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Contributions are invited in the form of :

Research Papers–*Randomized trials, intervention studies, studies of screening and diagnostic tests, cohort studies, cost-effectiveness analyses, and case control studies.*

Short Communications– *Brief accounts of descriptive studies, initial/partial results of a larger trial, and a series of cases;*

Correspondence– *Letters commenting upon recent articles in Journal of Ayurveda, other topics of interest or useful clinical observations. Debate on important issues such as those raised in the editorial forum are most welcome.*

Images in practice– *Interesting and original images which are worth a thousand words and help understand a particular concept. Images should accompany a certificate of ownership.*

A major criteria for acceptance of an article will be addition to existing knowledge and as such manuscripts are required to include 'what this study adds'.

2 copies of Books may be sent for book review section.

EDITORIAL

Role of *Panchakarma* in Medical Tourism

Introduction : Medical Tourism As Industry

Medical tourism can be broadly defined as provision of 'cost effective' private medical care in collaboration with the tourism industry for patients needing surgical and other forms of specialized treatment. This process is being facilitated by the corporate sector involved in medical care as well as the tourism industry - both private and public. Medical or Health tourism has become a common form of vacationing, and covers a broad spectrum of medical services. It mixes leisure, fun and relaxation together with wellness and healthcare. It is like rejuvenation and clean up process on all levels - physical, mental and emotional.

Ayurvedic Resorts Provide

Mass awareness about Ayurveda (Counseling) – Prevention of Diseases & promotion of positive health.

- *Panchakarma*
- *Yoga*
- Meditation

In resorts, tourists can just stay for a few hours, get treated and go enjoy their holidays. Atmosphere at the resorts is more relaxing and that helps in quick recovery. In the hospitals, people feel like they are really very sick and they cannot move around freely.

Food Plays A Key Role

Food is given utmost importance. Only vegetarian food is advisable. Contents of the meal differ from person to person depending on the kind of problems they are facing. Protein-rich food is to be administered. If non-vegetarian food is to be given only grilled or baked meat is advisable.

Obstacles

Travel agents stress only on the massage part of Ayurveda. They must also make people understand that Ayurveda cures many complex problems, like paralysis etc., which they will get only at an Ayurvedic hospital, under the observation of qualified doctors. There are a lot of illegal activities going on in the name of Ayurveda e.g. Sex Reckets & Indecent activities. As a result, it proves very challenging to convince tourists and Indian citizens to actually come and visit the Ayurvedic centers. Authenticity becomes suspect for the visitors. Strong monitoring is required. The accreditation system of the tourism department is a relief to all the Ayurvedic centers. There are lots of problems in exporting Ayurvedic medicines. Foreign countries have a compulsion of a certification regarding non-existence of metals in medicines. Lot of money is to be spent for this certification.

Future Plans

There is always a need to make future plans for promotion. There is close competition in the Ayurvedic sector now. Existing and new hotels are compelled to have an Ayurvedic spa. To have a tie-up with the travel agents abroad to have greater exposure , To have a tie-up with various Websites like Yahoo and Google to develop linkage , Franchising i.e. to release from restrictions, agreements with various countries , Holding exhibitions abroad , E-discount coupons from various Cell Mobile phone companies (such as Hutch, Reliance etc.) for subscribers, for availing Ayurveda / Panchakarma facilities at specific Spa / Hotels & Cross promotion of system with the groups of other hospitals- While the Hospital will promote Ayurvedic Resorts

/ Spa services, they will in turn market specific Hospitals are some of the tips as future plans to promote Medical tourism.

Giving Health Tourism A Boost

Promotion of Ayurveda / Panchakarma in print and electronic media. The travel agents abroad help in better exposure and marketing. One reason for that is, they have their own clientele and they are the ones who can influence tourists to visit a particular resort or spa

to participate in the Information Technology Business (ITB) held annually. Tourism Deptt. should safeguard the interest & rights of Ayurvedic Centers / Spa. Guidelines, as provided by the authorities for accreditation of Ayurvedic and Panchakarma centres is to be strictly implemented. Prepare and print brochures, CDs and other publicity material to promote Ayurveda in medical tourism & promote Medical & Health Tourism at various international platforms such as World Travel Mart.

Role of Panchakarma in medical Tourism

Panchakarma plays a very important role in medical Tourism. It is one of the very important sources of earning Foreign Exchange. It provides boom to Tourism Sector particularly the Medical Tourism. Panchakarma also helps in promoting Local Market / Industries for e.g. Hotel, Handicrafts, Gems , Jewelry, Garments, Carpets and Local Sit Seeing is also patronized by it. Exchange of traditional and cultural heritage besides elevating the National Prestige and Pride globally are the important attributes of Panchakarma. It meets out the expectations of masses as preventive, curative, rehabilitative and complete therapy.

Conclusions

1. Medical Tourism is a fast growing Industry.
2. Ayurveda / Panchakarma can contribute significantly in providing sound health to visitors globally.
3. Only Ethical and Standard practices of Ayurveda / Panchakarma can provide boom to Medical Tourism world over.

Prof. Ajay Kumar Sharma
Director

Clinical Study

Evaluation of the role of *Shodhana* therapy along with *Rasayana* therapy and the Biophysical Changes produced in the normal subjects - A pilot study

*Dr. W. J. Wickramarachchi, **Prof. A. K. Sharma

Abstract:

The present study was conducted on 70 apparently normal subjects to evaluate the role of *Shodhana* and *Rasayana* therapy on various scientific parameters. Subjects were divided into two groups and *Shodhana Karma* was administered in the form of *Vamana Karma* and *Virechana Karma* for group one. Thereafter *Amalakai Rasayana* was given to the cleansed (*Shodhita*) subjects. The group two was given only *Amalaki Rasayana* without cleansing the subjects.

It was observed that there were highly significant changes in subjective and objective parameters of group one which was treated with *Shodhana* followed by *Rasayana,* whereas significant changes were observed in group two also which was treated with only *Amalaki Rasayana*. It was also observed that the growing feeling of well being was markedly improved in the subjects of group one. Considering various factors, it can be concluded that *Shodhana* therapy as well as *Rasayana* therapy can produce significant changes on bio-physical factors without producing any toxic or harmful effects to the body.

Keywords: *Amalaki Rasayana, Shodhana* therapy*, Vamana Karma, Virechana Karma*

सारांश–

प्रस्तुत शोधकार्य 70 स्वस्थ व्यक्तियों पर किया गया, जिसमें शोधन एवं रसायन चिकित्सा का मानकीकरण वैज्ञानिक आधार पर किया गया है।

पंजीकृत व्यक्तियों को दो वर्ग में विभाजित कर अध्ययन किया गया है। प्रथम वर्ग के व्यक्तियों में शोधन कर्म जो वमन विरेचन के रूप में करते हुये आमलकी रसायन का प्रयोग किया गया है। दूसरे वर्ग में आमलकी रसायन का प्रयोग बिना शोधन (वमन विरेचन) कराये ही किया गया है।

प्रस्तुत शोध में पाया गया कि प्रथम वर्ग के व्यक्तियों में, जिनमें शोधन के बाद आमलकी रसायन का प्रयोग किया गया है उनमें लाक्षणिक (Subjective) एवं प्रयोगशालीय (Objective) मानकों पर अतिमहत्त्वपूर्ण (Highly significant) परिणाम आये हैं।

दूसरे वर्ग के व्यक्तियों, जिनमें शोधन कराये बिना ही आमलकी रसायन का प्रयोग किया गया है, महत्वपूर्ण (Significant) परिणाम मिले हैं। परन्तु स्वास्थ्य में सुधार की बढती हुई अनुभूति प्रथम वर्ग के व्यक्तियों में विशेष रूप से पाई गई। इससे यह निष्कर्ष निकलता है कि शोधन के बाद रसायन चिकित्सा का प्रयोग करने से शरीर के जैव भौतिक मानकों पर महत्त्वपूर्ण (Significant) परिवर्तन, बिना किसी विषाक्त और हानिकारक प्रभाव के बिना प्रकट होते हैं।

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Clinical Study

Evaluation of the role of *Shodhana* therapy along with *Rasayana* therapy and the Biophysical Changes produced in the normal subjects - A pilot study

Dr. W. J. Wickramarachchi, Prof. A. K. Sharma

Introducton:

Being an eternal science, *'Ayurveda'*, the 'science of human life', deals with physical, psychological as well as spiritual well being of an individual. It covers all the spheres of human life. *Rasayana* or *Jara Chikitsa* (Geriatrics) is one amongst the eight major clinical disciplines of *Ashtanga Ayurveda;* practiced extensively and effectively since ages aiming at rejuvenation and geriatric care. The focal basis of *Rasayana* is accelerated and appropriated nutrition leading to improved biological competence of the body.

The very meaning of the word *"Rasayana" (Rasa + Ayana)* refers to nutrition and its transportation in the body. Such a state of improved nutrition is claimed to influence on the human body and mind resulting in physical and psychological improvement of an individual with prevention of aging and development of body resistance or immunity.

Although all the *Rasayana* drugs produce longevity, intellect and rejuvenation effect on the body tissues, certain *Rasayana* drugs act directly at the level of *Medha* (intellect) and improve the mental faculties to a large extent in addition to the other *Rasayana* effects. These *Rasayana* drugs are named as *'Medhya Rasayana'*. Similarly, some *Rasayana* drugs have an inhibitory role on a particular disease and may be used as specific treatment for that particular disease; called as *'Naimittika Rasayana'*. The *Rasayana* used in healthy individuals for maintenance and promotion of positive health are known as *'Kamya Rasayana'*.

The body requires different type of *Rasayana* drugs in different age groups. In every decade of life various organs and their functions of the body are depleted e.g., in fourth decade decline of the lustre of the skin, in eight decade decline of the hearing etc. Therefore specific *Rasayana* drugs have been recommended in different decades to compensate the depletion of these biological factors of the body. *(Sh.Sa.Pu.8/19)*

The basic difference between the ordinary drug and the *Rasayana* drug is that the *Rasayana* drug may act on one or various levels and produce various beneficial effects in the body due to the *Prabhava* of *Rasayana* drug. Thus *Rasayana* drugs are expected to promote *Smriti, Medha, Arogya, Prabha, Varnna, Swara, Pranati, Kanthi, Dehabala* and *Indriyabala* in the body.

Such effects cannot succeed unless the channels of the body are clean and hence *Shodhana* therapy is an essential component of *Rasayana* therapy. The *Ayurvedic* classics emphatically emphasize that bio purification of the body is essential pre-requisite for the administration of *Rasayana* therapy. *(Ch.Chi.1/1/23-24)*

Explaining the reasons behind this, *Acharya* state that if the channels of the body are not clean, *Rasayana* effect will not be achieved in the same way as due colours do not take up dying of a cloth which has not been cleaned properly.*(Su.Su.27/4, As. Hr. Ut.39/4)*

Likewise the medicines given to the body without *Shodhana* therapy do not serve the purpose. Therefore medicines should be given only after proper *Shodhana* (i.e. Bio-purification by *Panchakarma* therapy) of the body.

Samshodhana Chikitsa cleanses all the microcirculatory channels of the body, eliminates the vitiated *Doshas (Ama)* and waste materials *(Mala)* accumulated in the body, enhances/stomulate the *Kayagni* and helps to maintain the state of normalcy and equilibrium, *Indriya* (senses), *Manas* (mind), *Buddhi* (intellect) and *Varna* (complexion)

become clear and acquire *Bala* (strength), *Pushti* (plumpness), *Apatya* (offspring) and *Vrishyata* (virility). A person, who wishes to live a long span of life free of diseases and without affecting *Jara* (senility), should perform *Samshodhana* at proper time and it should be skilfully administered to produce long lasting beneficial effects.

Shodhana gives a sort of nurturing to *Buddhi,* strength to *Indriyas,* stability to *Dhatus,* enhancement to *Agni* and delays the aging process. It not only eliminates the morbid humours (*Doshas*) but also removes various types of intracellular obstructions in the organs and systems may be in the path of secretion, transportation, absorption and excretion. By regularizing all physiological systems in turn create an ideal environment in the biological system for the better bioavailability of the drugs administered thereafter.

Aims and Objectives:

The present research work was launched with following objectives-

1) To evaluate the bio physical changes produced in a series of apparently normal subjects after administrating *Samshodhana* (purification) and *Rasayana* therapy on various scientific parameters.

2) To assess the safety of the *Shodhana* and *Rasayana* procedures on healthy volunteers and to establish as a preventive therapy by assessment of their Kidney and Liver functions.

3) Clinical evaluation of *Rasayana* therapy after proper *Shodhana* (Purification) of body.

MATERIALS AND METHODS

1. Selection of the cases:

The study was conducted in 70 apparently healthy subjects of different age groups and irrespective of sex, religion or socio-economic status. They were registered from the OPD of National Institute of *Ayurveda,* Jaipur as per the selection criteria after obtaining the due consent and recruited as volunteers for the study.

a) Inclusion Criteria

i) Age Group - 17 - 60 years.

ii) Sex – Either sex

iii) Volunteers not suffering from any disease.

iv) Volunteers who did not suffer from any systemic illness for the last six months.

b) Exclusion Criteria

i) Individuals in which any therapy is contraindicated according to the text.

ii) Individuals with any diagnosed disease.

iii) Individuals on any other drug therapy or health promoters.

v) Individuals not likely to cooperate with the trial regimen due to any cause/ personal compulsions.

c) Discontinuation Criteria

i) Any adverse effect/complication of *Poorva* or *Pradhana Karma.*

ii) Individuals not willing to continue the trial regimen

iii) Individuals who developed any minor/ major sickness during the course of the trial.

2. Grouping and Management:

The subjects were divided randomly into 2 groups having 45 and 25 subjects in group 1 and group 2 respectively.

Group 1- (*Shodhana* therapy + *Rasayana* therapy) In this group *Shodhana* therapy was administered in the form of *Vamana* and *Virechana Karma* as per the guidelines of the *Ayurvedic* texts. Thereafter *Amalaki Rasayana* was given in the form of *Churna* in the dose of 5gms. 2 times a day (b.d.) with Luke warm water.

Group 2- {Only *Rasayana* therapy (control group)} In this group *Amalaki Rasayana* was given in the *Churna* form in the dose of 5gms. 2 times a day (b.d.) with Luke warm water.

3. Duration of the course of therapy:

Group 1.

- *Deepana/Pachana* - 3days
- *Sneha Pana* - 3-7days

- *Abhyanga /Swedana Karma* - 1day
- *Vamana Karma* - 1day
- *Samsarjana Karma* - 3-7days
- *Prakrita Bhojana* - 1 day
- *Sneha Pana* - 3 days
- *Abhyanga/Sweda Karma* - 3 days
- *Virechana Karma* - 1day
- *Samsarjana Karma* - 3-7days
- Rest - 3 days
- Total *(ShodhanaKarma)* - 37 days
- *Rasayana* Drug - 30 days
- **Total - 67 days**

Group 2.

- *Rasayana* Drug - 30 days
- **Total - 30 days**

Methodology:

Pachana was performed with *Panchakola Churna* 3 grams b.d. for 3-5 days and disappearance of *Saama Lakshanas* was observed. Pure ghee made of cow's milk was administered within half an hour of sunrise along with luke warm water 3-7 days as *Sneha Pana*. On the first day a test dose of 30 ml was given to assess the *Agnibala* and the dose of ghee was increased gradually every day depending upon the symptoms of *Sneha Pachana*. The symptoms of *Sneha Pachana* were observed in each individual and *Snehapaana* was stopped on the appearance of *Samyak Snigdha Lakshanas*.

The subjects were advised to take *Naagaradya Churna* / warm water for drinking purpose and warm light gruel or light food on feeling of appropriate hunger during *Sneha Pana*. They were advised to avoid excessive physical work, long standing, excessive walking –talking-laughing etc, indulgence in sex, day time sleep, exposure to strong direct wind and sunlight etc., as described in *Ayurveda* as *'Apathya'* w.s.r. to diet and physical activities.

Sarvanga Abhyanga by *Dashmoola* oil and *Sarvanga Swedana* with *Dashmmola Kwatha* were administered on the rest day and on the day of *Vamana Karma* .On the rest day evening, the individuals were advised to take Curd, Rice with Ghee and *Urada Daala, Malai*, *Rabdi,* Milk etc. for the purpose of *Kaphotaklesha*.

On the day of *Vaman Karma;*

Phala Pippali Churna	-	10gms
Vacha Churna	-	5gms
Yashti Madhu Churna	-	5gms
Rock Salt	-	5gms

were taken and made into a paste by adding 15ml Bees Honey.

Procedure of *Vamana Karma:*

Subjects were advised to get up early in the morning and to attend to their natural urges and other morning regimens. Vital parameters of the subjects were assessed along with psychological assessment followed by *Sarwanga Abhyanga* and *Sarwanga Swedana*. They were advised to take *Yavagu* (made up of rice) along with 50 ml of ghee up to their full capacity of the stomach and next informed about each step of *Vamana Karma* and various symptoms he may experience during the entire process, thus preparing him psychologically as well.

Subjects were advised to sit on *Vamana Peeth* (specially made chair and basin to perform *Vamana Karma*). Their vital signs were again assessed to rule out any newly developed contraindications. *Vamaka Yoga* which was prepared previously was given to the patient to hold in his hand. *Vamana Mantra (Ch.Ka.1/4)* was recited and then this paste of *Vamaka Yoga* was liquefied with luke warm water or milk and administered orally. After that the individuals were advised to sit calmly and concentrate on any symptoms developing and to wait for spontaneous occurrence of *Vamana Vega*.

Their vital signs were assessed at regular intervals and waited for maximum for a *Muhurtha Kala (*48 minutes) till the spontaneous *Vamana Vega* was started. After that, *Vamanopaga* in the form of

Yashtimadhu Phanta Kwatha and milk were administered to induce *Pittantaka Vamana*. In the absence of spontaneous *Vamana Vega, Vamana* was induced by administering paste of *Vacha, Amlaki, Sarshapa* and *Pippali* along with *Yashtimadhu Phanta Kwatha*

In case of improper occurrence of *Vegas*, the individual were asked to tickle their fauces with two fingers to induce the *Vega*. During the entire process subjects were assisted by the scholar along with the paramedical staff by applying gentle massage in the upward direction over the back. After the completion of the *Vamana Karma,* the subjects were given luke warm water to wash mouth, hands and for gargling.

Pashchat Karma* of *Vamana Karma:

Light massage was given on the palms and soles of the subjects and they were advised to take rest until they felt comfort. Subjects were given *Dhoomapana* with *Dashamoola Churna* – 3 times in each nostrils and lastly they were advised to follow *Sansarjana Karma* according to the type of *Vamana Shudhi*. (*Pravara Shuddhi*-7 days, *Madhyama Shuddhi* – 5 days & *Avara Shuddhi* – 3 days)

Virechana Karma:

After the completion of *Sansarjana Karma*, individuals were put on their normal diet for one day, followed by *Snehpana* from the next day for 3 days and *Sarvanga Abhyanga* and *Sarvanga Swedana* were administered for the next 3 days.

Virechana Yoga:

- Rock Salt - 1 part – 5gm.
- *Shunti Churna* - 1 part - 5gm.
- *Trivrit Churna* - 2 parts - 10gm.

Subjects were given the decoction of *Virechana Yoga* (120ml.) along with 2 tablets of *Abhyaadi Modaka (Charak* Pharmaceuticals) with Luke warm water. The decoction was given on empty stomach in the morning. After achieving the *Kaphanta Virechana* subjects were advised to drink cold water to stop the action of *Virechana* drugs. Lastly they were advised to follow the *Sansarjana Karma* according to the type of *Virechana Shuddhi* as indicated in *Ayurvedic* texts.

- ***Rasayana* Procedure Group 1:** Those who completed the *Shodhana* procedures (*Vamana, Virechana & Sansarjana Karma*) were given *Amalaki Churna* 5gm. b.d. after meals with Luke warm water.

- ***Rasayana* Procedure Group 2:** *Amalaka Churna* 5 grams b.d. was given with luke warm water after meals.

4. Diet and Regimen:

All the individuals were recommended diet and regimens as per the descriptions available in *Ayurvedic* Classics during the therapy.

Follow up: Group 1 - after 67days, Group 2 - after 30 days.

5. Criteria for Assessment:

Following criteria were adopted for assessment of the impact of treatments produced in the subjects of two groups-

i. Subjective Improvement

ii. Clinical Assessment

a. Symptomatic improvements

b. Psychological improvements

c. Physical measurements

iii. Laboratory Investigations

i) Subjective Improvement:

Attempts were made to elicit the subjective improvements produced by *Shodhana* and *Rasayana* therapy in the subjects under the trial. All the subjects were specially looked into, for any growing feeling of wellbeing, physical and mental fitness, improvement of quality of the complexion etc.

ii) Clinical Assessment:

a. Symptomatic Improvements:

***Smriti* (Memory)**

i. Short Memory: Memory Span Test (10 Q)

8 – 10	Good Memory	3
5 – 7	Average Memory	2
3 – 4	Poor Memory	1
0 – 2	Very Poor Memory	0

ii. Long Lasting Memory

Able to recall incident during 2-5 yrs., old age.	3
Able to recall the date & place of Primary/ secondary exams.	2
Able to recall date of university entrance/ joining of job/marriage.	1

Medha **(**Level of Concentration) IQ Test (10 Q)

10 Intelligent	3
9 – 7 Somewhat Intelligent	2
6 – 4 Average	1
3 – 1 Weak	0

Arogya (Healthy physique)

Rarely	3
Infrequently	2
Occasionally	1
Frequently	0

Tarunya (Youthfulness)

>5 yrs. younger than actual age.	3
Looks actual age level.	2
>5 yrs. Older than actual age.	1
5 – 10 yrs. Older than actual age.	0

Prabha (Lustre)

Significant	3
Moderate	2
Mild	1

Varna (Complexion)

i. ***Ruksha Twacha*** (Dryness)

Nil	0
Mild skin involvement	1
Moderate skin involvement	2
Severe skin involvement	3

ii. ***Snigdha Twacha*** (Oily skin)

Nil	0
Mild skin involvement	1
Moderate skin involvement	2
Severe skin involvement	3

Akala Palitha (Grey Hair)

Nil	0
Mild hair involvement	1
Moderate hair Involvement	2
Severe hair Involvement	3

Swara (Voice)

Strong & Pleasant	3
Clear & Soft	2
Average	1
Weak	0

Dehabala (Body Strength)*Treadmill Test

> 2 minutes run	0
3 – 4 minutes run	1
5 – 6 minutes run	2
< 6 minutes run	3

Indriya Bala (Strength of Senses)

i. Drika (Vision) Snellen chart reading

Normal Range	0
Middle Range	1
Upper Range	2

ii. ***Rasa*** (Taste)

Able to taste 6 *Rasas*	3
Able to taste 3 – 5 *Rasas*	2
Able to taste 1 – 2 *Rasas*	1

iii. ***Gandha*** (Smell)

High sense of minute smells	3
Medium sense of smells	2
Reduced sense of smells	1
No sense of smell	0

iv. *Sparsha* (Lower/Upper Limbs & face)

Normal sense of touch	3
Medium sense of touch	2
Mild sense of touch	1
Absence sense of touch	0

v. *Shabda* *(Karna)*

Able to identify whispering sound 15cm away from the ear.	3
Able to identify whispering sound 60cm away from the ear.	2
Able to identify louder sounds only	1

For this purpose following "Symptom Rating Scale" was used which was developed by Prof. A.K. Sharma et.al.,

Table No. 1. Showing the "Symptom Rating Scale" Developed by Prof. A. K. Sharma et.al.,

Before Treatment			After Treatment		
Symptoms	**Percentage (%)**	**Grading**	**Grading of Symptoms**	**Percentage (%)**	**Grading**
Nil	00	0 -	Highly Significantly Improved	100%	4 + + + +
Mild	25 %	1 +	Markedly Improved	75%	3 + + +
Moderate	25 – 50 %	2 + +	Moderately Improved	25 – 50%	2 + +
Severe	75 %	3 + + +	Mildly Improved	25%	1 +
Agonizing	100%	4 + + + +	Unchanged	00	0 -

b. Psychological improvements – Anxiety level

c. Physical measurements – Body Weight, Blood Pressure, Pulse Rate, Respiratory Rate, Breath Holding Time

iii. Laboratory Parameters:

a. Haematological:

- E.S.R., Hb., T.L.C.
- D.L.C. - Neutophils, Lymphocytes, Eosinophils, Basophils, Monocytes.
- Platelets

b. Bio-Chemical:

- Lipid Profile - Total Cholesterol, HDL, LDL, VLDL, Serum Cholesterol, Serum Triglyceride.
- Liver Function Tests - T & D Billirubin, ALT (SGPT). AST (SGOT).
- Renal Function Tests - Blood Urea, Serum Uric Acid, Serum Creatinine
- Serum Antioxidant - Super Oxide Dismutase Test (SOD)

6. OBSERVATIONS AND RESULTS:

Table – No.2: Showing the comparison between before and after treatment in the subject of group 1.

Observations	After *Shodhana* Therapy			After *Rasayana* Therapy		
	t - value	p - value	Result	t - value	p - value	Result
Short Term Memory	1.43	0.080	NS	2.08	0.022*	S
Long Lasting Memory	0.37	0.355	NS	0.81	0.210	NS
Medha	-1.00	0.162	NS	1.35	0.091	NS
Arogya	3.31	0.001*	HS	4.57	0.000*	HS
Tharunya	4.38	0.000*	HS	5.96	0.000*	HS
Prabha	8.82	0.000*	HS	10.66	0.000*	HS
Varna						
Dryness	-7.28	0.000*	HS	-8.82	0.000*	HS
Oily Skin	-3.77	0.000*	HS	-3.60	0.000*	HS
Grey Hair	-0.64	0.261		-1.72	0.046*	S
Swara	3.23	0.001*	HS	5.66	0.000*	HS
Deha Bala	-4.23	0.000*	HS	6.03	0.000*	HS
Indriya Bala						
Drika	0.00	0.500		0.00	0.500	NS
Rasa	1.78	0.041*	S	2.43	0.010*	S
Gandha	2.01	0.025*	S	2.01	0.025*	S
Sparsha	0.00	0.500	NS	-0.86	0.803	NS
Shabda	0.86	0.197	NS	0.86	0.197	NS
Weight	-12.42	0.000*	HS	-7.48	0.000*	HS
Blood Pressure	-0.81/-0.81	0.210/0.210	NS	1.75/2.06	0.044*/0.023*	S
Pulse Rate	-0.90	0.186	NS	-0.65	0.260	NS
Respiratory Rate	-0.26	0.400	NS	-1.18	0.122	NS
Breath Holding Time	-5.13	0.000*	HS	9.35	0.000*	HS
Sleep	2.89	0.003*	HS	3.40	0.001*	HS

* Significant at 5% level of significance

Cont... **Table - 4.3 : Showing the comparison between before and after treatment in the subject of group 1.**

Observations	After *Shodhana* Therapy			After *Rasayana* Therapy		
	t - value	p - value	Result	t - value	p - value	Result
ESR in mm/ 1 Hr.	-2.13	0.02*	HS	-0.07	0.47	NS
Hb gm%	-1.28	0.10*	S	2.46	0.01*	HS
TLC /cu.mm.	2.40	0.01*	HS	1.73	0.05*	S
Neutrophils%	-2.98	0.00*	HS	-2.87	0.00*	HS
Lymphocytes %	2.49	0.01*	HS	1.82	0.04*	S
Eosinophils%	-3.13	0.00*	HS	-3.56	0.00*	HS
Basophils%	0.00	0.50	NS	0.00	0.50	NS
Monocytes%	0.36	0.36	NS	0.18	0.43	NS
Platelets%	1.58	0.06*	S	0.24	0.40	NS
Anxiety level	-1.77	0.042*	S	-4.56	0.000*	HS
Total Lipids.	-1.89	0.033*	S	-2.65	0.006*	HS
HDL. mg/dl	-3.44	0.001*	HS	-1.46	0.076	NS
LDL. mg/dl	-2.57	0.007*	HS	-2.74	0.005*	HS
VLDL. mg/dl	-2.50	0.008*	HS	0.98	0.166	NS
Serum Cholesterol.mg/dl	-5.04	0.000*	HS	-5.52	0.000*	HS
Serum Triglyceride.mg/dl	-2.00	0.026*	S	-1.23	0.112	NS
T Bilirubin. mg/dl	-0.49	0.312	NS	-1.85	0.036*	S
D Bilirubin. mg/dl	1.19	0.121	NS	2.19	0.017*	S
AST (SGOT). u/l	-1.22	0.114	NS	1.08	0.142	NS
ALT (SGPT). u/l	-1.31	0.099	NS	-1.42	0.081	NS
Blood Urea. mg%	-2.25	0.015*	S	-2.50	0.008*	HS
Serum Creatinine. mg%	-3.13	0.002*	HS	-0.33	0.373	NS
Serum Uric Acid. mg/dl	-2.26	0.015*	S	-4.88	0.000*	HS
Albumin	-4.51	0.000*	HS	-5.59	0.000*	HS
FBS	-3.01	0.002*	HS	-4.17	0.000*	HS
SOD u/l	13.18	0.000*	HS	17.01	0.000*	HS

* Significant at 5% level of significance

Table - 4.4 : Showing the Comparison between before and after treatment in the subject of both the groups.

Observations	After *Shodhana* Therapy			After *Rasayana* Therapy		
	t - value	p - value	Result	t - value	p - value	Result
Short Memory	2.08	0.022*	**S**	**1.45**	0.081	NS
Long Lasting Memory	0.81	0.210	NS	-1.00	0.835	NS
Medha	1.35	0.091	NS	1.00	0.165	NS
Arogya	4.57	0.000*	HS	3.29	0.002*	HS
Tharunya	5.96	0.000*	HS	2.17	0.021*	S
Prabha	10.66	0.000*	HS	3.63	0.001*	HS
Varna						
Dryness	-8.82	0.000*	HS	-4.38	0.000*	HS
Oily Skin	-3.60	0.000*	HS	-5.84	0.000*	HS
Gray Hair	-1.72	0.046*	S	-1.00	0.165	NS
Swara	5.66	0.000*	HS	-0.44	0.333	NS
Deha Bala	6.03	0.000*	HS	1.72	0.050	NS
Indriya Bala						
Drika	0.00	0.500	NS	0.14	0.66	NS
Rasa	2.43	0.010*	S	2.75	0.55	NS
Gandha	2.01	0.025*	S	2.57	0.60	NS
Sparsha	-0.86	0.803	NS	2.67	0.73	NS
Shabda	0.86	0.197	NS	2.81	0.51	NS
Weight in kgs.	-7.48	0.000*	HS	-1.49	0.076	
Blood Pressure mm/Hg.	1.75/2.06	0.044*/0.023*	S	1.00/1.23	0.165/0.116	NS
Pulse Rate in mins	-0.65	0.260	NS	-2.28	0.017*	S
Respiratory Rate in mins	-1.18	0.122	NS	-1.83	0.041*	S
Breath Holding Time in sec.	9.35	0.000*	HS	6.84	0.000*	HS
Sleep in hrs.	3.40	0.001*	HS	5.46	0.000*	HS
ESR. mm/ 1 hr.	-0.07	0.47	NS	-2.22	0.019*	S
Hb gm%	2.46	0.01*	HS	3.83	0.001*	HS
TLC /cu.mm.	1.73	0.05*	S	-0.77	0.226	NS
Neutrophils %	-2.87	0.00*	HS	0.83	0.207	NS
Lymphocytes%	1.82	0.04*	HS	0.57	0.288	NS
Eosinophils %	-3.56	0.00*	HS	-2.48	0.011*	S
Basophils%	0.00	0.50	NS	1.00	0.165	NS
Monocytes %	0.18	0.43	NS	-1.86	0.039*	S

Cont... **Table - 4.4 : Comparison between before & after treatment in the subjects of both the groups**

Category	Group-1			Group-2		
	t - value	p - value	Result	t - value	p - value	Result
Platelets%	0.24	0.40	NS	-0.40	0.346	NS
Anxiety level	-4.56	0.000*	HS	-1.83	0.041*	S
Total Lipids. gms/dl	-2.65	0.006*	HS	-5.08	0.000*	HS
HDL. mg/dl	-1.46	0.076	NS	0.60	0.276	NS
LDL. mg/dl	-2.74	0.005*	HS	-2.30	0.016*	S
VLDL. mg/dl	0.98	0.166	NS	-1.16	0.131	NS
Serum Cholesterol.mg/dl	-5.52	0.000*	HS	-3.38	0.001*	HS
Serum Triglyceride.mg/dl	-1.23	0.112	NS	-1.97	0.031*	S
T Bilirubin. mg/dl	-1.85	0.036*	S	-1.29	0.106	NS
D Bilirubin. mg/dl	2.19	0.017*	S	-1.40	0.088	NS
AST (SGOT). u/l	1.08	0.142	NS	0.67	0.254	NS
ALT (SGPT).u/l	-1.42	0.081	NS	1.05	0.152	NS
Blood Urea. mg%	-2.50	0.008*	HS	-1.75	0.048*	S
Serum Creatinine. mg%	-0.33	0.373	NS	-0.79	0.219	NS
Serum Uric Acid. mg/dl	-4.88	0.000*	HS	-4.57	0.000*	HS
Albumin	-5.59	0.000*	HS	-5.25	0.000*	HS
FBS	-4.17	0.000*	HS	-0.90	0.190	NS
SOD u/ml	17.01	0.000*	HS	6.12	0.001*	HS

* Significant at 5% level of significance

Table - 4.5 : Overall assessment in the subjects of Group 1 & Group 2

Category	Group - 1				Group - 2			
	M.D.	SD	t -value	p -value	M.D.	SD	t -value	p -value
Symptomatic Changes	0.643	0.182	23.17	0.000*	0.618	0.229	12.37	0.000*
Psychological Changes	0.580	0.302	12.59	0.000*	0.608	0.265	10.51	0.000*
Haematological Changes	0.812	0.385	13.83	0.000*	0.709	0.309	10.51	0.000*
Bio-Chemical Changes	0.784	0.255	20.16	0.000*	0.863	0.791	5.00	0.000*
SOD	42.39	15.01	17.01	0.000*	28.07	11.22	6.12	0.001*

* Significant at 5% level M.D. – Mean of the mean difference SD – Standard deviation of the mean differences

Discussions:

Data reveals that the subjects developed a growing feeling of well being, mental and physical fitness after the therapies in both groups particularly in group one which was treated with *Shodhana Karma* followed by *Rasayana*.

It was observed that there were significant improvements in symptoms such as *Arogya,*

Tarunya, Prabha, Varna (dryness of the skin, oiliness of the skin), breath holding time, sleeping hours, anxiety level, serum antioxidants (SOD) levels and significant reduction in eosinophil count, total lipids, LDL, serum cholesterol, blood urea, serum uric acid, albumin, in both groups. Further there were significant improvements in short memory, *Indriyabala* (*Swara, Gandha*), TLC, lymphocytes, D billirubin, blood pressure (within normal range) and significant decrease in body weight, neutrophils, FBS (fasting blood sugar) noticed in group one. Whereas significant decrease in pulse rate, respiratory rate (within normal range), ESR, serum triglyceride was noticed in the subjects of group two.

Considering the overall assessment, it can be noticed that the 'p' values of the all categories in both groups are statistically highly significant. It implies that both groups significantly responded to both *Shodhana Karma* along with *Rasayana* as well as only *Amalaki Rasayana* treatment. But while looking into the't' statistic of the overall assessment, the 't' values of the group one is considerably higher than the 't' values of the group two. It clearly states that the group one which was treated with *Shodhana* followed by *Amalaki Rasayana* produced more pronounced changes than the group two which was treated with only *Amalaki Rasayana*.

