Clinical Study

Clinical Evaluation of The Role of Different *Medoghna* Regime (*Kalpit Yoga+Lekhana Basti +Virechana)* In The Management of *Sthaulya* W.S.R To Dyslipidaemia

*Dr. Shivali Arora, **Prof. Ajay Kumar Sharma

Abstract :

Sthaulya (Obesity) is a medical condition in which excess body fat gets accumulated in the body to the extent that it may have adverse effect on health, predisposing to significant morbidities and premature mortality. Obesity has been identified by the World Health Organisation as one of the most serious public health problems of the 21st century. It substantially raises the risk of morbidity from Hypertension, Dyslipidaemia, Type 2 Diabetes, Coronary Heart Disease, Stroke, Gallbladder Disease, Osteoarthritis, Sleep Apnoea, Respiratory Problems, and Endometrial-Breast-Prostate & Colon Cancers. In the present study, effect of various medoghna regimes was checked on 30 clinically diagnosed and confirmed patients of *Sthaulya Roga* with Dyslipidaemia. It was concluded that both *Medoghna Vati* and *Medoghna Basti* regimes are highly effective in *Sthaulya* and related Dyslipidaemia.

Key words: *Sthaulya*, Obesity, Dyslipidaemia, *Baddha Meda*, *Abaddha Meda*, Medoghna Regime**.**

सारांश–

स्थौल्य रोगावस्था में देह में हानिकारक मात्रा में मांस एवं मेद धातु की वृद्धि होने से शारीरिक स्वास्थ्य पर कई दुष्प्रभाव उत्पन्न होते हैं उपद्रव स्वरूप अनेक रोग उत्पन्न होते हैं तथा आयु का ह्रास होता है। विश्व स्वास्थ्य संगठन द्वारा स्थौल्य रोग के उपद्रव स्वरूप अनेक रोगों यथा उच्चरक्तचाप मधुमेह डिस्लिपिडेमिया हृदयरोग पित्ताशय संबंधित रोग संधिवात श्वास संबंधी रोग एवं कर्कटार्बुद उत्पन्न होने की संभावना बढ़ जाती है। वर्तमान शोध कार्य में 30 स्थौल्य रोगियों पर विभिन्न मेदोघ्न चिकित्सा पद्धतियों का प्रभाव देखा गया तथा यह निष्कर्ष निकाला गया कि मेदोघ्न वटी एवं मेदोघ्न बस्ति क्रम दोनों स्थौल्य एवं संबन्धित डिस्लिपिडिमिया की चिकित्सा में लाभकर है।

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Introduction

Sthaulya Roga has been identified as a serious disease entity in Ayurveda long ago since the Vedika period. *Acharya Charaka* was the first to elaborate it in a separate chapter on *Ashta Nindita Purusha* i.e. the eight despicable personalities (*Ch.Su.21*), of which *Ati- Sthula* (obese) is identified as the worst on the basis of difficulties in its treatment.

Over eating of *Shleshma-bhuishtha ahara* along with sedentary life-style, day-sleeping lack of exercise, irresponsible attitude, etc. are the various etiological factors for *Sthaulya*. Over indulgence in three etiological factors leads to increase in *Guru, Snigdha, Manda, Sthira gunas* in the body thereby causing *Kapha bhuishtha dosha vriddhi* in the body. According to *Dalhana*, when excessive *Meda-sadharmi* food is eaten it directly gets converted to *Meda Dhatu*, as attributed to '*Vishishta Ahara Adrishta*' (*Dalhana*). Accumulation of *Kapha* and *Meda* leads to *srotovarodha* causing *margavarodhajanya samana vayu prakopa* in the *Koshtha* which results in *Jatharagni Sandhukshana* of the individual thereby increasing the appetite resulting in more intake of food (*Aharaja nidana*) and this vicious cycle continues leading to *Meda-sanchayawata Sthaulya* in the individual. Here the point of interest is that *Vishamagni* and *Mandagni* are pathological factors of *Sthaulya* and *Tikshnagni* is a manifestation of *Sthaulya Roga*. *Dhatwagni-mandya* develops at a later stage when the substrate (*Meda poshaka rasa*) is present in excess, more than the digestive power of *medo-dhatwagni*.

Beeja dosha has also been identified as one of the etiological factors of *Sthaulya Roga*. It is assumed that excessive intake of *shleshmala ahara* by parents may lead to genetic mutations so that the offsprings of such parents are more susceptible to put on weight with least of the indulgence in other *nidanas* of *Sthaulya Roga*.

Excessive formation of *Meda dhatu* is an eternal feature of *Sthaulya*. *Medo vriddhi* in a *sthula* person is of two types:

(i) Baddha Meda Vriddhi, representing the depot fat stored at various places in the body e.g. buttocks, abdomen, shoulders, breasts, etc.

(ii) Abaddha Meda Vriddhi, representing the fat which is mobile in nature and circulates freely in the plasma in the form of plasma lipids.

Acharya Sushruta has described various *updrava* due to *margavarodha* of *vata* by excessive *meda* leading to *Alpa prana, Prameha Pidika, Jwara, Bhagandara, Vidradhi*, *Vata vikara* and ultimately death. Therefore, extra care is needed in the treatment of the patients of *Sthaulya Roga,* not to aggravate the already vitiated *Vata Dosha* while pacifying and scraping the excess *Kapha dosha* and *Meda dhatu* from the body.

In modern system of medicine, obesity has been identified as a multi-factorial trait, contributed by the "obesogenic" environment of caloric abundance, increasing automation, sedentary lifestyle and an underlying genetic susceptibility. If not controlled at an early stage, it may lead to various co-morbidities such as Hypertension, Diabetes Mellitus, Dyslipidaemia, Atherosclerosis, CAD, Gall bladder diseases and various carcinomas.

Data from the SHIELD and NHANES surveys conducted in the United States support the fact that the patients with a higher BMI (overweight and obese) are at higher risk for developing diabetes mellitus, hypertension and dyslipidaemia. Obesity and Dyslipidaemia put together are two very important and reversible risk factors of atherosclerosis and hence CAD.

The term Dyslipidaemia is used to describe disordered lipid metabolism in the body. The dyslipidaemia of obesity is generally associated with an insulin resistant state and is more common in central obesity. Life style management including dietary modifications, active exercises and quitting smoking are good measures to lower the risk associated with Dyslipidaemia and obesity. Effective weight loss has shown to lower the raised cholesterol levels in the plasma.

h *Ayurveda*, *Abaddha meda dushti* associated with *Sthaulya* can be considered as Dyslipidaemia and should be treated on the lines of management of *Sthaulya Roga*.

Aims And Objectives

Present study has been conducted with following aims and objectives:

1. To study the aetiopathogenesis of *Sthaulya Roga* and Dyslipidaemia and work out their probable modern/ ayurvedic correlates.
2. To develop an effective herbo-mineral formulation for the management of *Sthaulya Roga* and related Dyslipidaemia.
3. To evaluate clinically the role of different *Medoghna* Regime (consisting of administration of *Medoghna Vati, Medoghna Basti* and *Virechan*) in the management of *Sthaulya Roga* w.s.r. to Dyslipidaemia using various scientific parameters.

Materials And Methods

Contents of *Medoghna Vati (Kalpit Yoga):*

Table No.1

Showing the contents of *Medoghna Vati*

S.No	Drug	Latin Name	Part Used	Quantity
1.	*Shilajatu*	*Asphaltum punjabinum*	resin	1 part
2.	*Apamarga*	*Achyranthes aspera*	Seeds	1 part
3.	*Guduchi*	*Tinospora cordifolia*	Stem	1 part
4.	*Haritaki*	*Terminalia chebula*	Fruit	1 part
5.	*Shu. Hingu*	*Ferula narthex*	Gum resin	1 part
6.	*Purana Guggulu*	*Commiphera wightii*	Gum resin	1 part
	For Bhavana			
7.	*Gomutra*			3 *Bhavnas*
8.	*Mustaka*	*Cyperus rotundus*	Tuber	3 *Bhavnas*
9.	*Triphala:* *Haritaki* *Amalki* *Vibhitaki*	 *Terminalia chebula* *Embelica officinalis* *Terminalia bellerica*	Fruit	3 *Bhavnas*

Contents of *Medoghna Basti*:

Table No. 2 Showing the contents of *Medoghna Basti*

S.No	Drug	Latin Name	Part Used	Quantity
1.	*Gomutra*			100ml
2.	*Tila Taila*	*Sesamum indicum*	Oil	50ml
3.	*Quath of:*			300ml
	Amalaki	*Embelica officinalis*	Fruit	
	Haritaki	*Terminalia chebula*	Fruit	
	Vibhitaki	*Terminalia bellerica*	Fruit	
	Agnimantha	*Premna mucronata*	Root bark	
	Mustaka	*Cyperus rotundus*	Tuber	
	Haridra	*Curcuma longa*	Tuber	
4.	*Madhu*			30gm
5.	*Yavakshar*	*Potasii carbonans*		2gm
6.	*Saindhav*	*Sodii chloridium*		10gm
7.	*Shu. Hingu*	*Ferula narthex*	resin	500mg
8.	*Shu. Shilajit*	*Asphaltum punjabinum*	resin	500mg
	Approximately 1 *Basti* contains			500ml

Contents of Virechana Yoga

Abhayadi Modaka 2nos. given with decoction of:

Table No. 3 Showing the contents of *Virechana Yoga*

S.No	Drug	Latin Name	Part Used	Quantity
1.	*Draksha*	*Vitis vinifera*	Fruit	10pieces
2.	*Amaltas*	*Cassia fistula*	Fruit pulp	10gm
3.	*Haritaki*	*Terminalia chebula*	Fruit rind	10 gm
4.	*Katuki*	*Picrorrhiza kurroa*		05gm

