90,120 and 150 ml for 5 days everyday at 7 am in the morning. Patient was advised to strictly follow regimens advised on *Snehapana* (internal oleation).

Samyak Snigdhata Lakshanas (signs of proper oleation) were observed and then *Sarvanga Abhyanga* (whole body *Ayurveda massage*) with *Dashamula Taila (Dashamula* medicated oil) and *Baspa Swedana* (Steam sudation) with *Dasamula* decoction was done on next day morning empty stomach at 9 am. *Kaphautkleshakara* food was given for diet in the evening.

Procedure: Traditional *Vamak yoga (*combination of with *Madanphala churna 6g, Vacha 1g, Saindhav* 2g and *Honey* 20ml) *was used. Vamanopaga Kashaya – Yastimadhu, Milk, lavanodaka* were used. Observations for *Samyak Suddhi Lakshanas* (signs of proper purification) were made. 7 *Vegas* with *Pittaantaki Madyam Suddhi* was observed. Patient was Haemodynamically stable within the procedure and no sign of dehydration was observed after *Vamana*.

Post-procedure: *Classical Samsarjana Krama Peyadi Krama* (sequence) *with 2 Annakala* was adviced for 5 days. On 6,7,8 th day after *Vamana* normal diet was adviced. Again from 9th day of *Vamana Snehapana* started for *Virechana*.

Virechana karma

Pre- Procedure: *Mahatikta Ghrita* was administered upto *Samyak Snigdhata Lakshanas* in the escalating dose of 50, 100, and 150 for 3 days everyday at 7 am in the morning. Patient was advised to strictly follow regimens advised on *Snehapana* (internal oleation). *Samyak Snigdhata Lakshanas* (signs of proper oleation) were observed and then *Sarvanga Abhyanga* (whole body Ayurvedic massage) with *Dashamula Taila (Dashamula* medicated oil) and *Baspa Swedana* (Steam sudation) with *Dasamula* decotion was done for next 3 days.

Procedure: *Virechana* with *Abhyadi Modak*[9] *4tab (1020 mg)* was given with normal tape water at 9:20 am and Observations for *Samyak Suddhi Lakshanas* (signs of proper purification) was done. The first *Vega* (bowel movement) came at 12:00 in the afternoon and subsequently 25 *Vegas* with *Kaphaantaki Madyam Suddhi* was observed. Patient was Haemodynamically stable during the procedure and no sign of dehydration was observed.

Post- Procedure: *Classical Samsarjana Krama Peyadi Krama* (sequence) *with 2 Annakala* was adviced for 5 days.

Internal Medicine: *Kaishor Gugullu* 500mg 2 Times a day, *Manjistha (Rubia cordifolia) churna* 2 gms, *Guduchi Satwa (Tinospora cordyfolia*) 500mg and *Suddha Gandhaka* 250mg 2 times a day with water, and *Pathya Aahar* (dietetic regimen) were prescribed after *Samsarjana Krama*.

Follow Up & Outcomes

Till time of discharge on 16/05 Patient had mild relief in scaling and moderate relief in itching and burning sensation. Complete relief in *Kandu* was found after *Vamana Karma*, marked relief in *Matsyasklopama, Mahavastu* and *Rukshata*. Patient had no any *Vyapads* (complications) during full course of *Virechana Karma*. On follow up after 15 days he had marked improvement (75% relief) in symptoms. Same improved status sustained and no symptoms aggravated even after 30 days follow up. There was no itching and burning sensation. Scaly Patches were reduced. Skin colour of patches was returning to normal. Patient was very happy and satisfied with the management. **(Photo image 1-8)**

Discussion

Eka-kustha is a *Vata- Kapha Pradhana*[10] *Tridosaja Vyadhi*. Repeated *Shodhana karma* is indicated in *Kustha* due to involvement of *Bahu Dosha*. *Pitta Dosha* and *Rakta Dhatu* have *Ashraya-Ashryi bhava*[11] (inter-relationship), hence treatment modality of *Pitta Dosha* and *Rakta Dhatu are* complimenting to each other. Considering the status of *Dosha Dushya, Agni, Samprapti Vaishistyata* and *Vyadhi Lakshana,* classical *Vamanottara Virechana Karma* was administered in the present clinical study. Due to *Ushna* and *Laghu Guna* (hot and light property) of *Panchakola Churna* used for *Deepana* and *Pachana* it helped in reducing the *Aam Dosha* and increasing *Agni*. There after pure *Mahatikta Ghrita* was given for the *Snehapana*. *Snehpana* reduced the *Daha* (burning sensation*),* lubricated the body and thus reduced dryness over the scales. *Sarvanga Sweda* done removed obstruction in *Srotas* and helped to bring *Doshas* from *Sakha* to *Koshtha* by *Srotoshodhaka* (purification of channels) process and by the help of *Sodhana* - both *Vamana and Virechana Karma Dosha* are eliminated. Being

Case Study

Dermatomyositis: A combined approach by *Panchakarma* (A case study)

Dr. Pushpa Sharma

Abstract

The inflammatory myopathies represent the largest group of acquired and potentially treatable causes of skeletal muscle weakness. They are classified into three major groups: polymyositis (PM), dermatomyositis (DM), and inclusion body myositis (IBM). Dermatomyositis is a rare disease with no cure. Allopathic treatment given for muscle weakness doesn't assure the patient, despite put the patient in trouble with unavoidable side effects. Such type of a disappointed case was treated by *Panchakarma*. Results were encouraging with improving quality of life of the patient.

Key words: Dermatomyositis, polymyositis, *Abhyanga, Yapana Basti*, SSPS, *Panchakarma*

सारांश–

इन्फ्लेमेटरी मायोपैथीज, स्केलेटल मसल वीकनेस के सबसे बड़े वर्ग को दर्शाता है। इन्हें मुख्य रुप से तीन वर्ग में विभाजित किया जाता है– पालीमायोपैथीज, डर्मेटोमायोसायटीज व इन्क्लूजन बाडी मायोसायटीज। डर्मेटोमायोसायटीज एक दुर्लभ रोग है, जिसका इलाज पूर्णरुपेण उपलब्ध नहीं है। एलोपैथिक उपचार रोगी को आश्वस्त नहीं करता, अपितु अपरिहार्य दुष्प्रभावों से रोगी की कठिनाई को बढ़ा देते हैं। इसी प्रकार की एक निराशाजनक अवस्था का पंचकर्म से उपचार का प्रयास किया गया। परिणाम उत्साहवर्धक रहा और रोगी के जीवन की गुणवत्ता बढ़ाने में सहायक सिद्ध हुआ।

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Case Study

Dermatomyositis: A combined approach by *Panchakarma* (A case study)

Dr. Pushpa Sharma

Introduction

Dermatomyositis is an idiopathic disorder that includes an inflammatory myopathy and characteristic skin manifestations; polymyositis includes the inflammatory myopathy without the cutaneous findings. The etiology of dermatomyositis remains unknown; some studies have reported an association with histocompatability antigens, environmental agents (e.g., virus, drugs) and autoimmunity[1]. The average age at diagnosis is 40, and almost twice as many women are affected as men[2]. The average age of onset in juvenile dermatomyositis is between five and 14 years. This subgroup of patients has a better prognosis than adult patients.