During the *Pradhana Karma* i.e. *Vamana* and *Virechana* eliminate the waste materials (endotoxins) accumulated in the body. *Vamaka Dravyas (Madanapaladi Yoga)* possessed *Ushna, Tikshna, Sukshma, Vyavai, Vikashi, Sara* and *Urdhvabhagahara* properties. Due to these properties *Vamaka Dravyas* get absorbed immediately in the blood stream and crosses the blood brain barriers and stimulate the vomiting centre situated in medulla oblongata and results into vomiting sensation and then emesis starts. At the same time *Vamaka Dravyas* enter the micro circulatory channels *(Srotas)* of the body due to the same properties; break the *Doshas* adhered to the cells; liquify them and bring to the *Koshtha*. Ultimately the waste materials are expelled out through the mouth due to their *Urdhvabhagahara* property. The expelled materials consist of undigested food particles, *Kapha* and *Pitta Dosha* etc. This process cleanses the channels of the body and leads to balance the digestive power (*Jatharagni*).

This Equilibrium of *Jatharagni* leads to the equilibrium of *Dhatvagni* and *Bhutagni*. Balanced *Jatharagni* leads to formation of highest quality of *Aahara Rasa* which leads to formation of highest quality of *Dhatus*. When administered *Rasayana* drugs after performing proper *Shodhana Karmas* produce maximum benifits of the *Rasayana* drugs. Thus highly significant improvement was observed in group one than group two.

Virechana (by *Trivritadi Yoga*) is bio-purificatory procedure of purgation that involves elimination of vitiated *Pitta Dosha, Pittakapha* or *Kapha Dosha* situated in *Pittasthana*. *Virechana Dravyas* possess all the pharmacological properties of *Vamaka Dravyas*. But they act in the downward direction (*Adhobhagahara* property) due to their *Prithvi* and *Jala Mahabhuta Gunas*.

Virechana cleanses the different types of toxic materials resulted due to the metabolic activities, the things to be excreted through the liver and the intestinal mucosa, along with the unabsorbed residues of gastrointestinal tract. Ultimate action of *Samyaka Virechana* (proper purgation) is regulation of gastro intestinal motility, essential for adequate absorption of *Samana, Rasayana* drugs and other nutrients.

Further *Virechana* drugs have cholerrhatic action thus increasing the production of bile. Some of the lipophilic toxins brought back to the liver from periphery are transformed into water soluble forms and are excreted through urine. Some toxins as described earlier are excreted from the body through bile during *Pittantaka Vamana* and during *Virechana*.

Virechana Karma regulates *Vata Dosha* by movement regulation *(Vatanulomana), Pitta Dosha* by chemo-enzymatic secretions and *Kapha Dosha* by regulating the intestinal mucosal secretions. By increased movements of intestines, due to smooth muscle contractions the glandular secretions related to gastrointestinal tract are pumped into the tract where existing *Srotovarodhaka Ama* and accumulated *Malas* are propelled into the intestinal lumen. Due to these hyperbaric solutions in the gut through osmosis, the accumulated toxins in the cells (*Rasa, Lasika* and *Udaka* etc.) move into the gut through the intestinal mucosa. Thus all the secretions

drained into the ileum are safely brought out of the body by peristalsis, which is the ultimate aim of *Shodhana* therapy. The sodium which might have been in excess previously is lost through *Virechana*, which may regulate sodium and potassium exchange. This indirectly regulates *Agni* and gives no place for formation of *Ama*. (endotoxins)

Finally, *Peyadi Samsarjana Karma* was given as post *Shodhana* regimen to regulate the depleted *Agni*. Consuming less calorie diet during the *Samsarjana Karma* also caused to reduce the weight of the subjects and calorie restriction has been found to reduce mitochondrial free radical production.

The levels of antioxidants (Super Oxide Dismutase) have increased highly significantly after *Shodhana* (P<0.000) and after *Rasayana* therapies (p<0.000) in subjects of group one. Similarly Super Oxide Dismutase increased highly significantly in group two also (p<0.001). Comparatively most highly significant increase was noted in group one than group two subjects.

The increase in antioxidant levels Super Oxide Dismutase due to the effects *Amalaki Rasayana* and the effect of *Shodhana*a therapy starting right from the *Pachana* and up to the *Samsarjana Karma*. Most of the drugs used in the *Shodhana* therapy possesse antioxidant properties.

The combination of *Shodhana* therapy and *Rasayana* therapy yields maximum benefits in increasing the antioxidants. These findings suggest that *Shodhana*a therapy increases the antioxidants and decrease the free radicals in the body and by increasing the antioxidants and decreasing the free radicals the pathogenesis of various diseases and ageing can be controlled /prevented.

No untoward side effects or toxic effects were reported in any of the subject registered in the series after administration of *Shodhana* and *Rasayana* therapies. All the subjects tolerated both the therapies well.

Conclusions:

On the basis of the overall findings, the group one which was treated with *Shodhana* followed by *Amalaki Rasayana* produced more pronounced changes on bio-physical factors than the group two which was treated with only *Amalaki Rasayana* without producing any toxic or harmful effects to the body. Hence the *Shodhana* and *Rasayana* therapies can be considered as potent remedy for managing untimely ageing (*Akalaja Jara)*.

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Clinical Study

Clinical Evaluation of *Triphala-Guggulu* & *Panchatikta-Ghrita Uttara-Basti* (Intrauterine) In The Management of Uterine Fibroid

*Dr. Pushpa Sharma, **Dr. Sushila Sharma, ***Prof. R. S. Sharma

Abstract:

Garbhashaya arbuda or uterine fibroid is one of the most common & least discussed of female afflictions. Uterine leiomyoma being the one of most common benign tumours in women amongst all neoplasms, is responsible for a large number of hysterectomies. Panchakarma therapy offers a ray of hope for such debilitating conditions, for which no effective medical treatment is available in modern science. Management of fibroid has become a global challenge. An effective & safe treatment of fibroid is a matter of great concern for physicians as well as surgeons. In Ayurveda a large number of drugs possessing anticancerous or antineoplastic properties have been mentioned, many recipes of drugs mentioned in the texts for the management of fibroid, of them Triphala-guggulu & Panchatikta-ghrita were chosen to evaluate their efficacy for the management of fibroid.

सारांश–

गर्भाशयार्बुद स्त्री में होने वाले सर्वाधिक अर्बुदों में से एक होते हुए भी सर्वाधिक विवेच्य विषय है। यह बड़ी संख्या में होने वाले गर्भाशयच्छेदन के लिए उत्तरदायी है। पंचकर्म चिकित्सा ऐसे दु:साध्य रोंगों के लिए आशा की किरण है जिनका आधुनिक चिकित्साशास्त्र में प्रभावी निदान उपलब्ध नहीं है। आयर्वेद में वर्णित अनेकों अर्बुदनाशक औषधियों में से त्रिफला–गुग्गुलु और पंचतिक्त घृत की उत्तरबस्ति को गर्भाशयार्बुद की चिकित्सा में इनकी क्षमता मूल्यांकन हेतु चयनित किया गया।

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Introduction

It is extra-ordinary that a tumour present in the uterus of up to 77% of patients requiring hysterectomy has not been given higher priority in medical research. Uterine fibroid have been a low priority area when compared with cancer research & poorly funded - surprisingly given that they are the most common neoplasm which any woman is likely to develop.

Uterine fibroids are benign growths of uterus often appear during childbearing period of women. But these days, as more women hold demanding jobs, many delay childbearing & most expect , more say in their health care, the incidence of fibroids is rising higher. Unfortunately, we have more cohort studies, case control studies & randomized control trials for rare disease than for a condition which affects at least half of women during their reproductive years & is the leading indication for the most common major operation in women.

On exploration of Samhita literature, though the disease Arbuda has been described widely but no special reference of female genital tract is available. According to Dr. P.V. Tiwari we can compare it with Mamsarbuda. In modern classics, in spite of detailed description given about Uterine Fibromyoma, etiology of the disease has not been clearly defined. Some etiological factors like hormonal influences & heredity though have gained attention in recent years but uncertainty in etiology of the disease is the main hurdle in its management.

Despite exhaustive & pain striking studies, no satisfactory treatment has been invented even today. Though, surgery is the treatment of choice in a growing menu of management of symptomatic fibroids but there is a long list of disadvantages of hysterectomy observed as post-hysterectomy manifestations & moreover, myomectomy has shown its own limitations & is more risky operation. In addition, drug therapy as medical treatment has its own limitations & adverse effects & has not yet shown satisfactory results. So, there is a need of finding a safe phytotherapeutic preparation in the management of uterine fibromyoma.

The majority of fibroids remain asymptomatic (75%). They are accidentally discovered by the physician during routine examination or at laparotomy or laparoscopy. The symptoms are related to anatomic type & size of the tumour. The site is more important than the size. A small submucous fibroid may produce more symptoms than a big subserous fibroid. Fibroid symptoms can develop slowly over several years or rapidly over several months. They may cause menstrual abnormalities like menorrhagia, metrorrhagia, Intermenstrual bleeding & dysmenorrhoea; pelvic pain, pressure symptoms like retention of urine, bladder irritability with diurnal frequency, urgency or obstructed urination, sense of rectal fullness, pain during defecation, tenesmus, constipation & low back ache; Infertility, Pregnancy related problems, rectosigmoid compression with constipation or intestinal obstruction, venous stasis, edema & varicosity of lower extremity & possible thrombophlebitis secondary to pelvic compression, weakness secondary to anemia & abnormal bleeding, polycythemia, Indigestion, discomfort sitting, dyspnoea, fatigue, abdominal bloating etc.

Panchakarma is a comprehensive system of knowledge & practices to purify the body from the degenerative influences of toxins & restore it to balance with natural law. If the body is biologically purified & cleansed the physiology is restored optimally & pathology reversed. The nutrients reach their desired destinations easily & their bioavailability is enhanced. When the channels are

purified, the administered drug & their metabolites may not stagnate unduly long in the body. So it was thought beneficial to reduce the size of fibroid with combined therapy including indigenous drug-Triphala-guggulu (indicated for Mamsarbuda in Yogaratnakar -Shukdosh chikitsa) & Panchatikta-ghrita (indicated in Chakradatta -Kustha chikitsa 98-100) Uttara-basti & to some extent it proved true.

Clinical Study

MATERIAL & METHODS

30 patients having uterine fibroids were selected from the O.P.D. /I.P.D. of department of Panchakarma & Prasuti & Stri Rog, National Institute of Ayurveda, who fulfilled the criteria of selection for this clinical research irrespective of race, cast, creed & religion.

Inclusion Criteria:

All female patients in age group of 20-50 years of age, presenting with signs & symptoms of fibroid uterus, having fibroid size up to 5cm. (Confirmed by USG) were included in the criteria irrespective of race, case, creed & religion.

Exclusion Criteria:

- Pregnancy cases
- Patients having PID (Pelvic Inflammatory Disease)
- Hb <6gm%
- Big size (>12 weeks)
- DUB (Dysfunctional Uterine bleeding)
- Subserous fibroid
- Unmarried girl → (For Uttra-basti only)
- Post menopausal Stage
- Patients who have developed sarcomatous changes in fibroids

The study was carried out in 30 patients divided into three groups:

Group A –Only Triphala –guggulu —orally

Group B – Only Panchatikta –ghrita — Uttara-basti

Group C –Triphala–guggulu+Panchatikta-ghrita Uttar-basti

Triphala –guggulu was given 500 mg b.d. with lukewarm water for three months. Panchatikta-ghrita was administered in the form of uttar-basti for three consecutive menstrual cycles after cessation of menses. The dose was 5 ml. each time. Before uttar-basti 1 Anuvasana + 1 Niruha + 1 Anuvasana basti were also given.

Ingredients of Triphala-guggulu are:-

S. No.	Drug Name	Botanical Name	Part used	Quantity
1.	Amalaki	Emblica officinalis	Fruit	1 Part
2.	Haritaki	Terminalia chebula	Fruit	1 Part
3.	Vibhitak	Terminalia belirica	Fruit	1 Part
4.	Pippali	Piper longum	Dried Berries	1 Part
5.	Guggulu	Commiphora mukul	Gum resin	5 Parts

Ingredients of Panchatikta–ghrita:-

a) Kwatha dravya:-

S. No.	Drug Name	Botanical Name	Part used	Quantity
1.	Guduchi	Tinospora cordifolia	Whole Plant	1 Part
2.	Nimba	Azadirachta indica	Leaves	1 Part
3.	Patola	Trichosanthes dioica	Leaves	1 Part
4.	Vasa	Adhatoda vasica	Leaves	1 Part
5.	Kantakari	Solanum surattense	Leaves	1 Part

b) Kalka dravya:-

1. Amalaki
2. Haritaki ¼ part
3. Vibhitaka

c) Ghrita – 1.5 Kg.

Assessment criteria

Table 1

Parameters	Cardinal Features	Score
1. Menorrhagia	Less than 5pads/day without clots	0
	5-6 full soaked pads/day without clots	1
	5-6 pads/day with clots	2
	More than 6 pads/day with or without clots	3
2. Intermenstrual Period	Once in 25-28 Days	0
	Once in 20-25 Days	1
	Once in 15-20 Days	2
	Up to 15 days or irregular	3
3. Pain in Lower abdomen	No pain	0
	Local tolerable pain oftenly	1
	Severe pain radiating to adjacent areas	2
	Pain at rest with disturbance of sleep	3
4. Weakness / Fatigue	Occasional on doing heavy work	0
	After doing extra work	1
	After doing routine work	2
	Even without doing work	3
5. Anemia	Hb value 12-13 gm%	0
	Hb value <12 & >10 gm%	1
	Hb value <=10 & >=8 gm%	2
	Hb value <8 gm%	3
6. Constipation	No Constipation	0
	Passes hard & soft stool regularly	1
	Passes hard stools all the time, but no need of laxative	2
	Needs laxative to pass stool	3
7. Volume of Uterus		
8. Volume of Fibroid		

Demographic profiles

Observation

TABLE 2

Parameters		No.	Percentage
1. Age (in Years)	25-30	2	6.66
	31-35	6	20
	36-40	7	23.33
	41-45	7	23.33
	46-50	8	26.66
2. Religion	Hindu	26	86.66
	Muslim	2	6.66
	Christian	1	3.33
	Buddha	1	3.33
3. Caste	Brahmin	13	43.33
	Others	17	56.66
4. Marital Status	Married	26	86.66
	Unmarried	4	13.33
5. Parity Status	Nulliparous	5	16.66
	Uniparous	0	0
	Multiparous (G_2-G_5)	18	60
	Grandmultipara (>G_5)	7	23.33
6. Habitat	Rural	5	16.66
	Urban	25	83.33
7. Education	Illiterate	5	16.66
	Literate	25	83.33
8. Occupation	House wife	17	56.66
	Service women	11	36.66
	Labourer	2	6.66
9. Economic Status	Upper Middle Class	15	50
	Lower Middle Class	11	36.66
	Lower Class	4	13.33

Parameters		No.	Percentage
10. General Health	Weak	9	30
	Average	5	16.66
	Good	16	53.33
11. Dietary Habit	Vegetarian	21	70
	Non-Vegetarian	9	30
12. Addiction	Tobacco Chewing	4	13.33
	Smoking	1	3.33
	Alcohol	0	0
	No addiction	25	83.33
13. Life Style	Active	12	40
	Sedentary	18	60
14. Koshth	Mridu	8	26.66
	Madhyam	10	33.33
	Krura	12	40
15. Prakriti	Vatapittaja	3	10
	Vatakaphaja	18	60
	Kaphapittaja	9	30
16. Heredity	Contributory	6	20
	Non-contributor	24	8
17. Interval	Regular	16	53.33
	Irregular	11	36.66
	Menopaused	3	10
18. Duration (in days)	3-5	14	46.66
	6-8	9	30
	Above 8	4	13.33
	Menopaused	3	10
19. Size of Fibroid	Below 2 cm.	8	26.66
	>2 cm. & <4 cm.	14	46.66
	4 cm. - 5 cm.	8	26.66

Table 3

Symptamatology

Cardinal features	Group A			Group B			Group C		
	Mean Score		Mean	Mean Score		Mean	Mean Score		Mean
	BT	AT	%	BT	AT	%	BT	AT	%
Menorrhagia	1	0.667	33.33	2	1.2	40	2	0.8	60
Intermenstrual Period	2	1.5	25	2.2	1.4	36.36	2	0.33	83.33
Pain Lower abdomen	1.16	0.33	71.42	1.8	0.8	55.55	2	0.8	60
Fatigue	1.75	1	42.85	2	0.66	71.42	1.833	1	45.45
Anemia	1.4	0.6	57.14	1.375	0.875	36.36	1.375	0.625	54.54
Constipation Uterus	2.2	1.4	36.36	2.2	1	55.54	2.4	0.6	75
Volume	275.42	148.24	46.18	217.53	148.34	31.80	241.69	118.64	50.91
Fibroid Volume	42.879	41.85	2.397	6.487	5.96	8.10	22.051	18.332	16.86

*Uterus Volume & Fibroid Volume in cm^3

Table 4

Cardinal features	Group A				Group B				Group C			
	± SD.	± SE	*t*	*P*	± SD.	± SE	*t*	*P*	± SD.	± SE	*t*	*P*
Menorrhagia	0.5773	0.3333	1	>0.1	0.4472	0.2	4	<0.02	0.447	0.2	6	<0.01
Intermenstrual Period	0.707	0.5	1	>0.1	0.447	0.2	4	<0.02	0.577	0.333	5	<0.05
Pain Lower abdomen	0.408	0.1666	5	<0.01	1.11	0.5	2	<0.10	0.447	0.2	6	<0.01
Fatigue	0.5	0.25	3	>0.05	0.577	0.33	5	<0.05	0.408	0.166	5	<0.01
Anemia	0.447	0.2	4	<0.02	0.534	0.188	2.64	<0.05	0.92	0.327	2.29	0.05
Constipation	0.447	0.2	4	<0.02	0.447	0.2	6	<0.01	0.447	0.2	9	<0.001
Uterus *Volume*	116.74	44.12	2.88	<0.05	31.72	12.95	5.34	<0.01	78.74	32.147	3.82	<0.02
Fibroid Volume	1.01	0.319	3.21	>0.01	0.41	0.130	4.03	<0.01	2.38	0.753	4.93	<<0.01

Result & Discussion

An intergroup comparison (by unpaired t test) revealed that the effect of Triphala-guggulu & Panchatikta-ghrita Uttara-basti was found equally good in Group A, B & C in improving the intermenstrual periods, pain in lower abdomen, fatigue, anemia & reducing the volume of uterus. Group C was found more effective than in Group A & B improving the menorrhagia, constipation & reducing the volume of fibroid. While Group A & B were found equally good in these features. The percentage of improvement in fibroid volume was low in all three groups but statistically it was found

significant, moderately significant & highly significant in Group A, Group B & Group C respectively(Table 3 & 4).

Conclusion

The comparative effect of indigenous compound, Triphala-guggulu & Panchatiktaghrita Uttara-basti was evaluated & combined group (Group C) was found more beneficial & effective than single therapy alone in symptomatic treatment of uterine fibromyoma as well as in reducing fibroid volume, as the results obtained were encouraging & invite more intensive studies further on large number of patients.

It was well tolerated by the patients & devoid of any adverse-effects.

- ❖ It's non-invasive-so there's no cutting or general anaesthesia.
- ❖ It's an out patient procedure-so there is no hospital stay.
- ❖ There is a short recovery time-so patient will be back on his feet in 1 hour
- ❖ There are documented fewer disability days (decreased days of missed work or days in bed), so minimal discomfort.

It might be due to the various properties like deepan (Pippali, Guggulu), pachan, amadoshahara (Pippali), rasayana, lekhana (due to Tikta Rasa), anticancerous & antineoplastic, (Amalaki, Haritaki, Guduchi, Nimba, Guggulu), adaptogenic, antioxidant (Guduchi, Haritaki, Amalaki, Pippali, Nimba), hepatoprotective Amalaki, Haritaki, Vibhitaka, Pippali, Guggulu, Guduchi, Nimba, Kantakari), immuno-modulator (Guduchi, Haritaki, Amalaki, Pippali, Nimba), antispasmodic (Vibhitaka, Guggulu, Amalaki, Vasa) , uterine tonic & uterine stimulant (Guggulu, Vasa, Kantakari), etc. of the constituent of the ayurvedic compounds that caused the positive result in the management of uterine fibroid. The main principal of the management of uterine fibroid was agnivardhana, Vatanulomana & stroto-vishodhana.

Uttara-basti which is given in Garbhashaya i.e. Artavavaha strotas stimulates the strotas. But it also acts as stimulant by contents used in formation of basti-dravya. The vaginal passage & uterus may also be purified & mollified after menstruation by Uttara-basti with special ghrita, helps to revitalize the hormonal system, giving youthfulness & stamina to the body. Uttara-basti also gives vibrant energy to the female organs.

Due to sukshma-guna of ghrita, it enters the microchannels (strotas). The medicated ghrita when enters through the intrauterine route, it enters the artavavaha strotas & due to its snigdha guna it causes the vatashaman. Uttara-basti may itself stimulate the organs & also increases the blood supply, which may favour absorption of drugs & excretion of waste products i.e. sthanic karma.

Thus it may be concluded that combined effects of all therapies Triphala-guggulu, Abhyanga, Swedana, Niruha-basti, Anuvasana-basti & Uttara-basti with Panchatikta-ghrita might have helped in pacifying the vitiation of Dosha & Dhatu & bring out Samprapti-vighatana causing breech in pathogenic process of the disease & ultimately alleviation of disease.

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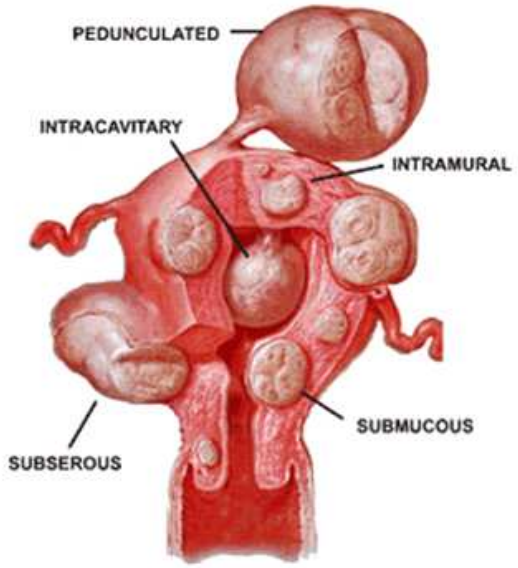

Fig.1: Different Types of Uterine Fibroids

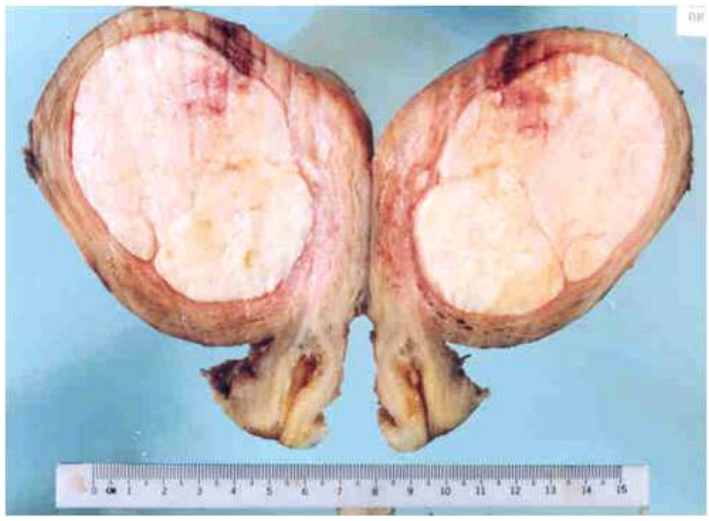

Fig.2: Calcified Intramural Fibroids

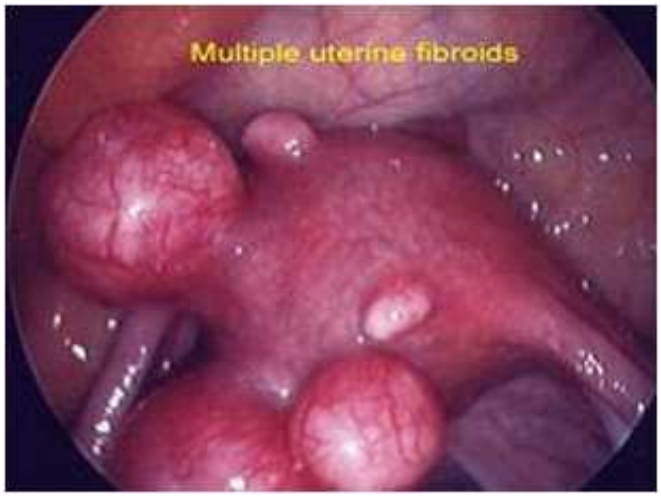

Fig.3; Multiple Uterine Fibroids

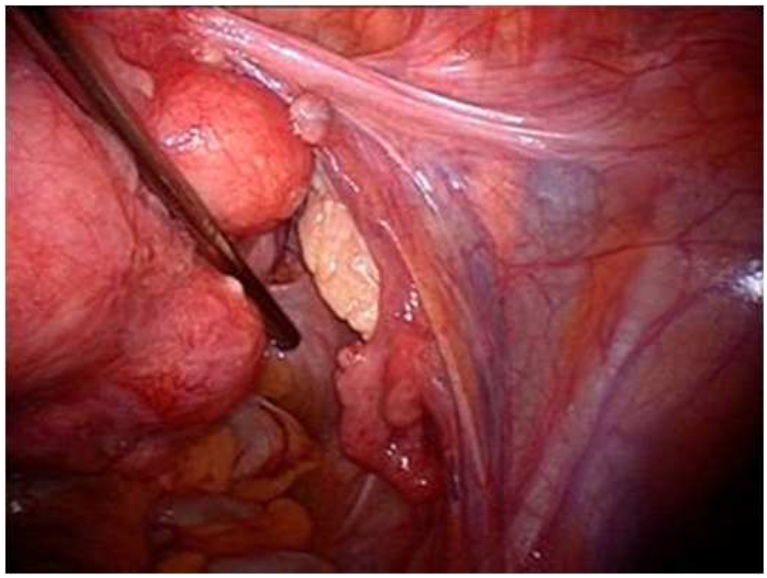

Fig.4: A Fibroid Polypus

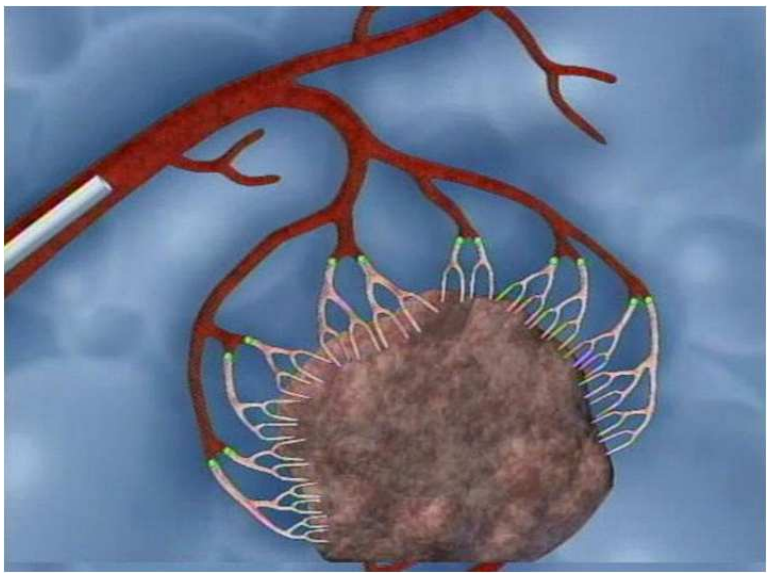

Fig.5: Diagram showing blood supply to a Uterine Fibroid

Clinical Study

Clinical Study on The Efficacy of *Akshadi Yog* & *Pratimarsha Nasya* In The Management of Recurrent Upper Respiratory Tract Infection In Children

*Dr. Shalini Tewari, **Prof. Abhimanyu Kumar

Abstract :-

Recurrent respiratory infections are a serious health problem in childhood. It has been very well described in the classics that children, due to various anatomical, physiological and immunological peculiarities, are prone to develop recurrent infections.The concept of immunology is correlated in Ayurveda as *vyadhikshamatwa*. Various drug and regimens that are capable to strengthening body's immune defense system have been described in classics.

Considering these facts, a clinical study to evaluate the effect of an Ayurvedic compound and Pratimarsh nasya, has been planned. The proposed multimodal drug, "Akshadi yog" is having few potent herbal medicines possessing *rasayana,agnivardhaka, aampachaka, srotoshodhaka*, anti-inflammatory, antimicrobial and mucolytic effect.

सारांश :-

बाल्यावस्था के समय श्वसन संस्थान में बार-बार होने वाला संक्रमण बच्चों के स्वास्थ्य की गंभीर समस्या है। बच्चों में बार-बार संक्रमण का कारण रचना शारीर, क्रिया शारीर और इम्यूनोलॉजी है। आयुर्वेद में इम्यूनोलॉजी का व्याधिक्षमत्व से सामांजस्य किया गया है। अनेक ऐसी औषधियॉ हैं जो शरीर के व्याधिक्षमत्व बल को बढ़ाती हैं इसी तथ्य को ध्यान में रखते हुए प्रस्तुत चिकित्सकीय शोध में आयुर्वेदिक कम्पाउण्ड ''अक्षादि योग'' और प्रतिमर्श नस्य के प्रभाव को देखने के लिए किया गया है। इस अध्ययन हेतु 2-12 वर्ष की आयु के 45 रोगी लिये गये। अध्ययन हेतु चयनित रोगियों को 3 समूहों में विभाजित किया। अध्ययन के परिणामों से सिद्ध होता है कि परीक्षणीय औषधि (अक्षादि योग) Upper Respiratory Tract Infection पर प्रभावकारी औषधि है।

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Clinical Study

Clinical Study on The Efficacy of *Akshadi Yog* & *Pratimarsha Nasya* In The Management of Recurrent Upper Respiratory Tract Infection In Children

Dr. Shalini Tewari, Prof. Abhimanyu Kumar

Recurrent respiratory infections are a serious health problem in childhood. The influence factors are: immaturity of immunological system, children spending time in day care centres, and environmental factors such as living conditions, pollution and passive smoking . The child between 4 to 8 years of age is known as catarrhal child which itself indicate the prevalence of the same among this particular age group. (Drake Lee AB. et.al, 1987)

URIs are usually minor illnesses even though they may be major nuisances. URIs range from the common cold, typically a mild, self-limited, catarrhal syndrome of the nasopharynx, to life-threatening illnesses such as epiglottitis. Viruses account for most URIs. Bacterial primary infection or superinfection may require targeted therapy. The respiratory tract is the most common site for infection by pathogens.This site becomes infected frequently because it comes into direct contact with the physical environment and is exposed to microorganisms in the air.

There is no proper standardized treatment for URTIs in modern medicine. Antibiotics have nothing to do with majority of the cases of URTI but still prescribed which make many young children immunocompromised. Although direct description of URTI is not given in *Ayurveda,* details of etiopathogenesis and symptomatology of the disease entity *Pratishyaya* and *kasa* covers most of the aspects described under recurrent upper respiratory infections (RURTI).

It has been very well described in the classics that children, due to various anatomical, physiological and immunological peculiarities, are prone to develop recurrent infections.The concept of immunology is correlated in Ayurveda as *vyadhikshamatwa*. Various drug and regimens that are capable to strengthening body's immune defense system have been described in classics

Considering these facts, a clinical study to evaluate the effect of an Ayurvedic compound and Pratimarsh nasya, has been planned. The proposed multimodal drug, "Akshadi yog" is having few potent herbal medicines possessing *rasayana, agnivardhaka, aampachaka, srotoshodhaka*,anti-inflammatory ,antimicrobial and mucolytic effect.

Material And Methods

Aims and objective

The study was plan to assess the clinical efficacy and safety of Akshadi yog and *Pratimarsh nasya* (Tulasi swarasadi taila) in the management of Recurrent upper respiratory tract infection in children. For this purpose a double blind, randomized and placebo – controlled study was conducted.

Plan Of The Study :

Children for the present study were selected from the O.P.D.and I.P.D. of Balroga Department of National Institute of Ayurveda, Jaipur. The selected patients were examined thoroughly and were recorded in the case sheet specially designed for this study.Children between 2 years to 12 years were selected for the study. Total 61 cases was screened out of which 16 numbers of cases was discontinued. Thus the study was completed in 45 cases.

Grouping of Patients:

Screened out children were randomly divided into three groups of 15 children in each group.

- Group A - This group of were given the trial drug Akshadi yoga.
- Group B - This group were given placebo .
- Group C-This group were given the trail drug Akshadi yoga and Pratimarsh nasya

Diagnostic Criterias Adopted:

A. Inclusion Criteria

- Age 2-12 years of either sex with satisfying criteria.
- Nasal Discharge/Running nose
- Nasal obstruction
- Sore throat
- Cough
- Expectoration
- Fatigue
- Fever

B. Exclusion Criteria

- Enlarged tonsils
- Lower respiratory tract infection
- Dyspnea
- Tuberculosis
- Bronchial asthma
- Bronchiestasis
- Pneumonia
- Bronchiolitis

Clinical Assessment –

Assessment of clinical symptoms depending on the severity was done on four-point scale

Nasal Discharge

- Normal Nasal discharge 0
- Nasal discharge only in morning 1
- Nasal discharge both in morning and evening 2
- Continuous nasal discharge 3

Nasal Obstruction

- No obstruction 0
- Obstruction only during sleep 1
- Intermittent obstruction throughout the day 2
- Complete obstruction throughout the day 3

Sore throat

- No sore throat 0
- Sore throat with pain and no difficulty in food intake 1
- Sore throat with pain and difficulty in food intake 2
- Sore throat with pain, which interferes with intake of liquid too. 3

Cough

- No cough 0
- Occasional cough 1
- Continuous cough with moderate pain 2
- Continuous cough with sever pain 3

Expectoration

- No expectoration 0
- Expectoration for 1-3 days 1
- Expectoration for 3-5 days 2
- Expectoration for >5 days 3

Fatigue-

- No fatigue 0
- Mild fatigue 1
- Moderate fatigue 2
- Severe fatigue 3

Fever

- No fever 0
- Fever only at night 1
- Mild fever throughout the day 2
- Moderate / severe fever throughout the day 3

Calculation of final score = frequency x severity

Laboratory Assessment:

Blood – Hb%, TLC, DLC, ESR, PBF.

Follow-up study for one month was done after the completion of the therapy**.**

Drug -A hypothetical formulation Akshadi Yog containing 10 drugs was selected for the present study. The compound was in the form of Syrup in order to enhance its palatability and easy administration in children.

Dose and Duration 1ml/kg/ day for 2 months.

Placebo-The placebo for the study was also in the form of syrup composed of sugar and water.

Pratimarsh nasya - The medicated oil is classical ' Tulsi Swarasadi oil "indicated in *peenus* used as Pratimarsh nasya.