Criterias for Selection of the Drugs

- Administration of *Vataghna* and *Shleshma-Medohara* drugs have been advised in the management of *Sthaulya Roga (Ch.Su.21/21).*
- *Mustaka, Haridra* and *Katuki* have been mentioned in the *Lekhaniya Mahakshaya* by *Acharya Charaka (Ch.Su.4/8(3)).*
- *Guduchi, Mustaka, Triphala, Madhudaka, Yavakshara, Agnimantha* and *Shilajatu* have been mentioned in the treatment of *Sthaulya* in *Charaka Samhita (Ch.Su.21/22-24).*
- *Shilajatu, Guggulu, Gomutra, Triphala, Madhu* have been indicated by *Acharya Sushruta* in the management of *Sthaulya (Su.Su.15/38).*

- *Madhu, Triphala, Guduchi, Abhaya, Guggulu, Shilajatu, Kshara, Yava, Amalaki* has been advised by *Acharya Vagbhatta* in the management of *Sthaulya (A.H.Su.14/22-24).*
- *Apamarga* has been described as *Kapha-medo-anilapaha* in *Bhavaprakash Nighantu. (B.P.Ni.Guduchyadi varga/220).*
- *Haritaki, Katuki* and *Aragvadha* possess an additional *Medonashaka* property alongwith *Virechaka* effect, therefore, were chosen for the administration of *Virechana* in the patient.
- *Shilajatu* and *Yavakshara* are a part of the *Ushakadi gana* which is *Kaphahara* and *Medovishoshana(Su.Su.38/38).*
- *Tila Taila* possess *Lekhana* and *Kaphavatanashaka* properties and has been prescribed in *Kapha* predominant and *Meda* predominant conditions *(Ch.Su.13/44).*
- *Acharya Sushruta* has emphasised on the *Sthaulyahara* and *Lekhana* properties of *Purana Madhu (Su.Su.45/140).*
- *Acharya Charaka* have advised the administration of *Ruksha, Ushna* and *Tikshna Basti* in *Sthaulya (Ch.Su.21/21).*
- *Lekhana Basti* has been advocated by *Acharya Sushruta* in the management of *Sthaulya (Su.Su.15/38).*
- *Acharya Charaka* has adviced the intake of *Bilvadi Panchmoola Kwatha* with *Madhu* in the management of obesity *(Ch.Su.21/24).*
- *Acharya Sushruta* has said *Dashmoola* to be *Tridoshashamaka, Shwasahara, Amapachaka (Su.Su.38/72).*
- *Virechana* has been advised alongwith other *Shodhana* therapies in the management of *Sthaulya* by *Acharya Vagbhatta (A.H.Su.14/14).*
- *Panchatikta Ghrita* was selected for internal *Snehana* of the patient as a *Purvakarma* of *Virechana* on the basis of *Lekhana, Meda-vasa-shleshma Upashoshana, Laghu, Ruksha* properties of *Tikta Rasa (Ch.Su.26/43)* and *Yogavahi Guna* of *Ghrita* which makes the whole formulation *Medanashaka* and *Lekhana* in nature.

Selection of Patients

The present study was conducted on 30 clinically diagnosed and confirmed patients of *Sthaulya Roga* and Dyslipidaemia, randomly selected from the OPD/IPD unit of P.G. department of *Kaya Chikitsa*, National Institute of Ayurveda, Jaipur, out of which 28 patients completed the trial whereas 2 patients left against medical advice(LAMA). A regular record of the assessment of all patients was maintained according to proforma prepared for the purpose. Following inclusion and exclusion criteria were used for registration of the patients for present clinical trial:

a. Inclusion Criteria

1. All patients suffering from obesity (BMI>23 Kg/ m^2) accompanied with dyslipidaemia.
2. Patients aged : 16-70 yrs
3. Sex : either sex

b. Exclusion Criteria

1. Patients suffering from obesity due to hereditary indisposition.
2. Patients suffering from drug induced obesity.
3. Dyslipidaemia due to injudicious use of drugs such as diuretics, corticosteroids, etc.
4. Increased abdominal girth due to other diseases e.g. Ascites.
5. Having hormonal disorder e.g. Hypothyroidism, IDDM.
6. Pregnant women.

Plan of Study

The registered patients were randomly divided into following three groups:

1. **Group-A**: 10 patients of *Sthaulya Roga* were recommended *Medoghana Vati* in the dose of 4 tablets BD (i.e. 4gm/day) with honey mixed luke warm water to be taken half an hour before meals for a period of 30 days.
2. **Group-B*:*** 10 patients of *Sthaulya Roga* were administered *Medoghana Basti* for a period of one month as per the pattern of *Karma Basti* after proper preparation of the patient

(*Abhyanga* and *Swedan*). *Medoghana Basti* was alternated with *Dashmool Quath Basti*. *Basti* was prepared as described in *A. H. Su. 19/45* and administered to the patient by the scholar carefully as described in *Ch. Si. 3/24-25*.

3. **Group-C:** 10 patients of *Sthaulya Roga* were treated with *Virechana karma*. Patients were given *Panchakola churna* 3gm BD for 5 days for *Ama Pachana*. *Abhyantara snehana* of the patient was then done with oral administration of *Panchtikta Ghrit* (increasing its dose in a stepladder pattern) for 5-7 days with luke warm water according to the *Prakriti* of the patient followed by *sarvanga abhyanga* with *Dashmoola taila* and *swedana* for 2 days. The following morning (10:00 A.M.), patient was given *Virechana yoga* on empty stomach after *sarvanga abhyanga* and *swedana*. After proper *Virechana*, patient was advised *Samsarjana Karma* depending upon the type of *shodhana* of his/her body.

All the patients were advised *Pathyahara* as described in the Ayurvedic text and exercises (morning walk for 30 minutes), during and after the therapy for proper maintenance of the weight.

Follow-up study :

Follow-up of the patient was done fortnightly for a period of 2 months.

Criterias of Assessment of the Patient

Both subjective and objective parameters were employed for assessment of the impact of the treatment in respective groups. Subjective criteria of evaluation included both the observations of patients and assessment of the physician.

1. Subjective Improvement

All the patients registered for the trial were regularly inquired about any growing feeling of physical or mental well-being and its clinical manifestations produced by the different *Medoghna* regime.

2. Clinical Improvement :

a) Symptomatic Improvement :

The various symptoms of *Sthaulya Roga* were rated using the following Symptom Rating Scale developed by Prof. A.K. Sharma et.al.

S.no.	Rating	Percentage	Score	Grading
1	Absent	00	-	0
2	Mild	25	+	1
3	Moderate	50	++	2
4	Severe	75	+++	3
5	Agonising	100	++++	4

b) Anthropometric Assessment

1. Weight of the patient
2. B.M.I. –

$$\text{B.M.I.} = \frac{\text{Weight of the patient in 'Kg'}}{(\text{Height of the patient in 'm'})^2}$$

3. Skin Fold Thickness

The skin fold thickness was measured with the help of vernier callipers at three different points i.e., Biceps, Triceps, Nape of the neck.

4. Waist circumference
5. Hip Circumference
6. Waist : Hip Ratio

a) Biochemical Assessment

Following investigations were done to assess the efficacy of different regimes :

i. Fasting Blood Sugar

ii. Serum Cholesterol

iii. Serum Triglycerides

iv. Serum High Density Lipoproteins

v. Serum Low Density Lipoproteins

vi. Serum Very Low Density Lipoproteins

Criterias of Assessment of Results

The results of the Clinical trial Taken under the present study were made on the following criterias:

1. Markedly Improved

i. Significant reduction in skin fold thickness.

ii. 5 Kg or more reduction in body weight.

iii. 2 Kg/m² or more reduction in B.M.I.

iv. ??????????????(SEE COPY)????????????????????? 10% reduction in Lipid Profile.

2. Improved

i. One grade reduction in skin fold thickness.

ii. 1Kg-5Kg reduction in body weight.

iii. < 2 Kg/m² reduction in B.M.I.

iv. 5-9% reduction in Lipid Profile.

3. No Change

No improvement in Body weight, B.M.I., Skin fold thickness and Lipid Profile.

4. Deteriorated

Increase in Skin Fold Thickness, Body weight, B.M.I. and derangement in Lipid Profile.

Observations And Results

Following observations were made and results obtained after the course of the therapies in different groups:

1. **Incidence of Age:** 24 patients (80%) were registered in the age group 31-60 yrs showing the higher incidence of obesity in third to sixth decade of life. Incidence of Dyslipidaemia is highest in middle-age group. Rest 04(13.33%) patients were recorded in 16-30yrs age-group and 02(6.67%) patients in 61-70yrs age group.

2. **Incidence of Sex:** The patients of obesity related Dyslipidaemia were equally distributed in both the sexes.

3. **Incidence of Religion:** 23 patients (76.67%) registered in the study were Hindus. It may be so as the hospital is situated in a Hindu dominant area.

4. **Incidence of Marital Status / Occupation:** 24 patients (80%) registered were married and a large number 13 patients (43.33%) were house-wives. The data shows that house-wives were more susceptible to obesity and obesity related dyslipidaemia. This may be due to the invention of various house-hold appliances. The work load of house-wives has significantly decreased but continuation of their faulty life-style including eating the left-overs of kids, eating large portions of food while tasting, watching T.V., sedentary activities and no or irregular exercises have added to the problem. Government servants (8)(26.67%) and 5 businessmen (16.67%) were next to house-wives in the incidence of obesity and related dyslipidaemia which may be due to their sedentary nature of work.