Classification of Dermatomyositis[2, 6-8]

1. Without muscle weakness (amyopathic dermatomyositis or dermatomyositis sine myositis)
2. With muscle weakness

   a) Adult

   - Associated with cancer
   - Not associated with cancer

   b) Pediatric - Classification Criteria for Polymyositis and Dermatomyositis*[9]

1. Skin lesions

Heliotrope: red-purple edematous erythema on the upper palpebra Gottron's sign: red-purple keratotic, atrophic erythema or macules on the extensor surface of finger joints

Erythema on the extensor surface of extremity joints, slight raised red-purple erythema over elbows or knees

2. Proximal muscle weakness (upper or lower extremity and trunk)
3. Elevated serum creatine kinase or aldolase level
4. Muscle pain on grasping or spontaneous pain
5. Myogenic changes on electromyography (short-duration, polyphasic motor unit potentials with spontaneous fibrillation potentials)
6. Positive anti-Jo-1 antibody test (histidyl-tRNA synthetase)
7. Nondestructive arthritis or arthralgias
8. Systemic inflammatory signs (temperature: more than 37°C [98.6°F] at axilla, elevated serum C-reactive protein level or accelerated erythrocyte sedimentation rate of more than 20 mm per hour by Westergren)
9. Pathologic findings compatible with inflammatory myositis (inflammatory infiltration of skeletal evidence of active regeneration may be seen)

**—Patients presenting with at least one finding from item 1 and four findings from items 2 through 9 are said to have dermatomyositis (sensitivity, 94.1 percent [127/135] and specificity of skin lesions against systemic lupus erythema and systemic sclerosis, 90.3 percent [214/237]).*

Differential Diagnosis of Dermatomyositis

- HIV infection (at onset of immunodeficiency)
- Lichen planus
- Polymorphous light eruption
- Seborrheic dermatitis
- Systemic lupus erythematosus
- Psoriasis
- Contact dermatitis
- Atopic dermatitis
- Trichinosis (caused by periorbital swelling and edema)
- Alcohol
- Drug effects*

Penicillamine, nonsteroidal anti-inflammatory agents (nifluric acid and phenylbutazone), hydroxyurea (Hydrea), pravastatin (Pravachol), clofibrate (Atromid-S) and ipecac

Table 1 - Cutaneous Manifestations of Dermatomyositis[1,3,8,10-12,13-15]

Pathognomonic manifestations	Characteristic manifestations	Less common manifestations	Rare manifestations
Gottron's papules: violaceous erythematous papules overlying the dorsal interphalangeal or metacarpophalangeal, elbow or knee joints Gottron's sign: symmetric, nonscaling, violaceous erythematous macules or plaques, often atrophic, in the same distribution as Gottron's papules	Shawl sign/ V-sign Heliotrope Periungual telangiectasias Mechanic's hand **Compatible manifestations** Poikiloderma atrophicans vasculare Calcinosis cutis	Facial swelling Malignancy Erythroderma Lichen planus Cutaneous vasculitis Panniculitis	Follicular hyperkeratosis Papular mucinosis Hypertrichosis Malignant erythema Urticaria/urticarial vasculitis Partial lipodystrophy Malignant atrophic papulosis (Degos' disease) Zebra-like striping Vulvar/scrotal involvement

Systemic Manifestations and Complications of Dermatomyositis[16-21, 8, 22, 23]

Systemic manifestations

- Common: proximal muscle weakness, dysphonia, dysphagia
- Less common: respiratory muscle weakness, visual changes, abdominal pain

Systemic complications/associations

- Cardiomyopathy
- Cardiac conduction defects
- Aspiration pneumonia secondary to respiratory muscle weakness
- Diffuse interstitial pneumonitis/fibrosis
- Large-bowel infarction secondary to vasculopathy has occurred in juvenile patients with myositis
- Muscle atrophy
- Muscle calcification
- Ocular complications including iritis, nystagmus, cotton-wool spots, optic atrophy, conjunctival edema and pseudopolyposis
- Internal malignancy

Laboratory Manifestations of Dermatomyositis

- Muscle enzyme elevation
  Serum aldolase, ALT, LDH, CPK,* AST, carbonic anhydrase isoenzyme III†
- Autoantibodies

ANA levels: elevated in 60 to 80 percent of patients with classic DM/PM

Antisynthetase antibodies

Jo-1: most common antisynthetase found; 20 percent of patients with DM may have positive result

Anti-EJ: may be more associated with typical skin lesions

SRP: occurring in 5 percent of patients, associated with polymyositis, acute-onset, severe, treatment-resistant forms of classic DM/PM with cardiac involvement

Mi-2 antibodies (a nuclear protein complex): occurring in 15 to 20 percent of patients with classic DM, associated with a more treatment-responsive form, shawl sign and prominent cuticular changes

Anti-PM-Scl antibodies: associated with overlap of scleroderma and DM/PM

Anti-Ku antibodies: associated with overlap of scleroderma or SLE with DM

- ESR: elevated in approximately 50 percent of patients, does not correlate well with disease activity
- Rheumatoid factor: elevated in 20 percent of patients, most often in those with overlap syndromes
- Neopterin and factor VIII–related antigen (von Willebrand factor): reported to correlate with juvenile DM
- EMG: myopathic pattern, 10 percent are false-negative

CPK = creatinine phosphokinase; AST = aspartate aminotransferase; ALT=alanine aminotransferase;

LDH = lactic dehydrogenase; ANA = antinuclear antibody; DM = dermatomyositis;

PM = polymyositis; SRP = signal recognition particle; SLE = systemic lupus erythematosus;

ESR = erythrocyte sedimentation rate; EMG= electromyography.

*—Used to follow course of disease.

†—*More sensitive but not widely available.*

Management

Table 2

S. No.	Treatment modalities	Side effects
1.	Oral prednisone	Gastrointestinal symptoms, adrenal suppression, immunosuppression, avascular necrosis, osteoporosis
2.	Methotrexate (Rheumatrex)	Stomatitis, hepatic fibrosis, cirrhosis, nausea, abdominal pain, neutropenia, hrombocytopenia, pruritus, fever, pneumonitis, and gastrointestinal symptoms
3.	Azathioprine (Imuran)	Lymphoma, nausea, vomiting, hepatotoxicity, leukopenia, oral ulcers, thrombocytopenia
4.	Cyclophosphamide (Cytoxan)	Increased risk for malignancy, leukopenia, thrombocytopenia, hemorrhagic cystitis, anorexia, nausea, vomiting, alopecia, sterility, congestive heart failure and stomatitis
5.	Cyclosporine (Sandimmune)	Impairs T-cell proliferation; nephrotoxicity, lymphoma, hypertension, hypertrichosis, gingival hyperplasia, hepatotoxicity, paresthesias, fatigue, hyperesthesias, depression and seizures
6.	Hydroxychloroquine	Myopathy, differentiated by biopsy; hematologic toxicity, hepatotoxicity, antimalarial retinopathy, dizziness, ataxia and weight loss
7.	Intravenous immunoglobulin	Pancytopenia, death, lymphoma
8.	Total body irradiation	Pancytopenia, death, lymphoma
9.	Topical steroids	-
10.	Physical therapy	-
11.	Sun avoidance	-
12.	Antihistamines	-
13.	Thymectomy and plasmapheresis	-