Contents of "Akshadi yog"

S.No	Drug	Parts Used	Proportion
1.	Vibhitaki (Terminalia bellerica)	Fruit	1 Part
2.	Amalaki (Emblica officinalis)	Fruit	1 Part
3.	Haritaki (Terminalia chebula)	Fruit	1 Part
4.	Pippali (Piper longum)	Root	1 Part
5.	Tulasi (Ocimum sanctum)	Panchanga	2Part
6.	Kantkari (Solanum xanthocarpum)	Panchanga	2Part
7.	Haridra (Curcuma longa)	Rhizome	8/5Part
8.	Gojihva (Onosma bracteatum)	Panchanga	8/5 Part
9.	Vasa (Adhatoda vasica)	Panchanga	12/5Part
10.	Yastimadhu (Glycyrrhiza glabra)	Root	12/5Part

Contents of Tulasi Swarasadi Taila

S.No	Drug	Parts Used	Proportion
1.	Sesame (Sesamum indicum)	Oil	1 Part
2.	Tulasi (Ocimum sanctum)	Panchanga	4 Part
3.	Sarala (Pinus roxburghii)	Oleo-resin	1/4 Part

1. Observations and Results

Table Showing Morbidity Score of all Morbidity Features before treatment

Morbidity Features	Group A Morbidity Score (*n*)				Group B Morbidity Score (*n*)				Group C Morbidity Score (*n*)			
	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12
Nasal discharge	06	03	04	02	08	07	00	00	00	09	06	00
Nasal Obstruction	05	05	04	00	12	01	00	00	02	07	06	00
Sore throat	06	01	00	00	07	00	00	00	06	06	01	00
Cough	04	06	04	01	08	07	00	00	06	06	02	00
Expectoration	00	02	02	00	05	03	00	00	04	01	01	00
Fatigue	00	07	01	00	07	00	00	00	14	01	00	00
Fever	09	02	01	00	15	00	00	00	12	03	00	00
Total	**30**	**26**	**16**	**03**	**62**	**18**	**00**	**00**	**44**	**33**	**16**	**00**

Observations on morbidity score for all features before treatment shows that maximum patients were under the severity grade range 1-3 in groups A ,group B and group C.

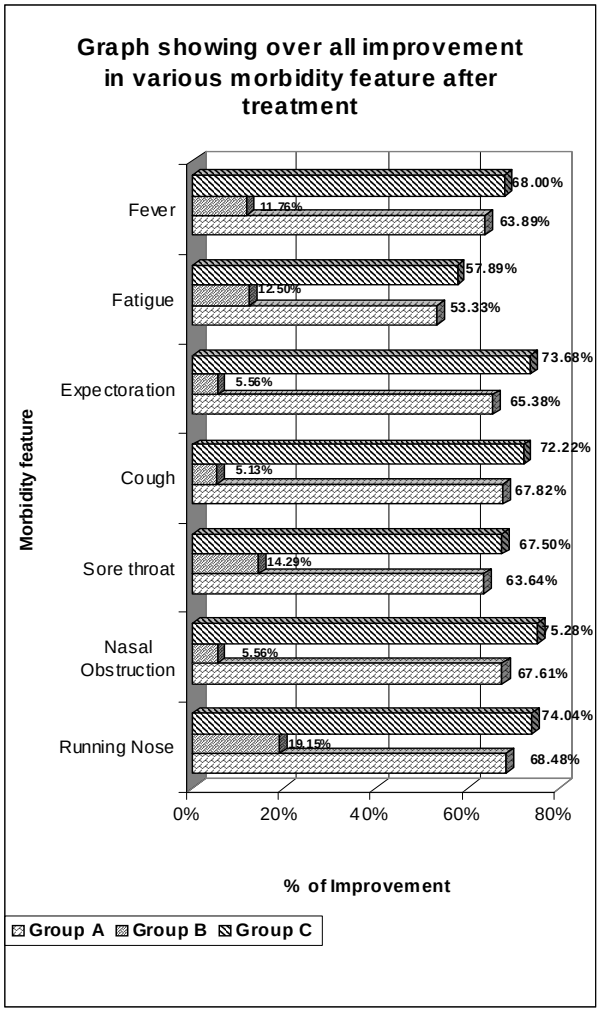
Table-2 Showing morbidity scoring of all the morbidity feature after treatment

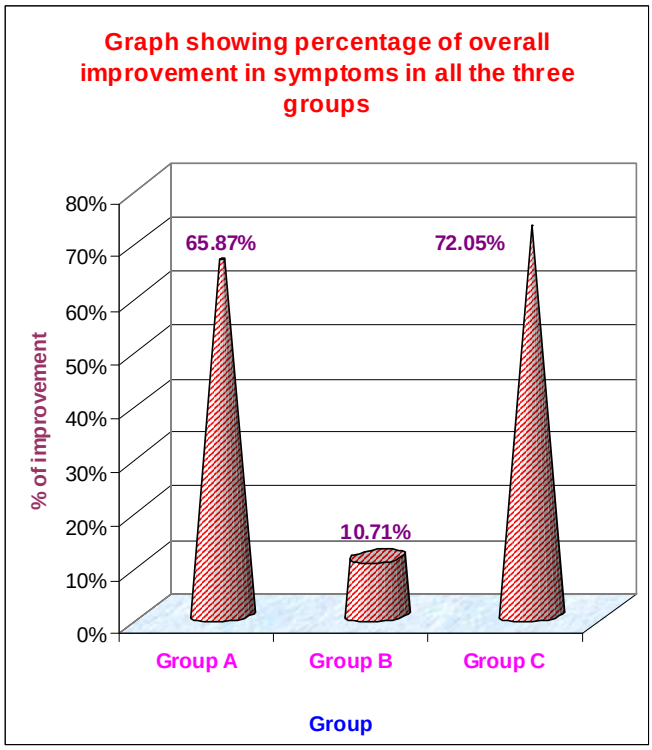
Morbidity Features	Group A Morbidity Score (*n*)					Group B Morbidity Score (*n*)					Group C Morbidity Score (*n*)				
	00	1-3	4-6	7-9	10-12	00	1-3	4-6	7-9	10-12	00	1-3	4-6	7-9	10-12
Nasal Discharge	04	08	03	00	00	01	09	05	00	00	02	13	00	00	00
Nasal Obstruction	01	12	01	00	00	00	12	01	00	00	07	05	03	00	00
Sore throat	04	03	00	00	00	01	06	00	00	00	04	08	01	00	00
Cough	04	09	02	00	00	00	09	06	00	00	06	06	02	00	00
Expectoration	01	01	02	00	00	00	06	02	00	00	03	03	00	00	00
Fatigue	03	05	00	00	00	00	07	00	00	00	08	07	00	00	00
Fever	05	06	01	00	00	00	15	00	00	00	10	05	00	00	00
TOTAL	22	44	09	00	00	02	64	14	00	00	40	47	06	00	00

Observations on morbidity score of all features, after treatment shows the increase in the cases, under the score range 1-3, and an decrease in the range 4-6, 7-9 and 10-12 in all 3 groups . An increase in the cases under score range 0-0 in groups A ,and C has been observed .No significant change was observed in group B.

Statistical presentation of over all improvement.

Symptoms	Mean			Gain	SD	SE	"t"	P	Interpre
	BT	AT	Diff.	%	±	±	Value	Value	-tation
A	4.28	1.46	2.82	65.87	1.47	0.56	5.07	<0.001	H.Sign.
B	1.81	1.61	0.19	10.71	0.18	0.07	2.83	<0.050	Signi.
C	3.70	1.03	2.67	72.05	1.63	0.62	4.33	<0.001	H.Sign.





Discussion

Nasal Discharge- The improvement was highly significant (P<0.001) with gain 68.48% in group A. In Group B the improvement was insignificant (P<0.1) with gain percent of 19.15 % obtained where as in Group C the improvement was highly significant (P<0.001) with gain percent 74.04%.Regarding *Nasal obstruction* in Group A the improvement was highly significant (P<0.001) with gain percent 67.61%.In group B the improvement was highly insignificant (P>0.1) with gain percent was 5.56%. In group C , the result was highly significant at P<0.001 and gain% was 75.28% obtained.*Sore throat* -. the improvement was highly significant (P<0.005) with gain percent was 63.64% observed.in group A.

In group B the relief was insignificant at P>0.1 and gain% was 14.29%.In group C the

improvement was highly significant at P<0.001, and gain percent was 67.50%.Cough- In group A the improvement was highly significant at P<0.001. Relief was obtained in Cough with the gain percent 67.82%. In group B relief is insignificant at P>0.1 with gain percent is only 05.13% .In Group C improvement was highly significant at P<0.001 and gain percent was 72.22% obtained.**Expectoration**- This improvement is statistically significant at P<0.025. and gain percent was 65.38% in group A. In group B the relief is insignificant at P>0.1 with gain percent is only 05.56% . In group C the improvement is highly significant at P<0.001 and gain percent was 73.68%.**Fatigue** -The improvement show highly significant at P<0.001 and gain percent was 53.33 obtained in group A. In group B the result was statistically insignificant (P>0.10) and gain% was 12.50%. In group C the improvement is highly significant at P<0.001. and gain percent was 57.89%. **Fever**-The improvement was highly significant at P<0.001 with gain percent was 63.89% in group A. In group B the result were insignificant at P<0.1 and gain% was 11.76%. In group C the results were highly significant at P<0.001 and gain percent was 68.00%.

Discussion regarding probable mode of action of Akshadi yog

Pharmacodynamic properties of herbal drugs in formulation of Akshadi yog on observation shows that most of drugs have mainly *Laghu, Ruksha, Tikshna guna, Tikta , katu rasa, Katu vipaka, Ushna Virya and Kapha Vata shamaka prabhava.*

Since in upper respiratory tract infection pranavaha srotas basically involve Pratishyaya and *Kasa roga* . In this disorder the *dosha* involved are *Kapha Vatapradhan* and *alpa pitta. Dushya* involved is *rasa* and *rakta dhatu* and *srotas* affected are *pranavaha, annavaha* and *Udakavaha srotas.*

Considering above factors the drug chosen besides having a *Kapha vata shamaka* activity should have strong affinity to act on *pranavaha srotas*. Drug possess *Laghu, Tikshna ,Ushna, Guna* and also *Kaphaghna* properties. It exhibit *srotosodhaka* properties which may help to remove *Dosha* stagnant in the *srotasas.*

Analysis of the *Rasa* present in the individual drug reveals that maximum drugs have *Tikta rasa* , and *Katu rasa* . *Tikta rasa* being predominant in *Akasha Mahabhuta* and *Laghu Guna*. its *Agnideepana* functions increases the metabolism and reduce the formation of *Ama*. Thus by virtue of *Tikta* and *Katu rasa*, both having *kaphaghna* property imbalance of *Kapha dosha* is maintained. This ensure the *Pachana* of *ama dosha* considering the *vipaka* of all the ingredients of study drug maximum drug have *Katu Vipaka* and *madhura Vipaka. Madhura vipaka* is said to increase all the *Sharira dhatus* ,*mana* and *Indriya* ,alleviate *Vata dosha* ,increases the vital strength. *Katu vipaka* increases the overall metabolism.

Ushna Virya and *Laghu Guna* having the properties *Vilayana, Pachana*, *Srotoshodhaka*. Due to this viscosity of *kapha doshas* is reduced and mucolytic and expectoration of *kapha* ensures the respiratory tract on coughing.

Majority of drug having *ushna virya* . *Ushna virya* by virtue of its *Vata* alleviating properties pacifies the vitiated *Vata* and *Kapha Dosha* .Most of the drug has *kapha vata shamaka prabhava*. Thus *Kapha shamaka* properties of drug help in breaking the *srotorodha* and digestion of *Ama*, which leads to proper functioning of the body.

The formulation contain drugs having *rasayana prabhava*. The *rasayana* drug are supported to increase all the Sharira dhatu, both qualitatively and quantitatively. Rasayana drug improve the quality of Rasadhatu and their by the entire status of the body. The study drug contains Rasayana prabhava are Emblica officinalis. It has immunomodulator effect (Biswas S. et. al.,) as per related study; the researcher has concluded that immunomodulatory regimen well play a key role in future therapies for urti. The ingredients as Amalaki by their anti-stress activity are responsible for reducing the provocation as aggravation of symptoms Emblica officinalis display pronounced adaptogenic properties, active against induced during stress. (Rege NN, et. al., 1999).

The Akshadi Yog is the combination of drug having *Amapachaka, Jwarhara* (Pippali,Gojihva), *Rasayana* (Amalaki),*Vishaghna* (Haridra), *Sothahara* (Kantakari, Yasthimadhu), Shwashkasahara (tulasi kantakari etc.), *Kasahara* (Vibhitaki), *Kasashwasahara* (Vasa) *Deepan pachana rasayana* (Haritaki), Thus the component of the study drug

might have acted at various levels in breaking the pathogenesis of URTI. The efficacy of trial drug in reducing the symptom like nasal discharge, nasal obstruction ,expectoration, cough, sore throat, mild fatigue and fever, because of the *Vata* and *Kapha shamaka Prabhava* of the drug and the anti-inflammatory, analgesic, antipyretic and antimicrobial effect of various ingredients. Immunomodulator property (Amalaki, Pippali, Tulsi, Yasthimadhu) of many drugs are responsible for the overall relief in symptoms.

Probable mode of action of Pratimarsh nasya

According to Acharya Charak Pratimarsh Nasya serve both the purpose of oleation and purification. It is presumed that multifactorial approach is responsible for producing therapeutic effect of *nasya karma*. It mainly performs the *srotoshudhi* and also helps in elimination of vitiated *dosha*. The drug contain tulasi, gandhviroja and tila taila. Decongestant action of Tila might be responsible for improvement in nasal obstruction, which is the main ingredient in nasal drop (Jorgen Johnsen, et.al 2001).

Summary.

- 4-8 years age group was the most affected group.
- Females were found more prone to RURTIs as compared to males.
- Maximum numbers of cases were belonging to urban area and middle socio-economic status.
- Psychological and behavioral problems were found associated with RURTIs in the form of irritability, poor school performance, enuresis, ADHD, teeth grinding, social withdrawn, fear, , aggressiveness and pica.
- Associated complaints found are headache, otitis media, sinusitis etc .
- Kapha Vata Prakriti patients were found to be more prone .
- The provocating factors told by the parents of the patients were dust, smoke, cold air, cold season, cold water,, seasonal changes, , physical stress, and mental stress.
- Appreciative improvement was observed in Hb%. TLC, neutrophil count and ESR show marked reduction.

Conclusion:

Recurrent Upper Respiratory Tract Infections is a common problem of all age groups. It is the leading cause of physician visits worldwide. It is more seen among pediatric age group.It gives rise to a good number of long term as well as short-term complications that can hamper the overall growth of a child. Symptomatology of URTIs, in children closely, resemble with *Pratishyaya* and *kasa.Kapha vata* traits of *Sharirika prakriti* can render a child have more prone to the disease.Prevention of RURTI is possible through avoiding the causative factors to the possible extent, better lifestyles and measures to improve the immune status of child. Ayurveda can constitute multidimensional approach for the treatment of RURTIs. Which includes drug and *Pratimarsha nasya* used to manage the RURTIs.The study observe that both drug and *Pratimarsha nasya* were effective in alleviating some symptoms but drug combined with *Pratimarsha nasya* had much greater potential to ameliorate the symptoms rather than the drug alone, as the response observed with drug was more positive in systemic symptom, while with *Pratimarsha nasya* in local nasal symptom.No adverse effects of the study drug were observed during the study. Further extensive study is needed to authenticate the result of the present study.

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Clinical Study

The Efficacy of *Punarnavadi Taila Matra Basti* In The Management of *Vataja Hridroga*

*Vd. Amit R. Nampalliwar, **Dr. D.K. Puri, ***Dr. S. R. Saley

Abstract

Over the years the heart has become more and more vulnerable to derangement with the result that cardiac disorders have become one among the major killers of present days in developed and developing countries. Basti Chiktsa has been advocated and practiced by Ayurvedic clinicians. Basti chikitsa has more therapeutic effect than other types of treatments that are used to cure various chronic illnesses. In this context scientific explanations are highly warranted to establish the efficacy of Basti treatment.

Thus the present study was undertaken with the aim - "To Study the Efficacy of Punarnavadi Taila Matra Basti in Vataja Hridroga."

For the study, 60 patients having symptoms of Vataja Hridroga like Hrudshul (chest pain), Hrudrava (palpitation), Swasawarodha (dyspnea) etc. were selected from IPD & OPD of GAC Nanded, and randomly divided into two groups. **Group - A (Trial Group)** - 30 patients were administered the Matra Basti of Punaranavadi Taila only. **Group - B (Control Group)** - 30 patients were kept on placebo treatment.

After study, it was observed that the relief of symptoms in Group-A was statistically significant which suggest that punarnavadi tail matra basti is efficacious in Vataja Hridroga and in Group-B it was observed that no relief in symptoms of Hridshul, Hriddrava, Shwasawarodha. Also both the groups showed relief in psychological symptoms like Shoka, Bhaya, etc. No side or toxic effects were noted in any of the patients during the trial period.

Key Words: Vataja Hridroga, Punarnavadi Taila, Matra Basti.

सारांश–

विकसित एवं विकासशील राष्ट्रों में हृदयरोग का प्रमाण दिनोंदिन बढ़ता जा रहा है। जिससे बहुत लोग मौत के शिकार बनते हैं। आयुर्वेद में बस्तिचिकित्सा के परिणाम अन्य चिकित्सा पद्धति से श्रेष्ठतर हैं। इसलिये बस्ति कि शास्त्रीय दृष्टि से उपयोगिता–स्थापन करना जरूरी है। प्रस्तुत अध्ययन का उद्देश्य 'वातज हृद्रोग में पुनर्नवादि तैल मात्रा बस्ति का प्रभाव' यह है।

प्रस्तुत अध्ययन के लिये 60 रुग्ण जो वातज हृद्रोग के हृत्शुल, हृद्रव एवं श्वासावरोध इन लक्षणों से पीड़ित हैं उनका शासकीय आयुर्वेद कॉलेज नान्देड़ के बाह्य एवं आन्तर रूग्ण विभाग से किया गया। रुग्णों का दो समूह में विभाजन किया गया। समूह 'अ'–प्रायोगिक समूह – 30 रुग्णों को पुनर्नवादि तैल की मात्रा बस्ति दी गयी। समूह 'ब' – नियन्त्रित समूह – इसमें 30 रुग्णों को दिया गया। अध्ययन उपरान्त ऐसा देखने में आया कि समूह 'अ' में रुग्णों के लक्षणों में सांख्यिकी दृष्टि से सकारात्मक परिणाम नहीं पाया गया । दोनों समूह में शोक भय आदि मानसिक लक्षणों पर उपशय मिला। अध्ययन के दौरान रुग्णों में अन्य पार्श्व प्रभाव या विषजन्य प्रभाव दिखायी नहीं दिया।

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Clinical Study

The Efficacy of *Punarnavadi Taila Matra Basti* In The Management of *Vataja Hridroga*

Vd. Amit R. Nampalliwar, Dr. D.K. Puri, Dr. S. R. Saley

INTRODUCTION:

The cardiovascular diseases described in Ayurveda under Hridroga are in concise from. The classification of Hridroga and many of the symptoms described are in subjective form. Vataja Hridroga is one of the five types of Hridroga mentioned in Ayurveda. It is diagnosed on the basis signs and symptoms like- Hridshul (chest pain), Hriddrava (palpitation) Swasawarodha (Dyspnea) Vepathu (Tremor) etc.

Basti karma is one of the most important and frequent procedure of panchkarma for allievating vata do?a. Acharya Vagbhata has even equated Basti chikitsa to ardha chikitsa. (A.H.Su.19/86)

The allopathic management finds out of Hridroga is costly, symptomatic and continues for the lifetime. It is need of the hour that Ayurveda find out safe and effective better modality which is preventative as well as curative.

Keeping all the above points in mind a study was conducted at Govt.Ayurved college & hospital, Nanded where efficacy of Punarnavadi Taila given as Matra Basti in 30 patients was evaluated.

After the clinical trial, it was found that the Punarnavadi Taila is very effective and safe and there is scope for reducing the doses of conventional drugs.

Aims And Objectives:

1. To Study The Efficacy of Punarnavadi Taila Matra Basti in Vataja Hridroga
2. To experiment and see whether any significant relief can be provided by this drug.

Materials And Methods:

Inclusion Criteria:

1) Patients of Vataja Hridroga between 20-60 years age, irrespective of sex.
2) Patients having symptoms of Vataja Hridroga like Hridshul (chest pain), Hriddrava (palpitation) Swasawarodha (dyspnea) etc were selected from IPD & OPD of G.A.C. Nanded.
3) Patient without complication (Grade-I-III)

Exclusion Criteria:

1) Patient with age below 20 years and above 60 years.
2) Patient with Diabetes, C.V.A., Obesity, Asthma, Rh. Arthrities etc.
3) Patient receiving any other treatment for cardiac disorder.
4) Patient having anatomical deformity or any congenital anamolies of Heart.
5) Patient with severe conditions and complications. (Grade-IV).

MATERIAL:

A) Trial Drug: Purnanavaditaila,

The contents of Purnanavaditaila:

बिल्वं रास्नां यवान् कोलं देवदारूं पुनर्नवाम्।
कुलत्थान् पञ्चमूलं च पत्तवा तस्मिन् पचेज्जले।
तैलं तत् नावनं पाने बस्तौ च विनियोजयेत्।
–अ.हृ.चि. 6/27 (हृद्रोग चिकित्सा)

Drug's Name	Latin Name	Ras	Vipaka	Veerya	Doshaghnata
Bilva	Aegle marmelos	Kashaya, Tikta	Katu	Ushna	KV
Rasna	Pluchea Lanceolata	Tikta	Katu	Ushna	KV
Yava	Hordeum Vulgace	Kashaya, Madhur	Katu	Sheet	KVP
Kol	Zizipus jujube	Amla	Amla	Ushna	V
Devdaru	Cedrus deodara	Tikta	Katu	Ushna	KV
Punarnava	Boerhaavia diffusa	Katu, Kashaya	Katu	Ushna	KVP
Kulattha	Dolicus biflorus	Kashaya	Katu	Ushna	KV
Shaliparni	Desmodium Gangeticum	Tikta, Madhur	Madhur	Ushna	KVP
Prushniparni	Uraria Picta	Madhur	Madhur	Ushna	KVP
Brihati	Solanum indicum	Katu, Tikta	Katu	Ushna	KV
Kantakari	Solanum xanthocarpum	Tikta, Katu	Katu	Ushna	KV
Gokshur	Solanum indicum	Madhur	Madhur	Sheet	V

(**Note:** V – Vata Dosha, P – Pitta Dosha, K – Kapha Dosha)

B) Control drug : Starch powder filled capsules.

C) Apparatus:

1. Metal syringe
2. Rubber catheter
3. Measuring glass

Methods:

Patients were treated under two groups.

Group – A Experimental Group - 30 patients were administered the matra basti of Punaranavadi taila only.

Group – B Control Group-30 patients on placebo treatment of starch powder capsules, Dose: 500mg X 2BD.

Investigations like Hb%, TLC, DLC, ESR, BSL (R), Urine routine examination etc. were done in all Patients

ASSESSMENT CRITERIA:

Lakshanas of Vataja Hridroga -

वेपुर्थर्वेष्टनं स्तम्भ-प्रमोह-शून्यता दर।
हृदि वातातुरे रूपं जीर्णे चात्यर्थवेदना।।
–च.सू. 17/31

The following signs and symptoms of Vataja hridroga were assessed before and after treatment in both the groups.

1) Primary Symptoms:-

1) Hridshul (chest pain)
2) Hriddrav (Palpatation)
3) Shwasawrodha (dyspnea)

2) The associated symptoms like

1) Shoka (Sadness)
2) Bhaya (Fear)
3) Vepathu (Tremor)
4) Moha (Giddiness)
5) Shabdasahishnuta (Intolerance of sound)
6) Alpanidrata (Loss of sleep) were assessed.

GRADATIONS OF SYMPTOMS:

Grade I - Patients with cardiac disease but without resulting limitations of physical activity. i.e. ordinary physical activity doesn't cause undue anginal pain (Hridshul) palpitation (Hriddrav), Dyspnea (Shwasawrodha).

Grade II - Patients with cardiac disease resulting in slight limitations of physical activity. (comfortable at rest) ordinary physical activity results in anginal pain(Hridshul), palpitation (Hriddrav), Dyspnea (Shwasawrodha).

Grade III - Patient with cardiac disease resulting in marked limitations of physical activity. (comfortable at rest) Less than ordinary physical activity cause anginal pain (Hridshul), palpitation(Hriddrav), Dyspnea (Shwasawrodha).

Grade IV - Patient with cardiac disease resulting in inability of carry on any physical activity without discomfort. Symptoms are present even at rest. If any physical activity is undertaken, discomfort is increased.

MODALITY OF TREATMENT:

- Metal syringe was used as the basti putak.
- Simple rubber catheter was used as basti netra.
- About 60 ml of luke warm punarnavadi taila was taken in the metal syringe with the help of measuring glass.
- After deep inspiration matra basti was given to patient as per standard procedure.

Duration:-

- 11 days.
- Matra basti was given after the passing of stool and urine in morning.

Dose- 60 ml

Control (Placebo) Group:-

Control group was examined clinically as per victims of vataja hridroga and placebo i.e. starch filled capsule were administered to them for 11 days in the dose of 2 capsule of 500mg twice a day.

OBSERVATION AND RESULTS:

TABLE NO. I : Division of Patients According to Age

Age. (Yrs.)	Group- A	Percentage	Group-B	Percentage	Total	Mean
20-30	03	10%	02	6.66%	05	8.33
30-40	07	23.33%	05	16.66%	12	20.00
40-50	10	33.33%	15	50%	25	41.66
50-60	10	33.33%	08	26.66%	18	30.00

In present study maximum patients of Hridroga were found in age group 40-50 years (41.66%).

TABLE NO. II : Division of Patients According to Sex

Sex	Group- A	Percentage	Group-B	Percentage	Total	Mean
Male	21	70.00%	23	76.66%	44	73.33
Female	09	30.66%	07	23.33%	16	26.66

In the present study Male patients (73.33%) were found to be more prone to Hridroga than female.

TABLE NO. III : Assessment of Symptoms in Experimental Group

Symptoms	N	Mean of difference	S.D.	S.E.	t	p
Hridshul (chest pain)	30	0.83	0.45	0.08	10.37	$p<0.05$
Hriddrav (Palpatation)	30	0.9	0.39	0.07	12.85	$p<0.05$
Shwasawrodh (dyspnea)	30	0.83	0.36	0.06	13.83	$p<0.05$

The present study show significant improvement in the symptoms of patient $p<0.05$ by paired 't' test this suggest that Punarnavadi Taila Matra Basti is efficacious in Vataja Hridroga.

TABLE NO. IV : Assessment of Symptoms in Control Group

Symptoms	N	Mean of difference	S.D.	S.E.	t	p
Hrudshul (chest pain)	30	0.1	0.3	0.05	2	p>0.05
Hruddrav (Palpatation)	30	0.06	0.24	0.04	1.5	p>0.05
Shwasawrodh (dyspnea)	30	0.1	0.3	0.05	1.5	p>0.05

The present study show no significant improvement in the symptoms was observed in control group p>0.05.

TABLE NO. V: Statistical Difference Observed in Associated Symptoms Due to Treatment

Shoka	Before Treatment	After treatment
Experimental group	24 (80.00%)	5 (16.66%)
Control group	16 (53.33%)	7 (23.33%)

The observed χ^2 value 7.52 is greater than expected value in χ^2 chart therefore the difference in symptoms of Shoka is significant.

Bhaya	Before Treatment	After treatment
Experimental group	21 (70.00%)	3 (10.00%)
Control group	22 (73.33%)	8 (26.66%)

The observed χ^2 value 7.62 is greater than expected value in χ^2 chart therefore the difference in symptoms of Bhaya is significant.

Vepathu	Before Treatment	After treatment
Experimental group	25 (83.33%)	2 (06.66%)
Control group	16 (53.33%)	8 (26.66%)

The observed χ^2 value 5.48 is greater than expected value in χ^2 chart therefore the difference in symptoms of Vapethu is significant.

Moha	Before Treatment	After treatment
Experimental group	26 (86.66%)	7 (23.33%)
Control group	27 (90.00%)	16 (53.33%)

The observed χ^2 value 2.23 is less than expected value in χ^2 chart therefore the difference in symptoms of Moha is insignificant.

Shabdasahishnuta	Before Treatment	After treatment
Experimental group	24 (80.00%)	3 (10.00%)
Control group	24 (80.00%)	13 (43.33%)

The observed χ^2 value 4.79 is greater than expected value in χ^2 chart therefore the difference in symptoms of Shabdasahishnuta is significant.

Alpanidrata	Before Treatment	After treatment
Experimental group	27 (90.00%)	9 (30.00%)
Control group	25 (83.33%)	12 (40.00%)

The observed χ^2 value 0.47 is less than expected value in χ^2 chart therefore the difference in symptoms of Alpanidrata is insignificant.

DISCUSSION:

- From above data, it is seen that the patients of Vataja Hridroga were found in all age groups with maximum number of them above 40 years, this is probably due to predominance of Vata in old age.
- Male were more prone to Vataja Hridroga than females, may be due to more addiction and mental stress.
- Hridshul (chest pain) - The statistical study of symptom Hridshul reveals that, the difference observed in 30 patients in experimental group was statistically significant ($P < 0.05$) by paired 't' test. The observed difference in control group of 30 patients ($P>0.05$) is not statistically significant.
- Basti is said to be the best treatment for alleviating Vata Dosha. The ingredients of punarnavaditaila are shothaghna, vataghna and balya. They are of Ushna veerya and processed with Tila-taila which is of sukshmaguna, the main site of vata is pakwashaya and basti is administrate in pakwashaya help in controlling the vitiated vata and thus help in relieving the Hridshul
- Hriddrav (Palpitation) - The vitiation of Vyan vayu by its chala guna leads to increased heart rate, which cause palpitation (Hruddrav).

  Also due to Kapha kshaya and vata prakopa in urasthana (chest) lead to the symptoms like Hruddrav. Thus Punarnavaditaila basti helps in breaking above samprapti and thus, useful in relieving Hriddrav.
- Shwasawrodha (Dyspnea) - The difference in symptom of Shwasawrodha in experimental group was found to be statistically significant ($P<0.05$) as compared control group. This is probably due to control of vitiated vata by Punarnavaditila basti leading to breaking of samprapti.
- This strongly suggests that Punarnavaditail matra basti is highly effective in relieving symptoms like- Hridshul, Hriddrava, Shwasawrodha etc.
- According to Ayurveda Hridaya is the site of mind, intelligence and spirit. Hence, the treatment also include counseling, reassurance to the patients, so both the groups showed relief in psychological symptoms like Shoka, Bhaya etc.

CONCLUSION:

- The relief of symptoms in Group-A was statistically significant which suggest that Punarnavaditail matra basti is efficacious in Vataja Hridroga.
- There was no relief in symptoms of - Hrudshul, Hruddrav and Shwasawrodha in Group-B.
- Both the group showed relief in psychological symptoms like Shoka, Bhaya etc.

- No adverse effect was observed in Group-A due to Matra basti of Punarnavaditail.
- The symptom like Alpanidrata and Shabdasahishnuta were not relieved and 4 patients did not respond to treatment with the symptoms of Hridshul, Hriddrav and Shwasawrodha.

  This may be due to insufficient of no. of days (11 days) of Matra Basti.
- Further evaluation is necessary by administrating the Basti for long term.

ACKNOWLEDGEMENT:

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Clinical Study

Evaluation of Anxiety in different *dehaprakriti* (body constitution) & effect of Tinospora cordifolia (*Guduchi*)

*Das Mahapatra Kousik, **Sharma Naresh Kr. , ***Gandharv Satish Kumar , ****Kumar Baldev, *****Dave Hetal H,

Abstract-

Background: Anxiety of same origin does not affect the two individuals equally. Moreover the effect of same drug is not equal on those individuals. Just because of their dehaprakriti that perception of anxiety and effect of drug are being different. Tinospora is an effective Anxiolytic therapy.

Methods: 30 (*Intend to treat population* (ITT) clinically anxious patients were taken as random sample, out of which 4 patients have discontinued their medicines. N=26 individuals have continued the usual stipulated course of medicine in a dose of 3gms/day for 60m days. Follow up taken in every 15 days. All patients were been assessed by "***Sinha Anxiety Scale (SAS)".*** The primary efficacy variable was the change in mean number of ***true points SAS***.

Results: Tinospora treatment was associated with a reduction in mean number of ***true points SAS***. A significantly greater percentage of Tinospora using patients (68%) experienced better relief by 5th week. Very few patients have experienced mild weakness and hypoglycemia. Follow up taken in every 15 days.

Conclusion: This pilot study suggests that Tinospora may be an effective Anxiolytic therapy. It was well tolerated in this population. Further randomized studies would be required to definitely establish the efficacy of Tinospora.

Key words- *Anxiety, Sinha Anxiety Scale, Tinospora cordifolia, Alkaloids, effictive, safe, low cost, easily available, Anxiolytic.*

सारांश-

एक ही कारण से उत्पन्न हुआ चित्तोद्वेग दो लोगों पर एक जैसा प्रभाव नहीं डालता है। जैसे एक ही औषध का प्रभाव उन पर एक जैसा नहीं होता है। केवल देहप्रकृति के कारण चित्तोद्वेग और औषध का प्रभाव अलग-अलग होता है। चित्तोद्वेग के लिए गुडूची एक प्रभावी चिकित्सा है। **विधि**- चित्तोद्वेग के 30 रोगियों को बिना क्रम से चुना गया। इनमें से 4 लोगों ने लगातार दवा नहीं ली। 26 रोगियों ने लगातार दवा ली। उन्होंने 3 ग्राम प्रतिदिन की मात्रा के अनुसार 60 दिन तक दवा ली। उनका अनुकरण पुनः 15-15 दिन पर किया गया। सभी रोगियों का निरीक्षण सिन्हा एन्जाइटी स्केल के आधार पर किया गया। **परिणाम** - गुडूची से सिन्हा एन्जाइटी स्केल के सही बिन्दु के मध्याङ्क का कम होना देखा गया। 68 प्रतिशत लोगों को 5 सप्ताह के बाद आराम मिला। बहुत ही कम लोगों ने कमजोरी और हाइपोग्लाइसिमिया की शिकायत की। **निष्कर्ष**-इस पाइलट अध्ययन से यह पता लगता है। कि गुडूची चित्तोद्वेग के लिए प्रभावकारी औषध है। इस तथ्य की और पुष्टि के लिए इसका बिना क्रम के और अध्ययन किया जाना चाहिए।

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Clinical Study

Evaluation of Anxiety in different *dehaprakriti* (body constitution) & effect of Tinospora cordifolia (*Guduchi*)

Das Mahapatra Kousik, Sharma Naresh Kr., Gandharv Satish Kumar, Kumar Baldev, Dave Hetal H,

Introduction

The 'nature of the mind' can be comprehended from different angles of Philosophy, Psychology and Spirituality. To distinguish the Philosophy of Mind from the empirical psychology, one has to go through the 'events of mind' or 'mental phenomena'. The matter of Psychology is to investigate the 'nature of mental phenomena', to develop theories of what these phenomena are and the principles that govern their operations. So, the only way to find some unity in our mental concept is to take one's perspective as primary, in relation to the other's- to regard one perspective as for better revealing the true nature of the mental phenomena. For example, if any mental phenomenon is uniform in nature, then it should be possible that all the people react equally. Again, there is probably no uniform way of resolving the tension generated by two perspectives. This peculiarity of the philosophy of mind creates an obstacle in the way of arriving at a theoretically satisfying conception of mind.

MATERIALS & METHODS:

STUDY DESIGN- This was a randomized, controlled and outpatient study of patients of Anxiety of Kangra valley (H.P.) surrounding the area of Rajiv Gandhi Govt. P.G. Ayurvedic College, Paprola. (H.P.)

Clinical material:

Patients were selected irrespective to age, sex, socio-economic status and dehaprakriti. After due registration mental status of the patients were assessed through "Sinha anxiety scale". Then their Deha-prakriti have been determined.