5. **Incidence of Socio-economic status:** 16 patients (53.33%) belonged to upper middle class and 9 patients (30%) belonged to lower middle class thereby showing that the incidence of *Sthaulya* was maximum in middle class socio-economic group. As middle class socio-economic group have easy accessibility to industrialized tools and machinery thereby encouraging sedentary life style along with higher intake of calories in the form of fast foods and canned foods resulting in an energy intake and expenditure imbalance in the body leading to obesity and related dyslipidaemia.

6. **Incidence of *Deha-Prakriti*:** *Vata-Kaphaja* (14 patients, 46.67%) and *Kaphaja* (9 patients, 30.00%) *Prakritis* were highly associated with the development of obesity, thereby showing the *Prikriti Sama Samvaya* nature of the disease *Sthaulya*.

7. **Incidence of *Abhyavaharana and Jarana Shakti*:** 21 patients (70%) presented with *Madhyana Abhyavaharana* and *Jarana Shakti*. Patients were conscious about their disease albeit figure and had reduced dietary intake in terms of quantity (*Matra*).

8. **Incidence of *Kostha*:** 17 patients (56.67%) had *Madhyama Koshtha* while 12 patients (40%) had *Krura* type of *Koshtha*.

9. **Incidence of *Agni*:** 14 patients (46.67%) had witnessed *Vishamagni* and 10 patients (33.33%) had *Tikshnagni* referring to their pathological status of *Agni*.

10. **Incidence of Dietary factors:** 17 patients (56.67%) used *Amla Rasa* dominantly in their diet and 15 patients (50%) used *Madhura Rasa* dominant diet. 12 patients (40%) indulged in *Adhyasana*, 11 patients (36.67%) in *Viruddhasana* and 5 patients (16.67%) in *Annasana*. All these are the etiological factors of *Sthaulya Roga*.

11. **Incidence of Sleep:** The data shows that 18 patients (60%) used to sleep for more than 8 hours/day and 11 patients (36.67%) used to sleep in day time, confirming that *Ati-nidra* and *Divaswapna* are two important causative factors of *Sthaulya Roga*.

12. **Incidence of *Vyayama*:** 19 patients (63.33%) had *Avara Vyayama Shakti* which might be due to *Dhatu Shaithilya* associated with *Sthaulya*. 19 patients (63.33%) used to do no exercises at all.

13. **Incidence of Emotional make up:** 13 patients (43.33%) gave the history of being tense and 5 patients (16.67%) were depressed, 4 patients (13.33%) were anxious having a lot of mental pressure, suggesting thereby that tension/ anxiety/ depression and emotional conflicts may lead them to indulge in over eating and snacking as mood elevators and be important etiological factors for *Sthaulya*.

14. **Incidence of *Nidana*:** Various *Nidanas* found in higher incidence included *Ksirad Sevana, Shaiyya, Sukha, Gurvati Sevana, Snigdhati Sevana, Avayayama, Sheetahara Sevana, Madhurati Sevana* and *Navanna Sevana*.

Symptomatic Improvement

Table no. 4 showing the pattern of clinical recovery in 28 registered patients of *Sthaulya Roga* in respective groups:-

Symptoms	Group A				Group B				Group C			
	% Imp.	*t*	*p*	Rem-arks	% Imp.	*t*	*p*	Rem-arks	% Imp.	*t*	*p*	Rem-arks
Chala Sphig-udara-stana (Pendulous buttocks, abdomen, breasts)	61.80	4.43	<0.01	S	71.61	10	<0.001	H.S.	28.57	3.67	<0.01	S.
Javoprodha (Difficult initiation)	71.42	3.16	<0.05	S.	85.71	2.30	<0.10	N.S.	60	2.71	<0.05	S.
Kshudha vruddhi (Excessive appetite)	33.33	1.00	>0.10	N.S.	83.33	3.16	<0.01	S.	85.71	2.25	<0.05	S.
Pipasa Atiyoga (Polydipsia)	28.57	1.51	>0.10	N.S.	44	2.53	<0.05	S.	44.44	2.44	<0.05	S.
Daurbalya (Weakness)	89	3.41	<0.01	S.	80.12	8.00	<0.001	H.S.	61.53	6.00	<0.001	H.S.
Kriccha Vyavayata (Difficulty in intercourse)	33.33	1.00	>0.10	N.S.	25	1.00	>0.10	N.S.	40	1.50	>0.10	N.S.
Svedadhikya (Excessive Perspiration)	50	2.53	<0.02	S.	42.11	3.16	<0.02	S.	38.46	2.23	<0.05	S.
Anga Gaurava (Heaviness)	100	5.54	<0.001	H.S.	93.98	8.85	<0.001	H.S.	93.75	6.70	<0.001	H.S.

Kshudra Shwasa (Dysnea)	14.28	1.00	>0.10	N.S.	50	2.53	<0.05	S.	50	2.44	<0.02	S.
Krathana (Snoring)	12.5	1.00	>0.10	N.S.	0	0.00	–	–	0	0.00	–	–
Gatrasada (fatigability)	33.33	1.51	>0.10	N.S.	66.92	3.41	<0.01	S.	53.33	6.00	<0.001	H.S.
Alpa Prana (Decreased expectancy of life)	33.33	1.51	>0.10	N.S.	60	2.00	<0.10	N.S.	33.33	1.96	<0.1	N.S.
Nidradhikya (Excessive sleep)	42.85	2.00	<0.05	S.	79.28	3.41	<0.01	S.	75	3.85	<0.01	S.
Anga shaithilya (Flabbiness)	50	1.83	>0.10	N.S.	56.41	2.53	<0.05	S.	44.44	1.80	>0.1	N.S.
Snigdhangata (Unctousness)	42.11	2.29	<0.05	S.	24.72	1.51	>0.10	N.S.	9.09	1.00	>0.1	N.S.
Daurgandhya (Foul body odour)	20	1.00	>0.10	N.S.	0	0.00	–	–	53.84	1.41	>0.1	N.S.
Alasya (Lassitude)	75	2.82	<0.02	S.	85.90	2.83	<0.05	S.	77.77	2.68	<0.05	S.

H.S. = Highly Significant, S = Significant, N.S. = Not Significant

The data shows excellent relief in the symptom *Anga-gaurava* in all the three groups (100%, 93%, 98% and 93.75% respectively). Significant relief was found in the symptoms of *Daurbalya* and *Alasya* in Group A; symptoms *Javoprodha*, *Kshudha Vridhi, Nidradhikya* and *Alasya* in Group B; and *Kshudha Vridhi; Nidradhikya* and *Alasya* in Group C. Moderate relief was seen in the symptom of *Chala-sphig-udara-stana* in Group A and B, *Javoprodha* in Group A and C, *Daurbalya* in Group C, *Svedadhikya* in Group A, *Kshudra Shwasa* in Group B and C, *Gatrasada* in Group B and C, *Anga Shaitilya* in Group A and B, *Daurgandhya* in Group C respectively. Maximum overall symptomatic improvement 55.82% was observed in the patients of Group B, followed by 49.95% in patients of Group C and 46.52% in patients of Group A respectively.

Anthropometric Improvement

Table no. 5 Showing the pattern of improvement in various Anthropometric parameters in 28 registered patients of *Sthaulya Roga* in respective groups.

Symptoms	Group A				Group B				Group C			
	% Imp.	*t*	*p*	Rem-arks	% Imp.	*t*	*p*	Rem-arks	% Imp.	*t*	*p*	Rem-arks
Body weight	5.13	5.19	<0.001	H.S.	6.20	7.23	<0.001	H.S.	4.40	5.45	<0.001	H.S.
B.M.I.	5.32	4.18	<0.01	S.	6.31	8.02	<0.001	H.S.	4.40	5.50	<0.001	H.S.
Waist circumference	6.76	6.17	<0.001	H.S.	5.82	7.83	<0.001	H.S.	4.52	11.71	<0.001	H.S.
Hip circumference	4.12	3.75	<0.01	S.	3.47	6.32	<0.001	H.S.	2.32	6.82	<0.001	H.S.
Waist : Hip Ratio	2.10	14.42	<0.001	H.S.	2.22	3.73	<0.01	S.	2.12	4.71	<0.01	S.
S.F.T. at Biceps	2.35	3.53	<0.01	S.	16.4	7.91	<0.001	H.S.	11.57	2.40	<0.05	S.
S.F.T. at Triceps	24.72	2.74	<0.05	S.	12	6.79	<0.001	H.S.	7.97	2.02	<0.1	N.S.
S.F.T. at Nape of the neck	7.63	2.82	<0.05	S.	10.5	4.87	<0.01	S.	5.62	4.68	<0.01	S.

H.S. = Highly Significant, S = Significant, N.S. = Not Significant

Thus maximum improvement in various anthropometric measures was seen in patients of Group B, followed by moderate improvement in patients of Group A and mild improvement in the patients of Group C respectively.

Biochemical Changes

Table no. 6 showing the pattern of Biochemical changes observed in 28 registered patients of *Sthaulya Roga* in respective groups.

Symptoms	Group A				Group B				Group C			
	% Imp.	*t*	*p*	Rem-arks	% Imp.	*t*	*p*	Rem-arks	% Imp.	*t*	*p*	Rem-arks
Fasting Blood Sugar	5.97	1.07	>0.1	N.S.	7.89	1.41	>0.1	N.S.	10.66	2.28	<0.05	S.
S. Total Cholesterol	20.71	4.60	<0.01	S.	8.99	2.23	<0.1	N.S.	7.08	1.70	>0.1	N.S.
S. Triglycerides	31.19	2.33	<0.05	S.	15.38	2.64	<0.05	S.	13.61	1.63	>0.1	N.S.
S. LDL Cholesterol	20.06	2.87	<0.05	S.	18.70	2.24	>0.1	N.S.	2.71	0.35	>0.1	N.S.
S. HDL Cholesterol	5.06	0.97	>0.1	N.S.	-.26	.08	>0.1	N.S.	8.58	2.32	<0.05	S.
S. VLDL	28.33	2.82	<0.05	S.	15.31	2.65	<0.05	S.	15.92	1.74	>0.1	N.S.
Total Cholesterol : HDL Ratio	19.33	2.66	<0.05	S.	9.48	3.80	<0.01	S.	-.95	.43	>0.1	N.S.