Case study - A 43 years old female patient residing in urban area visited the Panchakarma OPD in CBPACS, New Delhi in July 2011. This was a known case of Dermatomyositis and patient was already taking treatment from Skin OPD of AIIMS, New Delhi since 1year. Patient was suffering from related problems since last 3 years. Patient remained undiagnosed for 2 years and took treatment from many specialist doctors time to time. At the time of coming to OPD (no.91405) patient was complaining of severe weakness of proximal muscles of both upper and lower limbs with discoloration of face, neck and other exposed parts. She was unable to get up from sitting position. Swelling on eyelids and erythema on dorsae of hands was also present. She was also developing osteoporosis. The treatment provided in AIIMS was as following:

1. Daxona Pulse therapy for 3 days in a month since 6 months
2. Tab Wysolone 20 mg OD
3. Tab Folitrax 7.5 mg/ week
   Tab Folvite 5 mg/ week
4. Tab Cobadex forte 1 cap OD
5. Tab Shelcal 500 mg BD
6. Tab Depin-R ½ tab BD
7. Syp Potchlor 3 tsf TDS

Patient also had cholelithiasis (2.5 cm) and advised surgery for that but couldn't plan for that due to excessive weakness. Patient was unable to tolerate pulse therapy as she used to get bed ridden for 1 week after pulse therapy. SGOT & SGPT were raised due to side effects of medicines. Patient was feeling gastric discomfort and loss of appetite. So patient was willing for a side effect free treatment modality. Considering all these facts patient was admitted for Panchakarma therapy. Patient was advised to continue her allopathic treatment as prescribed.

1st sitting – 13.7.2011 to 26.7.2011, 2nd sitting (OPD/IPD-107325/30160) – 4.11.2011 to 19.11.2011, 3rd sitting - 22.9.2012 to 7.10.2012

Table 3

Oral Medicines	Panchakarma Management
1. Kaishore guggulu 500 mg twice a day with honey	1. Abhyanga with Ksheerabala Tail
2. Arogyavardhini vati 250 mg twice a day with water	2. Shashtik Shali Pinda Swedan daily
3. Tab Liv 52 500 mg twice a day with water	3. Mustadi Yapana Basti daily for 15 days
4. Ashwagandha Ch 2gm Shatavari Ch 2gm Muktashukti Bh. 250 mg With milk twice a day	
5. Manjishthadi Ch for Local application on affected areas	

Result - Table 4

Date	CPK (U/L)	SGOT (IU/L)	SGPT (IU/L)	Na (mmol/L)	K (mmol/L)
31.3.2011	630	54	42	137.4	3.7
28.4.2011	873	90	74	N.A.	N.A.
26.5.2011	1236	69	84	144	4.1
29.6.2011	598	44	78	132	2.7
22.9.2011	30	40	51	139	3.5
23.12.2011	40	38	40	134	3.4
29.8.2012	756	56	62	132	2.8

Table 5

S.No.	Sign/ Stymptoms	Before	Treatment
1.	Ability to lift both arms above head	Absent	Present
2.	Ability to get up from sitting position on the floor	Absent	Present
3.	Heliotrope with periorbital edema	Present	Absent
4.	Poikilodermatous macules in a "shawl" distribution over the shoulder, arms and upper back.	Present	Disappear
5.	Periungual telangiectasias	Present	Absent
6.	Gottron's sign: overlying the dorsal interphalangeal joints and sparing the interphalangeal spaces	Present	Absent

Discussion

Dermatomyositis is a rare disorder with a prevalence of one to 10 cases per million in adults and one to 3.2 cases per million in children, early recognition and treatment are important ways to decrease the morbidity of systemic complications. An association with other connective tissue disorders (overlap syndrome) and malignancy make this diagnosis particularly important to primary care physicians. Patient management includes careful evaluation for underlying malignancy and liberal use of physical therapy, antihistamines, sunscreen and oral corticosteroids. Poor prognostic indicators include poorly responsive disease, delay in diagnosis and the presence of malignancy. The therapeutic goal is to maintain function and prevent or minimize sequelae[24].

Thev *Ayurvedic* treatment provided to the patient, was helpful in improving liver functions which resulted in to decrease level of SGOT & SGPT which kept on increasing earlier. Panchakarma therapy could improve muscle strength and was helpful to support Patient's immune system; as a result patient was able to tolerate the pulse therapy given by skin specialist in AIIMS. She also underwent cholecystectomy for cholelithiasis as she was not feeling excessive weakness as before (That's why patient couldn't continue *Panchakarma* therapy after 2nd sitting. Patient was not responding to the best allopathic treatment at all, but with combined therapy of *Ayurveda*, she responded well to the treatment. The CPK level which was not reducing even after increasing dose of steroids, started coming down because of SSPS. Oral medicines along with local application of *manjishthadi choorna* helped in improving skin element of the disease. Observing the response, dose and duration of Pulse therapy was tapered down and stopped by dermatologist. But as the patient discontinued *Ayurvedic* treatment for cholecystectomy, her problems started aggravating again with allopathic treatment which were resolved with 2 sittings of *Panchakarma* again (22.9.2012). It could improve quality of the life of the patient. Muscle Biopsy of the patient never showed any malignancy till 1year of follow up. The consultants of AIIMS were also satisfied with results as this case was under research for them. This is only single case study which was carried out due to patient's trust in *Ayurveda*. We need more collaborative experimental and clinical studies to establish combined therapy for dermatomyositis as results in this case were very much encouraging.

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Identifying details should be omitted if they are not essential. Complete anonymity is difficult to achieve, however, and informed consent should be obtained if there is any doubt. For example, masking the eye region in photographs of patients is inadequate protection of anonymity.

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II.E.2. Authors and Reviewers

Manuscripts will be reviewed with due respect for authors' confidentiality. Confidentiality may have to be breached if dishonesty or fraud is alleged but otherwise will be honored.

Information about manuscripts (including their receipt, content, status in the reviewing process, criticism by reviewers, or ultimate fate) will not be disclosed to anyone other than the authors and reviewers. This includes requests to use the materials for legal proceedings.

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When reporting experiments on human subjects, authors should indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. If doubt exists whether the research was conducted in accordance with the Helsinki Declaration, the authors must explain the rationale for their approach, and demonstrate that the institutional review body explicitly approved the doubtful aspects of the study. When reporting experiments on animals, authors should be asked to indicate whether the institutional and national guide for the care and use of laboratory animals was followed.

III. Publishing and Editorial Issues Related to Publication in Biomedical Journals

III.A. Obligation to Publish Negative Studies

Editors will consider seriously for publication any carefully done study of an important question, relevant to readers, whether the results are negative (that is, convincingly allow the null hypothesis to be accepted) or positive (that is, allow the null hypothesis to be rejected).

III.B. Corrections, Retractions and "Expressions of Concern"

Editors assume initially that authors are reporting work based on honest observations. Nevertheless, two types of difficulty may arise.

First, errors may be noted in published articles that require the publication of a correction or erratum of part of the work. The corrections will appear on a numbered page, be listed in the contents page, include the complete original citation, and link to the original article and vice versa online. It is conceivable that an error could be so serious as to vitiate the entire body of the work, but this is unlikely and will be handled by editors and authors

on an individual basis. Such an error should not be confused with inadequacies exposed by the emergence of new scientific information in the normal course of research. The latter requires no corrections or withdrawals.