Inclusion criteria

*The age groups between 12-60 years.
*Normal Common blood count, LFT, RFT and Lipid profile.
*True points of "Sinha Anxiety Scale (SAS)" if more than 40.

Exclusion criteria

* Any medical/Surgical co-morbidity.
* If taking any other medication.
* Any significant protocol violation and adverse effect by tinospora.

CLINICAL STUDY

Pre-randomization & Randomization Phase

Study eligibility was assessed during the prerandomization phase, which lasted in 42 days. I myself maintained the record of *true points of SAS* of the patients during the trial. Upon successful completion of the prospective baseline period, *true points of SAS* records were reviewed.

Clinical assessments

Trial was conducted with full approval of the of the appropriate institutional review board. "Sinha Anxiety Scale (SAS)" is a govt. approved scale for assessing Anxiety.

Patients Population for efficacy Analyses

The intent-to-treatment (ITT) population was defined as randomized subjects who received at least single dose of study medication. ITT was 30(thirty). 4 (four) were dropped out (n=26). The causes of drop-out were-

- ❒ Significant protocol violation (2 patients).
- ❒ Adverse effect (Hypoglycemia) (1 patient).
- ❒ Lack of efficacy (as felt by the patient) (1patient).

Efficacy Measures

The primary efficacy analysis was based on the *comparison of the reduction in number of "true points of SAS"* in every 15 (Fifteen) days. It was observed throughout the treatment phase i.e. two

months. The result was 68.14%. Also subjective feelings of the patients were recorded. Reassessment was observed after 3 months of stoppage of medicine.

Safety Measures

The safety population included all subjects who received at least one dose of study medication and provided at least one post baseline measurement. The subject and informant were being asked if he had experienced any adverse effect. The incidence, type and severity of reported adverse events were recorded. Other safety assessments included vital signs, physical and neurological examinations and routine blood examination as per norm which includes common blood count, LFT, RFT and Lipid profile. Cognitive impairment was assessed through elicitation of adverse events.

For the clinical study thirty (30) individuals were taken, out of which four (4) individuals have discontinued their medicines, so they have been dropped out from my study. Twenty six (26) individuals have continued the usual stipulated course of medicine after fulfillment of all required criteria.

TABLE NO. 1

This table shows the distribution of twenty six (26) apparently healthy volunteers according to their age-

Age groups	***No. of Volunteers***	***Percentage (%)***
16-20 Years	22	84.61
20-30 Years	03	11.54
30-40 Years	01	03.85
Total	***26***	***100***

Age groups	**Vatapittaja**	**Vatakaphaja**	**Kaphapittaja**
16-20 Years (22)	06(27.27%)	06(27.27%)	10(45.46)
20-30 Years (03)	01(33.33%)	00	02(66.67%)
30-40 Years (01)	00	00	01 (100%)
Total	**07**	**06**	**13**

Observation and Discussion:

The above table shows that out of 26 volunteers' maximum (84.61%) were belonging to the age group of 16-20 years, 11.54% were between 20-30 years and 3.85% were between 30-40 years. In the first age group

It reveals from the above observation that the volunteers of (16-20) year's age group are very annoyed about their future and also want to know their body constitution. That's why they have readily registered themselves for taking medicaments to combat the Anxiety.

Fig: 1 : Graph showing the distribution of 26 apparently healthy volunteers according to their age

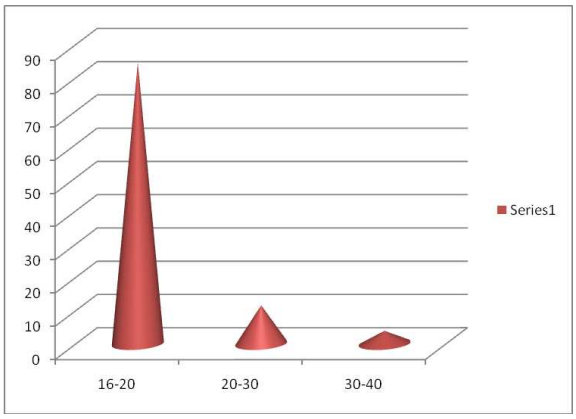

TABLE NO. 2

This table shows that distribution of twenty six (26) apparently healthy volunteers according to their sex-

Sex	***No. of Volunteers***	***Percentage (%)***
Male	13	50
Female	13	50
Total	***26***	***100***

Sex	**Vatapittaja**	**Vatakaphaja**	**Kaphapittaja**
Male (13)	03(23.07%)	03(23.07%)	07(53.86%)
Female (13)	04(30.76%)	02(15.38%)	07(53.86%)
Total	07	05	14

Observation and Discussion:

The above table shows that out of 26 volunteers 50% were male and 50% were female. It signifies that the state of anxiety has engulfed the society almost equally.

Fig: 2: Graph showing the distribution of 26 apparently healthy volunteers according to their sex

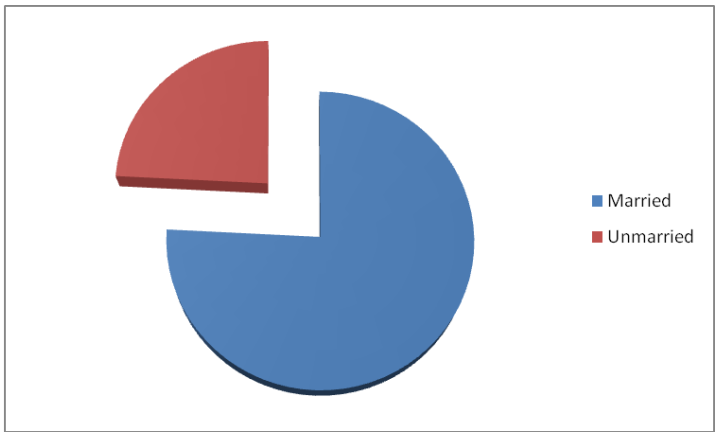

TABLE NO. 3

This table shows that distribution of twenty six (26) apparently healthy volunteers according to their socio-economic status-

Income Status	*No. of Volunteers*	*Percentage (%)*
Upper class	04	15.38
Middle class	19	73.07
Lower Middle class	03	11.55
Total	***26***	***100***

Income status	Vatapittaja	Vatakaphaja	Kaphapittaja
Upper class (4)	01(25%)	01(25%)	02(50%)
Middle class (19)	05(26.31%)	04(21.05%)	10(52.64%)
Lower Middle class(3)	01(33.33%)	00	02(66.67%)
Total	07	05	14

Observation and Discussion:

The above table shows that 73.07% volunteers are from middle class followed by upper class (15.38%) and lower-middle class (11.55%).

It reveals that the middle class families are more conscious about their future prospects, upcoming diseases and their psychic status. They are usually confused how to combat those situations, while the upper class people are less tensed for their sources.

Fig: 3 : Graph showing the distribution of 26 apparently healthy volunteers according to their socio-economic status

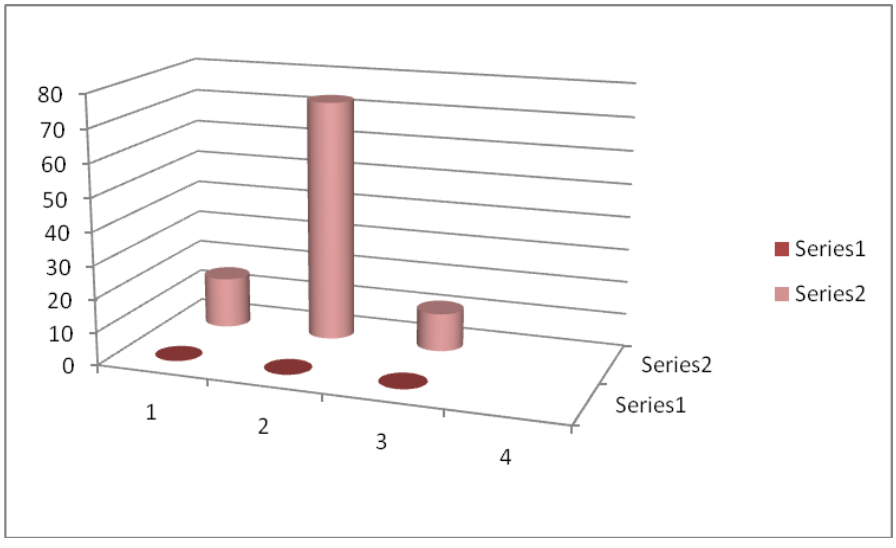

TABLE NO. 4

This table shows that distribution of twenty six (26) apparently healthy volunteers according to their occupation-

Occupation	*No. of Volunteers*	*Percentage (%)*
Servicemen	04	15.38%
Students	22	84.62%
Total	***26***	***100***

Occupation	Vatapittaja	Vatakaphaja	Kaphapittaja
Servicemen(4)	01(25%)	01(25%)	02(50%)
Students(22)	06(27.27%)	06(27.27%)	10(45.46)
Total	07	07	12

Observation and Discussion:

The above table shows that 84.62% volunteers were students and 15.38% were servicemen.

It signifies that students are much concerned about their psychological sophistication and general health as well rather than the servicemen.

Fig: 4 : Graph showing the distribution of 26 apparently healthy volunteers according to their occupation

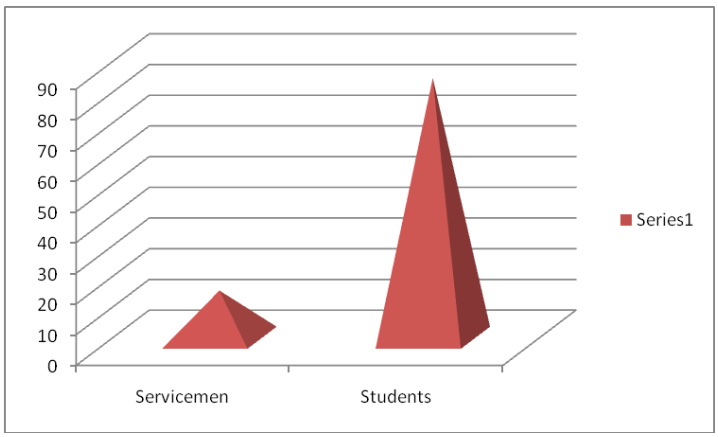

TABLE NO. 5

This table shows that distribution of twenty six (26) apparently healthy volunteers according to their dehaprakrti-

Dehaprakrti	*No. of Volunteers*	*Percentage (%)*
Vatapittaja	07	26.92
Vatakaphaja	01	03.85
Kaphapittaja	19	69.23
Total	***26***	***100***

Observation and Discussion:

The above table shows that maximum (69.23%) volunteers were belonging to Kaphapittaja prakrti, followed by Vatapittaja (26.92%) and Vatakaphaja (03.85%) prakrti.

It reveals that Kaphapittaja prakrti are more conscious about their psychic state and body constitution rather than those belonging to other constitutions.

Fig: 5 : Graph showing the distribution of 26 apparently healthy volunteers according to their Dehaprakrti

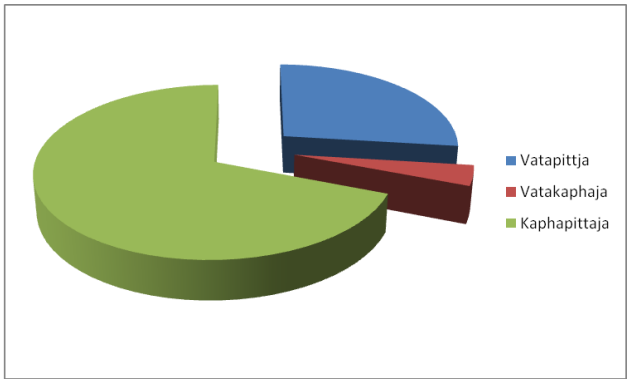

TABLE NO. 6

This table shows the relation between various Dehaprakrti with Anxiety of twenty six (26) apparently healthy volunteers-

Degree of Anxiety	Vatapittaja	Vatakaphaja	Kaphapittaja
Very high (80-100)	00	00	01
High (70-80)	00	00	04
Normal (40-70)	07	01	13
Low (25-40)	00	00	00
Very low (1-25)	00	00	00
Total	**07**	**01**	**18**

Observation and Discussion:

The above table shows that out of 18 Kaphapittaja prakrti volunteers 12(66.66%) were having normal range of Anxiety followed by high (22.22%), very high (11.12%). Out of 7 Vatapittaja prakrti volunteers 7 (100.00%) were belonging to normal range Anxiety. There is only 1 volunteer of Vatakaphaja prakrti who was suffering from normal range Anxiety.

TABLE NO. 7

These tables show the effect of Guduci powder on twenty six (26) apparently healthy volunteers after evaluated according to the "Sinha Anxiety Scale"-

(A) NORMAL RANGE ANXIETY

No. of volunteers- 17 (Seventeen)

B.T.	A.T.	% of Relief	SE	t	P
Mean+_SD 56+-9.14	Mean+_SD - 40+-8.59	71.43%	3.04	5.26	< 0.001

(B) HIGH ANXIETY No. of volunteers- 05 (Five)

B.T.	A.T.	% of Relief	SE	t	P
Mean+_SD74+-1.58	Mean+_SD - 50+-1.41	67.57%	0.948	25.32	< 0.001

(C) VERY HIGH ANXIETY No. of volunteers- 04 (Four)

B.T.	A.T.	% of Relief	SE	t	P
Mean+_SD81+-0.67	Mean+_SD - 53+-3.24	65.43%	1.67	16.77	< 0.001

Observation and Discussion:

The above tables refer that the effect of the drug Guduci powder was ***highly significant***. It also reveals that this drug has an explicit action on mental faculty as Medhya rasayana.

CONCLUSION

It signifies Anxiety of same origin does not affect the two individuals equally. Moreover the effect of same drug is not equal on those individuals. Just because of their dehaprakriti that perception of anxiety and effect of drug are being different. So determining the Dehaprakriti is very important for therapeutic and prognostic purpose.

Kaphapittaja persons are more prone to have Anxiety disorder rather than the individuals of other Prakrtis. Classically the disease Anavasthita cittata (Anxiety) is a Vatika Nanatmaja Vyadhi. Vatika prakrti persons are very susceptible to have quick reactions like anger, fear and irritation due to the Sighra (fast action) property of Vata, but at the same time they forget these things very quickly. The disease like Anxiety or any other psychological disorder are supposed to be a deep concern only when it causes a long term affect in our body or mind. The Vatika prakrti persons usually made them habituated with anxiety reaction, which is a non-sustainable morbidity for them. So, where there will be the dominancy of Vatika features in a person the proneness to long course of Anxiety disorder will be less. Though once the disease have already started to create a long term affect in Vata dominating person then it will be difficult to cure as it is a Vatika disorder. That has been satisfied through result also. The Vatika prakrti person had very little effect by tinospora.

On the other hand, the psychological sophistication of a Kapha prakrti person is strong and sustainable, as the Stamitya property (timidity) of Kapha causes very slow change in the mood. But once it affect, the person himself will not able be to alleviate the condition due to the Manda guna of Kapha.

The Pittaja prakrti person can not bear any sort misery due to the Tikshna guna of Pitta. That's why they are very vulnerable to the disease like Anxiety.

Now the question is why the persons of a It is the Tikshna guna of Pitta which refrain the person from bearing any sort of mental exertion, while the Manda guna causes further prolongation.

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Clinical Study

A Comparative Study of *Bhastrika Yogic Kriya* And *Jatamansi Ghana Vati* In The Management of Insomnia

*Dr. R. S. Ranawat, **Prof. N. S. Chundawat

Abstract -

In the modern era the sleep disorder are increasing abundantly. In this sleep disorder Insomnia being faced promptly by people who are not following the sleep hygiene. The prolonged or abnormal inability to this sleep is known as Insomnia.

The aim of researcher and subject of this study is the re-establish the *Ratriswabhava-prabhava Nidra*, which is natural and according to biological clock by *Bhastrika yogic kriya*. Because it is indeed in present era to find out or explore the non medicinal remedy of life style diseases like insomnia.

The *kwatha* and *ghana* form of *jatamansi* is being used in cases of insomnia and hypertension.

The *Bhastrika Yogic Kriya* regulates the functions of Trigranthis by increasing blood flow so it is expected to get results.

Key words : Insomnia, *Jata mansi Ghanavati* (Pre-established drug), *Bhastrika yogic Kriya*.

सारांश–

आधुनिक युग की भागदौड भरी जिन्दगी में मानसिक तनाव से सम्बन्धित अनेक रोग भयानक रूप धारण कर रहें हैं जिनमें से एक है – अनिद्रा ।

भस्त्रिका यौगिक क्रिया त्रिग्रन्थियों के कार्यों को नियमित करते हुए निद्रा की प्रक्रिया को सुचारु करती है।

अनुसंधान का लक्ष्य रात्रि स्वभाव प्रभवा नामक प्राकृतिक निद्रा को पुनर्स्थापित करना है जिसके लिए अनौषधीय योग के रूप में भस्त्रिका प्राणायाम पर अनुसंधान किया गया है एवं इसकी प्रामाणिकता के अध्ययनार्थ जटामाँसी घनवटी (पूर्व प्रचलित औषध) से इस यौगिक क्रिया की तुलना की गयी है एवं धनात्मक परिणाम संभावित है।

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Clinical Study

A Comparative Study of *Bhastrika Yogic Kriya* And *Jatamansi Ghana Vati* In The Management of Insomnia

Dr. R. S. Ranawat, Prof. N. S. Chundawat

In the modern era the sleep disorders are increasing abundantly. In these sleep disorders Insomnia being faced promptly by the people who are not following the sleep hygiene. The prolonged or abnormal inability to this sleep is known as Insomnia.

The prevalence of insomnia and other sleeping disorder are increasing world wide at an alarming rate in the developed and developing countries. Psychological stress, Fast growing competition, globalization of western culture, poor health care management and lack of consciousness towards the daily regimen (Dina charya) and seasonal regimen (Ritu charya) are responsible for it. The Surveys say that, 10% of world population is suffering from this frightening disease insomnia. Scientist of modern era includes ultra modernization and urbanization as causes of insomnia.

In current era this is the challenges at before of modern medical sciences to find out the non medicinal treatment of insomnia. So I have tried to searching the preventive and curative methods for insomnia.

The aim of researcher and subject of this study is the re-establish the Ratriswabhava-prabhava Nidra, which is natural and according to biological clock by Bhastrika yogic kriya. Because it is indeed in present era to find out or explore the non medicinal remedy of life style diseases like insomnia.

Material And Methods

1. Selection Of Cases

The study was conducted on 30 clinically diagnosed and confirmed cases of insomnia (anidra) selected from the OPD/ IPD and yoga unit of P.G. Deptt. Of swasthavritta, National Institute of Ayurveda, Jaipur

Inclusion criteria

1. Indivuals between age of 18 to 80 years of both sexes having insomnia of minimum 1 month duration were selected randomly for the study.
2. Insomnia with mild hypertension, mild depression Generalized Anxiety disorders and without any complication of other disease were included in the study.

Exclusion criteria

1. Individuals above 80 years and below 18 years of age of both sexes.
2. Patients with acute illness like Myocardial Infarction (M.I.) Cerebrovascular Accident (C.V.A.), Congestive Cardiac failure (C.C.F.) Chronic obstructive pulmonary disease (COPD), Meningitis, Acute pain condition and similar other disorders.
3. Patients having severe and malignant Hypertension.
4. Patietns with Major psychiatric illness like Epilepsy Schizophrenia, Major Depressive Psychosis, etc.
5. Patients with Alcohol dependence, drug addicts e.g. opioid, smack, charas etc.
6. Patients having chronic diseases like liver Cirrhosis, Asthama, Malignancies, Diabetes and Chronic Renal Failure.

2. Criteria of assessment

For evaluation of the clinical efficacy of Bhastrika yogic kriya along with proposed drug and to assessment of insomnia to the patients following parameters were adopted before and after the therapy - *Jrimbha* (yawning) *Tandra* (drowsiness) *Bhrima (giddiness)) Angamarda* (Malaise) *Klama*(fatigue) *Arati* (inertness) *Angasada*(lassitude)

Sirahshoola (headache) *Manodourbalya* (lack of concentration) *Smirtidourbalya* (lack of memory) *Indriya Karmahani* (poor sensory perception) *Ajirna* (indigestion) *Agnimandhya*(anorexia) *Malabaddhata* (constipation) *Dhatukshaya*(weight loss)

Administration of the therapy

30 clinically diagnosed and confirmed patients of Insomnia were selected and randomly divided into following three groups-

1. Bhastrika yogic kriya Group – First Group

10 registered patients of anidra were recommended bhastrika kriya for 15-20 min. after performance of sukshma vyayama for 45 days.

2. Drug Group – Second Group

10 registered patients of insomnia were recommended "jatamansi Ghana vati" in the dose of 4 gm. / day in two divided doses (2 tablets x.b.d.s.) with luke warm water for 30 days as ayurvedic therapy.

3. Mixed Group – Third Group

10 registered patients of insomnia were recommended bhastrika yogic kriya for 15-20 min. after performance of sukshma vyayama along with jatamansi Ghana vati simultaneously for 45 days and 30 days.

All the patients were advised to follow the pathya and apathya, as per the descriptions available in Ayurvedic and modern text, during the therapy.

Bhastrika Pranayama

The Identified patients of Insomnia for trial to see the effect of Bhastrika Pranayama were advised to report at 5.30 every morning. Each patients was clinically examined for B.P., pulse rate, respiration rate, Complaints like headache, giddiness, drowsiness etc. were also recorded.

And at 6 AM. Patients were directed to start the Bhastrika pranayama according to the method as follow After sitting on the plane floor, unfold the both legs straight.

Now Establish the left foot on the right thigh (groin), in the position that ankle remain near to umbilicus.

Again by using same method, place the right foot on the left thigh, keep both ankles near the umbilicus and keep straight the backbone. Keep both knees touch the floor.

After sitting in Padmasanam, patients were advised inhale slowly, deeply as long as possible and with the mouth closed to exhale forcibly through both the nostrils in a series of sixty expulsing at a stretch with in one minute.

Initially this procedure was repeated for total three sounds on one hundred and eighty expulsions, gradually the repetition were increased according to the capacity and tolerance of the patient or maximum for 20 minutes.

The Bhastrika pranayama balances and strengthens the nervous system as well as endocrine system by inducing peace, tranquility and onepointedness of mind. Blood from the lower portions of the body above the waist is well drained to the heart circulation due to gravitational force of the earth micro circulation in the brain is much improved. As the centre of head indirectly in contact with gravitational force of earth, the pineal endocrine gland (the king of Endocrine stands) which lies in the brain below this region is well stimulated. Pineal gland produces melatonin which is supposed to control all the physiological and biochemical functions in our body.

The master neurotransmitter serotonin is found all over the body and is necessary to modulate the levels of the stress hormones. Serotonin is precursor of melatonin, the hormone that is released at night when the body asleep, falling levels of norepinephrine are required for conversion of serotonin to melatonin. If there are persistently high levels of norepinephrine, as in the states of chronic anxiety, this conversion will not happen and the patient will have severe insomnia.

So the pineal gland stays responsible for routine sleep and Bhastrika yogic kriya increases it's functioning to maintain proper sleep.

According to various texts of yoga i.e. Gheranda Samhita Yoga kundalyoupanishada and Hatha yoga pradipika, there is explored that the Bhastrika pranayama deliberates the human being from these granthis or karmas (Aagami, samchit and

prarabdha) and may be helpful in achieve the main target of life or birth, that is Nirvana (Moksha).

Apart from this philosophical view, for the elimination of Insomnia in the population, by the Bhastrika yogic kriya we can consider these three granthis (Glands) as under-

- Pineal gland - Brahma granthi.
- Pituitary gland - Poshanak granthi or Vishnu granthi.
- Adrenaline gland - Rudra or Maheshwar granthi.

Because in the scientific view, the hormones which are responsible for the nidra and may become cause of insomnia related with these three glands and Bhastrika yogic kriya regulates the functions of all these three glands. By making appropriate level of the hormones secreted by these glands Bhastrika yogic kriya prevents and cures the insomnia and other related disorders.

Observations & Results

Clinical Evaluation Of Group Ist Treated With Bhastrika Pranayama

Symptoms	*n*	Mean		Diff.	% of Change	SD ±	SE ±	*"t"* Value	P Value
		BT	AT						
Jrimbha(yawning)	10	3.30	0.30	3.00	90.91	0.47	0.15	20.12	<0.001
Tandra (drowsiness)	10	3.30	0.30	3.00	90.91	0.47	0.15	20.12	<0.001
Bhrima (giddiness)	10	1.40	0.00	1.40	100.00	0.70	0.22	6.33	<0.001
Angamarda (Malaise)	9	1.56	0.22	1.33	85.71	0.50	0.17	8.00	<0.001
Klama(fatigue)	10	1.70	0.10	1.60	94.12	0.84	0.27	6.00	<0.001
Arati (inertness)	9	2.33	0.22	2.11	90.48	0.60	0.20	10.54	<0.001
Angasada (lassitude)	2	1.00	0.50	0.50	50.00	0.71	0.50	1.00	>0.10
Sirahshoola (headache)	10	2.50	0.40	2.10	84.00	0.74	0.23	9.00	<0.001
Manodourbalya (lack of concentration)	10	3.00	0.20	2.80	93.33	0.42	0.13	21.00	<0.001
Smirtidourbalya (lack of memory)	6	1.33	0.17	1.17	87.50	0.41	0.17	7.00	<0.001
Indriya Karmahani (poor sensory perception)	2	2.00	0.50	1.50	75.00	2.12	1.50	1.00	>0.10
Ajirna (indigestion)	10	1.60	0.00	1.60	100.00	0.52	0.16	9.80	<0.001
Agnimandhya (anorexia)	10	1.50	0.10	1.40	93.33	0.52	0.16	8.57	<0.001
Malabaddhata (constipation)	10	2.50	0.00	2.50	100.00	0.53	0.17	15.00	<0.001
Dhatukshaya (weight loss)	1	1.00	0.00	1.00	100.00	0.00	0.00	0.00	0.00

CLINICAL EVALUATION OF GROUP Iind TREATED WITH JATAMANSI GHANAVATI

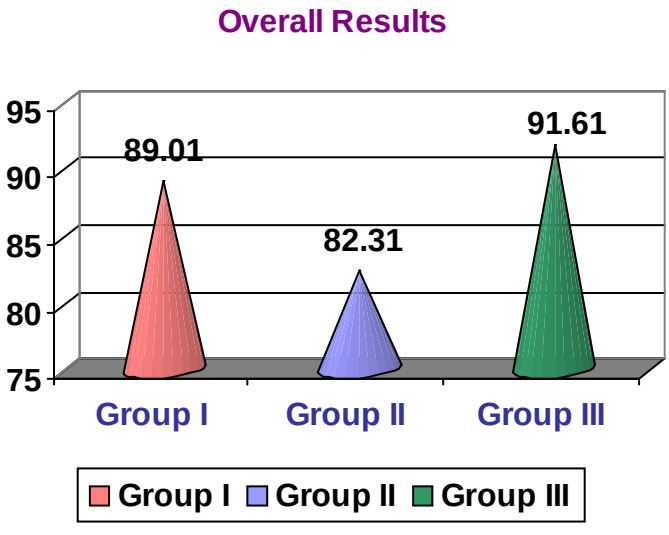
Symptoms	*n*	Mean		Diff.	% of	SD	SE	*"t"*	P
		BT	AT		Change	±	±	Value	Value
Jrimbha (yawning)	10	2.80	0.70	2.10	75.00	0.57	0.18	11.70	<0.001
Tandra (drowsiness)	10	2.80	0.40	2.40	85.71	0.52	0.16	14.70	<0.001
Bhrima (giddiness)	8	1.50	0.00	1.50	100.00	0.53	0.19	7.94	<0.001
Angamarda (Malaise)	9	1.44	0.00	1.44	100.00	0.73	0.24	5.96	<0.001
Klama(fatigue)	9	1.78	0.11	1.67	93.75	1.22	0.41	4.08	<0.01
Arati (inertness)	9	1.44	0.00	1.44	100.00	0.73	0.24	5.96	<0.001
Angasada (lassitude)	5	1.40	0.00	1.40	100.00	0.55	0.24	5.72	<0.001
Sirahshoola (headache)	10	1.80	0.30	1.50	83.33	0.97	0.31	4.88	<0.001
Manodourbalya (lack of concentration)	10	1.80	0.50	1.30	72.22	0.95	0.30	4.33	<0.01
Smirtidourbalya (lack of memory)	7	1.00	0.14	0.86	85.71	0.38	0.14	6.00	<0.001
Indriya Karmahani (poor sensory perception)	2	1.00	0.50	0.50	50.00	0.71	0.50	1.00	>0.10
Ajirna (indigestion)	10	1.40	0.00	1.40	100.00	0.70	0.22	6.33	<0.001
Agnimandhya (anorexia)	8	1.38	0.25	1.13	81.82	0.64	0.23	4.97	<0.001
Malabaddhata (constipation)	10	1.40	0.60	0.80	57.14	0.42	0.13	6.00	<0.001
Dhatukshaya (weight loss)	2	1.00	0.50	0.50	50.00	0.71	0.50	1.00	>0.10

Clinical Evaluation Of Group Iiird Treated With Both Remedies Simultaneously (Mixed Group)

Symptoms	*n*	Mean		Diff.	% of	SD	SE	*"t"*	P
		BT	AT		Change	±	±	Value	Value
Jrimbha (yawning)	10	3.60	0.10	3.50	97.22	0.97	0.31	11.39	<0.001
Tandra (drowsiness)	10	3.70	0.40	3.30	89.19	0.67	0.21	15.46	<0.001
Bhrima (giddiness)	10	2.00	0.00	2.00	100.00	0.67	0.21	9.49	<0.001
Angamarda (Malaise)	9	2.44	0.11	2.33	95.45	0.71	0.24	9.90	<0.001
Klama(fatigue)	10	2.70	0.00	2.70	100.00	0.48	0.15	17.68	<0.001
Arati (inertness)	8	2.00	0.00	2.00	100.00	0.76	0.27	7.48	<0.001
Angasada(lassitude)	4	1.25	0.00	1.25	100.00	0.50	0.25	5.00	<0.001
Sirahshoola (headache)	9	2.44	0.00	2.44	100.00	1.01	0.34	7.23	<0.001
Manodourbalya (lack of concentration)	9	3.11	0.22	2.89	92.86	0.60	0.20	14.42	<0.001
Smirtidourbalya (lack of memory)	8	2.75	0.63	2.13	77.27	0.83	0.30	7.20	<0.001
Indriya Karmahani (poor sensory perception)	5	1.80	0.20	1.60	88.89	0.55	0.24	6.53	<0.001
Ajirna (indigestion)	10	2.00	0.00	2.00	100.00	0.67	0.21	9.49	<0.001
Agnimandhya(anorexia)	10	1.90	0.00	1.90	100.00	0.57	0.18	10.58	<0.001
Malabaddhata (constipation)	8	2.38	0.00	2.38	100.00	0.74	0.26	9.03	<0.001
Dhatukshaya (weight loss)	2	1.50	1.00	0.50	33.33	0.71	0.50	1.00	>0.10

Overall Results

S.No.	Observations	%
1.	Group I	89.01
2.	Group II	82.31
3.	Group III	91.61



These over all data show the comparative statistical relief in various symptoms of Insomnia (Andira) after therapy under all three groups. We can say that Bhastrikea planayama may be established as a non medicinal remedy of insomnia. It is a great curse to the suffered people of modern stress age.

Discussion

It was the primary and basic aim of my study to find out the absolute remedy for insomnia with statistical evidences and conceptual study. So I selected Jatamansi which is approved drug for insomnia as well as mansika roga according to previous Ayurvedic research works, Because the comparative study helps in the establishment of any therapy or drug not only in the treatment but also in preventive side. .

Bhastrika regulates the functions of three knots (trayagranthi) pineal, pituitary and adrenaline glands. There are so many scientific views regarding with these three glands hormones and effects on sleep are present in modern medical science.

Conclusion

By the use of Bhastrika pranayama with medicine (Jatamansi Ghana Vati) has elevated the significancy of the drug, which reduces the burden of the patients in terms of loss of vital capacity and economic power.

Jrimbha (Yawning), Tandra (Drowsiness), Sirahashoola (Headace), Ajirna (Indigestion), Agnimandhya (anorexia) and Malabaddhata also reduced significantly by Bhastrika pranayama as well of jatamansi Ghana vati in the same manner. Thus we can say that Bhastrika pranayama alone may diminish these above symptoms because it not only produces symptomatic improvement but also improves various mental faculties to produce significant improvement in sleep pattern of all the patients.

No recurrence case was reported during follow up.

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Clinical Study

Etiopathological Study of *Kamala* (jaundice) w.s.r. to *Koshthashakhashrita Kamala* (hepato-cellular jaundice) and *Upashayatmaka* Study of *Navayas Churna*

*Dr. Kamleshwar Prasad, **Dr. S. K. Sharma, ***Prof. Piyush S. Mehta

Abstract

Kamala roga as described in *Ayurveda i*s much similar to the jaundice of modern medical science in all respect, because all most common sign & symptoms of kamala i.e. Yellowish discoloration of eyes, mouth, skin & nails like the color of turmeric and frog of rainy season, are illustrated in both medical sciences. Kamala has been classified into two groups on the basis of their residence and pathology. First is koshthashrita, it arises due to excess break down of erythrocytes and second is shakhashrita, due to intraheapatic cholestasis. Both types of jaundice are very much close to the extrhepaic and intrhepatic jaundice.

In the present clinical study, clinically diagnosed patients were given Navayas churna 500 mg twice daily for duration of 1 month with honey as Anupan. Patients were thoroughly assessed on different subjective and objective parameters every fortnight. After 30 days of therapy, a significant improvement in clinical parameters and laboratory investigations were observed. Thus Navayas churna along with honey as Anupana has a definite role in management of koshthashakhashrita kamala (Hepato-cellular jaundice).

सारांश–

आयुर्वेद मे वर्णित कामला रोग आधुनिक चिकित्सा शास्त्र के जॉण्डिस रोग के समान हैं क्योंकि दोनो चिकित्सा शास्त्रों में लक्षण जैसे नेत्र, नख, मुख तथा त्वचा का हल्दी तथा वर्षा ऋतु के मेढक के समान पीला होना बताया गया है। सम्प्राप्ति तथा स्थिति के आधार पर कामला रोग को दो वर्गों में विभाजित किया गया है। कोष्ठाश्रित जो रक्तकणों के अधिक टूटने के कारण उत्पन्न होता है, द्वितीय शाखाश्रित कामला जो कि पित्त के अधिक संचय के कारण उत्पन्न होता है।

इस अनुसंधान में नैदानिक आतुर को नवायस चूर्ण ५०० मि.ग्रा, मधु के साथ दिन में दो बार १ माह के लिए दिया गया था। रोगी को प्रत्येक १५ दिन पर पुनर्निरीक्षण किया जाता था। ३० दिन बाद महत्वपूर्ण लाभ रोगी के लक्षण तथा प्रयोगशालिय परीक्षण में देखा गया। इस प्रकार नवायस चूर्ण मधु के साथ कोष्ठशाखाश्रित कामला में निश्चित रुप से लाभप्रद है।

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Clinical Study

Etiopathological Study of *Kamala* (jaundice) w.s.r. to *Koshthashakhashrita Kamala* (hepato-cellular jaundice) and *Upashayatmaka* Study of *Navayas Churna*

Dr. Kamleshwar Prasad, Dr. S. K. Sharma, Prof. Piyush S. Mehta

Introduction:

Today well known, the most common cause of jaundice is viral hepatitis. In present century viral hepatitis is a great burning problem to modern medical science due to its broad range of their etiology, clinical manifestations and presentation. It causes millions of death every year all over the world. According to WHO about 10-50 persons per 1000,000 are affected annually & in India 85-95 percent (on the basis of sero-epidemiological study) of children is infected by 10 years of age with Hepatitis A Virus. More than 2 billion people worldwide have evidence of past or current HBV infection and 350 million are chronic carriers & approximate 620,000 deaths with HBV. In India there is 5-7 percent HBsAg carrier. According to estimation of WHO 3 percent of the world population is infected with HCV & approximate 170 million individuals are chronic carrier at risk of developing liver cirrhosis &liver cancer. But In India, the carrier's state of HCV is 2 percent.