H.S. = Highly Significant, S = Significant, N.S. = Not Significant

The above data shows that maximum percentage of improvement in the Lipid Profile was found in the patients of Group A (18.66%) followed by Group B patients (10.78%). S.HDL was also found to be increased in Group B patients. The changes in Group C patients (8.23%) were mild and not so significant. Also the pattern of changes in patients of Group C was variable.

S. Total Cholesterol: HDL Ratio which is a marker of risk assessment in the patients of Dyslipidaemia for the development of CAD improved significantly in patients of both Group A and Group B.

Table no. 7 showing the overall percentage of improvement in 28 registered patients of *Sthaulya Roga* in respective groups.

S. No.	Improvement	*Groups*	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	*P* Value
			BT	AT						
1	**Clinical**	Group A	0.82	0.41	0.42	46.52	0.49	0.17	2.21	<0.05
		Group B	0.97	0.37	0.60	55.83	0.49	0.17	3.37	<0.01
		Group C	1.13	0.57	0.56	49.96	0.61	0.19	2.86	<0.05
2	**Anthropometric**	Group A	43.22	40.77	2.45	7.27	1.58	0.53	5.35	<0.001
		Group B	45.10	42.71	2.38	7.87	0.98	0.32	6.59	<0.001
		Group C	46.11	44.33	1.79	5.37	0.87	0.27	5.41	<0.001
3	**Biochemical**	Group A	118.96	93.86	25.10	18.66	28.33	9.44	2.47	<0.01
		Group B	104.25	92.03	12.21	10.78	17.03	5.67	2.15	<0.05
		Group C	99.39	89.97	9.42	8.23	19.26	6.09	1.49	>0.1

Probable Modes Of Actions Of Various *Medoghna* Regimes

1. *Medoghna Vati*

- The proposed formulation *Medoghna Vati* is *Tikta-Katu-Kshaya* rasa dominant are *Kaphashamaka* in nature. *Tikta rasa* possess *Lekhana* and *Meda Kapha-Shoshana* properties; *Katu rasa* possess *Srotoshodhana* and *Mamsa-Vilekhana* properties; *Kshaya rasa* has *Sharira Kledopshoshana* property. All the three *Rasas* are *Karshyakara* in their *Prabhava* (*Ch. Su. 26/42*), leading to weight loss and slimming of the body.
- Due to the *Laghu*, *Tikshna* and *Ushna* properties, the drugs of *Medoghna Vati* are *Ashukari* in *Prabhava* and can enter the *Srotas* easily.
- *Ushna Virya* is also *Kapha-Vata Shamaka* by virtue of its nature.
- Most of the contents of *Medoghna Vati* have *Deepana* (88.89%), *Pachana (66.67%),* Hypolipidaemic*(55.56%),* Hypoglycaemic *(44.44%), lekhana* (66.67%), *Srotoshodhaka* (5556%), *Rasayana* (66.67%), Anti-atherosclerotic (33.33%) effects.
- It is inferred that by virtue of its pharmacodynamics, the proposed formulation, *Medoghna Vati*; is successful in breaking the pathological sequelae of the disease entity, *Sthaulya Roga* and this trial drug produced maximum corrective improvement in the lipid profile of the patients registered for the present trial along with symptomatic and anthropometric improvements.

2. *Medoghna Basti*

- *Basti Chikitsa* has been referred to as *Chikitsardha* as it influences the whole body and removes the vitiated *Vata dosha* alongwith *Pitta* and *Kapha*.
- The drugs used in the *Medoghna Basti* has *Lekhana*, *Kaphavatahara*, *Srotoshodhaka*, *Deepana*, *Pachana* and hypolipidaemic properties.
- In the form of *Basti,* large doses of foul smelling and unpleasant medicines could be administered in the patients through the rectal route.
- The *Tila Taila* present in the *Basti* could dissolve the lipophilic constituents of the *Basti* thus making them easily absorbable from the lipoidal gut membrane.
- *Basti dravyas* when introduced through rectum reach upto the level of *Nabhi, Kati, Parshva, Udara Pradesha* and produces cleansing effect. *(Ch.Si.1/40), (Su.Chi.35/24)*
- *Basti Dravyas* escape the complex phenomenon of digestion and thus by passes the stages of *Madhura* and *Amla Avasthapaka*.
- It has been reported that materials introduced by enema in some cases pass through the walls into the ileum. Such incompetence may permit the enema fluid to reach the duodenum. (The physiological Basis of Medical Practice by Taylor)
- Although *Basti Dravyas* come out in due course of time, the *veerya* of *Basti Dravyas* spread throughout the body with the help of *Apana, Udana* and *Vyana Vayu. (Su.Chi.35/26)*
- The parasympathetic stimulation by the administration of *Basti* increases the overall activity of the G.I.T. and allows rapid propulsion of contents along the tract. This propulsive effect is associated with simultaneous increase in rates of secretion of gastro-intestinal glands. *(Guyton's Physiology)*
- During the evacuation of *Basti* contents after *Dharana Kala*, the vitiated *Doshas* are propelled out of the *Koshtha* forcefully along with them, thus removing the *Avarana* of *Vayu*.

3. *Virechana Karma*

- *Panchakola Churna* given for 5 days prior to administration of *snehapana* was helpful in inducing *Deepana* and *Pachana* of *Ama dosha* in a series of patients of *Sthaulya Roga* registered for the current trial.
- *Snehapana* was done with *Panchatikta Ghrita*, keeping in view the *Lekhana* and *Kaphanashaka* properties of *Tikta rasa* and *Yogavahi guna* of *Ghrita*. Also *Ghrita* acts as a substrate which is directly taken up by the *Medodhatu* due to

'*Vishishta Ahara Adristha*' thus replacing the accumulated *Meda* molecules with medicated properties.

- *Sarvanga Abhyanga* and *Mridu Swedana* given to the patients after *Snehapana* helped in mobilising of *Meda* and vitiated *Doshas* and bringing them to *Koshtha*.
- *Virechana Karma* thus administered eliminated the excessive *Meda* & vitiated *Doshas* from the *Koshtha*.
- Also *Virechana Karma* removed the *Avarana* of *Vayu* in *Koshtha* and corrected the *Agni-vaigunya*, and *Medodhatwagni*.
- *Virechana Karma* also helped in flushing the excess *Ambu dhatu* from the body which is a component of *Meda dhatu*.

Conclusions

Following conclusions can be drawn from the current research project:

1. Both *Baddha* and *Abaddha Meda* gets vitiated and accumulated in excess in the disease entity, *Sthaulya Roga* (Obesity). *Abaddha Meda* can be correlated with serum lipids and its disordered metabolism in *Sthaulya Roga* with Dyslipidaemia.
2. The various *Medoghna* regimes used in the present clinical trial produced significant symptomatic relief in the patients of *Sthaulya Roga* alongwith significant improvement in various anthropometric measures, with highest percentage of relief in *Medoghna Basti* treated group.
3. The proposed formulation *Medoghna Vati* was highly effective and the best of the three formulations used in reducing the serum lipid levels and its contents possess a potent hypolipidaemic action. *Medoghna Basti* regime also reduced the serum lipid levels significantly.
4. Though *Virechana Karma* helps in a significant weight loss and symptomatic relief, but statistically it has shown no significant effect on the lipid profile.
5. It can be concluded from the present clinical trial that both *Medoghna Vati* and *Medoghna Basti* regimes are highly effective in the management of *Sthaulya Roga* and related Dyslipidaemia.

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Abbreviations Used:

1.	A.H.Su.	Ashtanga Hridaya Sutrasthana
2.	B.P.Ni.	Bhava Prakash Nighantu
3.	Ch.Su.	Charaka Samhita Sutrasthana
4.	Ch. Si.	Charaka Samhita Siddhisthana
5.	S.F.T.	Skin Fold Thickness
6.	Su. Chi.	Sushruta Samhita Chikitsasthana
7.	Su.Su.	Sushruta Samhita Sutrasthana

Clinical Study

Clinical Evaluation of An *Ayurvedic* formulation in Management of *Vataja Pratishyaya* with special reference to Allergic Rhinitis

*Dr. *Vijayant Bhardwaj*, **Dr. *Atul Bhardwaj*

Abstract

Ayurveda considers that the whole orchestra of treatment is governed by 'Chikitsa chatushpada' i.e. four basic pillars of treatment and also their required qualities lead to the fastest recovery of the disease. Among the four basic factors of treatment Dravya has been designated the second place quoting that it is a major tool in treating the diseases. In Ayurvedic classics there are a lot of single and compound drugs available which are mentioned in several contexts. Most of these are not retested according to the current research methodology. Unless the drug is tested through this methodology the drug will not get proper recognition in the scientific world. These drugs are used as single or in compound form where in their dosage and vehicle change the properties and thus widely applied in treatment. The route of administration of these drugs also vary; according to the disease e.g. locally, orally. So, that's why self formulated preparations Pratishyaya Saarthak Nasya with aqueous as a base and Pratishyaya Saarthak Awleha was selected. The results were very encouraging in 21 days and needs extensive study on large scale.

Key Words: Vataja Pratishyaya, Pratishyaya Saarthak Nasya, Pratishyaya, Saarthak Awleha

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Clinical Study

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Dr. *Vijayant Bhardwaj, Dr. Atul Bhardwaj*

Introduction

Sun, which diffuses dark to enlighten the sky, likewise the science of Ayurveda by virtue of its noble cause enlightens the obscuring dark of hidden and enigmatic subjects.