The second type of difficulty is scientific fraud. If substantial doubts arise about the honesty or integrity of work, either submitted or published, it is the editor's responsibility to ensure that the question is appropriately pursued, usually by the authors' sponsoring institution. However, it is not ordinarily the task of editors to conduct a full investigation or to make a determination; that responsibility lies with the institution where the work was done or with the funding agency. The editor should be promptly informed of the final decision, and if a fraudulent paper has been published, the journal will print a retraction. If this method of investigation does not result in a satisfactory conclusion, the editor may choose to conduct own investigation. As an alternative to retraction, the editor may choose to publish an expression of concern about aspects of the conduct or integrity of the work.

The retraction or expression of concern, so labeled, will appear on a numbered page in a prominent section of the print journal as well as in the online version, be listed in the contents page, and included in its heading the title of the original article. It will not simply be a letter to the editor. Ideally, the first author will be the same in the retraction as in the article, although under certain circumstances the editor may accept retractions by other responsible persons. The text of the retraction should explain why the article is being retracted and include a full original citation reference to it.

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III.D.1. Duplicate Submission

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Redundant (or duplicate) publication is publication of a paper that overlaps substantially with one already published in print or electronic media.

Readers of primary source periodicals, whether print or electronic, deserve to be able to trust that what they are reading is original unless there is a clear statement that the article is being republished by the choice of the author and editor. The bases of this position are international copyright laws, ethical conduct, and cost-effective use of resources. Duplicate publication of original research is particularly problematic, since it can result in inadvertent double counting or inappropriate weighting of the results of a single study, which distorts the available evidence.

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Certain types of articles, such as guidelines produced by governmental agencies and professional organizations, may need to reach the widest possible audience. In such instances, editors will choose to publish material that is also being published in other journals. Secondary publication for various other reasons, in the same or another language, especially in other countries and/or states, is justifiable, and can be beneficial, provided all of the following conditions are met.

1. The authors have received approval from the editors of both journals; the editor concerned with secondary publication must have a photocopy, reprint, or manuscript of the primary version.
2. The priority of the primary publication is respected by a publication interval of at least one week.
3. The paper for secondary publication is intended for a different group of readers; an abbreviated version could be sufficient.
4. The secondary version faithfully reflects the data and interpretations of the primary version.
5. The footnote on the title page of the secondary version informs readers, peers, and documenting agencies that the paper has been published in whole or in part and states the primary reference. A suitable footnote might read: "This article is based on a study first reported in the [title of journal, with full reference]."

   Permission for such secondary publication should be free of charge.
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III.D.4. Competing Manuscripts Based on the Same Study

Two kinds of competing submissions will be considered: submissions by coworkers who disagree on the analysis and interpretation of their study, and submissions by coworkers who disagree on what the facts are and which data should be reported.

Setting aside the unresolved question of ownership of the data, the following general observations may help editors and others dealing with these problems.

III. D.4.a. Differences in Analysis or Interpretation

If the dispute centers on the analysis or interpretation of data, the authors should submit a manuscript that clearly presents both versions. The difference of opinion should be explained in a cover letter. The normal process of peer and editorial review of the manuscript may help the authors to resolve their disagreement regarding analysis or interpretation.

If the dispute cannot be resolved and the study merits publication, both versions will be published. Options include publishing two papers on the same study, or a single paper with two analyses or interpretations. In such cases it would be appropriate for the editor to publish a statement outlining the disagreement and the journal's involvement in attempts to resolve it.

III.D.4. b. Differences in Reported Methods or Results

If the dispute centers on differing opinions of what was actually done or observed during the study, the journal editor will refuse publication until the disagreement is resolved. Peer review cannot be expected to resolve such problems. If there are allegations of dishonesty or fraud, editors will inform the appropriate authorities; authors will be notified of editor's intention to report a suspicion of research misconduct.

III.D.5. Competing Manuscripts Based on the Same Database

Editors may sometimes receive manuscripts from separate research groups that have analyzed the same data set, e.g., from a public database. The manuscripts may differ in their analytic methods, conclusions, or both. Each manuscript will be considered separately. Where interpretations of the same data are very similar, it is reasonable but not necessary for editors to give preference to the manuscript that was received earlier. However, editorial consideration of multiple submissions may be justified in this circumstance, and there may even be a good reason for publishing more than one manuscript because different analytical approaches may be complementary and equally valid.

III.E. Correspondence

As a mechanism for submitting comments, questions, or criticisms about published articles, as well as brief reports and commentary unrelated to previously published articles. This will likely, but not necessarily, take the form of a correspondence section or column. The authors of articles discussed in correspondence should be given an opportunity to respond, preferably in the same issue in which the original correspondence appears. Authors of correspondence will be asked to declare any competing or conflicting interests.

Published correspondence may be edited for length, grammatical correctness, and journal style.

Although editors have the prerogative to sift out correspondence material that is irrelevant, uninteresting, or lacking in cogency, they have a responsibility to allow a range of opinion to be expressed. The correspondence column will not be used merely to promote the journal's, or the editors', point of view. In all instances, editors will make an effort to screen out discourteous, inaccurate, or libelous statements.

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IV. Manuscript Preparation and Submission

IV.A. Preparing a Manuscript for Submission

Editors and reviewers spend many hours reading manuscripts, and therefore appreciate receiving with manuscripts that are easy to read and edit. Much of the information in journals' instructions to authors is designed to accomplish that goal in ways that meet each journal's particular editorial needs. The guidance that follows provides a general background and rationale for preparing manuscripts for any journal.

IV.A.1.a. General Principles

The text of observational and experimental articles is usually (but not necessarily) divided into sections with the headings Introduction, Methods, Results, and Discussion. This so-called "IMRAD" structure is not simply an arbitrary publication format, but rather a direct reflection of the process of scientific discovery. Long articles may need subheadings within some sections (especially the Results and Discussion sections) to clarify their content. Other types of articles, such as case reports, reviews, and editorials, are likely to need other formats.

Publication in electronic formats has created opportunities for adding details or whole sections in the electronic version only, layering information, cross-linking or extracting portions of articles, and the like. Authors need to work closely with editors in developing or using such new publication formats and should submit material for potential supplementary electronic formats for peer review.

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During the editorial process reviewers and editors frequently need to refer to specific portions of the manuscript, which is difficult unless the pages are numbered. Authors should therefore number all of the pages of the manuscript consecutively, beginning with the title page.

IV.A.1.b. Reporting Guidelines for Specific Study Designs

Research reports frequently omit important information. The general requirements listed in the next section relate to reporting essential elements for all study designs. Authors are encouraged in addition to consult reporting guidelines relevant to their specific research design. For reports of randomized controlled trials authors should refer to the CONSORT statement. This guideline provides a set of recommendations comprising a list of items to report and a patient flow diagram.

IV.A.2. Title Page

The title page should carry the following information:

1. The title of the article. Concise titles are easier to read than long, convoluted ones. Titles that are too short may, however, lack important information, such as study design (which is particularly important in identifying randomized controlled trials). Authors should include all information in the title that will make electronic retrieval of the article both sensitive and specific.
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To prevent the information on potential conflict of interest for authors from being overlooked or misplaced, it is necessary for that information to be part of the manuscript. It should therefore also be included on a separate page or pages immediately following the title page.

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An abstract should follow the title page. The abstract should provide the context or background for the study and should state the study's purposes, basic procedures (selection of study subjects or laboratory animals, observational and analytical methods), main findings (giving specific effect sizes and their statistical significance, if possible), and principal conclusions. It should emphasize new and important aspects of the study or observations.

Because abstracts are the only substantive portion of the article indexed in electronic database and the only portion many readers read, authors need to be careful that abstracts reflect the content of the article accurately.