As far as there is no specific treatment available in modern medicine, fortunately Ayurveda has leading role to play in management of kamala roga.

Material and methods:

Selection of patients:- On the basis of inclusion, 32 patient of kamala were registered from O.P.D. & I.P.D. of N.I.A., Jaipur, who were clinically found suitable for *upashayatmaka* study.

Inclusion criteria:

1. All patients with clinical manifestation of kamala roga were selected.
2. Age of patient in between 10 to 70 years.
3. Either sex.

Exclusion criteria:

1. Jaundice patient with liver failure, ascites, kernicterus, post-hepatic obstruction, liver abscess, liver cirrhosis, & billiary cirrhosis.
2. Jaundice due to genetical and chromosomal disorders.
3. Less than 10 years and more than 70 years
4. Pregnant woman with jaundice.

Discontinuous criteria:-

1. A non cooperative patient.
2. Whose symptoms were aggravated?
3. Who developed hypersensitivity for any constituents of trial medicine?

Assessment criteria:-

Assessment of the effect of therapy was done on the following parameters:

- Assessment for any improvement in various clinical features of kamala was done fortnight on the basis of grade scoring methods.

Symptoms rating scale for kamala:-

S. No.	Severity of symptoms	Score	Scoring symbol
1.	Absent	0	-
2.	Mild	1	+
3.	Moderate	2	++
4.	Severe	3	+++

- **Laboratory parameters**

- Haematological- TLC, DLC, ESR, Hb gm%, CT & BT
- Serological- S. bilirubin direct & indirect, ALT, AST, ALP, serum protein, lipid profile & HbsAg.
- Urine- Bilirubin and urobilinogen.
- Radiological- USG whole abdomen

Drug delivery and duration: Out of total 32 registered patients only 30 patients were completed their trial. Study was carried out under single group.

- The *navayas churna* (Trikatu, triphala. Trimada & lauhabhasma) was constituted according to *churna* preparation method in *Rasa-shastra* pharmacy of National Institute of *Ayuveda*, Jaipur.
- **Dose** - Navayas churna, 500 mg morning & evening.
- **Anupana** - Madhu (honey), 1000 mg mixing with drug.
- **Course** - 30 days
- **Rout of drug** - Oral
- **Follow up:** Patients had followed-up every 15 days for 1 month.

Dietary instructions:

Registered patients were advised to take plain diet and were asked to avoid spicy foods, coffee, tea, paratha. Puri, kulatha dala, rajam, alcohol and other fatty products.

Results and discussion:

According to table No. 1 and 2, in current clinical trial, *Navayaslauha churna* with *madhu* was found extremely significant in relieving *haridra varna* (<0.0001), *mutra vanra* ((<0.0001), *shakrita varna* (<0.0001), *avipaka* ((<0.0001), *kandu* (<0.0001), *aruchi* (0.0001), *daurbalya* (<0.0001), and *hrillas and sadana* (<0.0005); and highly significant in *jwara* (<0.0078) and *only significant in swasha* (<0.05), which are statically significant. Whereas % of improvement was not very high in *jwara* (67.5%), in *aruchi* (65.31%),in *daurbalya* (64.28%), in *sadana& hrillas* (63.49%) and in *swasha* (35%)

Here there is not correlation in between "P" vallues and % change in symptoms because of less number of paired symptoms , according to statistics. Total number of patients were taken in this research work is 30 but all symptoms were not found in every patients so No. of each symptoms are less than total No. of patients. Wilcoxon rank sum test ("w") has a special charcteristic i.e. it include only of those symptoms, in its calculation which are paired in number and remaining numbers of unpaired symptoms are excluded (there is not change in score or those having the same score). So above data have no correlation in between them.

In laboratory findings decrease in total bilirubin including direct and indirect, ALT and in liver size was found highly significant (0.001) whereas improvement in AST and ALP was found only significant ($p<0.05$). Others supportive laboratory finding did not change satisfactory.

The improvement in symptoms and laboratory values may be found because of improvement in *agnimandya*, concentration of abnormal *pitta* (bilirubin) and removal of obstruction of *pittavaha srotasa* by respective group of rugs i.e. *trimada, triphala, trikatu, lauhabhasma and madhu.*

Conclusions:

Navayas lauha churana with *madhu* was extremely significantly effective in improving the symptoms of *haridra varna* (discoloration of sclera, mucous membrane and others structures) *mutra varna* (yellowish discoloration of urine), *shakrita varna* (discoloration of faeces), *avipaka* (indigestion) *avipaka* (indigestion), *kandu, aruchi, daurbalya, hrillasa, and sadna*, and highly significantly effective in *jwara* (fever) and only significantly effective in *shwasa*.

Highly Improvement in laboratory value likes total bilirubin including direct and indirect bilirubin, ALT and liver size, and more significant improvement was also noted in AST and ALP.

The therapy was well tolerated by all the patients and no unwanted effect was reported during the trial period. Hence the drug trial is safe, easily available and cost effective and can be recommended to the patients of koshthashkhashrita kamala.

Table No.1: Showing the effect of treatment on different sign andsymptoms

Symptoms	Pts. with Sym. ptoms.	No. of pairs	Mean		Diff.	% of Change	SD ±	SE ±	"W"	'P' Value	Results
			BT	AT							
Haridra varna	29	25	1.03	0.17	0.87	84.46	0.43	0.08	325	< 0.0001	ES
Mutra varna	30	28	1.23	0.17	1.07	86.99	0.45	0.08	406	< 0.0001	ES
Stool color	20	19	0.90	0.17	0.73	81.11	0.64	0.12	190	< 0.0001	ES
Hatendriya	-	-	-	-	-	-	-	-	-	-	-
Daha	11	7	0.37	0.13	0.23	62.16	0.43	0.08	28	<0.0156	S
Avipaka	30	28	1.60	0.43	1.17	72.93	0.53	0.10	406	< 0.0001	ES
Daurbalya	27	23	1.40	0.57	0.90	64.28	0.61	0.11	276	< 0.0001	ES
Sadana	16	12	0.63	0.23	0.40	63.49	0.50	0.09	78	<0.0005,	ES
Aruchi	26	23	1.73	0.60	1.13	65.31	0.78	0.14	276	< 0.0001	ES
Hrillas	14	12	0.63	0.23	0.40	63.49	0.45	0.09	78	<0.0005	ES
Jwara	12	8	0.40	0.13	0.27	67.50	0.45	0.08	36	<0.0078	HS
Swasha	5	2	0.20	0.13	0.07	35	0.25	0.04	3	< 0.05	S
Kandu	16	16	1.07	0.27	0.80	74.76	0.89	0.16	136	<0.0001	ES

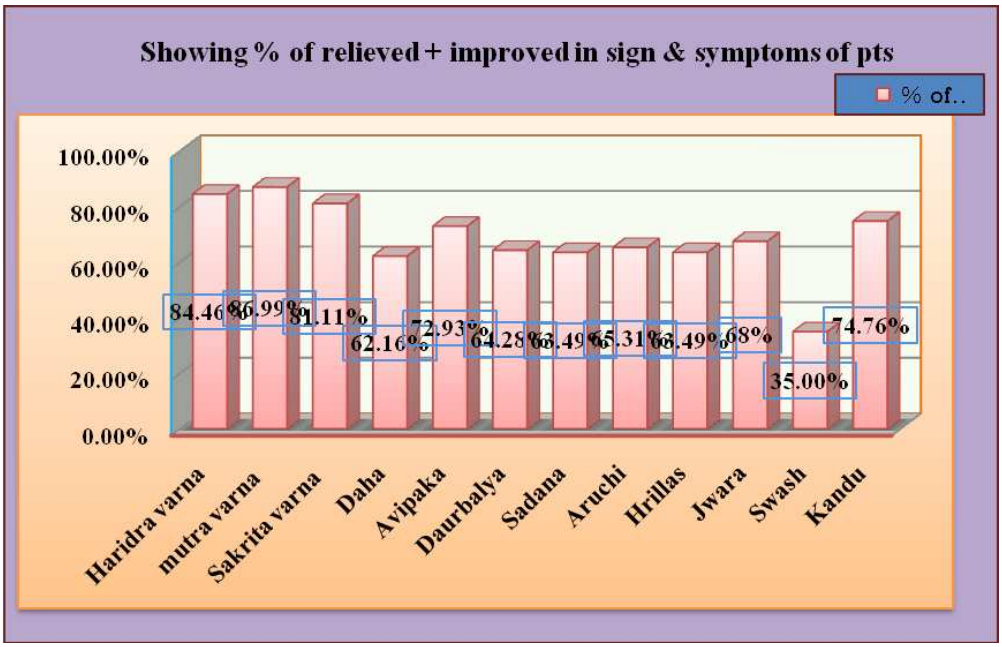

Table No.2: Showing the effect of treatment on different laboratroies investigations:

Investigations		*n*	Mean BT	Mean AT	Diff.	% of Change	SD ±	SE ±	"t" Value	'P' Value	Results
Hb gm%		30	11.39	11.57	+0.18	1.58	1.81	0.33	0.52	>0.10	NS
TLC		30	6236	6001	+235	3.77	1020	186.	1.26	>0.10	NS
D	P	30	60.03	62.10	-2.0	3.33	8.92	1.63	1.27	>0.10	NS
L	L	30	34.10	31.46	-2.63	7.71	7.69	1.40	1.87	<0.01	MS
C	E	30	2.467	2.767	-0.3	12.16	1.31	0.24	1.25	>0.10	NS
ESR		30	17.46	16.26	+1.20	6.87	10.13	1.85	0.65	>0.10	NS
CT		30	6.028	6.068	-0.04	0.66	0.95	0.17	0.23	>0.10	NS
BT		30	2.818	3.207	-0.39	13.88	0.86	0.16	2.46	>0.02	S
S. Bilirubin	T	30	4.380	1.610	+2.77	63.24	1.511	0.27	10.0	<0.001	HS
	D	30	2.622	0.7367	+1.86	71.89	1.170	0.21	8.82	<0.001	HS
	I	30	1.805	0.8733	+0.93	51.57	1.163	0.21	4.39	<0.001	HS
ALT		30	168.9	57.580	+1113	65.90	164.1	29.9	3.71	<0.001	HS
AST		30	200.9	54.390	+1465	72.92	290.9	53.1	2.76	>0.01	S
ALP		30	280.0	143.20	+1468	52.53	318.6	58.2	2.52	<0.02	S
S. Protein	Total	30	6.320	6.346	+0.03	0.41	0.543	0.10	0.27	>0.10	NS
	Alb	30	4.005	4.183	-0.18	4.5	0.455	0.08	2.15	<0.05	S
	Glob	30	2.315	2.243	+0.07	3.11	0.685	0.13	0.57	>0.10	NS
	A:G	30	1.810	1.947	-0.14	7.73	0.660	0.12	1.13	>0.10	NS
Lipid profile	CHO	30	214.7	160.29	+54.4	25.35	281.3	51.4	1.06	>0.10	NS
	TG	30	141.6	133.47	-8.18	5.77	37.82	6.90	1.18	>0.10	NS
	HDL	30	52.59	54.333	-1.74	3.30	6.512	1.19	1.46	>0.10	NS
	LDL	30	82.89	81.727	+1.17	1.40	15.69	2.86	0.41	>0.10	NS
	VLDL	30	27.59	25.587	+1.60	5.82	7.836	1.45	1.10	>0.10	NS
USG/Liver size		30	129.9	123.53	+6.39	4.91	6.444	1.18	5.43	<0.001	HS
HBsAg		30	0.03	0.03	0.000	0.00	0.000	0.000	0.00	>0.10	NS

N.S. = Not significant; S. = Significant; M.S. = More significant; H.S. = Highly significant, E. S= Extremely significant

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Clinical Study

Pilot Study To Compare Two Indigenious Drug's In Type-II Diabetes Mellitus W.S.R, *Madhu Meha*

*Dr. Kashinath. Samagandi, **Dr. Jagriti Sharma, ***Dr. Kamalesh Kumar Sharma ****Dr.Shiva Kumar ****Dr.Tapas Brata Tripathy

Abstract:

It is a pilot study conducted on patients of Diabetes mellitus Type II which shows signs and symptoms similar to Madhumeha, which comes under the Vataja type of Prameha. This is the preliminary study conducted over the 10 subjects before trying over the larger samples. This study was taken by seeing the present statistics of the incidence and prevalence of diabetes mellitus in the community.Two indigenious drugs are, one is Whaet grass in the form of juice and another is the Nisha Amalaki compound in the form of the 500 mg tablets. Logic behind the selection of the wheat grass is by influence of traditional practice by rural peoples of Karnataka state, and Nisha amalaki by classical ayurveda excellance. Aims of the present study was to evaluate the anti-diabetic effect of Wheat grass juice and Nisha-Amalaki and to compare the effects of both .Materials and methods of the study were planned on 2 groups .one group was administerd with Wheat grass juice, 2nd group with Nisha amalaki group.Result & Discussion of the study revealed that Wheat grass juice showed good result in relieving the subjective criteria's viz. Kshudhadhikyata, Daurbalya and Pipasadhikyata and objective criteria's FBS when compared to Nisha Amalaki group after 10 days.

सारांश:

प्रस्तुत अध्ययन वातज प्रमेह के अन्तर्गत मधुमेह के समान लक्षणों वाले रोग डाइबिटिज मलाइटिस टाईप-2 पर आधारित है। यह एक प्रारम्भिक मार्गदर्शक अध्ययन है जो दस रोगियों पर किया गया । डाईबिटिज मलाइटिस की पूर्ववृत्त (prevalence) एवं सद्योवृत्त (incidence) के वर्तमान सांख्यिकी आधार पर इस अध्ययन का चयन किया गया । दो स्वदेशीय औषधियाँ- गोधूम पत्र स्वरस व निशा आमलकी मिश्रण वटी (500 मि.ग्रा.) अध्ययन हेतु चयन किया गया । कर्नाटक प्रदेश के ग्रामीण क्षेत्र मे पारम्परिक तौर पर गोधूम पत्र का उपयोग मधुमेह मे किया जाता है एंव निशा आमलकी मिश्रण का वर्णन हमारे संहिताओ मे है । इस अध्ययन का उद्देश्य गोधूमपत्र स्वरस व निशा आमलकी के मधुमेह हर प्रभाव का तुलनात्मक अध्ययन करना है।

यह अध्ययन दो समूहों में किया गया है, प्रथम समूह में गोधूम पत्र स्वरस व द्वितीय समूह में निशा आमलकी दिया गया। परिणाम व परिचर्चा के आधार पर दस दिनों में व्यक्तिपरक मानदंड (Subjective Criteria) यथा क्षुधाधिक्य, दौर्बल्य व पिपासाधिक्य एवं वस्तुनिष्ठ मानदंड (Objective Criteria) यथा एफ.बी.एस. में गोधूम पत्र स्वरस का निशा आमलकी की तुलना में अच्छा प्रभाव प्राप्त किया।

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Clinical Study

Pilot Study To Compare Two Indigenious Drug's In Type-II Diabetes Mellitus W.S.R, *Madhu Meha*

Dr. Kashinath. Samagandi, Dr. Jagriti Sharma, Dr. Kamalesh Kumar Sharma, Dr. Shiva Kumar Dr.Tapas Brata Tripathy

Preface

Diabetes is a metabolic disorder characterized by hyperglycemia with cardinal features of Polyuria, Polydipsia and Polyphagia. In India at present approximately about 32 million people are suffering from diabetes and the future affliction is projected to 80 million by the year 2030.In Ayurveda, Diabetes Mellitus can be understood by etiological factors of Prameha mentioned as enjoying the pleasures of life with reduced or no physical activity and sedentary life.Madhumeha is type of Vataja Prameha & it is the nearest resembling condition with Diabetes Mellitus. Here an attempt is made to analyze the effect of Dravya "Godhuma Patra Svarasa/ Wheat grass juice" which is used by many tradional practioners of rural Karnataka state.. As though there is no direct reference of use of Godhuma Patra Swarasa but Godhuma has been told as Pathya in Prameha by this use of Wheat grass juice can be traced out and to confirm its efficacy in the management of Madhumeha or Diabetes Mellitus this study is carried out and also the efficacy of the Wheat grass juice is compared with the Nisha Amalaki drug which is proven.

Clinical Study

Aims And Objectives Of The Study

1. To evaluate the anti- diabetic effect of Wheat grass juice.
2. To evaluate the anti- diabetic Nisha-Amalaki

Materials And Methods

Selection Of Patients

Patients attending the OPD of S.D.M. college of Ayurveda and Hospital, Hassan were selected irrespective of age, sex, religion, occupation, marital status etc. and were randomly divided in 2 groups considering the inclusion criteria for the study.

Inclusion Criteria

Mild to moderate cases of diabetes mellitus having fasting blood sugar within range of 121 mg/dl to 220 mg/dl and post prandial blood sugar within range of 181 mg/dl to 280 mg/dl were selected.

Patients above the age group of 25 years and below 70 years of age were selected. Patients within 5 years of diagnosis for diabetes mellitus were selected for the study.

Exclusion Criteria

Severe form i.e. patients having fasting blood sugar above 221 mg/dl and post prandial blood sugar above 281 were excluded. Patients with uncontrolled blood sugars were excluded. Patients with other systemic disorders and complications of diabetes mellitus were excluded from the study.

Diagnostic Criteria

Diagnosed cases of diabetes mellitus within 5 years of detection were selected for the study. Mild to moderate diabetic cases were selected based on the following standard reference chart for classification along with the clinical signs and symptoms mentioned in the classics.

FBS 70 to 120 mg/dl-normal, 121 to 170 mg/dl- mild, 171 to 220 mg/dl moderate, 221 and above severe

PPBS 120 to 180 mg/dl- normal, 181 to 230 mg/dl-mild, 231 to 280 mg/dl- moderat, 281 and above severe

As per classification of S.N Khosle at al.Nagarjuna

Research Design:

The selected patients will be randomly divided in to the two groups. Each group consisting of 10 Patients

Group A: Swarasa matra is 1 Pala (50ml) as per the classics. In the present study the dosage of

Wheat grass juice is also decided principally based on the above. 10 Patients were administered wheat grass juice in the dosage of 1 Pala (50ml) twice a day before food.

Group B: 10 patients were administered with Nisha Amalaki tablet tablets 500mg twice a day before food. Diet and exercise will be similar for both groups to avoid the study bia's.

Duration of Treatment: 10 days\

Statastical analysis: by paired "t" test

Assesment Criteria

Pippasadhikyata, Kshuddhaadhikyata, Prabhuta mutrata, Karpadadaha & Daurbalya which are self- graded, grade "0" indicates no or mild sign and grade "3" for excessive sign.

Results - Effects of the Therapies on the Patients of Madhumeha

Effect of Wheat Grass Juice on the Patients of Madhumeha (NIDDM): As mentioned above 10 patients were treated with wheat grass juice administered in the dose of 50 ml twice a day before food for 10 days. **Group A (Wheat Grass juice)**

Table no.1 - Effect of Wheat Grass juicgroup after 10 days

Signs & Symptoms	Mean		Diff.	% of Change	SD ±	SE ±	*"t"* Value	P Value
	BT	AT						
Prabhuta mutrata	3.8	2.5	1.3	34.21	0.67	0.21	6.19	<0.001
Pipasadhikyata	3.2	1.9	1.3	40.7	0.82	0.26	5	<0.001
Kshudhadhikyata	1.8	1.2	0.6	33.4	0.68	0.22	5.45	<0.001
Karapada Daha	3.4	2.3	1.1	32.4	0.73	0.23	4.7	<0.001
Daurbalya	1.6	0.7	0.9	56.25	0.98	0.32	2.81	<0.02
F.B.S	162.7	149.6	13.1	7.06	8.25	2.66	4.32	<0.001
P.P.B.S	212.5	190.5	22.1	10.45	8.60	2.77	7.9	<0.001

Effect of Nisha-Amalaki tablets on the Patients of Madhumeha (NIDDM): As mentioned above 10 patients were treated with **Nisha-Amalaki tablets** administered in the dose of 2 tablets twice a day for 10 days. **(Group B Nisha Amalaki)**

Table no. 2- Effect of Nisha Amalaki group after 10 days

Signs & Symptoms	Mean		Diff.	% of Change	SD ±	SE ±	*"t"* Value	P Value
	BT	AT						
Prabhuta mutrata	3.9	2.3	1.6	41.02	0.51	0.166	9.6	<0.001
Pipasadhikyata	2.1	1.3	0.8	38.09	0.78	0.25	3.2	<0.01
Kshudhadhikyata	1.7	1.2	0.7	41.17	0.67	0.21	3.33	<0.001
Karapada Daha	3.3	2.1	1.2	36.36	0.78	0.25	4.8	<0.001
Daurbalya	1.0	0.5	0.5	50.50	0.52	0.17	2.94	<0.01
F.B.S	177.0	168.2	15.4	8.70	4.90	1.58	9.74	<0.001
P.P.B.S	220.8	199.3	21.5	9.73	13.59	4.38	4.90	<0.001

Discussion

Effects of Therapies

On Prabhuta mutrata - After one month of the treatment Wheat grass juice showed 34.2% improvement in Polyuria, while Nisha Amalaki tablet showed 41.1 % improvement.

On Pipasadhikyata – After one month of the treatment Wheat grass juice showed 40.3 % improvements in Polydypsia (Pippasa adhikata), while Nisha Amalaki tablet showed **38%** improvement.

On Kshudhadhikyata – After one month of the treatment Wheat grass juice showed **33.4 %** improvements in Kshudhadhikyata (increased appetite), while Nisha Amalaki tablet showed **41.2 %** improvement

Phenylalanine – in Wheat Grass juice is amino acids, it is essential in human Nutrition. It is used in elevating the mood as it is closely involved with the nervous system and it acts as appetite suppressant.

Glutamic acid – in Wheat Grass juice is amino acids. Rightly considered to be nature's brain food by improving mental capacity, helps give a lift from fatigue and also it suppresses the craving for sugar.

The protein contents in the wheat grass juice helps the patients to overcome the emaciation caused by utilization of fats and proteins for energy needs of the body thereby relieving the symptom of **Kshudhadhikyata**

On Karapada Daha- After one month of the treatment Wheat grass juice showed **32.4 %** improvements in **Karapada Daha**, while Nisha Amalaki tablet showed **36.4 %** improvement.

Tryptopan – in Wheat Grass juice is a amino acid.it is essential for human nutrition also helps in reducing the risk of artery.

Arginine – in Wheat Grass juice is a amino acid.it is a conditionally essential amino acid. Supports the cardio vascular system and prevents the cells and arteries dying from the hypoxia.

Methylcobalamin, a special form of Vitamin B12, is being studied now for treatment of neuropathy

Niacin (Vit B3) – in Wheat Grass juice dialtes the blood vessels and increases the flow of blood to the peripheral capillary system.

Vit C, Vit E, Superoxide Dismutase (SOD) & Selenium – in Wheat Grass juice is an highy potency anti-oxidant enzyme which prevents the impact of free radicals on the blood vessels which causes diabetic neuropathy

On Daurbalya – After one month of the treatment Wheat grass juice showed **56.3 %** improvements in **Daurbalya**, while Nisha Amalaki tablet showed **50.6 %** improvement .

Alanine – in Wheat Grass juice is a amino acid, an important source of energy for muscle tissue, brain and the CNS system. Also strengthens the immune system by producing the anti bodies, helps in the metabolism of sugar and organic acids.

Aspartic acid – in Wheat Grass juice is amino acid. Helps in expulsion of harmful ammonia from the body. When ammonia acts on the circulatory system it is highly toxic and this can in turn shows harmful to CNS system, and also increases resistance to fatigue and increase endurance.

On F.B.S - After one month of the treatment Wheat grass juice showed **7.1 %** improvements in F.B.S while Nisha Amalaki tablet showed **8.6 %** improvement

Biotin – in Wheat Grass juice ,lowers the fasting blood glucose level as a co-factor of enzymes required for fatty acid synthesis, Biotin may increase the utilization of glucose to synthesize fats, biotin has been found to stimulate glucokinase, an enzyme in the liver, resulting in in increased synthesis of glycogen, the storage form of glucose, and also biotin has also been found to stimulate the secretion of insulin in the pancreas these thing helps in the lowering the blood glucose.

On P.P.B.S - After one month of the treatment Wheat grass juice showed **10.4 %** improvements in P.P.B.S while Nisha Amalaki tablet showed **9.8 %** improvement

The rich fiber content of wheat grass (Godhuma) slows down the carbohydrate digestion and absorption and so improves glycemic control. Wheat grass (Godhuma) has a low glycemic index of

54, which helps in controlling the raise in the post prandial blood glucose levels. The low Glycemic index of the wheat grass juice (Godhuma) i.e. 54 delays the digestion process and slows down the absorption of carbohydrate from intestine thereby helps to maintain the sudden rise in blood glucose levels soon after food intake. As the sudden increase in post prandial blood sugar is controlled the post prandial urine sugar also is thereby controlled.)

Difficulties of the study:

- Initial we made patients to grow wheat grass juice by there won, but they felt very difficult.
- Even some patient find difficult to take fresh juice twice daily.
- Dose of wheat grass to be measured each time during administration was bit difficult.

Summary And Conclusion

In this study Wheat grass juice showed good result in relieving the subjective criteria's viz. Kshudhadhikyata, Daurbalya and Pipasadhikyata and objective criteria's FBS when compared to Nisha Amalaki group after 15 days. While conducting the main study, all difficulties of the study will be rectified and the study period and the follow up days will be extended to assess the action of each drug. Combination of these two indiginious drugs may help to control both objective and subjective criteria's.

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Pharmaceutical Study

Concept of *Shodhana* (Purification / Processing) And Its Impact on Certain Poisonous Herbal Drugs

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Abstract:

Ayurveda stresses on the need for Shodhana (purification / processing) of poisonous herbal drugs. After proper Shodhana only the herbals like Aconite, Strychnos and Semecarpus etc, should be administered to the patients. Purification is necessary to render chemical and physical purity to the drug. By the process, the drugs become therapeutically more effective and also less toxic. Herbal drugs are being reported for their toxic effect now-a-days in different scientific journals. The knowledge of traditional purification methods mentioned in various Ayurvedic classics for poisonous herbal drugs is necessary in present era. Here an attempt has been made to compile the various methods used for purification of the poisonous herbal drugs including latest scientific evidence regarding the role of Shodhana and major chemical constituent responsible for poisonous effect. The results showed that the toxic chemical constituents were reduced after Shodhana.

Key Word: Ayurveda; Shodhana; Purification; Processing; Poisonous herbs; Media

सारांश –

आयुर्वेद पद्धति मे विषैली जड़ीबूटी तथा विष वस्तुओं के शोधन (शुद्धिकरण/संस्कार) को बडा महत्व दिया गया है। यथोक्त शोधन के पश्चात् ही वत्सनाभ, कुपिलु और भल्लातक जैसे विषद्रव्यो को दवाओं के रूप में प्रयोग किया जाता हैं। शोधन से द्रव्य भौतिक तथा रासायनिक रूप से शुद्धि होता है तथा वह वीर्यवान् और कम जहरीले बनते है। आजकल बहुत सारे पौधे अपने विषकारी परिणाम से वैज्ञानिक पत्रों में प्रचारित हो रहें हैं। इसलिये आजकल शास्त्रोक्त विषद्रव्य शोधन विधियों का ज्ञान बहुत महत्वपूर्ण बना है। इस लेखन में उक्त शोधन विधियों के बारे मे प्रकाश डाला गया है तथा शोधन द्वारा होने वाला भौतिक एवं रासायनिक बदलावों का वैज्ञानिक तरीके से विमर्श किया गया है। फलितांश रूप से यह पाया है कि शोधन से विषद्रव्यों का विषैले रासायनिकों की सान्द्रता कम हो जाती है।

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Pharmacological Study

Concept of *Shodhana* (Purification / Processing) And Its Impact on Certain Poisonous Herbal Drugs

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Introduction:

Many poisonous drugs are used as single drug or a compound formulation in Ayurveda.[1] The formulations Amrta Bhallataka leha, Sanjivani vati, Bhallataka rasayana, Bhallatakadi modaka,[2] Brhatbhallataka avaleha[3] , Bhallatakadi choorna[4], Bhallataka kshara[5] contains Semecarpus. More than 500 Ayurvedic compound formulations contain Vatsanabha as an ingredient. Among them few frequently used and important formulations are Tribhuvanakirti Rasa, Anandabhairava Rasa, Sutasekhara rasa, Vatavidhwamsana rasa, Maha vishagarbha taila,[6], Sanjivani Vati[7]. Formulations which contain Strychnos are Agnitundi Vati, Vishatinduka Vati, Vishatinduka taila, Navajeevana Rasa, Krimimugdar Rasa, Vatagajankusha Rasa, Mahavisagarbha taila,[8] Lakshmivilasa Rasa, Karaskara Ghrta. Dhatura is used as an ingredient in Kanakasava, Sutasekhara rasa, Jwarankusa rasa, Dugdha vati,[9] Kanakasundara Rasa,[10] Lakshmivilasa Rasa,[11] Mahajwarankusha Rasa,[12] Bruhat kanakasundara Rasa,[13] Pralapantaka Rasa,[14] Kanakaprabha vati.[15] Formulations which contain gloriosa are Nirgundi taila, Kasisadi taila, Mahavisgarbha taila,[16] Trilokya Chintamani,[17] Kanakasundara rasa.[18] The poisonous plants should be added in the compound formulations only after proper Shodhana (purification / processing). A poison in a small dose is a medicine, and a medicine in a large dose is a poison. It is important to have an awareness regarding the poisonous plants which when used after shodhana in the proper, prescribed dose, acts as potent drug therapeutically.[19] Safety is a fundamental principle in the provision of herbal medicines and herbal products for health care, and a critical component of quality control.[20] The formulations which contains the poisonous medicinal plants may cause some adverse effect if it is not processed properly. Adverse effects of the poisonous medicinal plants are mainly due to the improper Shodhana (purification/processing) and over dose etc. For example adverse effect of Vatsanabha (aconite) was reported by recent researches.[21] The poisonous drug, Bhallataka have a number of therapeutic activities, for example pharmacological activities like anticancer,[22] anti-inflammatory activity[23] are proved scientifically. Proper awareness, knowledge of Shodhana methods and media used for processing / purification and researches on impact of Shodhana are the tools to bring poisonous medicinal plants into the mainstream and to make them more accountable. So an attempt has been made to collect the different Shodhana methods mentioned in Ayurveda for certain poisonous drugs and recent researches on impact of Shodhana (purification/processing).

Materials And Methods:

The concept of Shodhana and different Shodhana methods for herbal drugs were collected from different Ayurvedic classical texts. The recent researches on the impact of Shodhana of poisonous medicinal plants are also collected from various research journals. The compiled data were scrutinized and presented in a specific format i.e. tabular and descriptive format.

I. Concept Of Shodhana:

a) Definition: - Shodhana is a process by which unwanted impurities are separated from the substance by various pharmaceutical methods like grinding,[24] washing etc. with specific drugs (media) thereby minimization the toxicity of the substance.[25]

b) Types of shodhana: - Shodhana process is grossly subdivided into two major categories as samanya and vishesha.[24]

♦ Samanya Shodhana (Common purification/ processing):

Samanya Shodhana means general method of purification of all poisonous drugs of a particular

group, e.g. Samanya Shodhana of visha dravyas.[26]

Method 1:

Cut the drug into small pieces. Then Soak in cow's urine for 3 days. Change the cow's urine every day. On 4th day wash it with warm water, dry under sun & store.

Method 2:

The drug should be tied in a pottali and boiled (Swedana) with milk in Dolayantra for 5 prahara (15hrs). Milk must be above the level of Pottali and maintain the level of milk throughout the Swedana process with repeated addition of milk.

♦ Vishesha Shodhana (Specific purification/ processing):

Vishesha Shodhana means specific method of purification for the particular drug. E.g. Shodhana of Bhallataka in brick powder,[27] Boiling precatorius seeds in Kanji (sour gruel) for 3 hours,[28] Immersion of nux-vomica seeds in cow's urine followed by swedana with cow's milk & roasting with cow's ghee.[29]

c) Procedures:

The method by which physical and chemical impurities get separated from the poisonous drug when treated with other various drugs (media) is shodhana. During shodhana various media and various processing techniques are adopted.[30] The common methods or pharmaceutical procedure used for shodhana of herbal drugs are

- Bhavana (Trituration) - eg. Ahiphena[31]
- Bharjana (Frying) – eg. Hingu[32]
- Swedana (Boiling) – eg. Vacha[33]
- Mardana (Pounding) – eg. Jayapala[34]
- Nimajjana (Soaking) – eg. Langali[35]
- Prakshalana (Washing) – eg. Chitraka[36]
- Prithakkarana (Separating) – eg. Kampillaka[37]
- Achushana (Absorption): Oily content of certain toxic materials is minimized through different absorption means, e.g. Bhallataka Shodhana[27]
- Parishravana (Straining): The solid material is dissolved in suitable liquid media and separated from insoluble impurities through straining, e.g. Guggulu[38]

d) List of poisonous substances under the Ayurvedic system of vegetable origin:

In Ayurveda the poisonous plants were classified mainly as visha and upavisha[39] **(Table 1)** and poisonous substance of vegetable origin were mentioned in drugs and cosmetic act[40] is given in **Table 2.**

II. Shodhana Methods And Researches:

Different Shodhana methods of commonly used poisonous drugs i.e. Vatsanabha (Aconite), Kupilu (Strychnos), Bhallataka (Semecarpus), Dhatura, Langali (Gloriosa) and the recent researches on Shodhana of these drugs are compiled.