While going through the Ayurvedic classics we observe a vivid description of the disease Pratishyaya. There is descriptive mention of this disease with regards to aetiopathogensis, classification, symptomatology, complication and management. This reflects that ancient Ayurvedic galaxy was well versed with the concept of Pratishyaya. The importance of this disease is reflected by the fact that Aacharya Sushruta has mentioned a separate chapter for detail description of Pratishyaya.

Aacharya Sushruta and Vagbhatta have mentioned five types of Pratishyaya. These five different types of Pratishyaya reflect different type of rhinitis. After evaluating the symptomatology of different types of Pratishyaya it seems prudent to accept that no individual type of Pratishyaya has got complete compatibility with symptoms of ALLERGIC RHINITIS but Vataja Pratishyaya seems to be in close proximity with Allergic origin of rhinitis. A sincere endeavour has been made to annex and compile the compatible features of Vataja Pratishyaya and Allergic rhinitis subsequently.

Drugs -

For this present clinical study, the trial drug Pratishyaya Saarthak Nasya with aqueous as a base and Pratishyaya Saarthak Awleha was selected.

Though the formulation for the present clinical study are not mentioned in Ayurvedic texts, the fundamentals of Ayurvedic treatment i.e. Dosha-Dushya vimarsha etc. are deemed and respected in every sense. Apart from this aspect an endeavour has been made to coalesce proven drugs having potency against pathogenesis of nasal allergic manifestation. Immunomodulators and proven mucous membrane decongestants drugs are also featuring in these formulations.

Ingredients of Pratishyaya Saarthak Nasya:-

Haridra-2 parts, Shirisha-2 parts, Bharangi-1 part, Bilva fruit pulp-1 part, Kantkaari-1part, Daaru haridra-2 parts Guduchi-1 part, Yastimadhu-1part, Jaiphala-2 parts, Bhanga patra-2 parts, Balamoola-2 parts, Soma-2 parts and Karpoor 1/2gm./100ml.

Method of preparation:

Decoction of coarse powder of the above said drugs except karpoora was prepared and ultrafiltrated 3 times. Then karpoora was dissolved in this prepared decoction. A mixture of Methyl Paraban Sodium-2 gm. And Propyl Paraban Sodium was used as a preservative in these nasal drops. Prepared nasal drops were preserved in sterile small bottles with droppers.

Ingredients of Pratishyaya Saarthak Awleha:

Haridra-2 parts, Shirisha-2 parts, Yawaani-1part, Bharangi-1part, Karkatshringi-1 part, Yastimadhu-1 part, Kantkaari-1part, Bilva fruit pulp-4 part, Guduchi-1 part, Amaltas fruit pulp-4 parts, Daaruharidra-1part,Vasapatra-1 part, Nirgundi-1 part, Guda-32 parts and Ghrita-1/2 part. Shunthi, Marich, Pippali - Each 20 Gms. per kg. of Awleha Honey-1/2 part and Abhraka bhasma-5gm. /kg. of awleha as prakshepa drugs.

Method of preparation:

Coarse powder of Haridra, Shirisha,Yawaani, Bharangi, Karktashringi, Yastimadhu, Kantkaari, Guduchi, Daaruharidra, Vasapatra and Nirgundi was made. Decoction of the up stated drugs was made as per classical texts and filtered. Pulp material of Bilva

fruit and Amaltas was extracted and made into a paste. The paste of Bilva fruit and Amaltas pulp was fried in Ghrita as per direction of Awleha preparation methods.Purana Guda was dissolved into the filtered decoction of drugs in adequate amount and with the help of low intensity heat, converted into a semisolid Awleha subsequently. Already fried pulp and the semisolid resultant Awleha were mixed in an adequate size container. The fine powder of prekshepa drugs were admixed in the Awleha after its cooling down. The Awleha was ultimately preserved in sterile containers.

Clinical study:

Clinical study has been carried out in 3 trial groups TG- I, TG- II and T.G.-III. Twenty six patients were registered i.e. ten each in TGI and TGIII and 6 patients in TG II from E.N.T., O.P.D., **R.G.G.P.G.A. Hospital** and all have completed the trial. Complete description regarding the details of each research case was recorded in a predesigned proforma.

Criteria of selection of patient:

i. Inclusion criteria:

Patients of different age groups having features described in **Vataja Pratishyaya** and Allergic rhinitis were selected and randomly divided into 3 groups irrespective of sex, caste etc.

ii. Exclusion criteria:

a) Severe obstruction of nasal cavity i.e. severe DNS, Adhesions in the nasal cavity presenting hindrance for nasal drops instillation in TG I and TGIII.

b) Established diabetics (for TG II and TG III)

Method of Study:

After taking consent of patients, they were divided randomly into following groups.

Trial Group I:

In this group Pratishyaya Saarthak Nasya 3 drops in each nostril twice a day was taken and 10 patients were given this drug for local use.

Trial Group II:

In this group Pratishyaya Saarthak Awleha 10 gm. twice daily with milk was taken as trial drug and 6 patients were treated with this drug.

Trial Group III:

In this group Pratishyaya Saarthak Nasya 3 drops in each nostril twice a day locally and group Pratishyaya Saarthak Awleha 10 gm. twice daily with milk orally were given to 10 patients as a trial drugs combination.

Duration of time:-21 days for all groups

Follow up: - After completion of trial every week for 2 months

Criteria of assessment of results:

In Subjective criteria scoring system was adopted.

In Objective Haematological and Radiological parameter was adopted.

Observation and Results

Effect of Pratishyaya Saarthak Nasya in 10 patients in Group I

The effect of **Pratishyaya Saarthak Nasya** was observed in the clinical features kept under criteria for assessment. In nasal itching there was 62.92 % of relief percentage which is statistically significant at the level of $p < 0.001$ ($t = 8.01$), excessive sneezing was relieved by 60 % which is statistically significant at the level of $p < 0.001$ ($t= 9.11$). Thin and watery discharge from nose was relieved by 67.85 % which is statistically significant ($p< 0.001$, $t =10.72$). Nasal obstruction was relieved by 63.63 % which is statistically significant ($p<0.001$, $t = 8.70$). Itching in palate and pharynx was relieved by 75.18 % which is statistically significant ($p< 0.05$, $t = 4.28$). Watering from eyes was relieved by 93.75% which is statistically significant ($p < 0.001$, $t= 6.77$). Mucosal oedema was relieved by 55 % which is statistically significant ($p < 0.001$, $t = 11.21$). Paleness/congestion was relieved by 77.27 % which is statistically significant ($p < 0.001$, $t = 8.01$). Post nasal drip was relieved by 88.88 % which is statistically significant ($p< 0.05$, $t = 6.59$) and retracted tympanic membrane was relieved by 75 % which is statistically insignificant ($p > 0.05$, $t = 3$). No unwanted effects and ill-hazards were noticed after the treatment.

Effect of Pratishyaya Saarthak Awleha in 6 patients under Group II

In this trial group after the treatment nasal itching was relieved by 46.29% which is statistically significant (P < 0.05, t = 3.87). Excessive sneezing was relieved by 35.62 % which is statistically insignificant (p > 0.05 , t = 2.04). Thin and watery discharge from nose was relieved by 53.6 % which is statistically significant (p < 0.05, t = 6.24). Nasal obstruction was relieved by 30.55 % which is statistically significant (p < 0.05, t = 3.15). Itching in palate and pharynx was relieved by 75.18 % but statistically evaluation is not possible as 'S.D'. is O. Watering from eyes was relieved by 100 % which is statistically significant (p < 0.001, t =9.11). Mucosal oedema was relieved by 45.35 % which is statistically significant (p < 0.05, t = 4.93). Congestion/ paleness of nasal mucosa was relieved by 50.21 % which is statistically significant (p < 0.05, t = 6.58). Post nasal drip was relieved by 100 % which is statistically significant (p < 0.05, t=5.26) and granulation on posterior pharyngeal wall was relieved by 42.85 % which is statistically insignificant (p > 0.05, t = 3).

Effect of combined therapy i.e. Pratishyaya Saarthak Nasya and Pratishyaya Saarthak Awleha in 10 patients under Group – III

In the present group, after the treatment nasal itching was relieved by 72.72 % which is statistically significant (p < 0.001, t = 9.91). Excessive sneezing was relieved by 63.15 % which is statistically significant (p < 0.001, t = 9.02). Thin and watery discharge from nose was relieved by 66.66 % which is statistically significant (p < 0.001, t=7.29). Nasal obstruction was relieved by 83.33 % which is statistically significant (p < 0.001, t = 9.57). Itching in palate and pharynx was relieved by 88.88 % which is statistically significant (p < 0.05, t= 4.0). Watering from eyes was relieved by 100 % which is statistically significant (p<0.001, t = 7.62). Nasal mucosal oedema was relieved by 68.75 % which is statistically significant (p<0.05, t=4.76). Paleness/ congestion was relieved by 81.81 % which is statistically significant (p < 0.001, t=9.02). Discharge collection in middle meatus and retracted tympanic membrane was relieved by 100 % but the statistical analysis is not possible as 'S.D'. is 0. Post nasal drip was relieved by 100 % which is statistically insignificant (p > 0.05, t = 3.02) and granulation on posterior pharyngeal wall was relieved by 54.64 % which is statistically significant (p < 0.05, t = 3.87).