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IV.A.5. Introduction

Provide a context or background for the study (i.e., the nature of the problem and its significance). State the specific purpose or research objective of, or hypothesis tested by, the study or observation; the research objective is often more sharply focused when stated as a question. Both the main and secondary objectives should be made clear, and any pre-specified subgroup analyses should be described. Give only strictly pertinent references and do not include data or conclusions from the work being reported.

IV.A.6. Methods

The Methods section should include only information that was available at the time the plan or protocol for the study was written; all information obtained during the conduct of the study belongs in the Results section.

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Describe your selection of the observational or experimental participants (patients or laboratory animals, including controls) clearly, including eligibility and exclusion criteria and a description of the source population. Because the relevance of such variables as age and sex to the object of research is not always clear, authors should explain their use when they are included in a study report; for example, authors should explain why only subjects of certain ages were included or why women were excluded. The guiding principle should be clarity about how and why a study was done in a particular way. When authors use variables such as race or ethnicity, they should define how they measured the variables and justify their relevance.

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Identify the methods, apparatus (give the manufacturer's name and address in parentheses), and procedures in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods see below; provide references and brief descriptions for methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate

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Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to verify the reported results. When possible, quantify findings and present them with appropriate indicators of measurement error or uncertainty (such as confidence intervals). References for the design of the study and statistical methods should be to standard works when possible (with pages stated). Define statistical terms, abbreviations, and most symbols. Specify the computer software used.

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Present your results in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations. Extra or supplementary materials and technical detail can be placed in an appendix where it will be accessible but will not interrupt the flow of the text; alternatively, it can be published only in the electronic version of the journal.

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Where scientifically appropriate, analyses of the data by variables such as age and sex should be included.

IV.A.8. Discussion

Emphasize the new and important aspects of the study and the conclusions that follow from them. Do not repeat in detail data or other material given in the Introduction or the Results section. For experimental studies it is useful to begin the discussion by summarizing briefly the main findings, then explore possible mechanisms or explanations for these findings, compare and contrast the results with other relevant studies, state the limitations of the study, and explore the implications of the findings for future research and for clinical practice.

Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not adequately supported by the data. In particular, authors should avoid making statements on economic benefits and costs unless their manuscript includes the appropriate economic data and analyses. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such.

IV.A.9. References

IV.A.9.a. General Considerations Related to References

Although references to review articles can be an efficient way of guiding readers to a body of literature, review articles do not always reflect original work accurately. Readers should therefore be provided with direct references to original research sources whenever possible. On the other hand, extensive lists of references to original work on a topic can use excessive space on the printed page. Small numbers of references to key original papers will often serve as well as more exhaustive lists, particularly since references can now be added to the electronic version of published papers, and since electronic literature searching allows readers to retrieve published literature efficiently.

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Some journals check the accuracy of all reference citations, but not all journals do so, and citation errors sometimes appear in the published version of articles. To minimize such errors, authors should therefore verify references against the original documents. Authors are responsible for checking that none of the references cite retracted articles except in the context of referring to the retraction. For articles published in journals indexed in MEDLINE, the ICMJE considers PubMed the authoritative source for information about retractions.

IV.A.9.b. Reference Style and Format

The Uniform Requirements style is based largely on an ANSI standard style adapted by the National Library of Medicine (NLM) for its databases. For samples of reference citation formats, authors should consult National Library of Medicine web site.

References should be numbered consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by Arabic numerals in parentheses. References cited only in tables or figure legends should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure. The titles of journals should be abbreviated according to the style used in Index Medicus.

This Journal requires that the references from the Ayurvedic classics should be cited within parentheses in the text, i.e. (Cha. Soo. 25/40).

IV.A.10. Tables

Tables capture information concisely, and display it efficiently; they also provide information at any desired level of detail and precision. Including data in tables rather than text frequently makes it possible to reduce the length of the text.

Type or print each table with double spacing on a separate sheet of paper. Number tables consecutively in the order of their first citation in the text and supply a brief title for each. Do not use internal horizontal or vertical lines. Give each column a short or abbreviated heading. Authors should place explanatory matter in footnotes, not in the heading. Explain in footnotes all nonstandard abbreviations. For footnotes use the following symbols, in sequence:

***,†,‡,§,||,¶,**,††,‡‡**

Identify statistical measures of variations, such as standard deviation and standard error of the mean.

Be sure that each table is cited in the text.

If you use data from another published or unpublished source, obtain permission and acknowledge them fully.

Additional tables containing backup data too extensive to publish in print may be appropriate for publication in the electronic version of the journal. In that event an appropriate statement will be added to the text. Submit such tables for consideration with the paper so that they will be available to the peer reviewers.

IV.A.11. Illustrations (Figures)

Figures should be either professionally drawn and photographed, or submitted as photographic quality digital prints. In addition to requiring a version of the figures suitable for printing, this Journal asks authors for electronic files of figures in a format (e.g., JPEG or GIF) that will produce high quality images in the web version of the journal; authors should review the images of such files on a computer screen before submitting them, to be sure they meet their own quality standard.

For x-ray films, scans, and other diagnostic images, as well as pictures of pathology specimens

or photomicrographs, send sharp, glossy, black-and-white or color photographic prints, usually 127 x 173 mm (5 x 7 inches). Letters, numbers, and symbols on Figures should be clear and even throughout, and of sufficient size that when reduced for publication each item will still be legible. Figures should be made as self-explanatory as possible. Titles and detailed explanations belong in the legends, however, not on the illustrations themselves.

Photomicrographs should have internal scale markers. Symbols, arrows, or letters used in photomicrographs should contrast with the background.

If photographs of people are used, either the subjects must not be identifiable or their pictures must be accompanied by written permission to use the photograph. Whenever possible permission for publication should be obtained.

Figures should be numbered consecutively according to the order in which they have been first cited in the text. If a figure has been published, acknowledge the original source and submit written permission from the copyright holder to reproduce the material. Permission is required irrespective of authorship or publisher except for documents in the public domain.

IV.A.12. Legends for Illustrations (Figures)

Type or print out legends for illustrations using double spacing, starting on a separate page, with Arabic numerals corresponding to the illustrations. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain the internal scale and identify the method of staining in photomicrographs.

IV.A.13. Units of Measurement

Use only standard Units of Measurements. If some new measurements or scoring patterns are used they should be explained in detail in the text.

IV.A.14. Abbreviations and Symbols

Use only standard abbreviations; the use of non-standard abbreviations can be extremely confusing to readers. Avoid abbreviations in the title. The full term for which an abbreviation stands should precede its first use in the text unless it is a standard unit of measurement.

IV.B Sending the Manuscript to the Journal

This Journal accepts electronic submission of manuscripts, whether on disk or attachments to electronic mail. Electronic submission saves time as well as postage costs, and allows the manuscript to be handled in electronic form throughout the editorial process (for example, when it is sent out for review). When submitting a manuscript electronically, authors should consult with the instructions for authors of the journal they have chosen for their manuscript.

If a paper version of the manuscript is submitted, send the required number of 6 copies of the manuscript and figures; they are all needed for peer review and editing, and editorial office staff cannot be expected to make the required copies.

Manuscripts must be accompanied by a cover letter, which should include the following information.