Vatsanabha (*Acontium ferox* Wall.):

Shodhana methods:

Different methods of Shodhana are mentioned in various Ayurvedic classics. The roots should be cut into small pieces and immersed in cow's urine for 3 days[41] or swedana in dola yantra with different medias like, Swedana for 3 hours in goat's milk[42] or in triphala kwatha for 3 or 24 hours[43] or in cow's milk for 3 or 5 or 6 hrs,[44] in cow's urine for 8 yama (24 hours),[43] in water and milk as media for 3 hours.[45]

Bhavana is given to the pieces of Vatsanabha by Gomutra (cow' urine) for 3 days.[46]

The small pieces of Vatsanabha should be taken in a cloth piece. Mahisha Mala (buffalo dung) is smeared over the cloth piece and a mass should be prepared. Then the round ball of mass should be heated in the fire of Karisha (husk) for 3 hours. After self cooling, the cloth is taken out and the Shuddha (pure) Vatsanabha is collected.[47]

Latest researches:

The recent research studies showed that, the Aconitine % before Gomutra shodhana is 0.113 and Aconitine % after Gomutra Shodhana is 0.089. This value shows how much the Aconitine % is decreased after shodana by using cow's urine as media.[48]

In another study on Shodhana of Vatsanabha reveals that the toxic alkaloids is removed by

swedana with the cow's urine method is more than the others media like cow's milk, goat's milk, Triphala Kwatha, etc. So cow's urine is the best media for Shodhana of Vatsanabha.[49]

Kupilu (*Strychnos nux-vomica* Linn.):

Shodhana methods:

The different methods of Shodhana of kupilu is soaking in cow' urine for 7 days, Soaking in cow's urine for 7 days followed by swedana with cow's milk for 3 hrs,[50] Soaking in cow's urine for 7 days followed by swedana with cow's milk for 3 hrs & roasting with cow's ghee,[29] Immersion in Kanji, Swedana with Godugdha, Roasting with cow's ghee,[51] Roasting with castor oil.[52]

Latest researches:

The research studies on Shodhana of Kupilu shows that the Strychnine and Brucine content is reduced after processing with cow's ghee.[53] The seeds processed in milk showed the lowest strychnine content in the cotyledons, exhibited marked inhibition of PTZ induced convulsions and maximal potentiation of hypnosis, and were the safest (LD_{50}).[54]

Bhallataka (*Semecarpus anacardium* Linn.):

Shodhana methods:

Cut pieces of fruits were mixed with brick powder and rubbed thoroughly by covering it with thick cloth till the outer covering is removed. Then it is allowed to be in brick powder for 3 days till the oily part is absorbed. Then washed with hot water[10] (or) Swedana in Dolayantra for 3 hrs in coconut water[55] (or) the thalamus portion is removed and soaked in cow's urine for seven days followed by cow's milk for seven days. Then the seeds should be put into bag containing coarse brick powder with which they are rubbed carefully, with a view to reduce the oil content. Then the fruits are washed with water and dried in air[56] (or) Thalamus removed fruits should be taken in a vessel containing boiling water and has to be boiled for 10 mins.[57] Apart from the classical methods some other Shodhana methods are still followed by traditional practitioners. One such method is frying Bhallataka fruits in fire. Seeds are taken in an iron pan, should be heated from below and hot charcoal is put over the Bhallataka fruits in the pan. The oily part of the Bhallataka burns and gradually gets reduced as the oily fraction decreases.

Latest researches:

Recent researches show that there is change in Rf values before and after shodhana of Bhallataka fruits. Biological activity of *Semecarpus* nuts were tested against lipopolysaccharides (LPS)-induced nitric oxide (NO) production in rat peritoneal macrophages. It showed minimum activity in the extract from unpurified nut (8.06%), which gradually enhanced when treated with brick (10.61).[58]

TLC of Methanol extracts of the fruits before and after shodhana reveals that almost all the compounds corresponding to certain Rf values are present before shodhana after Shodhana but except that corresponding to 0.82. Besides, the intensity of the chromatogram was reduced after shodhana which means that shodhana has brought in some change in the oily fraction of the constituents of Bhallataka by removing a certain compound that makes it non toxic.[59]

Dhatura (*Datura metel* Linn.):

Shodhana methods:

The seeds of precatorius should be kept in Dolayantra and swedana should done using cow's milk for 1 yama (3 hour) and then it should be washed with hot water and dry properly.[60] The fresh Datura seeds should be kept in Dola yantra & swedana is done using cow's urine for 1 yama (3 hrs) afterwards triturated in Khalvayantra & filtered through cloth.[61] Datura seeds is soaked in cow's urine for 12 hours,then washed with water and subjected to swedana in a dola yantra containing cow's milk for 3 hours. The seeds are used after removing testa.[62]

Latest researches:

The GC-MS studies on *Datura metel* Linn. and *Datura innoxia* Mill. Showed that the 70-90% of reduction hyosciamine and scopolamine reduced almost zero after Shodhana.[63]

Langali (*Gloriosa superba* Linn.):

Shodhana methods:

Iimmersion of langali in cow's urine for 1 day.[64] Cut pieces of gloriosa should be kept in sour

buttermilk for seven days in earthen pot and dried sun.[65]

Different Shodhana methods of commonly used drugs:

Apart from the drug mentioned, there are some poisonous plants used commonly in most of the compound formulation. They are Ahiphena,[31] Bhanga,[66] Gunja,[28] Snuhi ksheera,[67] Jayapala.[34] The Shodhana procedure and medias used to purify the drugs were mentioned in **Table 3**.

Discussion:

Aconitine is the main toxic constituent in Vatsanabha. Though there are different media for Shodhana mentioned for Vatsanabha, the recent researches proved that the % of removal of aconitine is more in cow's urine. Since cow's urine is easily available and cost effective, this method can be adopted for Shodhana of Vatsanabha. Strychnine and Brucine are the toxic agents in nux-vomica. Shodhana on kupilu proved the reduction of these toxic contents after the procedure. Changes of the Rf value in raw and purified Bhallataka reveals the chemical changes after Shodhana procedure. GC-MS studies on *Dattura metel* and *D.innoxia* proved the reduction of the toxic chemical hyosciamine and scopolamine. These research studies have proved the importance of Shodhana of the poisonous drugs. So the poisonous plants should be purified / processed before administering to the patient either as a single drug or compound formulations. The adverse effects like itching, masculo-popular rashes, urethritis and stomatitis was noticed in the controlled clinical trials of Bhallataka (Bajpai et al 1970).[68] These studies reveals that the adverse effects of the drug *Semecarpus anacardium*. So these poisonous plants should be added to the compound formulation only after proper purification. In Ayurveda, there are lot of media used for Shodhana. Cow's urine and cow's milk are the common media for Shodhana of visha dravya (poisonous plants). The specific method for individual drug differs. For Bhallataka, the brick powder is one of the important media for Shodhana. The oil present in the fruit is highly irritant; a hypothesis that the oily part of the fruit is toxic and its degree of removal is proportional to its safety margin.[41]Brick is the best adsorbent to remove the oil By Mixing With It.

Conclusion:

The poisonous plants which when used after shodhana in the proper, prescribed dose, acts as potent drug therapeutically. Therefore Shodhana is a processing method by which the drugs gets potentiated and are enhanced therapeutically because of the removal of impurities.The recent research studies also proved that there is a chemical change after Shodhana of poisonous drugs. The importance of the concept of Shodhana was proved by recent studies on Vatsanabha, kupilu, Bhallataka, Dhatura Shodhana. So it is important now-a-days to prove the effect of Shodhana with modern parameters including animal experimental studies.

Table 1: Classification of Poisonous substances

Visha (9)	**Upavisha (11)**
Halahala	Vishatinduka (Kuchala)
Kalakuta	Ahiphena (Aphima)
Shringaka	Rechaka (Jamalaghota)
Pradeepana	Dhatura beeja
Saurashtrika	Vijaya (Bhanga)
Brahmaputra	Gunja
Haridra	Bhallataka
Saktuka	Arka Ksheera
Vatsanabha (Aconite)	Snuhi Ksheera
	Langali
	Karveera

Table 2: List of poisonous medicinal plants

Sanskrit name	Latin name	Family
Ahipena	*Papaver somniferum* Linn.	Papavaraceae
Arka	*Calotropis gigantea* Linn.	Asclepiadaceae
Bhallataka	*Semecarpus anacardium* Linn.	Anacardaceae
Bhanga	*Cannabis sativa* Linn.	Cannabaceae
Danti	*Baliospermum monatanum* Muell.	Euphorbiaceae
Dhatura	*Datura metel* Linn.	Solanaceae
Gunja	*Abrus precatorius* Linn.	Fabaceae
Jayapala	*Croton tiglium* Linn.	Euphorbiaceae
Karaveera	*Nerium indicum* Mill.	Apocynaceae
Langali	*Gloriosa superba* Linn.	Liliaceae
Parasika Yavani	*Hyosymus niger* Linn.	Solanaceae
Snuhi	*Euphorbia neriifolia* Linn.	Euphorbiaceae
Vatsanabha	*Acontium ferox* Wall.	Ranunculaceae
Vishamushti	*Strychnos nux-vomica* Linn.	Loganiaceae

Table 3: Different Shodhana methods of commonly used drugs

No	Drugs	Media	Principle	Method
1.	Ahiphena	Water, Cow's milk, ginger Juice.	Washing and Bhavana	Wash with water and milk. Give 21 Bhavanas with Ginger Juice.
2.	Vijaya (Bhanga)	Decoction of Babbula Bark (*Acacia farnesia*)	Swedana	Swedana in Dolayantra for 1/2hr with Babbula Twak Kashaya
3.	Gunja	Cow's milk or kanji	Swedana	Swedana in Dolayantra for 3 hrs with cow's milk or Kanji
4.	Snuhi Ksheera	Juice of Tamarind leaves	Mixing and drying	Equal quantity of Snuhi Latex + ¼th Tamarind Leaves juice added and dry under sun

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Pharmaceutical Study

Pharmaceutical Standardization of *'Maha Shankha Vati'*

*Dr. Nalini Rameshrao Hedaoo, ** Dr.V. Nageswara Rao

Abstract

Ayurvedic classics describe guidelines for manufacturing medicines by deciding factors like place of origin and time of collection of raw material, specific part and quality of raw material etc. In the present scenario, it is quite impossible for any manufacturing unit to follow these instructions due to commercial compulsion. The situation resulted in production of sub-standard Ayurvedic medicine, so because of unavailability of safe and efficacious drugs, Ayurveda has failed in its way to provide safe efficacious quality medicine. We live an era, where sophisticated and advanced technologies are easily available to us. There is need of proper standardization of Ayurvedic drugs at various levels. Hence, in the present study, we tried for proper standardization on the basis of Ayurvedic & Modern parameters.

Key words:- *Maha Shankha Vati, SOP (Standard operative procedure).*

सारांश–

आयुर्वेदीय ग्रन्थों में औषध निर्माण के लिये कुछ निर्धारित तत्व जैसे वानस्पतिक द्रव्यों के उत्पत्ति स्थान, संग्रहण काल, निश्चित अवयव तथा गुणवत्ता के आधार पर कुछ दिशा निर्देश दिये है। उच्च स्तर पर निर्माण के कारण किसी भी औषध निर्माता के लिये इन निर्देशों का पालन कर पाना आज के युग में असम्भव है। परिणामस्वरूप आयुर्वेदीय औषधियों की गुणवत्ता का स्तर गिरा है। सुरक्षित तथा प्रभावी औषधियों के अभाव के कारण आयुर्वेद सुरक्षित तथा प्रभावी औषधियों के निर्माण में असफल हो गया है। वर्तमान में उच्चस्तरीय ज्ञान तथा आधुनिक तकनीक उपलब्ध है। आवश्यकता है तो कई स्तरों पर आयुर्वेदीय औषधियों के निश्चित मानकीकरण की। अत: इस अध्ययन में हमने आयुर्वेदीय व आधुनिक पैरामीटर्स आधार पर निश्चित मानकीकरण करने की कोशिश की है।

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Pharmaceutical Study

Pharmaceutical Standardization of *'Maha Shankha Vati'*

Dr. Nalini Rameshrao Hedaoo, Dr.V. Nageswara Rao

Introduction

Khalveeya Rasa is the combinations of herbal, mineral and animal products, so that we can have the effects of all collectively in a single formula. These are administered in smaller doses, to get faster relief and combating many ailments by proper Anupana and Sahapana. It takes less space for manufacturing and storing. The most important aspect is that, it preserve the properties of freshly added Churna, Swarasa etc with the help of Moorchita Parada i.e., Kajjali, Rasasindura, Hingula etc. Due to this Khalveeya Rasaushadhies occpies greater portion in therapeutics as compare to other Kalpana, Such as Vati, Gutika, Taila, Ghrita etc.

"Maha Shankha Vati" selected for the present study is also a compound drug which comes under "Khalveeya Rasa Kalpana". Most of the Khalveeya Rasa comes under "Sagandha and Niragni" Moorchhana preparation. Maha Shankha Vati is one of such preparation. However some of Khalveeya Rasa are seen prepared with Agni such as Putapaka, Puta, Valuka yantra Vidhi etc. some Khaveeya Rasa viz Kafaketu Rasa, Bhuvneshwar Rasa etc termed as Rasayoga, but are not having Moorchhita Parada.

In the present study three sample of "Maha Shankha Vati" have been prepared by adopting method describe in Ayurvedic Formulary of India (A.F.I.) Vol. 2 approved by government of India with *some desire changes*.

As in A.F.I. quoted that this patha taken from Bhaishajya Ratnavali, but it is actually coming in practice from Rasendra Chintamani.

Selection of Raw Material:

All the ingredients used in the processing are procured from N.I.A. pharmacy except Chincha (Tamarandus Indica) for Kshara preparation.Chincha Panchanga procured from Nagpur, Maharashtra.

Preparation of Maha Shankha Vati:-

Reference: AFI, Part-2, Edi.2nd Pg.179 (Bhaisajyaratnavali, Agnimandyarogadhikara; 186-187)

Date of Commencement: 4 Aug 09

Date of Completion: 26 Dec. 09

Ingredients and their proportion:

Table No.1 showing about the amount of ingredients of three samples of Maha Shankha Vati:

S.No.	Ingredients	Sample 1	Sample 2	Sample 3
1.	Kajjali	50 gm	50 gm	50 gm
2.	Shankha bhasma	25 gm	25 gm	25 gm
3.	Shuddha Vatsanabha	25 gm	25 gm	25 gm
4.	Shuddha Hingu	25 gm	25 gm	25 gm
5.	Cincha ksara	25 gm	25 gm	25 gm
6.	Sunthi	25 gm	25 gm	25 gm
7.	Maricha	25 gm	25 gm	25 gm
8.	Pippali	25 gm	25 gm	25 gm
9.	Sandhava lavana	25 gm	25 gm	25 gm
10.	Samudra Lavana	25 gm	25 gm	25 gm
11.	Vida Lavana	25 gm	25 gm	25 gm
12.	Sauvachala Lavana	25 gm	25 gm	25 gm
13.	Romak Lavana	25 gm	25 gm	25 gm
	Total Wt.	**350 gm**	**350 gm**	**350 gm**

Table No.2 showing drugs using for Bhavana in Maha Shankha Vati:

Bhavana dravya	Part used	Usable form	Amount for 7 Bhavana in all 3 samples
Chitraka	Root	Kwatha	7.350 Lt
Apamarga	Whole Plant	Kwatha	7.350 Lt
Nimbu	Fruit	Swaras	7.350 Lt

Equipments: Pestle & Mortar, Spatula, Weighing Machine, Heating Apparatus, Storage Tank, Hot Plate, Spoon, Beaker, Measuring cylinder, Knife, Petri dish, pH paper, Cloth, S. S. Vessels etc.

S.O.P. (Standard Operative procedure) -The whole S.O.P. was divided into four steps

A. Preparation of Kajjali
B. Processing of remaining ingredients.
C. Bhavana of Drugs
D. Preparation of three Samples of Maha Shankha Vati

A) preparation of Kajjali:

Ingredients and their proportion: Shu.Parada - 180 gm, Shu.Gandhaka - 180 gm

Procedure: Initially equal amount of suddha parada and suddha gandhaka were taken and fine kajjali was made by grounding for at least 6 hrs a day. Mardana should be done until symptoms are appeared of Kajjali. Lastly kajjali was weighted and kept used for further processing.

Observations:

- In the final stage kajjali was visible as black colored powder having no luster as keen observation under sunlight through naked eyes.
- For proper mixing of sulphur, extensive mardana was done.

Precaution:

- Proper mardana should be done while preparing kajjali (min. 6 hrs / day).
- Gandhak should be properly purified and it should be avoid of excess fat involved in the shodhana process.
- Kajjali should be taken in used only after if it has passed test for fineness (Rekha Purnata)and Nischandra (Devoid of shine & free globules of Hg).
- Mardana should be done precociously as in later stage because of it become very fine which spills causing loss during vigorous mardana.

Result:
- Yield :- 350 gm
- Loss :- 10 gm (2.86%)

B) Processing of remaining ingredients:

Includes Extraction of Parada from Hingula & last three sanskara, preparation of Shankha Bhasma, Chincha Kshara, Vatsanabha Shodhana, Gandhak Shodhana & Hingu Shodhana, also included preparation of fine powder of Herbal Drugs & Lavana.

- Extraction of Parada from Hingula was done by Urdhwapatana method (AFI, Part-1) and yield was 41%.
- While doing last three Sanskara of Parada i.e Bodhana, Niyamana and Dipana (AFI, Part-1), total loss was occurs (4.21gm=2.24%). It may be because of Jala & Hansa Gati of Parada.
- In the present study Shodhana of Gandhaka was done by using Goghrita and Godugdha (AFI, Part-1).Total loss occurs during Gandhak Shodhana was 3.19%.
- Shankha Bhasma was prepared within three Gajaputa (AFI, Part-1), After second Gajaputa, Bhasma was cleared rekhapurnatwa pariksha. But proper color of Bhasma was not showed. It may be because of improper heat. To clear this third Puta was given (maximum temperature during Putapaka was 800^{o}c maintained for 2 hours) and total loss during the procedure was 15.95%.
- In the present research work Vatsanabha was used after Shodhana By Gomutra.(AFI, Part-1) Total loss was found upto 59.41% after shodhana.
- In the present study Shodhana of Hingu was done by using Kamala Patra swarasa for bhavana. Total loss occurs during Hingu Shodhana was 2 %.
- During the procedure of Chincha Kshara preparation(AFI, Part-1), white ash was obtained upto 5.04%. After preparation of the white ash

of Chincha Panchanga, some unburned particles were left in the form of coal. Total Kshara prepared in this procedure was 13.22% of the white ash.

⇨ As shown in Table No.1, for the preparation of Sample 1, all the ingredients were taken in each 25 gm and 50 gm of Kajjali. In the same way, for the preparation of Sample 2 and sample 3, all the ingredients were taken as mentioned in Sample 1.In this way Three Samples of Maha Shankha Vati were prepared by using same ingredients in same proportion for the purpose of standardization.

Table No. 3 showing observations after powdering of Ingredients:

S. No.	Name	Wt. of Raw Drug	Wt. of Powdered Drug	Loss/ Gain	Wt. after sieving
1.	Maricha	406 gm	393 gm	-13 gm	363 gm
2.	Pippali	429 gm	412 gm	-17	400 gm
3.	Sunthi	408gm	388 gm	-20	368 gm
4.	Saindhava Lavana	402 gm	400 gm	-2	399 gm
5.	Sauvarchala Lavana	220 gm	219.20gm	- 0.80 gm	218 gm
6.	Vida Lavana	280 gm	267 gm (After Nirmalikarana)	-13 gm	267 gm
7.	Samudra Lavana	220 gm	219 gm	-1	218gm
8.	Romak Lavana	200 gm	200 gm	0	200gm

(C) Bhavana of Drugs:-

Date of Commencement: 10Aug 09

Date of Completion: 5 Dec. 09

Reference: Sh.Sm.M.K.1/4, A.H.U.T.39/135

Material required: 1. Ingredients - 350 gm in each sample (3 Samples), 2.Bhavana Drugs - 3 Drugs (As mentioned below)

Table No. 4 showing various aspects of Bhavana in Maha Shankha Vati:

Name of the drug	Requiired raw drug for 7 Bhavana	Ratio of drug : water	Amount of decoction /Swaras	S1	S2	S3
Chitak (rt)	7,350 kg	1:8 – 1/4	14,700 lt	700 ml/ Bhavana-7	700 ml/ Bhavana-7	700 ml/ Bhavana-7
Apamarga (pl)	7,350 kg	1:8 – 1/4	14,700 lt	700 ml/ Bhavana–7	700 ml/ Bhavana–7	700 ml/ Bhavana–7
Nimbu (Fr)	17 Kg	———	7,350 lt	350 ml/ Bhavana–7	350 ml/ Bhavana–7	350 ml/ Bhavana–7

D) Preparation of three Samples of Maha Shankha Vati:

After completion of bhavana, Three Samples of Maha Shankha Vati were prepared.

Procedure:

⊙ At first kajjali (150 mg) was divided into three equal parts of 50 gm each and was assigned names as Sample 1, Sample 2, Sample 3 were kept in separate khalva's respectively for further processing.

⊙ Second step was addition of remaining ingredients into respective Khalva with the aim of preparation of three samples.

⊙ There were three drugs for Bhavana, in which one was to be used fresh (Nimbu).

⊙ Decoction of dried drug (Chitrak, Apamarga) was make by following ratio of 1:8 – ¼ left.

- Sample for decoction (100 ml) were stored for calculating the extract values.
- Each sample contains 350 gm total drug material, in which only 125 gm material was herbal material and 700 ml kwatha in each sample was too much for Bhavana. Because of this kwatha was used in the form of Rasa kriya, which was prepared by using water bath.
- Rasakriya, which was prepared, was divided into three equal parts and poured into respected khalva's and mardana was done for 3 hrs in each khalva.
- After giving Bhavana material took much more time to dry because of this after each Bhavana material was spread on iron tray for purpose of drying.
- After completion of bhavana, vati was prepared in the weight of. 250 mg.

Table No. 5 showing physical characteristic of decoction/Swarasa used in Bhavana:

S.No.	Name	Color	pH	Taste	Appearance	Odor/Smell
1.	Chitraka	Dark Brown	6	Katu	Thin Liquid	Mild, Not Specific
2.	Apamarga	Slight Brown	7	Katu	Thin Liquid	Not Specific
3.	Nimbu	Pale Yellow	2.5	Amla	Thin Liquid	Not Specific

Apart from above description, other observation mentioned as under.

1) In case of Nimbu Swarasa, a yield of 43.24% that is 7,350 lt of juice was obtained from 17 Kg of fresh fruit.

2) In last Bhavana (Nimbu Swarasa) , mixture completely failed to dry and it turns to black color, sticky appearance with thick consistency.

Precaution regarding process of Bhavana:

- In the preparation of decoction coarse powder of the drug should be soaked over night in water for proper yield of extract value.
- Decoction should be made on mild heat.
- Raskriya (concentrated decoction) should be done on a water bath on a mild heat.(40-60° C)
- Proper mardana is mandatory for homogenous mixture of medicine.

Table No. 6 showing extract value of the decoction used in Bhavana at a Glance:

Name of drug	Kwath/ Swaras Sample solution x (ml)	E1 (gms)	E2 (gms)	E3 (gms)	Mean (E) gms	% of Extract (x)
Chitraka	10 ml	0.260	0.215	0.220	0.232	24.65%
Apamarga	10 ml	0.200	0.220	0.210	0.210	22.29%
Nimbu	10ml	0.500	0.510	0.490	0.500	53.06%

Observations regarding finished product:

1. Final yield of Maha Shankha Vati after making pills in respective samples is as follows:

i. Sample 1 :- 712 gm

ii. Sample 2 :- 700 gm

iii. Sample 3:- 689 gm

2. Physical characteristics of the pills in all 3 samples:

i. Color :- Black

ii. Odor :- Amla (Lemon Flavored)

iii. Taste :- Mainly Amla minutely Tikta & Katu

iv. Solubility :- Dissolved in water leaving residue in the bottom of the vessel.

v. Appearance :-Smooth Appearance

vi. pH :- 3.31

Table No. 7 showing weight added by decoction on the basis of their extract values.

S. No.	Name of the Drug	% extract	Solid weight of the kwatha / Amount of kwatha (gms)
1.	Chitraka	24.65	341.40
2.	Apamarga	22.29	308.7
3.	Nimbu	53.06	735

Yield of Maha Shankha Vati :- 2435.10 gm

i. Weight of extract of Bhavana Drugs :- 1385.10 gm

ii. Weight of Kajjali:- 150 gm

iii. Weight of other Drugs:- 900 gm

Actual yield of Maha Shankha Vati :- 2101 gm

Result:- Loss of Weight :- 2435.10 – 2101 = 334.10

% of Loss:- 13.72 %

Discussion: Maha Shankha Vati was prepared in four steps. First step was Kajjali formation. Second step includes processing of all ingredients to converts into useable form. Third steps includes the bhavana of three drugs and fourth step includes preparation of three samples of Maha Shankha Vati.

Processing of Maha Shankha Vati was started with formation of Kajjali. Kajjali was formed after extensive Mardana, finally lusterless black color fine powder was obtained. At the end of the process reveals loss of 10gm (2.09%).

After this, come to the second procedure which involves processing of all ingredients. Total 14 ingredients were involved in each sample. Each drug was taken each 25 gm and 50 gm of Kajjali, by this way total weight of each sample was 350gm. Third step includes bhavana of three drugs, which involves seven times Bhavana of three drugs each in three respective samples. Here instead of seven times bhavana, two times bhavana was given in the form of rasakriya. Decoction was made by following the ratio of 1:8 and 1/4th left.

But because of time limitation, it was not possible to give seven times Bhavana of each drug to each sample separately. To avoid this, it was planned to reduce the amount of liquid to be used for two Bhavana in the form of "Rasakriya" before addition into three samples. Finally comes to the last aspect of procedure, preparation of vati was carried.

At the end probably extract value added by herbal extracts was calculated.

Summary - The present study entitled "Pharmaceutical Standardization of Maha Shanka Vati " has been planed with an attempt to contribute to the ongoing process of standardization of compound formulations.The pharmaceutical section deals with the preparation of three samples of Maha Shankha Vati. Three samples of Maha Shankha Vati were prepared, to check the uniformity of the procedure as a part of the standardization of the drug.

Conclusion

- Maha Shankha Vati is a herbomineral compound having its first description found in Rasendra Chintamani.
- Maha Shankha Vati was prepared by following the method prescribed in A.F.I. volume 2nd *with required changes in S.O.P.* In the present study, *instead of seven times bhavana of each decoction/swarasa, two times bhavana of each rasakriya was adopted.*
- Increase of the final product is approximately two times the initial material due to addition of extract during Bhavana of three herbal drugs in the form of rasakriya.

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Conceptual Study

Upadhatu Vivechan - A Conceptual Study

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Abstracts

Upadhatu, like dhatu, is a group of vital component of the body which is responsible for the proper maintains of body. These are formed on due course of metabolic process with the direct influence of dhatvagni. Different views regarding the upadhatu are available in different classics which are considered from different stand point. Knowledge of all clinical consideration and consequence are inevitable prior to entire in the clinical practice. Scientific analysis upadhatus and their practical annotation are the main aim of this article.

Key Words : *Dhatu, Upadhatu, Dhatvagni*

सारांश–

धातु की तरह उपधातु भी शरीर के जैविक घटकों का समूह है जो कि शरीर को सम्यक् रूप से चलाने के लिए आवश्यक है। इसका निर्माण धात्वाग्नि के सीधे प्रभाव में चयापचय क्रियाओं के द्वारा होता है उपधातु के सम्बन्ध में विभिन्न संहिताओं में विभिन्न मत उपलब्ध है जो कि अलग–अलग भावों को ध्यान में रखकर प्रतिपादित किये गये हैं सभी प्रकार का नैदानिक तथा चिकित्सात्मक भावों का अध्ययन चिकित्सा अभ्यास के सफल परिणामों के लिए आवश्यक है। उपधातु का वैज्ञानिक विश्लेष्ण तथा प्रयोगात्मक व्याख्या ही प्रस्तुत पत्र का विवेच्य विषय तथा मुख्य उद्देश्य है।

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Conceptual Study

Upadhatu Vivechan - A Conceptual Study

Dr. Shyam Lal Sharma, Prof. M.S. Meena

Introduction:

Ayurvedic system of medicine is based on the basis of tridosha theory. Tridosha keep the body healthy and vitiation of which causes the disease. The vitiated dosa affecting the body constituents i.e. dhatu and upadhatu produces the diseases. Upadhatu is nano-concept of ayurveda and has been elicited in the clinical parlance. Various acharyas have viewed and analysed upadhatu from various angles and there exist a little bit different opinion. Hence all opinion should be analyzed scientifically before entering in to the clirical practice.

(I) Etymology:

One has to apply the grammatical understanding of the term to derive the indepth meaning of the word. The word 'Upadhatu' consists of two parts i.e. Prefix "Upa" and the word "Dhatu"

(I) Dhatu :

Vyutpatti:

"Dha Sitanigamati Iti Tun Unam | Sarira Dharaka Vastuni | "[SKD-1/70] The word 'Dhatu' is derived form the root "Dha" which means to support and nourish.

"Dhiyate Sarvam Asmin Iti |" [SKD]

Eveyting existing is supported by this or because they bear and support, they are termed as Dhatu.

Nirukti :

a) "Dadayati Sarira Sambvardhakan Iti Dhatu |" (SKD) Which supports the growth of the body is termed as Dhatu.

b) "Ete Sapta Swayam Sthitva Dehan Dadhati Yan Nraam|" [SKD-IInd/790] Dhatus are stable constituents, the basic elements of the body, which make the body exist.

(II) Upa:

"Upa Pradi Vimsati Upasargantargata Upasaraga Visesah|"

[Ayurvediya Sabdakosa] "Upa" is a prefix attached to the word "Dhatu", Prefix Changes the meaning of the word with which it is acting. The literary meaning of "Upa" is: "Anugatini | Anukampa | Adhikyam | Hinah | Samipyam |" Towards, near to, by the side of, resemblance, nearness, with the idea of subordination and inferiority. [M.W. Dic.]

(III) Upadhatu-

Vyutpatti:

"Pu Upamitah Dhatyubhih |" [SSTMN]

"Pradhana Dhatusadrsesud "That shows close resemblance towards Dhatu.

Nirukti:

1. "Dhatubhava Te Upadhatavah |" Upadhatus are evolved from Dhatus.
2. "Dhatu Samipe Bhava Upadhatavah |" [SA.Pr. 5/1-Dipilka] Upadhatu are produced along with Dhatus.
3. "Dhatubyah Ca Upajayante Tasmat Ta Upadhatavah |" [S.Su.14/10-Bhanumati] Those, which are derivatives of Dhatus, produced at complementary, subsidiary level, are known as upadhatus.
4. "Dhatoh Upadanabhutat Jato Anya Dhatuh|"[C.Ci17/17-Cakra] "Upadana" means Samavayi Karana (immediate cause). Dhatu are the immediate cause of Upadhatu.
5. "Upagatah Vaikrtyam Prapto Dhatu Upadhatuh |" [SA.Pr5/17-18; Gudhartha Dipika]

Vitiated state of Dahtu is termed as Upadhatu.

II. Concepts:

In order to develop the precise concept of Upadhatu Available references form the classics are compiled as follows.

Acharya Caraka while describing the nutrition of body lements defines a separate group of elements, but has not entitled them.

Further while analyzing this unit commentator Chakrapani entitled them as Upadhatu. These seven components are Stanya, Rakta (indicative of Raja), Kandara, Sira, Vasa, Twak and Snaya. Cakrapani has also quoted the opinion of Acarya Bhoja in this regard. Bhoja has mentioned only five components of this unit, which are Sira, Snayu, Raja, Stanya and Twak. He has nomenclated this unit as Upadhtu. Acharya Susruta not mentioned these components collectively and also not used the term Upadhatu. While describing the functions of Dos, Dhatu and Mala revered seer has mentioned Raja and Stanya. Along with these two components, "Garbha" is mentioned under this unit. Commentator Dalhana has termed these three as Upadhatus. Among the remaining components except Vasa all are mentioned under Vatavyadhi Nidana and Chikitsa. In Satrasthana while explaining the nourishment of Dhatus in successive manner Acharya Susruta has used the term "Prajayate" (S.Su 14/10). Elucidating this term revered Dalhana shed a light on Upadhatus. Here commentator has enlisted the same components as stated by Acarya Charaka and further added Sandhi to this list. He has nomenclated the unit as Upadhatu, Gayadasa's commentary on Susruta Samhita is available on Nidanasthana only, and while annotating on Nidanasthana's first chapter he has mentioned the Saloka regarding Upadhatus – "Rast Raktam Tatha Stanyam Asrjah Kandara Sirah |" Mamsat Vasa Twacah Sat Ca Medasah Snayu Sambhavah ||" [S. Ni.1/25-29, Nyayacandrica] He had modified the first part of Sutra as mentioned above. He has not mentioned Sandhi. Here he remarked that originally this Sloka belongs to fifteenth chapter of Sutrasthana. He further opines that when "Dharana" Karma of Dhatu is expected, "Dhatu" term should not be restricted to only Saptadhatu but Mala and Upadhatu are also to be considered along with term. In this regard he has clearly used the term "Upadhatu'. Further references from the classics are mentioned where commentators have interpreted the "Dhatu" term in Sloka for Upadhatus and Malas along with Sapta Dhatu. (1) "Dosa Dhatvagni Samatam....|" [S.Ni. 1/18] In the above verses "Dhatu" term is interpreted for Upadhatu and Mala, along with Sapta Dhatu.

(2) "Sama Dosah Samagnisha Sama Dhatu Mala Kriyah |" [S. Su 15/41] In the above context Dalhana has interpreted the "Dhatu" term for Upadhatus along with Sapta Dhatu. In Uttaratantra, Acharya Susruta has mentioned the Dhatu and Upadhatus related with Netra (S. U. 1/19) Revered Oracle of next era Astanga Sangrahakara has not used the term Upadhatu. While explaining the Dhatu metabolism, revered Acharya has mentioned the components as a "Prasadaja Part" but not nomenclated them as Upadhatu. Revered Aquaria adds Sandi in these Prasadaja entities for the first time, which is accepted by Dalhana as mentioned previously. In this context they have not mentioned Raja and Stanya (A.S. 6/45). Acharya has considered these two entities separately while elucidating the "Anjali Pramana" of body elements. (A.S.Sa 5/93). Revered oracle Laghu Vagbhata has not mentioned these components collectively anywhere and also not used the term "Upadhatu". Commentators of Astanga Sangraha and Astanga Hrdaya have not nomenclated these components as Upadhatus.

Further the seer of medieval period Sarngadhara, stands differently while enlisting this unit of Upadhatu. Revered oracle has enlisted Stanya, Raja, Vasa, Sweda, Danta, Kesa, and Oja as unit of Upadhatu. (SA. Pr. 5/16-18). He has clearly mentioned them as "Sapta Upadhatavah." (SA. Pr. 5/1). Further the oracle of next era, Bhavamisra, has accepted the opinion of Sarngadhara. There are some references available in Bhavaprakasa, which shows similarity with charaka and susruta schools of thoughts also. The author of Yogatarangini has also accepted the Sarngadhara School of thoughts.

Review of the Classies

Century	Names of Revered Acharyas	Mentioned the Upadhatus Collectively as a Unit		Used the term "Upadhatu"	
		Yes	No	Yes	No
4-6th	Caraka	+			+
4-6th	Susruta		+		+
4-6th	Vrddha Vagbhata	As a Prasadaja Elements			+
4-6th	Laghu Vagbhata		+		+
11th	Bhoja	+		+	
11th	Gayadasa	+		+	
11th	Cakrapani	+		+	
12th	Dalhana	+		+	
13th	Indu. Arundatta		+		+
	Hemadri				
14th	Sarngadhara	Modified Unit			+
16th	Bhavaprakasa				+
17th	Yogatarangini				+

Bhoja has mentioned only five components as Upadhatu. Acarya Charaka has elucidated seven components as Upadhatu. Astanga Sangrahakara adds Sandhi to this list. Commentator Dalhana accepted it and thus the number of the Upadhatu becomes eight. The author of medieval period Sarngadhara comprehends Sweda, Danta, Kesa and Oja under Upadhatu.