Inter group comparison over criterias of assessment:

In the inter group comparison over criterias of assessment:

- In nasal itching statistically G- I and G- II comparison is significant and Group III gives highest % relief.
- In excessive sneezing there is no significant statistical difference between any of the group but G- III provides highest % relief.
- In thin and watery discharge from nose there is statistically significant difference between G- I and G- II and also between G-II and G-III while G- I gives highest % relief.
- In nasal obstruction there is significant statistical difference between G-I and G-II, G-I and G-III, G-II and G-III while G-III gives highest % relief- In itching in palate and pharynx there is no significant statistically difference between any of the groups but G-III gives highest % relief.
- In watering from eyes there is no statistically significant difference between any of the groups but G-II and G- III gives highest % relief.
- In nasal mucosal oedema is no statistically significant difference between any of the groups but G-III gives highest % relief.
- In paleness/congestion of nasal mucosa there is statistically significant difference between G-II and G- III while G- III gives highest % relief.
- In post nasal drip there is no statistically significant difference between any of the groups but G- II and G- III gives highest % relief.
- In retracted tympanic membrane there is no statistically significant difference between any of the groups but G-III gives highest % relief.
- In granulation on posterior pharyngeal wall there is statistically significant difference between G-I and G- II and between G- I and G-III while G-III gives highest % relief.

Effect on Laboratory parameters:

a) Total eosinophilic count (TEC):-

The reduction in count is significant statistically in G- III at the level of $p<0.05$ ($t = 2.35$). The percentage change in this group is 19.39%

b) Hb % -

The result was significant statistically in G- I at the level of $p < 0.05$ ($t = 3.01$). The percentage change in this group is 0.70 %.

c) TLC -

The result is not statistically significant in any of the three groups. In G- I % change is 1.5 %, in G- II % change is 7.68 % and in G- III % change is 0.79 %

d) ESR -

The result is not significant statistically in any of the three groups. In G- I % change is 15.66 %, in G - II % change is 17.31 % and in G- III % change after treatment is 14.68 %.

Effect on Radiological parameters (water's view-PNS) -

- None of the trial group observed changes in mucosal thickening after the treatment which was found in total of 6 patients in the study.
- TG- III observed sinus clearance especially of maxillary sinuses after the treatment. Sinus haziness which may be attributed to associated sinusitis was observed in 2 patients of this group before the treatment.

The overall effect of the formulations in all the three groups suggested that:-

- Complete cure was not found in any of the three groups
- *In Group I* - Two patients were markedly improved, seven were moderately improved, and one patient was slightly improved.
- *In Group II* - In this group of six patients, four were moderately improved and two were slightly improved.
- *In Group III* -In this combined group of formulations, five patients were markedly improved and five patients were moderately improved.

Discussion

Pratishyaya is Vata-Kapha Predominant Tridoshaja disease in which Kaphadi Dosha shows movement towards *Nasa Pradesh* under the influence of Vata-Dosha.

Pratishyaya Saarthak Nasya having predominance of Tikta Rasa (41.66 %), Laghu Guna (37.93 %), Ushna Virya (69.23 %), Katu Vipaka (76.93 %) and Vata-Kapha hara properties (76.65 %) whereas **Pratishyaya Saarthak Awleha** having Predominance of Tikta Rasa (44 %), Laghu and Ruksha Guna (34.4 % each), Ushna Virya (69.22%), Katu vipaka (76.92 %) and Vata-Kapha hara properties (68.95 %) which can counteract the Samprapti of the disease Pratishyaya. According to different classical textual references the drug also possesses properties like *Vishaghana, Shirovirechna, Shothahara, Kandughana, Kasahara* and *Balya* which further varify the action of the trial drugs over the disease Vataj Pratishayaya.

Apart from these facts the constituents of the combinations also have potentially proven Pharmacological actions like antihistaminic, vasoconstriction, Bronchodilator and anti-inflammatory activities in modern pharmacological context which will counteract various sequence of events responsible in pathogenesis of Allergic rhinitis.

Conclusion

If we see the symptomatology of vattaja pratishyaya in Ayurveda we find the same symptomatology of acute rhinitis. In modern's acute rhinitis and allergic rhinitis we found the same symptoms in the beginning of disease. It is very difficult for modern people also to differentiate these two diseases in beginning. The difference is only that all the symptoms are of recurrent type or remains in whole of the year.

So, Vataj Pratishyaya can be correlated to Allergic Rhinitis if it is of recurrent type.

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Clinical Study

Clinical Evalution of *Kshara Sutra* In The Management of Haemorrhoids (*Arsha*)Under The Influence of *"Pranda Gutika"*

*Dr. R. N. Yadav, **Dr. B.B. Pandey, ***Prof. H.K. Kushwaha

Abstract:

Haemrrhoid is old and is among the first condition mentioned in medical history as contributing to human discomfort.

The exact incidence of haemorrhoid in general population is not known but it is higher then generally realized. they may account for as much as 20 percent of general surgical out patient practice (leicester,1981). they represent the commonest cause of anorectal bleeding in patient attending rectal clinic (William et al,1977). they are the cause of immense physical & mental discomfort and inconvenience to the patient who often seek remedies.

In *Ayurveda Acharya Sushruta* has described four curative measures for *Arshas Bheshaj*, *Shastra*, *Kshara* & *Agni*. Among them the *Kshara Sutra* therapy a concept of *Ayurvedaic* surgery is elaborately described by *Acharya Chakrapani* in *Chakradutta*. Keeping the fact the *Mandagni* & aggravation of *Vata* in mind, *Kshara Sutra* ligation is done along with *Deepana Pachana Vatanulomaka yoga Pranda Gutika*.

Key words: *haemorrhoids, KsharaSutra , Pranda Gutika.*

सारांश –

अर्श एक जीर्ण व्याधि है जिसका वर्णन आयुर्वेद संहिताओं में मिलता है। सामान्यतया इसके रोगी कुल बहिरङ्ग के 20 प्रतिशत अनुपात में मिलते है अर्श के रोगी हेतु 4 प्रकार की चिकित्साओं का उल्लेख किया जो निम्नप्रकार से है–

1. भैषज 2. शास्त्र 3 क्षार 4 अग्निकर्म

क्षार सूत्र को वर्णन आचार्य चक्रपाणि ने सर्वप्रथम किया। क्षारसूत्र के प्रयोग में उपद्रव होते है इनको कम करने के लिए वातानुलोमन एवं दीपन पाचन द्रव्यों का प्रयोग जैसे प्राणदा गुटिका का प्रयोग किया है।

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Introduction:

Arshas or haemorrhoids are definitely the commonest ailments that afflict the mankind. The haemorrhoid are the dilated veins occurring in relation to the anus. Sedentary life style, irregular &inappropriate diet, prolonged sitting, psychological disturbance like anxiety and rectal disorder.

In modern times the survival of every individual has become more competitive due to competition the life has taken a tremendous pace. His survival is full of family problems, social ties &economical crisis. Camping up with shortage of time with multiple commitments, many a times, lead to irregularities in his daily routine. All the above mentioned factor result in derangement of Jatharagni I.e., Mandagni which leads to constipation and this constipation increase the back pressure into haemorrhoidal veins to produce piles.

Nidana: Therapeutic abuses, habits and mechanical factor in two groups. first group comprising mainly dietic ingredient leads to accumulation of Mala and second group lead to vitiation of Dosas especially Apana Vayu, which is responsible for physiological function of Guda, plays major role in the development of Arshas.

Depending upon the above mentioned factor the aetiology of Arshas can be broadly classified as follows.

1. Dietic factor i.e, Mithya Ahara-dietic indulgence like Virudhahara (taking mutually contradictory food), Adhyashan ,Pramitaashan, Alpashana and Asatmya Ahar, in take of cattle meat, fish etc. which is dried and purified and again of emaciated animals. Intake of Masha, Pindalu,dry vegetables, germinated corn and pulses, intake of Sneha, Kilata(milk preparation)heavy fruit etc. will interfere with digestive enzymes leading to poor digestion and constipation.
2. Habits and pressure or irritation in anal canal i.e., Viharaj cause like- lack of exercise and Divaswapana, excessive indulgence in sex suppression of natural urge. Defective sitting, riding
3. General weakness and emaciation from prolonged illness i.e. Nidanarthakar cause as Gulma, Atisara, accumulation of Ama Grahani, Pandu
4. Imbalance of Agni (Mandagni)-the cause which develop Mandagni are-excessive food intake, Pramitashan, Adhyashan, Virrudhashan, eating too much food like meat, Pinyak milk preparation
5. Genetic factor-Hereditary piles (Sahaja Arsha) are caused by the vitiation of the seeds (sperm &ovum) specially the part of the seed which is responsible for the formation of anal canal sphincters.

Vyanjaka Hetu:

Ati Pravahana, Sital Jala Sparsh in anus, Asamyak use of Vasti Netra, Ati Mala Sanchya, Vivandha, Gudakshta, premature delivery, Visam Prasava, Pressure due to foetus, rubbing of anal region

Aims and objectives of the study:

1. To study the line of treatment of Arshas.
2. To carry out a comparative assessment of efficacy of standard Kshara Sutra ligation alone &Kshara Sutra ligation with Pranda Gutika(orally) in the management of Arshas.
3. To find the choice of treatment in the management of 1^{st} 2^{nd} 3^{rd} 4^{th} degree of internal haemorrhoids.

Material and methods:

For the present study following material& methods has been adopted.

1. Selection of patients.
2. Laboratory investigations.
3. Grouping of the selected patients.
4. Drug and Kshara Sutra.
   a. Dose, Anupana, & duration of Pranda Gutika.
   b. Method of Kshara Sutra ligation.
5. Observation of the patients.
6. Assessment criteria.

1. Selection of the patients: the present study has been carried out on patients who had been attending the out patient department of Shalya Tantra N.I.A. Jaipur. The patients were enrolled according to inclusion and exclusion criteria.

>Inclusion criteria: patients were selected irrespective of their sex, religion and occupation, economic &educational status.

The age groups of selected patients were between 18-70 years.