- A full statement to the editor about all submissions and previous reports that might be regarded as redundant publication of the same or very similar work. Any such work should be referred to specifically, and referenced in the new paper. Copies of such material should be included with the submitted paper, to help the editor decide how to handle the matter.
- A statement of financial or other relationships that might lead to a conflict of interest, if that information is not included in the manuscript itself or in an authors' form
- A statement that the manuscript has been read and approved by all the authors, that the requirements for authorship as stated earlier in this document have been met, and that each author believes that the manuscript represents honest work, if that information is not provided in another form; and
- The name, address, and telephone number of the corresponding author, who is responsible for communicating with the other authors about revisions and final approval of the proofs, if that

information is not included on the manuscript itself.

The letter should give any additional information that may be helpful to the editor, such as the type or format of article in the particular journal that the manuscript represents. If the manuscript has been submitted previously to another journal, it is helpful to include the previous editor's and reviewers' comments with the submitted manuscript, along with the authors' responses to those comments. Editors encourage authors to submit these previous communications and doing so may expedite the review process.

Copies of any permission to reproduce published material, to use illustrations or report information about identifiable people, or to name people for their contributions must accompany the manuscript.

V. References

A. References Cited in this Document

1. Davidoff F for the CSE Task Force on Authorship. Who's the Author? Problems with Biomedical Authorship, and Some Possible Solutions. Science Editor. July-August 2000: Volume 23 - Number 4: 111-119.
2. Yank V, Rennie D. Disclosure of researcher contributions: a study of original research articles in The Lancet. Ann Intern Med. 1999 Apr 20;130(8):661-70.
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B. Other Sources of Information Related to Biomedical Journals

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Council of Science Editors (CSE) www.councilscienceeditors.org <http://www.councilscienceeditors.org>

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The Mulford Library, Medical College of Ohio www.mco.edu/lib/instr/libinsta.html <http://www.mco.edu/lib/instr/libinsta.html>

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Annexure I

Manuscript no. JOA/NIA/20 /

Authorship Criteria and Responsibility
Financial Disclosure, Acknowledgment and Copyright Transfer Form

Manuscript Title :

I/We certify that the manuscript represents valid work and that neither this manuscript nor one with substantially similar content under my/our authorship has been published or is being considered for publication elsewhere. For papers with more than 1 author, We agree to allow the corresponding author to serve as the primary correspondent with the editorial office, to review the edited typescript and proof.

I/We have seen and approved the submitted manuscript. All of us have participated sufficiently in the work to take public responsibility for the contents. All the authors have made substantial contributions to the intellectual content of the paper and fulfil at least 1 condition for each of the 3 categories of contributions: i.e., Category 1 (conception and design, acquisition of data, analysis and interpretation of data), Category 2 (drafting of the manuscript, critical revision of the manuscript for important intellectual content) and Category 3 (final approval of the version to be published).

I/We also certify that all my/our affiliations with or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript are completely disclosed on the title page of the manuscript. My/our right to examine, analyze, and publish the data is not infringed upon by any contractual agreement. I/We certify that all persons who have made substantial contributions to the work reported in this manuscript (e.g., data collection, writing or editing assistance) but who do not fulfil the authorship criteria are named along with their specific contributions in an acknowledgment section in the manuscript. If an acknowledgment section is not included, no other persons have made substantial contributions to this manuscript. I/We also certify that all persons named in the acknowledgment section have provided written permission to be named.

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1. Name	Signatures	(date)
2. Name	Signatures	(date)
3. Name	Signatures	(date)
4. Name	Signatures	(date)
5. Name	Signatures	(date)
6. Name	Signatures	(date)

Annexure II

Manuscript Submission Checklist

Submitted by: E-mail ☐ Post ☐ Both ☐

Covering letter and submission :

1. Covering letter (in original) ☐
2. Copyright transfer form (in original) ☐
3. Illustrations (in original) ☐
4. Manuscript (E-mail/original) ☐
5. Category for which submitted ☐

Presentation and Format :

1. Printed on A4 paper with 1" margins on all sides in double space. ☐
2. Abstract, text, acknowledgement, references, legends, tables starting on a new page. ☐
3. Title page contains the following:
   - Full title of the paper ☐
   - Initials, surname and highest degree of authors, affiliation ☐
   - Name of Departments/Institution ☐
   - Details of Corresponding Authors including e-mail ☐
   - Numbers in Arabic numerals. ☐
4. Abstract (Hindi and English) and Key words provided. ☐
5. “What this study adds” Box (only for research papers and short communications). ☐
6. References. ☐
7. Pages numbered consecutively. ☐

Language and Grammar :

1. Uniform American English. ☐
2. Abbreviations spelt out in full for first time. ☐
3. Text arranged as per IMRAD format. ☐
4. Follows style of writing in Journal of Ayurveda. ☐
5. Conventional units used throughout manuscript. ☐

Tables and Figures :

1. No repetition of data in Table/graphs and in text. ☐
2. Figures are black and white (except Images), good quality; with labels on back. ☐
3. Table numbers in roman numerals and Figure numbers in Arabic numerals. ☐
4. Correct symbols used for footnotes to tables. ☐
5. Figure legends provided. ☐
6. Patient privacy maintained ☐

Short Communication

AYURVEDA NEWS AND VIEWS

*Dr. Rizwana Parveen

National & Internal Seminars

- 2nd International Ayurveda Congress: Ayurveda-The Pursuit of Health, Happiness and Long Life, organized by All India Ayurvedic Congress, International Academy of Ayurveda and IMAVF.

  Date : 1st and 2nd April, 2017.

- 21st International Conference Maharishi Ayurveda / Ayurveda And Psychology, organized by All India Ayurvedic Congress, International Academy of Ayurveda and IMAVF.

  Date : 28th to 30th April, 2017.

- 2nd International Ayurveda Congress, organized by All India Ayurvedic Congress, International Academy of Ayurveda and IMAVF.

  Date : 1st and 2nd April, 2017.

- An International Conference Evidence Based Ayurveda & Life Sciences, organized by Journal of Ayurveda Research AYUSHYA.

  Date : 16th and 17th April, 2017.

- National Conference on Relevance of Sushruta's Concept of Surgery in Present Era, organized by Banaras Hindu University, Varanasi.

  Date : 7th and 8th April, 2017.

- Entrepreneurial Training on Aloe Vera Processing (AVPT-2017), organized by CSIR-Central Institute Of Medicinal And Aromatic Plants, Lucknow.

  Date : 18th to 21st April, 2017.

- Methods in Epidemiologic, Clinical and Operations Research India 2017, organized at Hotel TBD, Chennai.

  Date : 24th to 29th April, 2017.

- National Seminar on Recent Advances & Future Prospects of Srotas Sharir, organized by Banaras Hindu University, Varanasi.

  Date : 29th April, 2017.

- International Conference on Ayurveda, Homeopathy and Chinese Medicine, organized at Munich, Germany.

  Date : 18th and 19th May, 2017.

- Training Course on "Advances in Biology of Communicable Diseases (2017)", organized at NIRRH and ICMR, Mumbai.

  Date : 8th May to 2nd June, 2017.

- aadhanaa 2: National Seminar on Clinical Aspects, organized by Nangelil Ayurveda College, Kothamangalam.

  Date : 18th to 20th May, 2017.

- Organic and Ayurveda Expo 2017, organized at Chennai Trade Centre - Hall 2, Chennai.

  Date : 9th to 11th June, 2017.

- The Yogshala Expo 2017, organized by Namo Gange Trust.