Upadhatus accepted by Acharyas

Name of Acharya									Newly Introduced by Sarngadhara				Tot-al
	Stanya	Raja	Kandara	Sira	Vasa	Twak	Snayu	Sandhi	Sweda	Danta	Kesa	Oja	
Caraka	+	+	+	+	+	+	+	+	-	-	-	-	7
Gayadasa	+	+	+	+	+	+	+	+	-	-	-	-	7
Cakrapani	+	+	+	+	+	+	+	+	-	-	-	-	7
Bhoja	+	+	-	+	-	+	+	-	-	-	-	-	5
Astanga Sangrahakara	+	+	+	+	+	+	+	+	-	-	-	-	8
Dalhana	+	+	+	+	+	+	+	+	-	-	-	-	8
Sarngadhara	+	+	-	-	+	+	-	-	+	+	+	+	7
Bhavamisra	+	+	-	-	+	+	-	-	+	+	+	+	7

Upadhatus quoted by Acharyas

Names of Revered Achryas	Names of the Upadhatus Mentioned	No
Bhoja	Stanya, Raja, Sira, Twak Snayu	5
Caraka: Gayadasa; Cakrapani	Stanya, Raja, Kandara, Sira, Vasa, Twak, Snayu	7
Vrddha Vagbhata; Dalhana	Stanya, Raja, Kandara, Sira, Vasa, Twak, Snayu, Sandhi	8
Sarngadhara; Bhavamisra; Trimalla Bhatta (Y.T)	Stanya, Raja, Vasa, Sweda, Danta, Keasa, Oja	7

(IV) Characters Of Upadhatu:

Classics have explained the concept of Upadhatu in correlation with Dhatu. Upadhatu are derived from Dhatus. Acharya Charaka has explained their specific correlation in the following verse: "Rasat Stanyam Tato Raktam Asrjah Kandarah Sirah|

Mamsat Vasa Twacah Sat Ca Medasah Snayu Sambhavah |" [C. Ci. 15/17]

Dhatu	Related Upadhatus
Rasa	Stanya, Raja
Rakta	Kandara, Sira
Mamsa	Vasa, Twak
Meda	Snaya, Sandhi (Dalhana)

First four Dhatus are related with Upadhatus. Revered annotator Dalhana in Sutrasthana elucidates the rational behind this. "Vivista Karyantra Utpada Darsanartham |" [S.Su. 14/10-Dalhana] In the context of nourishment of Dhatus, Acharya Susruta has specified the term " Prajayate" for first four upadhatus only.

"Rast Raktam Tato Mamsam Mamsat Medah Prajayate |" [S.Su. 14/10] Annotator Dalhana has elucidated that to specify the distinct function of these Dhatus the term "Prajayate" is used for them. Further he opines that we cannot deduce the cause behind this, the only logic is "Swabhava." The features of these Upadhatus are as follows:

1) **Produced at Complementary level:-** "Dhatubhyah Ca Upajayante |" [Bhoja] Upadhatus are produced from Dhatu metabolism, but they are produced at subsidiary level, secondary level. The word "Upajayante" suggests that they are by product of Dhatu metabolism.

2) Gativivarjita :-

"Jayanta Eva, Param Na Janayanti |" [C.Ci. 15/17, Cakra]

Commenting on the above verse of Bhoja, revered Cakrapani further enlightens the view that they are not having the property to produce successive elements. "Dhatvantara Aposanat ..... Upadhatu Sabdena Uccante |" [C.Ci.15/17-Cakra] Cakrapani has stated that since they do not have the property of nourishing the Dhatus, they are termed as upadhatus. They have no fate to get transformed into further components. Acharya Bhoja has referred this meaning of this term as "Atra Gativivarjita Iti Anena Dhatvantara Posanadya Gatih Nisidhyate |" [S.Su 14/10 Sivadasa Sen] He explained that Upadhatu do not have any fate to nurish successive Dhatu. In the context of Dhatus their 'Gativarjitva' is proved. 3) Sarira Posakatva:- Annotator Chakrapani Specifies that though Upadhatu do not nourish Dhatu, but they do nurish other components of the body. To understand the precise concept of Upadhatus, their role in body physiology it is necessary to know the characters of Dhatus on the basis of which Upadhatus are described in classics.

Characters of Dhatu Characters of Upadhatu

	Characters of Dhatu	Characters of Upadhatu
1	Dhatvantara Posakatva Dhatu Nourishes successive Dhatu	Dhatvantara Aposakata: Upadhatu do not nourish successive Dhatu or Upadhatu
2.	Gativivarjita- This property is not found is Dhatu	Upadhatu possesses Gativivarjitva in relation with Dhatu
3.	Dhatu Sneha Parampara :- Dhatu nourishes successive as well as former Dhatu. They are connected to each other through nourishing pool.	Such type of inter-relation is not present in Upadhatus.
4.	Sarira Posakatva :- It is present in Dhatus.	It is present in Upadhatus too
5.	Sarira Dharanatva :- Dhatus bear the body elements.	In Upadhantus this function is supportive to Dhatus.
6.	Dhatu functions right from conception & continue through our the life.	Some Upadhatus (Raja & Stanya) functions for specific time period only.
7.	Some Dhatu (i.e. Surka) produces alike body elements. It is having reproductive capacity.	Upadhatus do not have reproductive capacity. Function of Raja & Stanya is supportive to reproduction.
8.	Dhatus do not act as 'Mala Bhava' for Body. Only Surka is ejaculated from	Some (Raja & Stanya) of them are excretory in nature & act as 'Mala

the body by means of specific function of reproduction. Bhava' for the body if not expelled after specific time period.

(IV) Modifiedconcept Of Sarngadhara: Svatantra Siddhanta of Acharya Sarngadhara regarding the concept of Upadhatu:- Eminent oracle Sarngadhara has not accepted the opinion of the former Acharyas. He introduced a modified unit of Upadhatu. "Stanyam Rajasca Narinam Kala Bhavati Gacchati |" Suddha Mamsabhavah Snehah Sa Vasa Parikirtitah | Swedo Dantah. Tatha Kesah Tathaiva Ojasca Saptamam | Iti Dhatubhava Ineya Ete Saptopadhatavah |" [SA. Pr 5/16-18]

Sarngadhara has asserted Stanya, Raja, Vasa, Sweda, Danta, Kesa, and Oja as Upadhatu. Acharya Bhavamisra Concurred with the opinion of Sarngadhara. "Stanyam Rajo Vasa Swedo Dantah Kesah Tathaiva Ca | Oja ca Sapta Dhatunam Kramat Saptopadhatavah | |" [BH. Pu. 3/212]

According to this school of thoughts, Dhatus are related with Upadhatus in following manner:-

Modified unit of Upadhatu of Acharya Sarnagadhara

Dhatu	Related Upadhatu		Excluded Upadhatus
	Accepted Upadhatus as previously mentioned	Newly introduced Upadhatus	
Rasa	Stanya	-	Raja
Rakta	-	Raja	Kandara, Sira
Mamsa	Vasa	-	Twak
Meda	-	Sweda	Snayu, Sandhi
Asthi	-	Danta	-
Majja	-	Kesa	-
Sukra	-	Oja	-

As compared to Charaka, Sarngadhara School are having separate views on following points:

Acharya Sarngadhara has not mentioned kandara, Sira, Twak, Snayu, and Sandhi. Instead of these he appendaged Sweda, Danta, Kesa and Oja to the list of Upadhatu. All the seven Dhatus are mentioned in relation with Upadhatus. Acquiring the knowledge of newly introduced upadhatus:-

(I) Sweda – Acharya Charaka and Susruta has referred it under "Dhatu Mala" of the body. Sweda is derived form Mala Portion of the Meda Dhatu. Acharya Sarngadhara and Bhavamisra have mentioned it under Upadhatu and Dhatu Malas too. (SA.Pr.5/15;BH. Pu.3/209)

(II) Danta – Ancient seer has not mentioned Danta under "Dhatu Mala." All body elements are categorized under Prasadaja of Mala entities. Commentator Chakrapani has explained in this context that Danta receives its nutrition form Mala portion of Asthi Dhatuu. Danta are included in Asthi by Acharya Charaka. Acharya Susruta has termed it as "Rucakasthi". Susruta has not referred Danta under "Dhatu Mala"

(III) Kesa – Acharya Charaka and Astanga Sangrahakra have included Kesa under Dhatu Mala. Acharya Sarngadhara mentioned it as an Upadhatu of Majja.

(IV) Oja – It is elixir of all the Dhatus starting from Rasa to Sakra. (C.Su 17/75, S.Su. 15/19 –Dalhana; A.H. Su. 11/37 – Arundatta; A.S.Su. 19/28; C.Su 17/17 – Cakra; C.Su 28/4 –Cakra)

Annotator Chakrapani has quoted few anonymous statements in this regard. Some are of the view that Oja is a specialized form of Sukra since it doesen't nourish the mind. Some opine it as eighth number of Dhatu. In this context one anonymous statement supports the view of Sarngadhara to consider the Oja as Upadhatu. Rational behind this is explained that like other Dhatus though it sustains the body but does not nourish it. Acharya Bhavamisra in this context states this entity as essence of all the Dhatus. (BH.Pu.3/101). Chakrapani while commenting on Upadhatus narrated his opinion that Oja should not be considered as Dhatu of Upadhatu. It cannot be separated from Dhatus, as it is elixir of them. (C.Ci 15/17-Chakra) While commenting on Upadhatu, author of Gudhartha Dipika Kasirama Vaidya has elucidated his opinion. He raised a question regarding the Upadhatu of Rasa and Rakta in males. During this discussion he opines that when improperly metamorphosed Rasa Dhatu come out of the body it is called as Upadhatu of Rasa. Due to vitiation of Pitta, augmented Rakta when goes upward it is to be named as Upadhatu of Rakta. Further he has given a meaning of Upadhatu as "Upagatah Vaikrtyam Prapto Dhatuh Upadhatuh" [SA. Pr. 5/17-18] According to his opinion vitiated form of Dhatu is to be termed as Upadhatu.

Discussion : Upadhatus etymologically and syntactically signifies the matter which protects but donot gives nutrition to the body. scholars of various classics and their commentator have commented on various angles of upadhatu their formation, functions and consequential. one group of scholars opine that upadhatu is the resultant byproduct of the dhatuposana karma from ahararasa and rasadhatu. Other group have give the view that some of the upadhatu are waste product. one school suggested that upadhatu formed simultaneously with dhatu where as other school suggested that it is a phenomena of later stage.

Conclusion : It may be concluded from the above discussion that through different acharyas have given different views regarding upadhatu but clinically all more or less reveal similar consequences and are having exact contextual meaning.

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Conceptual Study

Oja Vis A Vis Immunity

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Abstract

Ojas is the one which keeps all the living beings refreshed. There can be no life without ojas. Ojas marks the beginning of the formation of embryo. It is the nourishing fluid of the embryo.It enters the heart right at the stage of the latter s initial formation. Loss of ojas amounts to the loss of life itself. It sustains the life and is located in the heart. It constitutes the essence of all the tissue elements .The elan vital owes its existence to it. But all this action of ojas manifest itself in different ways, only with the help of blood vessels. So these vessels play an important role in the maintainenance of health. The actions described here pertain to both the types of ojas.It is this ojas where the soul is lodged after the union of the sperm and ovum. It is the essence or the slime material formed as a result of the union of the sperm and ovum. Entrance of ojas into the heart of the embryo manifest the cardiac activities.

Key words : Oja, Immunity, Bala, Sara, Visramsa etc.

सारांश–

ओज सभी जीव धारियों का तेज है। ओज भ्रूण को भी पोषण पहुँचाता है। ओज के नाश से जीव का नाश होता है। ओज जीव देता हुआ हृदय में स्थित है। ओज के हृदय प्रवेश से भ्रूण के सभी कार्य प्रारंभ होते हैं। सभी धातुओं का सार ओज है। ओज अपने कार्य सभी दिशाओं में धमनी से सहयोग से दिखाता है। ओज का मतलब यहाँ दोनों प्रकार के ओज से है। ये वही ओज, जो शुक्र शोणित के संयोग में प्रकट होता है। ये सार अथवा पिच्छिल तत्त्व शुक्र शोणित के संयोग के समय प्रकट होता है। जब ये ओज गर्भ के हृदय में प्रवेश करता है, तब हृदय का कार्य प्रारम्भ होता है।

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Conceptual Study

Oja Vis A Vis Immunity

Dr. P .V. Kulkarni, Dr. S. M. Vaidya

Introduction

Ojas is the essence of all the tissues and it is directly related to the strength of the body.As ghee is unctuous quint essence of the whole milk, like wise ojas too is the similar essence of all dhatus[1].

Oja is necessary for the well being of the body and mind. It is the essence of all the physiological activities and health.

Immunity is defined as the capacity of the body to resist the pathogenic agents. It is the ability to resist the entry of different types of foreign bodies like bacteria, virus, toxic substances etc[2].

Functions Of Oja

Firm and well developed muscles, unobstructed movements, clarity of voice and complexion and normal functioning of motor and sensory organs[3].

The kapha in its natural state promotes strength in the form of ojas. When in morbid condition ,it causes various diseases. As the bees collect honey from the fruits and flowers ,so is the ojas which maintains the body of human being by virtue of its properties and actions[4].

Features Of Oja

It is said to be predominantly white, reddish and yellowish in colour. It is of watery nature, unctuous, pure, cold, stable, pervading,soft,delicate and the excellent seat of life[5]. In the above verse Charak describes three colours for oja as white, yellow, and red.

Types Of Oja

Two types of oja are mentioned in Ayurveda classics as Paraoja and Apara oja[6]. Two types of immunity are Innate immunity and Acquired immunity

1.Innate immunity or Non specific immunity- It is the inborn capacity of the body to resists the pathogens. By chance, if the organisms enter the body, innate immunity eliminates them before the development of any disease. It is otherwise called natural or non specific immunity.

This type of immunity represents the first line of defence against any type of pathogens.

Mechanisms Of Innate Immunity (Table No. 1)

Sl.No	Structures and mediators	Mechanism
1	Gastro Intestinal tract	1. Enzymes in digestive juices and the acid in stomach destroy the toxic substance or organisms entering digestive tract through food. 2. Lysozyme present in saliva destroys bacteria.
2	Respiratory System	1. Defensins and cathelisidins in epithelial cells of air passage are anti microbial peptides. 2. Neutrophils, lymphocytes, macrophages and natural killer cells present in lungs act against bacteria and virus.
3	Urogenital System	Acidity in urine and vaginal fluid destroy the bacteria.

Sl.No	Structures and mediators	Mechanism
4	Skin	1. The keratinised stratum corneum of epidermis protects the skin against toxic chemicals. 2. The beta defensins in skin are antimicrobial peptides. 3. Lysozyme secreted in skin destroys bacteria.
5	Phagocytic Cells	Neutrophils, monocytes and macrophages ingest and destroy the microorganisms and foreign bodies by phagocytosis.
6	Interferons	Inhibit multiplication of viruses, Parasites and cancer cells.
7	Complement Proteins	Accelerate the destruction of microorganisms.

2. Acquired Or Specific Immunity

It is the resistance developed in the body against any specific foreign body like bacteria, viruses, toxins, vaccines or transplanted tissues. So this type of immunity is also known as specific immunity. It is the most powerful immune mechanism that protects the body from the invading organisms or toxic substances .Lymphocytes are responsible for acquired immunity.

Seat Of Oja

Ten vessels are attached to the heart which carry ojas and pulsate all over the body. The heart is indispensable for all the normal mental and physical activities because the entire sense perception representing animation depends on the heart. Moreover, the heart is the substratum of the ojas and it is also the controller of the mind. Thus physicians have called the heart as Mahat and Artha[7].

Three Types Of Vikratis Of Oja

There are three types of abnormalities of ojas. Visramsa [displacement], vyapat [vitiation], and kshaya[wasting]

1. Dislocation, lassitude, displacement of doshas, fatigue, deficiency of functions are the symptoms of the displacement of ojas.
2. Heaviness, stiffness in organs, malaise, impairement of complexion, drowsinwss, excess sleep, swelling are the symptoms of the vitiation of ojas.
3. Fainting, atrophy of muscles ,confusion, delirium, unconsciousness along with the symptoms leading to death are found in wasting of ojas[8].

In cases of dis placement and vitiation, ojas should be promoted with non contradictory specific measures, the case of wasting with loss of consciousness should not be taken up.

Three Types Of Deformities Of Immunity

1) Immune deficiency diseases
2) Auto immune diseases
3) Allergy and immunological hyper sensitivity reactions

1) Immune Defficiency Diseases

Immune deficiency diseases are group of diseases in which some components of immune system is missing or defective. Normally, the defence mechanism protects the body from invading pathogenic organism. When the defence mechanism fails or becomes faulty [defective],the organisms of even low virulence produce severe diseases. The organisms which take advantage of defective defense mechanism, are called opportunists.

The immune deficiency diseases caused by such opportunists are of two types.

a. Congenital - These are inherited and occur due to the defects in B cell, or T cell or both. The common examples are Di George s syndrome [due to absence of thymus] and severe combined immune deficiency [due to lymphopenia or the absence of lymphoid tissue]

b. Acquired. - These occur due to infection by some organisms .The most common disease of this type is acquired immune deficiency syndrome[AIDS]

2) Auto Immune Diseases - These are defined

as condition in which the immune system mistakenly attacks body s own cells and tissues. Normally, an antigen induces the immune response in the body. The condition in which the immune system fails to give response to an antigen is called tolerance. This is true with respect to bodys own antigens that are called self antigens or auto antigens. Normally ,body has the tolerance against self antigen. However in some occasions the tolerance fails or becomes in complete against self antigen. This state is called auto immunity and it leads to the activation of T Lymphocytes or production of auto antibodies from B Lymphocytes. The T Lymphocytes or auto antibodies attack the body s normal cells whose surface contains the self antigen or auto antigen.

Thus the auto immune disease is produced when body s normal tolerance decreases and the immune system fails to recognize the body s own tissues as SELF. The auto immune diseases are of two types.

a. Organ specific diseases which affect only one organ

b. Organ nonspecific or multi systematic diseases, which affect many organs or systems.

Common Auto Immune Diseases

Insulin dependent diabetes mellitus

Myasthenia gravis

Hashimoto s thyroiditis

Grave s disease

Rheumatoid arthritis

3) Allergy And Immunological Hyper Sensitivity

The term allergy means hyper sensitivity. It is defined as abnormal immune response to chemical or physical agent. During the first exposure to an allergen, the immune response does not normally produce any reaction in the body. Sensitization or an initial exposure to the allergen is required for the reaction. So the subsequent exposure to the allergen causes variety of inflammatory responses .These responses are called Allergic reactions or immunological hyper sensitivity reactions.

The immunological hyper sensitivity reactions may be innate or acquired. These reactions are mediated by mostly antibodies. In some conditions, T cells are involved. Common symptoms include sneezing, itching, and skin rashes. However in some persons the symptoms may be severe. The common allergic conditions are Food allergy, Allergic rhinitis, Bronchial asthma, Urticaria.

Conclusions

In the different stages of foetus, ojas plays an important role. At the time of conception, it is the essence or the slime material which provides nutrition to the embryo. In the third stage ,when there is formation of various organs, ojas manifests its own actions. Because it pervades all the stages of life, the synonym MAHAT attributed to it is justified. Death occurs due to loss of ojas even if there is no loss of other tissue elements of the body. It is called DHARI because it is important in bringing about coordination among all the factors responsible to sustain life.

Activities of RAS, Limbic system etc can be due to the normal functioning of ojas. The activity of a healthy, active immune system also attributes to ojas.

Ojas and immunity seems to be same ,as the functions of the both are same. Two types of ojas and immunity, three types of their defects can also be taken as same.

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Conceptual Study

The Role of *Rasayan* In Infection

*#A K Panja, **S. Choudhury , ***S. Rath, ****A. Chattopadhyaya

Abstract:

The diseases in *ayurveda* are categorized into two categories, e.g. endogenous and exogenous. Infections exercise a major part among the exogenous categories. A vivid description of infectious diseases, their pathogenesis and treatment have been documented in ayurvedic treatise. *Rasayana* therapy along with other *vishanashaka* treatment is categorically advocated for the prevention and eradication of infectious diseases. The underlying concepts of transmission of infectious diseases, in brief pathogenesis and planning of rasayan therapy to improve the immunity and thus to arrest the propagation of infectious diseases are contextually most important in current era.

Key words: *micro-organism, infection, rasayan, immunity.*

सारांश-

आयुर्वेद में रोगों को निज तथा आगन्तुज रूप में विभाजित किया गया है। कीटाणु संक्रमण आगन्तुज रोग की एक महत्वपूर्ण कड़ी है। जिसका निदान-सम्प्राप्तिपरक विस्तृत वर्णन आयुर्वेद संहिता में वैज्ञानिक रूप से किया गया है। इसकी प्रतिरोधार्थ अन्य विषनाशक चिकित्सा के सात विशेष रूप से रसायन चिकित्सा का विधान किया गया है। विभिन्न प्रकार के नैमित्तिक एवं आजस्त्रिक रसायन के प्रयोग द्वारा व्याधिप्रत्यनीयक-बल एवं शारीरिक-बल की वृद्धि के माध्यन मे से इस कीटाणु-संक्रमण जन्य रोग प्रतिरोध सम्भव है। कीटाणु-संक्रमण पद्धति, कीटाणु-संक्रमण जन्य रोग, उनकी सम्प्राप्ति, व्याधि-क्षमत्व वर्धनार्थ रसायन कल्प-प्रयोग विचार इत्यादि विषयक शास्त्रपरक अवलोक ही इस प्रबन्ध का मूल उद्देश्य हैं।

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Conceptual Study

The Role of *Rasayan* In Infection

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The immunity or the body resistance is caged in the paramount level for which the body does not get affect by the virulent or mild form of diseases. Any interaction in the alteration of the quantum of aggravation of functional entities breaks the physiological barrier in inculcated pathways results the production of the diseases. The consequences in the alteration of the physiological pathway decoct the magnified cumulative effect of the interaction caused due to the deranged functional entities. The extrinsic or intrinsic factors are qualitatively quantified with the multiple factorials responsible for the production of the respective diseases in causing pathogenesis in the detoxified systems inside the body. The symphony of the sequences of the pathology is well accelerated by the acute way breaking the resistance of the body produced as the result of interaction in between the microorganism and body resistance. This transmission of the micro-organism are deeply segmented the particular organ or affecting the particular anatomical structure with the modulation of acclimatized intrinsic pathway and subsequently altering the physio-biochemical factors. The quality of the quantum of ample microorganism is magnified in the production of the different diseases with a specific genesis but ultimately the utmost immunity is depleted.

Right from the birth the immune system are well activated to protect the body from the variety of infection and the action of the specific system are varied in different age group for which the specific infection are commonly susceptible in particular age. The gene environmental regulation are affected through immuno-depression and manifested to different characteristics. Commonly the early infections are transient and self healing and called intermediate state. The cusp of the virulent infections breaks the intermediate stage and triggers through the transmission of putrefying pathogens. The resources of the infections are though having a wide range but categorical comprehension of the infective pathology are dependent upon the immuno-suppression or alteration of the immuno-modulation in a specific way. The *bhutabhisangaja jvara*, *graha roga*, *rajayaksma*, *kustha* etc. are due to micro-organism like virus, bacteria, fungus etc. and these captivated micro-organisms cause pathogenesis affecting nerves, skin and physique etc. with the neuro-physio pathological characteristics. The textures of the infections are vitrified in the processing of the diseases and results the quench of abnormalities in the localized or general state. The bonafide micro-organisms of the respective diseases create the anomalies in the respective organs and become virulent with its multiplication. The immunological systems are to be kept by detoxification in the course of administration of the specific immuno-modulation therapy.

Rasayan enhances the immunity and this measures is effective if the purification are performed for detoxification of the system or the administration of the *rasayana* drug connate the process of longevity through immuno- modulation in terms of resisting the disease process or even arresting the production of the disease caused due to infection. The viable factors are resisted and the cumulative interaction advances the process of immuno-modulation. The inter-chemical changes are arrested by enhancing the immunity in the micro or macro level and it acts through the molecular biogenesis inside the body in the form of qualitative regeneration of the respective tissues. *Rasayana* is used to prevent the infection and to arrest the infective disease promoting the immunity of the vital essence of the respective body tissue as being affected and break the intensity of the processing of interaction between the micro-organism and the body resistance with the programmed theism. Effective uses of single or compound drugs in a fixed dose or in increasing followed by tapered manner are well versed to mitigate the particular disease in *rasayana*. The significance of the chronology of the *rasayana* has assumed greater importance as a cause of serious and fatal infections in immuno-

compromised patients. The uses of *Embelica officinalis* and *Samecarpus anacardium* enlighten the view of immuno-promotion and immuno-suppression quality respectively in different infection. In almost all the infective diseases are prevented to the practice of *Achara rasayana* as it regulates the neuro-transmitters to maintain the psychological threshold so that the individuals are kept themselves alert from the source of infection. Simultaneously the use of seasonal fruits, fluid and aphrodisiac drugs prevent the infections and the administration of *madhutailika* and *Yapanbasti* increase the IgG and IgM level with the specific justified mechanism.

Conclusion *:*

It may be revealed from the above that the true infections are the basic pathologic factors where body immunity gets depleted and this can be arrested through the immuno-modulatory drugs in the testified form.

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Conceptual Study

Teratological Aspect In *Ayurveda*

*Dr. Indra Bahadur, **Dr. J. Manohar

Abstract-

Our ancient acharya had known of the genetic and chromosomal deformities of modern era scientific thought. They described the disease according to illustration and applied deformities. Acharyas Sushruta described the abnormal foetus like snake, scorpion and gourd are symbolic and illustriuos.

Sarpvrishchik Kushmand Vikritaakrityashch ye.
Garbhastvete Striyashchaiv gyeya Papkrito Bhrishm. Su.Sha.2/50

When we go through the modern science. We see another branch of modern science Teratology. It is based on the study of abnormalties of physiological developments only but Ayurveda described structural as well as functional deformities also. Now a days we can see if any pregnant mother. She take to much Alcohol or Nicotine, their child found I.U.G. Retardation.

Key Words : *Garbh* (Embryo/foetus), *Garbhay vikrity*, Teratology.

सारांश–

हमारे प्रचीन आचार्यों को आधुनिक युग के आनुवंशिक एवं गुणसूत्र विकार आदि की वैज्ञानिक सोच का ज्ञान था। उन्होने रोगों का वर्णन उत्पन्न होने वाले विकारों के आधार पर उदाहरण सहित वर्णन किया। आचार्य सुश्रुत ने भ्रूण विकृतियों को प्रतीकात्मक एवं उदाहरण सहित वर्णन किया जैसै सर्प, बिच्छू और पेठा आदि।

सर्पवृश्चिक कूष्माण्ड विकृताकृतश्चये।
गर्भा स्त्वेते स्त्रियाश्चैव ज्ञेया पापकृते भृशम्॥ सु.शा २/५०

आधुनिक विज्ञान का परिशीलन करने पर पृथक से टेरटालोजी नाम की शाखा देखने को मिलती है। आधुनिक शास्त्र के अनुसार यह क्रियात्मक विकृतियों को ही दर्शाती है लेकिन आयुर्वेद के अनुसार क्रियात्मक विकृतियों के साथ–साथ रचनात्मक विकृतियों को भी दर्शाती हैं। आजकल हम देख सकते हैं कि यदि गर्भवती महिलाऐं मद्यपान एवं धूमपान का अत्यधिक सेवन करती हैं तो उनके गर्भस्थ शिशु की वृद्धि का ह्रास पाया जाता है।

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Conceptual Study

Teratological Aspect In *Ayurveda*

Dr. Indra Bahadur, Dr. J. Manohar

Material and Methods : Our ancient acharya had known of the genetic and chromosomal deformities of modern era scientific thought. they described the disease according to the then illustration and applied deformities. Due to the malfunctioning of antenatal care, nonfulfillment of the desire of pregnant mother and other various factors are causing such disease and abnormalties.

Acharyas Sushruta described the abnormal foetus like snake, scorpion and gourd are symbolic and illustriuos. The genetic and chromafomal deformaties are like developmental abmormalities and should be prevented by care of pregnant women nutritional, harmonal, choice of medication and mental condition, which are very much important at recent times also. Teratological abnormalities should be cured or prevent at the time of conception. So the important of conceiving of mother at the time of fertilitation had been given importance of earlier times.

Recent researches show that it can be prvented by advising Vitamin, nutritional value diet, mental harmony and harmonal check, blood grouping test etc.

In ayurved these abnormality are described in Sutra roop (sloka) with examples to understand easily by the scholars for a better and healthy society.

आयुर्वेदानुसार विकृत गर्भ –

Sarpvrishchik Kushmand Vikritaakrityashch ye.
Garbhastvete Striyashchaiv gyeya Papkrito Bhrishm.
Su.Sha.2/50

Foetuses having shape of serpent, scorpian, gourd and other deformities are caused by excesive unrighteous behaviour of the woman.

Garbho Vatprakopen Douhridey Vaavmanite.
Bhavet Kubjah, kunhi Pangurmuko Minmin Yav Va.
Su.Sha.2/5

Foetus becomes humped with deformed hand lame, dub or with muffled voice by aggravation of vata or disregarding the longing of the woman during pregnancy.

Matapitrostu Nastikyadashubhaishcha Purakritaih.
Vatadeenam Prakopenam Garbho Vaikratamapnuyat
Su.Sha.2/52

Teratolagical deformities take place due to atheism of parents unrigteous past duds and agravation of vata etc.

Beejatmakarmashaya Kaldoshairamartustatha aahar Vihar Doshaih.
Kurvanti Dosha Vividhani Dushyah Sansthan Varnaindriya Vaikratani.
Cha. Sha. 2/29

Varshasu Kashthashmghanambuvegastaroha Saritsrotsi Sansthitasya.
Yathaiv Kuryurvikriti Tathaiva Garbhasya Kukshou Niyatasya Doushaha.
Cha. Sha. 2/30.

Because of the defects in seeds (sperm, ovum) actions associated with the soul, uterus, time and food as well as regimen of the mother dosaj get variously vitiated and this results in the impairment of the shape colour and sensory as well as motor organs of the offspring. As a free standing in the current of a river gets affacted by the forceful downward movement of wood, stone pieces and water during the rainy season, so the foetus the uterus of the mother gets affected with the vitiated doses.

According to Astang Sangrah : We may get abnormal foetus if we conceive a female under the age of sixteen. First three days of menstrual cycle.

According to Astang Hridya : Pathological defects in span and ovum structural defects in the fetus may have because of abnormal dosa present in the body.

Kalkarmatmabeejanam Doshaimartustathaiva ch.
Garbhasya Vaikritam Dushtang heenadi Janmatah Yagya Smriti. 3/169

Modern concept - Teratology is the study of abnormalities of physiological development. It is often thought of as the study of birth defects, but it is much broader than that, taking in other developmental stages, such as puberty; and other life forms, such as plants. The term stems from the Greek, meaning monster, or marvel and logos, meaning speech or, more loosely, the study of.

Teratogenesis : Birth defects are known to occur in 3-5% of all newborns. They are the leading cause of infant mortality in the United States, accounting for more than 20% of all infant deaths. Seven to ten percent of all children will require extensive medical care to diagnose or treat a birth defect. And although significant progress has been made in identifying etiologic causes of some birth defects, approximately 65% have no known on identifiable cause.

It was previously believed that the mammalian embryo developed in the impervious uterus of the mother, protected from all extrinsic factors. However, after the thalidomide disaster of the 1960s, it became apparent and more accepted that the develping embryo could be highly vulnerable to certain environmental agents that have negligible or nontoxic efects to adult individuals.

Teratology education : It is estimated that 10% of all birth defects are caused by a prenatal exposure or teratogen. These exposures include, but are not limited to, medication or drug exposures, maternal infections and diseases, and environmental and occupational exposures. Teratogen-caused birth defects are potentially preventable. Studies have shown that nearly 50% of pregnant women have been exposed to at least one medication during gestation.

Teratogenic agents : A wide range of different chemicals and environmental factors are suspected or are known to be teratogenic in humans and in animals. A selected few include :

* **Ionizing radiation** : atomic weapons, radioiodine, radiation therapy.
* **Infections** : cytomegalovirus, herpes virus, parvorirus B-19, rubella virus (German measles), syphilis, toxoplasmosis, Venezuelan equine eneephalitis virus.
* **Metabolic imbalance** : alcoholism, endemic cretinism, diabetes, folic acid deficiency, iodine deficiency, hyperthermia, phenylketonuria, rheumatic disease and congenital heart block, virilizing tumors.
* **Drugs and environmental chemicals** : isotretinoin, nitrazepam, androgenic hormones, enalapril, Dioxin, coumarin, cyclophosphamide, diethylstilbestrol, diphenylhydantoin (Phenytoin, Dilantin, ethanol, hexachlorobenzene, lithium, methimazole, organic mercury, penicillamine, tetracyclines, thalidomide, valproic acid etc.

The status of some of the above substances (e.g. iphenylhydantoin) is subject to debate and many other compounds are under varying drgrees of suspicion. These include Agent Orange. nicotine, aspirin and other NSAIDs. Other compounds are knowns as severe teratogens based on veterinary owrk and animal studies, but aren't listed above because they have not been studied in humans, e.g. cyclopamine.

Teratogenic outcomes - Exposure to teratogens can result in a wide range of structural abnormalities such as cleft lip.cleft palate. dysmelia. anencephaly, ventricular septal defect. In most cases, specific agents produce a specific teratogenic response.

Conclusion : The description of congenital deformities & their aetiology which has given by the teratology branch of modern branch in recent era had already been described thousand years ago in the Ayurvedic treatises.

After studying the ayurvedic & modern aspects it may be concluded that the description of specific causes of congenital deformities given in ayurvedic texts reg beeja dosha, garbhashaydosha, maternal nutishment are having nearly exact ressemblance as given in the modern science. Now a days we can see if any pregnant mother. She take to much Alcohol or Nicotine, their child found I.U.G. Retardation.

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Conceptual Study

First Aid Measures of Snakebite Poisoning In *Ayurveda* - A Quick Look

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Abstract

Snakebite remains an underestimated cause of accidental death in modern India. Estimates of snakebite mortality in India vary from approximately 1,300 to 50,000 annually. Considering this, The World Health Organisation has added snakebite to their list of Neglected Tropical Diseases and designed an exclusive protocol its management. *Ayurveda* has its own way of approach towards the management of *Visha*, which is unique and is parlance with the concepts of current science. *Acharya Charaka* advocated 24 *upakramas* to counter the cases of poisoning, which can be categorized into different sets of sub divisions for easy and scientific understanding. Among these, '*Mantra'* is emphasized as par excellence. In the current attempt, efforts were made to provide certain justifications to these classical remedial measures with special emphasis on the measures that restrict the entry of poison into systemic circulation.

Key words: *Ayurveda, Mantra chikitsa*, Poisoning, *Upakrama*, *Sarpa Visha*, Snakebite

सारांश–

आज के आधुनिक भारत में भी सर्प दंश (Snakebite) के कारण से होने वाली दुर्घटनापूर्ण मृत्यु (accidental death) को कम ही आंका जाता है। आज भी भारत में सर्पदंश से होने वाली मृत्यु दर 1,300 से 50,000 वार्षिक है। इसको ध्यान में रखते हुए विश्व स्वास्थ्य संगठन ने सर्पदंश (Snakebite) को (Neglected Tropical Diseases) के अन्तर्गत रखा है। आचार्य चरक ने सर्पविष के उपचार के लिए 24 उपक्रमों का उल्लेख किया है जिनमें मंत्र भी है जिसके आश्चर्य जनक परिणाम देखने को मिलते है। प्रस्तुत शोध पत्र में सर्पविष के रुधिर परिसंचरण में फैलने को तुरन्त रोकने के उपायों तथा आयुर्वेदिक तरीकों का वर्णन किया गया है।

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Conceptual Study

First Aid Measures of Snakebite Poisoning In *Ayurveda* - A Quick Look

Kruti Y Vyas, Galib, P Bedarkar, BJ Patagiri, PK Prajapati

Introduction:

Snakes are distributed all over the world except in the regions of Arctic, New Zealand and Ireland and are more prevalent in temperate and tropical countries.[1] India is such a country, where snakebite is very common emergency. It has reported that, there are only 52 venomous snakes out of 216 species in India.[2] Yet, every year 50,000 Indians, mostly poor villagers, die in 250,000 incidents of snakebite,[3] with high incidences in the states of Tamil Nadu, West Bengal, Maharashtra, Uttar Pradesh, and Kerala.[4]

Five families of poisonous snakes viz. Colubride, Elapidae, Hydrophidae, Viperidae and Ataspididae[5] have been identified in India. Commonly the Indian cobra (*Naja naja*), Common krait (*Bungarus caeruleus*), Russell's viper (*Daboia russelii*) and Saw scaled viper (*Echis carinatus*) are the four venomous snakes found in India. Romulus Whitaker called them the "Big Four" which are mainly responsible for Indian snake bite mortality.[6]

Descriptions on different types of Snakes, their respective characters along with nature of poisoning, treatment modalities etc. have been categorically emphasized in *Ayurvedic* classics.