1st 2nd 3rd 4th degree of internal piles with pedicles.

>Exclusion criteria:

- Patient who were suffering from systemic disease like tuberculosis diabetes mellitus
- Patient who were associated with hepatitis-B and H.I.V
- Patient associated with carcinoma of rectum ulcerative colitis, Crohn's disease

>Grouping of the selected patients:

The clinical trial consists of three groups &in each group there were 10 patients.

Group A - Only Pranda Gutika.in this group 1st degree and early 2nd degree piles patients are include.

Group B - Patients will under go ksharsutra ligation only.

Group C - Patients will be treated with Pranda Gutika befor 10 days & 10days after kshar sutra ligation.

Drug and Kshara Sutra: **Pranda Gutika**

The formulation was prepared in pharmacy of NIA Jaipur.

The ingredient used in this preparation was; Shunthi, Marich, Pippali, Pippali root, Talish, Nagkeser, Chavya, Ela, Dalchini, Khash, Guda Drug used in this trial.

Bhasjya Ratnawali- Arsha Chikitsa Prakarana (Verse-9/80-90)

Dose: 500mg 2TDS

Anupana: Luke warm water

Duration: 10 days before&10days after treatments.

Observation of the patient:

Condition of the patient were observed daily under specific assessment criteria up to the complete healing of wound and dressing was done daily up to the cutting of pile mass.

After complete healing of wound all the recorded information was calculated and presented in form of table &graphs.

Assessment criteria: It was based on subjective and objective parameters. Following criteria had been considered.

During the trial &, follow up study the patients will be assessed on the basis of following parameters Subjective improvement & Objective improvement—

➢ **Pain**

Grade	Explanation
o	No pain as a symptom.
+	Localized feeling of pain during movement only but no feeling during rest.
++	Localized, tolerable pain even during rest but completely relieved by Hot Sitz bath.
+++	Radiating, intolerable pain, relieved by oral analgesics, but not disturbed the sleep.
++++	Intolerable, radiating and continuous pain with sleep disturbance and patient seek medical help as earlier possible.

➢ **Sphincter tone/spasm**

Grade	Explanation
o	Easy DRE and proctoscopic examination is possible
+	Easy DRE examination but painful proctoscopic examination
++	Easy DRE examinationbut proctoscopic examination is not possible
+++	Painful DRE examination
++++	DRE examination is not possible

➢ **DRE- Digital recatal examination**

➢ **Bleeding**

Grade	Explanation
o	No bleeding
+	Bleeding P/R as drops before and during/after defecation one episode per day
++	Bleeding P/R as drops before and during/after defecation at more than one episode per day
+++	Bleeding P/R as stream at before and during/after defecation one episode per day
++++	Bleeding P/R as stream before and during/after defecation at more than one episode per day

➢ **Retention of urine**

Grade	Explanation
o	No discomfort to pass urine
+	Urine pass with mild pain
++	Urine pass with moderate pain
+++	Urine pass with severe pain
++++	patients can not pass urine at all

➢ **Constipation:**

Grade	Explanation
0	Normal stool is passed regularly
+	Patient passes irregularly normal stool
++	Patient passes completely hard stool
+++	Patient take aperients to pass stool
++++	Patient needs enema to pass stool

➢ **Agnimandya**

Grade	Explanation
0	Normal
+	Patient has less interest on food, but intake is normal and regular
++	Patient has less interest on food, intake is less but regular
+++	Patient has less interest on food, intake is less and irregular
++++	Patient has no interest of food at all

Cutting time:

For the assessment of cutting time, average cutting time formulae was used.

$$\textbf{Average cutting time} = \frac{\text{Total no of days for cutting of pile mass After standard Kshara Sutra}}{\text{Number of patients}}$$

Healing time:

for the assessment of healing time, average healing time formulae was used.

$$\textbf{Average healing time} = \frac{\text{Duration of complete healing of Wound after pile mass cutoff}}{\text{Number of patients}}$$

Discussion and Results:

1. Effect of Trial on symptoms of Group-A

Symptoms	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	*"t"* Value	P Value
		BT	AT						
Pain	04	1.50	0.75	0.75	50.0/0	0.5	0.25	03	>.05
Size of piles	10	1.4	0.9	0.5	35.7	0.527	0.166	03	<.02
Bleeding	10	1.7	0.6	1.1	64.7	0.567	0.17	6.12	<0.001
Agnimandya	10	1.6	0.5	1.1	68.7	0.567	0.214	5.12	<0.001
Constipation	10	1.8	0.7	1.1	61.1	0.875	0.27	3.97	<0.01

Effect of Trial on Pain of Groups B & C

Groups	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	*"t"* Value	P Value
		BT	AT						
B	05	1.2	1.4	-0.2	-66.6	0.91	0.29	-2.75	>0.05
C	06	1.16	0.66	0.50	42.8	0.547	0.22	2.23	>0.05

Effect of Trial on sphincter spasm of Groups B & C

Groups	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	*"t"* Value	P Value
		BT	AT						
B	06	1.16	1.20	-.04	-42.8	0.849	0.269	-1.86	>0.05
C	10	2.4	01	1.4	58.3	0966.	0.305	4.58	<0.01

Effect of Trial on Retention of urine of Groups B&C

Groups	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	*"t"* Value	P Value
		BT	AT						
B	7	1.42	1.3	0.12	- 21	0.823	0.26	- 1.15	>0.05
C	10	2.6	01	1.6	61.53	1.344	0.426	3.74	<0.01

Effect of Trial on Bleeding of Groups B&C

Groups	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	*"t"* Value	P Value
		BT	AT						
B	8	1.37	1.5	-0.13	- 29	0.966	0.30	-1.3	>0.05
C	10	1.9	0.3	1.6	84.2	0.516	0.163	9.79	<0.001

Effect of Trial on Constipation of Groups B&C

Groups	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	*"t"* Value	P Value
		BT	AT						
B	10	1.6	1.8	- 0.2	- 12.5	0.78	0.249	-0.80	>0.05
C	10	2.1	1.7	0.4	66.6	0.516	0.163	8.75	<0.001

Discussion:

Discussion On Observation

Incidence of age: –

The age incidence of the maximum extent 46.66% was found in age group of 51-61. Next age group of maximum percentage is 29 –39 years and their percentage is 20%.

Incidence of haemmorridal patients increases with advancing age. 40 year of age is more favarable. These findings supports the Gass and Aclam (1950), Hughes (1957), Thomson (1975)

theory. According to them, the haemmorridal formation increases with advancing age due to sliding down of the part of the lining of anal canal as a result of stretching fragmentation of muscularis sub-mucosea ani.

Incidence of sex:-

The maximum number of registered patients were male i.e., 76.66%. according to carman and Veidenheimer (1973) and Goligher (1984), the disease commonly affecting both genders of all age group. So, it should be common in both genders. But in present study the percentage of female was 23.33% probably due to the operation phobia and of their shy character. Males are generally more affected because of lifestyl and nature of work.

Incidence of Religion:-

Data reveals that maximum number of patients attending the O.P.D. /I.P.D. were Hindu ,(96.66%). There is no specific relation between the religion and the disease. So, it may be due to the predominance of Hindu community in the study area. To draw any interference further extensive study is needed in large number of patients of different communities.

Incidence of Occupation:-

Maximum number of cases 30% were businessman following by labour and serviceman respectively. This finding suggests that the person who were taking inappropriate and irregular diet and the sedentary life style were more prone to this disease.

Incidence of Dietary Habits:–

The present study revealed that maximum patients were practiced to vegetarian diet (60%) while (40%) patients were habituated to mixed diet. though 60% are vegetarian incidence can be more due spicy foods and fast foods.

Incidence of Nature of Diet:-

Maximum number of cases (70%) were practiced to spicy diet and only (30%) were practiced to non-spicy diet. spicy diet itself is cause of Arsha as it leads to Agnimandya.

Incidence of Nature of work:–

Maximum number of cases i.e., (70%) were doing sedentary jobs. This suggests that sedentary life style are prone to the development of internal haemmorrids. Sedentary life style leads to constipation, Agnimandya, which are causative factors for Arsha.

Incidence of Bowel Habit:-

Constipation and irregular bowel habit were found in (76.66%) and 20% of cases respectively. Irregular bowel habits is it cause of Arsha.

Incidence of kostha:-

Maximum i.e. 43.3300% patients were having Krura Kostha and 23.33% patients were having Madhyam Kostha & 33.33% was mirdu kostha,This is also the most important cause for occurrence of this disease. In Krura Koshtha patient, evacuation of Mala is always hampered so it leads to accumulation of faecal matter in rectum region which in turn lead to pressure on valve less rectal veins.

Incidence of Chronicity:-

Chronicity were distribution reveals that maximum number of patients came for the treatment after 1 years and 2-4 years and their percentage were (70%) and (13.33%) respectively.

This shows that this disease at the initial stage doesn't produce much discomfort to the patients. so, they ignore to take medical advices at the period, but when the disease progress and the condition become worse, they switch over to the anorectal clinic.

Incidence of Position of Pile type:-

On the basis of inclusion criteria the patients with internal pile mass were only considered for the clinical study and it was found that (83.33%) had internal and (6.66%) patients were belonged top inter-external and 10% external types of pile mass.

Incidence of position of Pile Mass:-

Pile mass was maximum found at the position of 3, 7, 11 O'clock position in all cases. This arrangement of piles is due to the difference in the termination of right and left main branches of the main superior rectal artery. The left branch containing essentially as a single vessels while the right branch splits into an anterior and posterior branch. Consequently when the associated radicals

of the superior rectal vein become varicose two sets of haemmorrids form on the right side but only on the left side (miles, 1939).