  Date : 16th to 18th June, 2017.

- Skill-cum-Technology upgaradation programme on 'Cultivation and Primary Processing of Economically Important Medicinal and Aromatic Plants', organized at Rajasthan Agriculture Research Institute, Rajasthan.

  Date : 28th to 30th June, 2017.

- A State Level Workshop on Grahya-2017, organized by Shri B. M. Kankanwadi Ayurveda Mahavidyalaya, Karnataka.

  Date : 9th June, 2017.

*Senior Research Fellow-Journal of Ayurveda, NIA, Jaipur

Ayurvedic Herbal Garden – the ideal way to keep all your ailments at bay!

We are well aware of the rich antioxidant, anti-inflammatory, anti-septic and carminative properties of medicinal herbs. We also know the immense benefits of these medicinal herbs in fighting various ailments from common cold and simple burns, to cancer and depression. Hence, without doubt, herbs are the best way to keep ailments at bay, and therefore, including the right herbs in our diet becomes all the more important. But, instead of buying them from the market, why not grow them at home, as majority of these common herbs can be easily grown at home, and does not require too much effort and time.

Here are some valuable medicinal herbs that can be grown in your home garden:

Rosemary (Sarpagandha)

To grow: Rosemary grows best in sandy soil and prefers neutral to alkaline conditions with average fertility. The herb grows best in sunshine and cannot withstand waterlogging.

Medicinal values: This medicinal herb is excellent in improving concentration, lifts your mood, a good source of iron, calcium and vitamin B6. It is highly rich in antioxidants and has anti-inflammatory compounds, essential fatty acids, anti-allergenic, astringent and stimulant properties. It also boosts immune system and memory, regulates bowel movements, offers relief from migraines, and improves blood circulation in the body.

This herb is best used as spice. The leaves can be used as mild tea, as it is considered beneficial in fighting headache, depression, cold, gout, rheumatism, premature baldness, muscle pain, dandruff, indigestion and neuralgic condition. Rosemary oil helps in relieving pain from indigestion and menstrual cramps and is soothing on the stomach. The oil can also be applied externally on sores.

Coriander

To grow: Although popular as a kitchen herb, the green leaves, seeds, and powder of seeds of coriander are all beneficial to health. Coriander can be easily grown in a pot. Coriander seeds are easy to germinate. You just need to sprinkle them on the ground and you can see seedlings in a week, and when they start germinating, ensure that they get good sunlight. Water them well too.

Medicinal value: Coriander helps in easy digestion, is excellent for anaemia, menstrual irregularities, effective in fighting skin diseases including pimples, eczema, dryness and fungal infections. Being rich in calcium, it is good in bone regrowth and durability. 'Citronelol, a component of essential oils in coriander, is an excellent antiseptic. The healing power of the leaves keeps wounds and ulcers in the mouth from getting worse. It also protects eyes from contagious diseases. Regular consumption of coriander boosts immunity and purifies blood. In Ayurveda, coriander is often recommended for stomach related ailments.

Parsley (Ajwain / Ayamodakam)

To grow: Parsley can thrive in the sun, but the soil has to be moist. The herb prefers damp, well-drained soil and partial shade. It grows best when fed with organic fertiliser.

Medicinal value: It is a good source of volatile oils, antioxidants and flavonoids. It has many vital vitamins like Vitamin C, Vitamin K, Vitamin B12 and Vitamin A, apart from folic acid. The medicinal herb has immense healing powers that help you tackle flatulence and bad breath.

Parsley can be crushed and applied on bruises for quick healing. The juice is used to treat urinary tract infections, constipation, kidney stones, indigestion, jaundice, gas, colic, diabetes, asthma, cough, osteoarthritis, and high blood pressure. It is also used an aphrodisiac.

Lemon Balm (Melissa)

To grow: The herb easily grows in rich, moist and well-drained soil. It can be grown indoors too, but ensure that it gets atleast six hours of food sunlight daily. The lemony-mint fragrance of the leaves has given this name to the plant.

Medicinal value: This versatile medicinal herb helps relieve insomnia, anxiety, flatulence, wounds, and stomach upset. It also speeds up healing of cold sores. The crushed leaves of the herb act as a mosquito repellent when rubbed on to the skin. In

Ayurveda, the medicinal plant, lemon balm has been traditionally used against bronchial inflammation, flatulence, headache and fever, high blood pressure, palpitations, toothache, vomiting. Tea made of leaves of the plant helps soothe menstrual cramps and relieves PMS. The volatile oils in lemon balm, is thought to relax muscles of the bladder, stomach and uterus, relieving cramps and nausea.

Sage (salvia/salvi)

To grow: Sage can be grown in well-drained, fertile soil, with enough sunlight. It can also survive well in dry, indoor air, but will need strong sunlight.

Medicinal value: In ancient times, sage was used as a fertility drug. It also has anti-hypertensive, anti-diabetic and anti-inflammatory and anti-microbial properties. Sage juice, when mixed with warm water and consumed, can cure hoarseness and bad cough, while infusion of sage leaves as tea, can help in soothing nervous system. Sage is also beneficial in treating stomach pain, gas, improves appetite, depression, treating cold sores, and excessive sweating. Sage extract stimulates hair growth too, imparting shine and lusture to your locks and preventing dandruff.

Basil (*Tulsi*)

To grow: Just sow basil seeds in a warm, sunny corner of your house and provide water on a regular basis to retain moisture once the soil has warmed.

Medicinal value: Basil has hoards of health benefits and has been used in treating various illnesses since times immemorial. To point out some of the wonders of basil, this medicinal herb can help improve appetite, is excellent cure for cold and cough, corrects digestion, controls body temperature, is excellent for preventing hair loss, preventing heart diseases, kidney ailments, and diabetes. The paste of leaves of the herb can be applied to cuts and scrapes too, as it is an excellent antioxidant, antiseptic, anti-inflammatory and antibacterial properties. Just chewing a few basil leaves daily, can cut down your visit to doctor's clinic by half.

We have only taken a peek into few common herbs that can be grown in a home garden. You can grow more such valuable herbs if you are passionate about gardening and getting fit, and what's more, there is no better way to unwind than growing a home garden!

Regular yoga practice can significantly reduce menstrual distress

Practicing yoga may improve mood and reduce pain in women affected by menstrual distress, associated with physical and psychological symptoms, says a recent study.

For the study, researchers carried out a systematic review of the published literature on yoga practice and common menstrual disorders. Yoga helps enhance mood, reduces pain, increases well-being, and shows heightened relaxation response, the women who participated in the yoga intervention reported, the findings revealed.

The study revealed the effects of yoga on problems such as amenorrhea, dysmenorrhea, oligomenorrhea, premenstrual syndrome and premenstrual dysphoric disorder.

For the study, a range of yoga interventions were used, which included a combination of asana and pranayamaand other yogic relaxation or meditation techniques. All the studies which was evaluated, showed beneficial effects and reduced symptoms.

Following yoga intervention, all studies reported some change in their outcome measures, suggesting reduced symptoms of menstrual distress.

Practicing yoga is one of the ways of rectifying menstrual disorders. Bhujangasana, Matsyasana, Dhanurasana, Halasana and Sarvangasana are few excellent postures for treating menstrual disorders.

Yoga includes relaxation of body and mind, and is the only activity which is beautifully designed so that there is no stress on the body, as everything is done at the individuals own pace. Being positive in life, can add to your spiritual well-being with practice of yoga, which uses your natural ability to become more flexible in your ability to balance and harmonize all happenings in life.