Acharya Sushruta described four types of snake bites as[7]:

1. *Sarpita* : Inflamed deep wound, blackish in colour
2. *Radita* : Superficial wound, red or bluish in colour. This bite is considered as less poisonous. (*alpa visha*)
3. *Nirvisha* : Non-Poisonous bite. May be a Dry bite. Signs of inflammation cannot be observed.
4. *Sarpangabhihata* :Actual bite will not take place in this type.

Accidental contact with snake will lead to the manifestation of symptoms like *Shopha* (local inflammation) etc. This kind of manifestation has been explained by *Charaka*[8] as '*Shanka Visha*' (suspicious poisoning), which manifests because of fearful complex.

Acharya Vagbhata categorized the bites in to two[9] viz. *Savisha* (Poisonous) and *Nirvisha* (Non-Poisonous). This classification is similar with that of modern classification, which categorized the snake bites in to two viz. Dry and Wet bites.

Dry bite (Type I) : A kind of bite, where no (or minimal) venom is injected. It occurs in between 25% - 50% of snake bites.[10] These bites occur as matter of defence or to give warning signals. The intension of the creature (snake) in this situation is basically to escape and hence, a small or no amount of poison will be injected through such bites.

Wet bite (Type II): These are the actual poisonous bites. If the individual (victim) comes across with a ferocious snake, which is hungry and behind its prey; such bites will be more poisonous as bulk amount of toxin enters in to the systemic circulation. As per the available statistical data, such bites are very less in number.

Treatment Modalities

WHO provided a protocol for snakebite treatment in 2005[11] and emphasized the first aid measures as following:

- Reassure the victim who may be very anxious.
- Immobilise the bitten limb with a splint or sling (any movement or muscular contraction increases the absorption of venom into the blood stream and lymphatic circulation)
- Avoid any interference with the wound as this may introduce infection, increase absorption of venom and increase local bleeding.

Treatment in *Ayurveda* has been categorized in to '*Chaturvimshati Upakramas*' by *Acharya Charaka*,[12] which are enlisted at table 1.

Table 1: *Chaturvimshati Upakramas*

S.No.	Treatment Measure	Probable comparison
1	*Mantram*	Chanting *Mantra*s
2	*Arishta bandhanam*	Application of Tourniquet
3	*Utkartanam*	Incision over the bite excluding the vital points
4	*Nishpeedanam*	Compression
5	*Achushanam*	Sucking through the site
6	*Agni*	Thermal cauterisation
7	*Parishekam*	Sprinkling water
8	*Avagaham*	Water bath
9	*Rakta mokshana*	Blood letting
10	*Vamanam*	Emesis
11	*Virekam*	Purgation
12	*Upadhanam*	Medication on incised scalp
13	*Hrudayavaranam*	Protection of heart
14	*Anjanam*	Medicated collyrium
15	*Nasyam*	Medicated nasal insufflations
16	*Dhumam*	Medicated smoking
17	*Leham*	Medicated linctuses
18	*Aushadham*	Anti-poisonous drugs
19	*Pradhamanam*	Medicated snuffing
20	*Pratisaranam*	Local applications
21	*Prativisham*	Specific antidotes
22	*Sajna Samstapanam*	Resuscitation
23	*Lepam*	Application of Medicated pastes
24	*Mruta Sanjeevanam*	Revivation

In this context, the seer mentions not to follow all these 24 modalities in all cases of poisonings. One has to examine and decide the procedure justifiable for that specific condition.[13]

Based on the probable purpose of the treatment, these *Upakramas* can be grouped in to the following five sets of sub-divisions: (Table - 2)

Table 2: Sub-divisions of *Chaturvimshati Upakramas*

	Purpose	***Upakrama****	**Total *Upakramas***
1	The measures that restricts the entry of the poison in to the systemic circulation	2-8, 23	8
2	Elimination therapy	9, 10,11, 15,16,19	6
3	Supportive, Symptomatic treatment	13,22,24	3
4	Counteracting Medications / Antidotes etc.	1,17,18,21	4
5	Topical applications	12,14,20	3
		Total	24

* The digits representing the numbers given for the *Chaturvimshati Upakramas* mentioned above.

- It has been specified by *Charaka* that "Without entering in to the blood stream, poison cannot damage the tissues."[14] Similar concepts have been expressed by *Vagbhata*, who says that "Poison cannot damage the tissues without entering into the blood. Even an atom of poison can spread all over the body along with blood and can damage the system."[15] Considering these; priority has been given by the seers towards preventing the entry of poison in to the systemic circulation.
- The measures specified in first category of the above table will be beneficial in restricting the entry of poison in to systemic circulation.
- In addition, *Mantra* has been exclusively emphasized by *Charaka* and preferred to be followed immediately after the suspected cases of poisonings.

1. *Mantra*:

Chakrapani prefers '*Mantra*' as foremost and par excellence *upakrama* among others, which nullifies the poison without fail.[16] *Charaka*[17] further says that, *Mantra* occludes the blood vessels, prevents the entry of poison in to systemic circulation and protects from further infections too. (Table - 3)

Table 3: Probable mode of action of *Mantra*

S.No.	**Mode of action**	**Probable comparison**
1	*Dhamani Bandha*	Occlusion of Blood Vessels
2	*Avamarjana*	Downward movement of the poison
3	*Atma Raksha*	Protection from further infections

How *Mantra* works in snake poisoning?

When the individuals are bitten, usually the bite will be of Type-I (as mentioned earlier). Out of such bites, development of symptoms (minimal to serious systemic) can be expected due to the anxiety and fearful complex. At times death also may occur with such bites, which will be purely due to fright and massive shock. In such instances, it becomes mandate to reassure the victim and alleviate the anxiety and freight. This only can be achieved successfully by *Mantra Chikitsa*.

The Para Sympathetic Nervous System (PSN) will get stimulated when an individual (the victim) is frightened or in fearful complex, further leading to dilatation of peripheral blood vessels. This will result in decreased blood flow towards the vital organs like brain etc. and leads to the symptoms like giddiness, fainting or even collapse based on the severity of the shock.

Chanting of *Mantra*s in a specific rhythm builds confidence in victim and helps in relieving anxiety.[18] They stimulate Sympathetic Nervous System and strengthen the peripheral blood vessels, which helps in maintaining the normal blood flow to the vital organs. Thus *Mantras* have a vital role in reassuring the victim.

2. *Arista Bandhana*

Though, this technique has said to be out dated, still is useful in remote areas, where medical facilities are meagre. *Chakrapani* prefers to apply tourniquet, before entering of the poison in to systemic circulation.[19] *Vagbhata* says that, the blood vessels cannot carry the poison, if tourniquet is applied properly.[20] *Sushruta* categorized tourniquet in to two as below.[21]

- ✓ *Mantra Arista* - Amulet impregnated with *Mantra*
- ✓ *Mantra Rahita Arista* - Actual Tourniquet

Mantra Arista will be beneficial in boosting the confidence of the individual and works in the similar way of *Mantras*.

Sushruta goes on emphasizing the method of application and says that, it should be applied only in cases of bites occurred over the limbs. The tourniquet should be applied four inches above the site of bite.[22] *Sushruta* further stresses on the precautions to be observed during the procedure. *Bandhana* with *Arista* should not be too tight or loose. He prefers not to apply much pressure (*Gadha Bandhana*). Applying tourniquet with greater pressure for longer duration occlude underlying main vessels (arteries, lymph) and nerves, which further interferes the circulation and nerve impulses. This results in *Shoona Gatrata* (numbness) and *Puti Klinna Mamsa* (Gangrene formation).[23] Enough pressure is to be applied to occlude superficial venous flow, which slow down the entry of poison in to the systemic circulation. This concept is well accepted even by the modern medical science.

3. *Utkartana, Nishpidana and Chushana*:

Arishta Bandhana has certain limitations like, it is beneficial only in cases of poisonous bites over limbs (*Shakha Dashta*) etc. In case, if the bite is occurred other than the limbs, the treatment modalities like *Utkartana, Nishpidana* etc. are beneficial.[24]

These modalities are under debate. With an intention to prevent further damage to the underlying soft tissue and other structures (like nerves, blood vessels etc.); the current scientific community doesn't advocate following these procedures. Still, these procedures are beneficial, where medical facilities are far away and specific anti-venom is not available.

Acharya Sushruta says that, if no one treatment is given for poisoning, that poison will kill the victim within 2 to 3 hours (*Muhurta*).[25] *Vagbhata* says that, the poison will stay at the site of the bite at least for 100 *Matra Kala* and hence proper local measures are to be taken to eliminate the poison from the site of the bite and its spreading in to the system.[26] Even the modern science accepts that, the incision and letting the blood are beneficial with in the first 30 minutes of the bite.

Charaka advocates incision over the bite (excluding the vital points), compression and sucking with taking proper care. The seer advocates to keep flour of *Yava* or cloth or little amount of mud in oral cavity prior to sucking the poison from the site of the bite.[27] This may be a kind of precautionary measures, which prevents the contact of poison with oral mucosa. Special instrument like *Shringa* were also preferred for this purpose, which are comparatively safer.

4. *Parisheka, Avagaha* and *Lepa*:

After proper (possible) elimination of poison from the site of the bite, the incised area is to be cleaned thoroughly and medicated pastes are to be applied. For these purposes, the drugs and other liquids which are '*Sheeta*' (cool) in nature have been preferred.[28] Such procedures and medicaments will help in pacifying the local symptoms and further infections in the wound. The cold character of the drug also helps in contraction of local blood vessels, preventing further spread of remaining poison (if any) at the site.

Conclusion:

The *Upakramas* have their own significance in neutralizing the poison in different ways. Though

there is certain ambiguity in the approach as compared to the modern medical science; the treatment modalities emphasized in Ayurveda have a great significance and are valuable particularly in remote areas, where medical facilities are meagre.

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This journal does not wish to receive papers on work that has already been reported in large part in a published article or is contained in another paper that has been submitted or accepted for publication elsewhere, in print or in electronic media. This policy does not preclude the journal considering a paper that has been rejected by another journal, or a complete report that follows publication of a preliminary report, such as an abstract or poster displayed at a professional meeting. Nor does it prevent the journals considering a paper that has been presented at a scientific meeting but not published in full or that is being considered for publication in a proceedings or similar format.

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III.D.3. Acceptable Secondary Publication

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.
6. The title of the secondary publication should indicate that it is a secondary publication (complete republication, abridged republication, complete translation, or abridged translation) of a primary publication. Of note, the National Library of Medicine does not consider translations to be "republications," and does not cite or index translations when the original article was published in a journal that is indexed in MEDLINE.

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.

In the interests of fairness and to keep correspondence within manageable proportions, journal may want to set time limits for responding to articles and correspondence, and for debate on a given topic. Journal has also set policy with regard to the archiving of unedited correspondence that appears on line. These policies should be published both in print and electronic versions of the journal.

III.F. Supplements, Theme Issues, and Special Series

Supplements are collections of papers that deal with related issues or topics, are published as a separate issue of the journal or as part of a regular issue, and are usually funded by sources other than the journal's publisher. Supplements can serve useful purposes: education, exchange of research information, ease of access to focused content, and improved cooperation between academic and corporate entities. Because funding sources can bias the content of supplements through the choice of topics and viewpoints, this journal adopts the following principles. These same principles apply to theme issues or special series that have external funding and/or guest editors.

1. The journal editors take full responsibility for the policies, practices, and content of supplements, including complete control of the decision to publish all portions of the supplement. Editing by the funding organization will not be permitted.
2. The journal editors will retain the authority to send supplement manuscripts for external peer review and to reject manuscripts submitted for the supplement.
3. The journal editors will approve the appointment of any external editor of the supplement and take responsibility for the work of the external editor.
4. The sources of funding for the research, publication, and the products the funding source make that are considered in the supplement should be clearly stated and prominently located in the supplement, preferably on each page. Whenever possible, funding should come from more than one sponsor.
5. Secondary publication in supplements (republication of papers previously published elsewhere) will be clearly identified by the citation of the original paper. Supplements will avoid redundant or duplicate publication. Supplements will not republish research results, but the republication of guidelines or other material in the public interest might be appropriate.

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.

Double spacing of all portions of the manuscript including the title page, abstract, text, acknowledgments, references, individual tables, and legends-and generous margins make it possible for

editors and reviewers to edit the text line by line, and add comments and queries, directly on the paper copy. If manuscripts are submitted electronically, the files should be double spaced, because the manuscript may need to be printed out for reviewing and editing.

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.
2. Authors' names and institutional affiliations.
3. The name of the department(s) and institution(s) to which the work should be attributed.
4. Disclaimers, if any.
5. Corresponding authors. The name, mailing address, telephone and fax numbers, and e-mail address of the author responsible for correspondence about the manuscript (the "corresponding author;" this author may or may not be the "guarantor" for the integrity of the study as a whole, if someone is identified in that role. The corresponding author should indicate clearly whether his or her e-mail address is to be published.
6. The name and address of the author to whom requests for reprints should be addressed.
7. Source(s) of support in the form of grants, equipment, drugs, or all of these.
8. Word counts. A word count for the text only (excluding abstract, acknowledgments, figure legends, and references) allows editors and reviewers to assess whether the information contained in the paper warrants the amount of space devoted to it, and whether the submitted manuscript fits within the journal's word limits. A separate word count for the Abstract is also useful for the same reason.
9. The number of figures and tables. It is difficult for editorial staff and reviewers to tell if the figures and tables that should have accompanied a manuscript were actually included unless the numbers of figures and tables that belong to the manuscript are noted on the title page.

IV.A.3. Conflict of Interest Notification Page

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.

IV.A.4. Abstract and Key Words

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.

3 to 10 key words or short phrases that capture the main topics of the article. These will assist indexers in cross-indexing the article and may be published with the abstract. Terms from the Medical Subject Headings (MeSH) list of Index

Medicus should be used; if suitable MeSH terms are not yet available for present terms may be used.

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.

IV.A.6.a. Selection and Description of Participants

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.

IV.A.6.b. Technical information

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 their limitations. Identify precisely all drugs and chemicals used, including generic name(s), dose(s), and route(s) of administration.

Authors submitting review manuscripts should include a section describing the methods used for locating, selecting, extracting, and synthesizing data. These methods should also be summarized in the abstract.

IV.A.6.c. Statistics

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.

IV.A.7. Results

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.

When data are summarized in the Results section, give numeric results not only as derivatives (for example, percentages) but also as the absolute numbers from which the derivatives were calculated, and specify the statistical methods used to analyze them. Restrict tables and figures to those needed to explain the argument of the paper and to assess its support. Use graphs as an alternative to tables with many entries; do not duplicate data in graphs and tables. Avoid non-technical uses of technical terms in statistics, such as "random" (which implies a randomizing device), "normal," "significant," "correlations," and "sample."

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.

Avoid using abstracts as references. References to papers accepted but not yet published should be designated as “in press” or “forthcoming”; authors should obtain written permission to cite such papers as well as verification that they have been accepted for publication. Information from manuscripts submitted but not accepted should be cited in the text as “unpublished observations” with written permission from the source.

Avoid citing a “personal communication” unless it provides essential information not available from a public source, in which case the name of the person and date of communication should be cited in parentheses in the text. For scientific articles, authors should obtain written permission and confirmation of accuracy from the source of a personal communication.

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

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B. Other Sources of Information Related to Biomedical Journals

World Association of Medical Editors (WAME) www.WAME.org <http://www.WAME.org>

Council of Science Editors (CSE) www.councilscienceeditors.org <http://www.councilscienceeditors.org>

European Association of Science Editors (EASE) www.ease.org.uk <http://www.ease.org.uk>

Cochrane Collaboration www.cochrane.org <http://www.cochrane.org>

The Mulford Library, Medical College of Ohio www.mco.edu/lib/instr/libinsta.html <http://www.mco.edu/lib/instr/libinsta.html>

"This is a reprint (*with minor alterations according to the need of this Journal*) of the ICMJE Uniform Requirements for Manuscripts Submitted to Biomedical Journals. The editors of this Journals prepared this altered version. The ICMJE has neither endorsed nor approved the contents of this reprint. The ICMJE periodically updates the Uniform Requirements, so this reprint prepared on 1.1.2007 may not accurately represent the current official version at www.ICMJE.org <http://www.ICMJE.org>. The official version of the Uniform Requirements for Manuscripts Submitted to Biomedical Journals is located at www.ICMJE.org <http://www.ICMJE.org>."

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.

The author(s) undersigned hereby transfer(s), assign(s), or otherwise convey(s) all copyright ownership, including any and all rights incidental thereto, exclusively to the Journal of Ayurveda, in the event that such work is published in Journal of Ayurveda.

Authors' name(s) in order of appearance in the manuscript.

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**

Ayurvedic remedies for tired or sore eyes

Tired eyes a common issue faced by one and all today. Tired eyes or sore eyes is characterized by puffiness around the eyes, with burning sensation or redness in the eyes, and heaviness in the head.

Causes: -Lack of sufficient sleep hours is one of the main causes of tired eyes. The other common causes are eyestrain, allergy, excessive crying, fatigue, long hours of work on the computer, or continuously watching television, reading for prolonged hours in either dim light or very bright light, pollution, lack of oxygen supply to cornea, and conjunctivitis.

Ayurveda believes that several factors can affect efficient functioning of the eyes. Eye disease is caused by vitiation of three doshas. The tridoshas (vatta, pitta and kapha) usually function in their respective channels when in balanced condition. Factors such as those mentioned above, can actually vitiate these doshas in the eyes.

Apart from these, Ayurveda believes that other factors such as roaming around in hot son for long time, remaining awake for long time at night or sleeping in the afternoon, head injuries, use of microscope constantly for working, and alcoholism can also lead to tired/sore eyes.

Symptoms: - Tired eyes presents itself with symptoms such as redness of the eye, burning sensation, irritation, heaviness in eyes, itchiness, watery eyes, dry eyes, blurred vision, headache, sore neck, and increased sensitivity to light.

Ayurvedic remedies:

Netra Tarpana is a specialized ayurvedic treatment for eyes, that helps relieve tiredness and improves eyesight. It is particularly recommended for people who work on the computer regularly for prolonged hours, drive for long periods or operate machinery, or for anyone who is suffering symptoms of tired or sore eyes.

The treatment is carried out together with a face massage, and about 30minutes, and usually performed by experts.

Freshly made dough rings are filled with fragrant oils and placed around the eyes. Thereafter, sterilized cow's ghee is gently poured into the eyes keeping them open. It is an effective treatment for other eye diseases and blurred vision, too.

The Healing Power of Fruits in Ayurveda

In Ayurveda, it is said that good food is the one that tastes best in its raw, natural form, and is easily digestible, without addition of any salt, spices or condiments. Seasonal fruits are therefore, the best.

According to latest study, certain fruits and vegetables help in reversing Type II diabetes by improving the functioning of pancreas, while another new Canadian study revealed that a diet rich in fruits and veggies can mitigate the effect of a gene associated with heart disease.

Ayurvedacharya, Satish Bajaj, believes that fresh fruits are ideal for people with various health problems. When consumed regularly, they help in healing and preventing diseases. It is a known fact that fruits provide energy and have several curative properties. Based on your health condition, you can choose from the below list, certain types of fruits that are best suited for your health. However, the golden rule to be followed here is that seasonal fruits grown in your country are the best for your health.

For Heart - The Kiwi fruit has blood thinning properties, apart from preventing arterial blockage. Regular intake of Kiwi fruit helps in lowering Low-Density Lipoprotein (LDL or Bad Cholesterol) and triglyceride levels in the blood stream. All berries, including strawberry, blueberry, cranberry or raspberry are heart-friendly, helping to lower bad

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cholesterol levels.

The high potassium content present in cheekoos, cherries, sweet-lime, bael, banana, avocado, peaches, phalsa and loquat, and the high magnesium content in mango, banana, and plums help protect the heart, lowering high blood pressure.

For diabetics and Asthmatics - Although, diabetics and asthmatics are advised to avoid very sweet fruits such as banana, cheekoos, grapes and litchis, certain fibre-rich fruits are considered safe when consumed in reasonable quantities such as guava, phalsa, jamun, prunes, ber, papaya, cherries, sour pomegranate, and amla (Indian gooseberry).

Kiwi fruit, in particular, has even been found to reverse asthma during early stages of development of the disease. Figs, lemon and Indian gooseberry, too, have been particularly found helpful for asthmatics.

To promote urination - Fruits with high water content like watermelon, musk melon, grapes, white pumpkin, tomatoes, cranberry, and tender coconut water are excellent to promote urination.

For arthritis - Inflammation and painful joints noticed in arthritic patients can be reduced considerably, if cherries and walnuts are taken on regular basis, as they help in reducing uric acid levels in blood. The other fruits that can help arthritic patients immensely and ease pain are strawberries, papaya, applies, cantaloupe, kiwi fruit, mango and peaches.

For Digestion - All fruits help in relieving constipation when consumed with seeds and skin. The fibre in fruits bind stools and absorb moisture, thereby softening stools and giving them bulk. Through trial and error basis, you can choose the right fruits to be added to your diet. The fruits with high fibre content are apples, artichokes, berries, pears, figs, dates, and prunes. Apart from these, the fruits that generally promote a healthy digestive system are banana, avocados, cantaloupe, honeydew melon, grapes, mango, kiwi, papaya, pears, watermelon, peaches and nectarine.

Energizers - Red fruits such as apple, pomegranate, red grapes, watermelon, dates and sapota are excellent energizers.

Appetizers - Yellow fruits such as mango, papaya, oranges, pineapples and loquat are good appetizers.

Immunity - To boost up immunity levels, consume plenty of grapes, amla, green almonds and bael, as all green variety of fruits are excellent immunity boosters.

Anti-oxidants - Majority of the fruits have high antioxidant levels, although mangoes, currants and black grapes are particularly helpful in fighting age-related diseases. It is best to eat only freshly cut fruits or drink fresh juices, as oxidation begin as soon as the fruit is exposed, leading to microbial contamination. Experts recommend that as far as possible, it is good to eat fruits with skin and with seeds for roughage.

Herbs to cure male and female infertility

Infertility is a common issue causing much concern for younger generation today. Ayurveda has certain set methods and principles for treatment of infertility.

Infertility is more than just the inability to conceive among couples. It also includes women who can conceive, but are unable to carry pregnancy to full term due to repeated mis-carriages.

Male infertility- Although both men and women have equal role to play in child birth, the Ayurvedic concept of infertility in men focuses on abnormalities in sperm, penile disfunction, deficiency in seminal fluid, and issues pertaining to senility and old age. Male infertility may also occur due to various medical reasons, including presence of urinary diseases.

Herbs for men: At present there are several medications advised for male infertility. Some of the well-known herbs that help in curing male infertility are jeevaka, kakoli, shatavari and ashwagandha, all of which,help in rectifying some of the above mentioned conditions. Kokilaksha and vidarikanda, specifically help in improving quantity of seminal fluid.

Ayurveda also considers treatment with Kapikacchu to increase sperm count. It is also considered to prevent male sterility and acts as nervine tonic. Gokshura helps in increasing androgen levels and improves blood flow into the

penis. The other herbs used to enhance male fertility levels in Ayurveda are Bala, and Salammisri. While Bala is used in cases of general debility and sexual inadequacy, Salammisri serves as a good nutritional supplement and aphrodisiac.

Female infertility - Ayurveda associates female infertility to issues such as tubular blocks, salpingitis, obesity, pelvic inflammatory diseases, uterine fibroids, obesity, and vaginitis.

Bangalore grows to be the hub of medical tourism in India

Bangalore, the capital of the State of Karnataka, now better known as Silicon Valley of India, has been witnessing major inflow of foreign patients over the past few years. Patients from across the globe have been flocking to the Silicon Valley city, like never before. The reason for the emergence of Bangalore as the hotbed for medical tourism in India, are many.

Apart from being a global outsourcing centre, Bangalore is now the health giver to the world. Medical tourism is a growing phenomenon and is only eight to ten years old in the city. In comparison to other metros such as Chennai and Mumbai, Bangalore caught up later in the race. However, today, the city aims to be the topmost in attracting foreign patients from across the globe.

According to medical experts, one of the major reasons for this is that Bangalore is a well-known brand in the world. Apart from being a knowledge city, it offers the best hospitals, and pleasant weather, to patients coming here for treatment.

Apart from earning reputation as the 'Silicon Valley of India', Bangalore is also known as the 'Pub Capital of India', 'Garden City' and so on. Bangalore is full of life and energy, given, the beautiful parks, multiplexes, avenues and historical monuments, not to mention, its pulsating nightlife and a salubrious climate.

Bangalore has been the hub of healthcare since the British era. Currently, it is the centre of attraction due to the presence of large number of major hospitals in the city, and innumerable medical institutes and colleges. The medical experts and professionals are also increasing here by the day.

Majority of the hospitals in Bangalore have capitalized on the growth of floating population, and the growth of the income bracket. Moreover, the holistic health centers in the city have been offering alternate systems of therapy like Art of Living and yoga courses and Ayurvedic therapies, said a source from the Karnataka Government Tourism department.

Bangalore has primarily become the centre of attraction primarily due to the presence of large number of major hospitals in the city, and the innumerable medical institutes and colleges, says Vittal Murthy, Secretary, Kannada Culture Information and Tourism department.

Feel the fruit power on your skin

It is a known fact that fruits/fruit juices are excellent options not only for overall good health, but also for the skin. Earlier, spa treatments involved use of expensive imported creams, made of exotic ingredients. This trend is now changing, as the spa owners have now realized that fresh fruits can render an equally refreshing appeal, while also offering the relaxation that you well-deserve.

Several newly-opened skin spas in India, for instance, offers natural beauty fixes made out of fresh fruits and vegetables. Each part of your body is treated with different fruit/vegetables in various therapy rooms designed for the purpose.

For instance, a face dessert is made available with papaya being used as cleanser; mango mousse cream, honey and oat scrub; and avocado face pack. Spas are also offering other natural treatments such as clay treatments and acupressure massages.

A masseuse when speaking to a leading daily in India, said "Our skin is exposed to growing pollution levels our everyday. It is therefore better to stop feeding our skin on daily basis, with synthetics that come in a bottle".

In fact, the spa owners are collecting fresh and natural ayurvedic ingredients during the right season, from the remotest corners in the country to provide the best Ayurvedic herbal spa. For instance, to make apricot body scrubs, the apricots are directly sourced from the farmers.

When you undergo a spa therapy, the therapists use fresh fruits like papaya, apple, banana and oatmeal, along with other special herbs, to make a body scrub. The kind of therapy you are offered will depend on the type of skin that you have.

For instance, those with normal skin are offered treatments with avocado, strawberry and papaya; those with dry skins are treated with banana, chickoo, unpasteurised full fat milk and honey; for oily skin it is a pack of lemon, orange, tomato, and tangerine, while mature skin is treat with banana, primrose, egg whites and crushed egg shells.

Fruit facials were done since ages. But, the noteworthy trend is that people are now more cautious when dabbing chemicals onto their skin, with majority of them now opting for alternate natural skin therapies, rather than blindly using chemicals that are harmful to the skin.

Apart from hydrating and rejuvenating the skin, the smell of fruits helps in de-stressing. Fruits are also cost-effective and natural.

Yoga helps women tackle three major phases of life

Yoga can help women in dealing with three most important phases of their life – menstruation, maternity and menopause. Yoga asansas and pranayama are helpful in dealing with these three phases, say yoga experts.

Menstruation - Women go through this phase between puberty and menopause. To ensure a healthy menstrual cycle, proper functioning of ovaries is important. During this phase, women often experience painful menstruation (dysmenorrhea), and premenstrual syndrome. Stress and many other factors including inflammation, and womb spasm can cause dysmenorrhea.

Asanas such as Kapalabhati, Bidalasana, Sukhasana, Bhujangasana, Bidalasana, Dhanurasana, Matsyasana, Anuloma Viloma, Pavanamuktasana, Baddha konasana, Suptabaddhakonasana, Paschimottanasana, Janusirsasana, can ease menstrual pain and help in increasing blood supply to pelvic organs.

Maternity - Some specific yoga poses can prevent miscarriages and infertility in women caused by defective ovaries, and displacement of uterus. During pregnancy, the first three months are crucial, when pre-natal care is advised. Yoga improves the strength of pelvic muscles and prevents back strain due to extra weight of the baby. Strong uterine muscles can ease delivery pain.

Meditation, along with pranayama and other yoga poses such as bhujangasana, gomukhasana can help in stimulating the pituitary gland, responsible for secretion of pro-lactin.

Performing yoga after delivery can help in removing excess fat that was built up in the body during pregnancy, while also re-shaping the body and removing any stress on the pelvis, shoulders, neck and back during pregnancy period. Some specific yoga poses such as Virabhadrasana II, Viparita karani, ujjayi breathing, Salambhasana, Sukhasana, MArichyasana, Paripurna Navasana, are particularly helpful poses during the post-partum period.

Certain poses such as Adho Mukha Svanasana, Trikonasana, Marichyasana, Vipariti Karini, and Bhujangasana are particularly helpful for women who have had C-sections.

Menopause- Menopause is part of every woman's life, occurring between the ages 40 and 60, when menstruation permanently stops. It is associated with hormonal, psychological and physical changes. The symptoms usually associated with menopause are irregular menstruation, hot flashes, change in appearance, sexual desire, urinary problems, sleep disturbances, mood changes, palpitations and backaches, though not all of these are experienced by every woman.

The yogic phases that may be of help during this phase are Kapalabhati, Tadasana, Pada Hastasana, Warrior Pose, Trikonasana, Padmasana, Bhujangasana, child pose, Paschimothanasana, Marichyasana, Pavanamuktasana, Anuloma viloma, and simple meditation techniques.

All these phases can cause physical and psychological disturbances of varying degrees in women. Pranayama helps immensely, as it reduces cortisol in blood, regulates endocrine gland and maintains proper functioning of crucial glands. Regular practice of yoga by women during all these

phases in life, not only reduces the associated symptoms, but, improves the overall quality of life, helping to deal these natural biological processes with peace and acceptance.

New approved natural therapy for heart-diseases proven effective

A US FDA approved treatment for heart-disease called Enhanced External Counter Pulsation (EECP) has been unveiled in Bangalore recently, by Sri Sri Ravishankar, the Art of Living Founder.

The inauguration was held at Sri Sri Ayurveda Panchakarma – the Ayurveda and Wellness Spa, in association with The Global Heart Foundation, Pune, India.

Speaking during the inauguration, Sri Sri Ravishankar, briefed that EECP is one of the first allopathic treatments that does not involve invasive procedures or medication, and offers clinical treatment to cardiac patients in a natural manner.

The centre will focus on holistic heart care, offering specialized, but affordable treatment, through a combination of state-of-the-art EECP therapy, together with effective herbal and Panchakarma therapies. The treatment will be offered to cardiac patients to improve cardiac and vascular health. EECP is a non-invasive heart treatment, which is being accepted widely now, by physicians and patients, owing to its high success rate. The treatment is out-patient based, with no hospital admission required, requiring just one hour a day for 35 consecutive days.

The treatment helps considerably in improving blood supply to heart muscle. Recent clinical evidence has suggested that the therapy improved blood circulation to heart muscle by developing collaterals and opening dormant capillaries, which is later confirmed by scan and angiogram. Therefore, it works like a natural bypass, revealed Dr. Keshav Prasad, Chief Operating Officer, Sri Sri Ayurveda Panchakarma.

The Nutty Affair continues

We all know about the various health benefits of nuts. Here's more to it that latest studies have confirmed.

Lowers Cholesterol - Scientists say that apart from just avoiding fatty foods, including nuts as part of your daily diet is essential for lowering cholesterol and remaining healthy in general. Latest research at the University of Toronto in Canada, suggests that a diet rich in nuts and oats, have been effective in lowering cholesterol levels. Almonds, for instance, is well-known for their ability to fight LDL (bad) cholesterol, and are associated with reduced risk of heart diseases. Studies have shown that consuming almonds five times a week helped in 50percent reduced risk of heart diseases.

Antioxidants - According to Aparna Tandon, a dietician, a diet rich in dietary fibre is helpful for those fighting obesity. It also defends one from cancer. However, to obtain maximum benefit, one should refrain from peeling their skin. A handful of nuts can actually prevent you from turning to junk food every time you are hungry.

An ounce of almonds can help meet nearly 33percent of daily requirement of your body. Apart from being a rich source of vitamin E, they also help remove toxins and improve immunity levels.

Nuts and seeds are rich in vitamin E, and therefore are associated with less age-related cognitive decline. Including an ounce of walnuts, hazelnuts, almonds, peanuts, cashews, brazil nuts, flax seeds etc in your diet, can help in boosting memory.

Nuts are easy to carry, fun to much, and meet all essential nutrient requirements and hence, there is no harm in continuing this nutty affair, as they also do not burn a hole in your pocket!

SHORT COMMUNICATION

INSTITUTE NEWS

*N.N. Kutty**

The Department of AYUSH organized a 3-Day India-Africa Workshop on Sharing Practical Experiences, Information and Expertise on Traditional Medicine on 18th, 19th and 20th October. The Institute actively participated, co-opted and involved in the successful conduct of this important International Workshop in Jaipur. The Delegations comprising 60 Delegates from around 25 African Countries also visited the Institute and saw various activities.

Shri Anil Kumar Ji, IAS, Secretary(AYUSH), Govt. of India visited the Institute on 19th October and saw various activities in the Hospital, Panchakarma Unit, Pharmacy, Departments etc.

The Institute celebrated the Dhanwantari Diwas on 24th October with enthusiasm, festivity and gaiety. Director, all the Teachers, Officers, Staff, Scholars and Students participated in the Dhanwantari Pooja.

Prof. Ajay Kumar Sharma, Director and Prof. Abhimanyu Kumar, Head of the Department of Bala Roga visited USA and participated in the Sixth International Symposium of Ayurveda(Medicine and Beyond) and Health at School of Medicine, Connecticut University, Farmington, CT, USA during 2-7 November 2011. They conducted 2 Workshops and delivered 4 Lectures with Presentations on various Subjects and Aspects of Ayurveda.

5 Medical Professionals and Medical Students from School of Medicine, Connecticut University, Farmington, USA were provided Training in Ayurveda in the Institute during 16-11-2011 to 1-12-2011. They were led by Dr. Amala Guha, Director, Complementary and Alternative Supportive Care, School of Medicine, Connecticut University.

Prof. Ajay Kumar Sharma, Director was nominated Member on the Selection Committee of Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, Jodhpur by the Chancellor, His Excellency the Governor of Rajasthan.

Prof. Ajay Kumar Sharma, Director participated and made Presentations in a Workshop in All India Ayurved Congress on 5th December, in the 3rd Meeting of Task Force of Department of AYUSH on 12th December, in the Meeting of Scrutiny Committee for EMR Projects of CCRAS on 17th December and in a Meeting in Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University regarding RTI Act for showing Answer Books to Students on 26th December.

A Book, "Obesity and Ayurveda" authored by Prof. Ajay Kumar Sharma, Director and Dr. Amit Sharma was released.

*Administrative Officer, NIA, Jaipur