6 healing herbal drinks from the storehouse of Ayurveda

Did you know that in ancient days, people relied on Ayurvedic herb-infused water for healing ailing bodies? Those days, people were naturally healthier and had a stronger immunity. One reason could be due to the easy availability of herbs and spices in those days, when most of these healing herbal drinks were easily made at home.

The whole idea to prepare healing water by infusing ayurvedic herbs and spices is to extract oils of the plant, which has various healing properties. Water is a powerful therapeutic tool according to Ayurveda, and soaking certain herbs or spices can actually improve its healing power.

Water represents the nourishing, cooling quality, associated with lunar energy. It aids digestion, cools and balances pitta dosha, supports kapha, and balances the dryness caused by vata. It nurtures, lubricates and detoxifies as it flows out of the body as urine. When water is well-absorbed by the body, it has several healing qualities.

Ayurvedic texts describe water as healing, as it helps in preventing fatigue, improves the glow of skin, prevents constipation, increases stamina, provides satisfaction, helps pacify pitta, aids digestion, is a coolant by itself, easy to assimilate, is life-giving and an antioxidant. These healing effects of water can be further enhanced using Ayurvedic methods. Ayurvedic texts recommend boiling the water for various lengths of time, sometimes adding herbs or spices to the water, creating therapeutic water called 'ushnodaka'.

It is said that while regular water takes about 6 hours to remove toxins from the body, boiled and cooled water takes about 3 hours to open the channels for toxin elimination and warm herb-infused water takes only about one-and-half hours to do the same, due to the effect of agni, and herbs and spices.

Mentioned here are seven varieties of healing herb-infused drinks with their health benefits:

Healing drink with fenugreek

Fenugreek (also called methi) is a common spice used in every Indian household. But, it is a storehouse of medicinal properties that can cure several health problems. It has antioxidant and anti-inflammatory properties. Soak fenugreek seeds in boiled and cooled water overnight. It imparts a pale yellow hue to the water. Drinking this water early in the morning is very helpful in prevention of water retention, and prevents bloating. The amino acid compounds in these seeds promote insulin secretion in the pancreas, thereby controlling blood sugar levels for diabetics.

The Tulsi drink - Tulsi (Indian basil) is well-known for its medicinal properties. Then, it is no wonder that the leaves of the plant when soaked in water can work magically for the skin and heal several health problems. The antibiotic, antifungal and antibacterial properties of Tulsi, helps prevent fever and cold and also helps in keeping your skin and hair healthy. Tulsi water acts as great diuretic and detoxifies kidneys, and helps reduce uric acid levels in the blood, further cleansing the kidneys. Boil few leaves of Tulsi in about half-a-litre of water. Drink this tulsi tea, or use it as a gargle thrice a day.

Pathimugam (Indian red wood) water - Pathimugam (Indian red wood) soaked in water, is a popular thirst quencher used in India, particularly in the State of Kerala. The bark of the tree has several medicinal benefits. The healing water turns light pink in colour, and is used as a cure for Kidney disorders, high cholesterol, blood purification, diabetes and other skin diseases. You just have to boil the water to which pathimugam is added, strain the water and drink it just as you would drink regular water at any time of the day.

Coriander Seed Water -Coriander (also known as Dhaniya) seeds contain plant-derived chemical compounds and are high in antioxidant properties. Coriander seed water helps in preventing water retention and acidity, and gastric issues. Drinking coriander seed water helps in curing mouth ulcers too, due to the presence of 'citronelol', which acts as an antiseptic. Add the seeds to boiling water, and boil for about 5 minutes and strain. This water can be had any time during the day.

The Triphala drink

Triphala has endless list of medicinal properties, but, is largely known for its ability to cure constipation. Triphala is generally available in

powdered form. This can be mixed in warm water and consumed to regulate bowel movements and cure constipation. Triphala is also an excellent detoxifier, which makes your skin glow naturally. It provides immunity against cold, flu, and other diseases. Triphala powder can be added to warm water and consumed regularly.

An ideal Ayurvedic diet holds the key to good health

An ideal Ayurvedic diet purely depends on the individual's body type, digestive capacity and the season of intake. Your diet also varies depending on the level of activity that you do. An ideal ayurvedic diet is also about maintaining the balance of the three vital forces in the body, namely, *vata, pitta* and *kapha*, through your diet. According to Dr. Isaac Mathai, Founder of Soukya Holistic Healing Centre in Bengaluru, an ideal ayurvedic diet includes two meals a day, preferably in the morning and before sunset in the evening. However, this is again dependent on the individual's body constitution, digestive capacity and season of intake. But, mixing incompatible items should be strictly avoided. For example, milk and fish, honey and meat, vegetables and milk, curd and chicken, banana and buttermilk, and so on, he points out. Also, Dr. Mathai advises against intake of curd at night, and excessive use of salt.

It is the three vital forces, vata (wind), pitta (fire) and kapha (water) that maintain health and balance in the body. When they are in balance, the body remains healthy. But, when their balance is disturbed, it results in illness. The balance can be disturbed by internal causes like improper diet, and sometimes due to external causes like weather or injury, all of which leads to ill health.

According to Dr. Girija, Founder of Sanjeevani Ayurveda and Yoga Centre, Chennai, vata is responsible for all movements within the body, pitta implies heat, and is responsible for digestion, while kapha implies binding and stability of the body. An individual may be said to be belonging to vata, pitta or kapha body constitution, or a combination of two, depending on the individual's body physique, likings, behavioural patterns and attitude. As per Ayurvedic principles, it is essential to include all six tastes in your meals to keep you healthier, says Dr. Mathai. However, depending on your body constitution, certain tastes can impact in different ways. The humble and popular 'kichari', served in Indian households, which is a nutritious mix of beans and rice is a good tridoshic, and a perfectly balanced dish. Intake of sweet, sour, salt is good for vata type, while these tastes may not go well with kapha type. On the other hand, bitter, astringent and pungent may be good for kapha type, but may not go well for a vata type. Astringent, sweet and bitter are recommended for pitta, he points out.

When choosing your diet, if you have a vata body constitution, include boiled or steamed starchy vegetables, dairy, ripe fruit, grains like rice and wheat, spices like ginger, cumin, ginger, cinnamon, fennel, cilantro and oregano in your diet.

If your dominant dosha is pitta, you could consider including cooling vegetables like cucumber, zucchini, some dairy, sweet fruit, most grains including rice, barley and oats, wheat, mild spices like coriander, cardamom, cloves and turmeric. If you belong to kapha body constitution, you may choose to eat cooked rather than raw vegetables, warm drinks, fruits like apples, pears, cranberries, grains like millets and rye, and hot spices.

Apart from eating right based on your body type, Ayurveda also advises against excess dependence on fridge and microwave. This is because, according to ayurvedic way of eating, every meal should be freshly prepared and served warm. It is also good to ensure that vegetables used in the meals are seasonal, and locally produced.

This way, stepping back to this ancient way of eating, can actually bring back the lost balance to your body. The holistic approach to health can also help you in retaining your vitality, and keep you a happy person without much effort.

Sources of information

www.ayurvednews.com
www.ayurvista.net
www.ayurvedforum.com
www.ayurvedictalk.com
www.liveayurved.com
www.ians.in
www.naturalproductsasia.com
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