Incidence of Degree of Pile Mass:-

Maximum number of patients (36.66%) had 3rd degree pile mass and (26.66%) were of 4th degree and 23.33% were of 2nd degree pile mass.

According to Bailey and Love there are 3 degree of pile mass. Thomson 1975, Gass and Adam 1950, Hughes 1957 and Patey 1972 suggested that the anal canal, sub mucous muscularis ani. Corpoea cavernosa and abnormal sphincter tone are responsible for the determination of degree of pile mass.

Incidence of Sphincter Tone:-

Abnormal sphincter tone were noted in (70%) patients. it is well established by Hancock and Smith (1975),, Arabi et.al., (1977) and Ball (1908) that the abnormal tone is responsible for the formation of haemmorrids.

Incidence of Previous Treatment:-

Data of previous treatment taken by the patients showed that 60% had taken conservation management and 16.66% patients had taken haemmorridectomy.

This shows, unless the primary aetiological factor i.e. Agnimandya, constipation etc. of Arshas remains in the body, there will be chance of recurrence.

Discussion On Results

Effects of Drug on Consistency of Stool (Constipation):-

In Group C (ksharasutra + Pranda Gutika before and after) there was reduction in constipation that was p< 0.001 (highly significant) while in Group B (only Ksharasutra) there was increase in constipation that was insignificant but comparitively there was increased chances of constipation. In Group A wheere only Pranda Gutika was given, highly significant reduction in constipation was there but comparatievly less as Group C. this shows that preparation has good effect on reducing constipation.

Effect of Drug on appetite:-

In Group A &C there was increase in appetite that was highly significant. in Group B where only(ksharasutra ligation was there) there was loss of appetite. So this suggests that intervention of Pranda Gutika a before and after ksharasutra ligation is more effective.

Effect of Drug on Agnimandya:-

The drug has positive effect on Mandagni as soon by comparative study of groups as highly significant result was found in group a where shad Pranda Gutika was given before and after of kshar sutra ligation. It can be explain on the basis of digestive, carminative, and appetizing effect of drug.

Effect of Drug on Pain:-

In Group A there was reduction of pain that was highly significant. In Group B where only (Ksharasutra ligation was there) there was increase in pain that was highly significant, In Group C where reduction in pain. This suggests that drug has total effect in reduction in flatulence, discomfort which ultimately reduces pain.

Effect of Drug on Bleeding:-

In Group A there was reduction in bleeding that was (p< 0.001) highly significant. In Group B there was increase in bleeding that was also highly significant while in Group C bleeding has decreased.

Effect of Drug on Flatulence

In Group A were administration of Pranda Gutika physicalp was there along with ksharasutra before and after there was maximum relief in flatulance, which shows that this preparation is highly effective for flatulence.

Effect of Drug on Discomfort

In Group C (ksharasutra + Pranda Gutika a before and after) there was reduction in discomfort that was highly significant .in Group B there was increase in discomfort, in Group C comparatively there was decrease in discomfort that was effectively.

Effect of Drug on swelling

In Group C there was decrease in swelling that was highly significant, In Group B there was increase in swelling, while in Group C there was

decrease in swelling which suggests that intervention of drug before and after of Ksharasutra Ligation is more effective.

Post operatiove complications of Ksharasutra Ligation:

In Group C there was reduction in ***pain*** after Ksharasutra ligation while Group B has shown increase in pain this was due to the ***sphincter spasm*** caused by standard Ksharasutra ligation. Due to the fear of pain, the patient usually tries to avoid the natural urges of motion resulting in ***constipation.*** So, the constipation was observed in Group B more p> 0.1, insignificant and in Group C it was reduced that was highly significant.

The Kshara (Caustic material) present in standard Ksharasutra causes anal irritation in Group B more but less in Group C this anal irritation may cause inflammation in the surrounding area of plicated pile mass and it was observed that patients of Group B suffered more from this. This swelling may cause urethral stricture and affects prostate, resulting in ***retention of urine***.

Bleeding per anum was also noticed in Group B patients. It is clear from above data that Group C shows less post operative complications after Ksharasutra ligation in comparison to Group B because of the effect of trial drug.

Discussion on Cutting time:-

The average cutting time of plicate pile mass of Group B was 6.7 days, while in Group C, it was 6.2 days. This suggests that the trial medicine had some effect on cutting time of plicate pile mass. Pile mass is cut early as there is less bleeding less slough less spasm all these factors contributed to early cutting of pile.

Discussion on Healing Time:-

The average healing time of Group B was observed on 6.2 and in Group C it was on 6.1 days. From this result one can conclude that less post operative complications may results in early healing of wound.

Discussion on the action of drugs

1. **Nagra:** Shunthi is carminative, digestive and it removes constipation (B. P.).Fresh Ginger is relishing, appetizer, aphrodisiac. it is given in constipation (ch.su.27/166). It also possesses anti–oxidant property. It is reported to contain an antihistaminic factor. it is antidepressant (wealth of India).

2. **Pippali:** *Rogaghnata :* Aruchi, Agnimandya, Gulma, Yakrutroga, Krimi, Raktavikara, Kasa, Shwasa, Hikka, Kustha.

   Karma : Deepaniya MahaKashya (Ch.su.), ShoolPrasmna MahaKashya (Ch.su.) Raktashodhaka, Mootral, mild laxative,liver stimulant, Vatanulomana.

3. **Marich:** Kapha-Vatajanya Vikara, Ajirna, Yakritavikara. Vata Kaphashamaka, Lekhana, Deepaniya MahaKashya (Ch.su.), Pachana, Srotoshodhana.

4. **Chavya:** Thermogenic,appetizer, Digestive, Carminative, Expectorant, Stomachic. Arshoghana, Deepaniya Mahakashya, Shoolprashmana (Ch.Su). Hepatic stimulant . Vibandhanahashool prashamana (Su.Sut.)

   It is used in digestive troubles,haemorrhoids and after parturition.preliminary pharmacological experiments indicate the presence of a smooth muscle relaxant active principle in the stem (wealth of India). Probably this helps to remove the hypertonicity og the anal sphincters.

5. **Dalchini:**Vedanasthapana, Deepana, Pachana, Vatanulomana, Raktasodhana liver stimulant .

6. **Ela:** Rochana, Deepana, Pachana, Anulomana, Kaphanissaraka, Balya Bronchodilator, Expectorant, Digestive and Anti microbial.

7. **Talis Patra:** The drug Talis is aromatic, appetizer, expectorant and laxative. It is used in cough, bronchitis and asthma. It checks anorexia, constipation and nausea. It is much used for haemorrhagic conditions.it is used in ailment of digestive system. The drug is recommended to be useful in aruchi, agnimandya, adhamana and gulma roga, Sothhar.

   Talis is useful in general debility and promoting dhatvagni.it checks vomiting> Chedana-slesmhara > Javraghana

   > Dhatvagnivardhaka > Vedanaasthapana

   > Dipana-vatanulomna

8. **Ushira:** *Tikta, Madhura Ruksha, Laghu Sheeta Katu KP*? RaktaShakandna Raktpita Prasmana

9. **Khash**:

9. **Nagkeshara:** Powder of Nagkeshara is an excellent drug for checking haemorrhage, Regular use of Nagkeshara cures bleeding piles. Both mesuol and mesuone show antibacterial activity against micrococcus pyogenes var. aureus, E.coli, Ebertella typhosa, V. cholerae Bacillus friedlanderi and mycobacterium phlei. The essential oil from stamen showed antifungal activity against C.trepicalis. Arshoghana Raktani(Ch.su.).

10. **Guda:** vatapitta nashaka, Vatanulomka

> Virshya > Mutra-shodhana

> Agni Vardhaka > pushtivardhaka

So we see that all the ingredients of Pranda Gutika have some common properties. They are appetizer, digestive, pain killer, bowel regulator and property to stop bleeding.

Conclusion:

- Arsha is a problem related to age and dietary factors. It is a very terrible condition; Patient is avoiding defecation because of every morning become painful with bleeding per rectum. Patients become very anxious after looking of pan full with blood. Based on its symptomatology it can be correlated with haemorrhoids.
- Arsha as delineated in the classics comes under the heading of Mahagadas. It appears at Guda region which is Sadyapr?nahara Marma.
- In humans, the erect position results in very high pressure on the valve less rectal venous plexus which make humans prone to this disease.
- It is estimated that 50% of the population above the age of fifty have the minimal or significant piles.
- Vitiation of Apana Vayu is the main factor to produce this disease but other causative factors also play much more role in the disease formation like Vegavidharana, Ati Usna-Tiksna and Mamsa Ahara, Utkuttasana etc.
- Now a day's fast food, irregularity in food taking, working in siting position for long time and stressful life also play a major role in formation of haemorrhoids.
- Kshara sutra ligation is very effective treatment for haemorrhoids, but there are many complication associated with swelling, pain, bleeding, retention of urine, constipation etc. so this therapy has lots of post operative complication.
- Very less post operative complication were observed in the treated group where Deepana-Pachana and Vatanulomaka yoga was used.

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Clinical Study

A Clinical Study on the Efficacy of a Herbal formulation in *Madhumeha* (Diabetes Mellitus) w.s.r. to its Hypoglycaemic Effect

** Dr. Shefali, ** Dr. K. Govardhan*

Abstract

Madhumeha (Diabetes Mellitus) is non communicable fastest growing global pandemic and India is having maximum number of diabetics worldwide.

The present study was single blind single group study with pretest and post test design. The study was undertaken to assess the efficacy of herbal formulation in Management of Madhumeha (Diabetes Mellitus) w.s.r. to its Hypoglycaemic effect. The study drug in current project was found highly effective in reducing Hyperglycaemia.

सारांश –

मधुमेह विश्वव्यापी स्तर पर तेजी से फैल रही अंसचारी व्याधि है व पूरे विश्व में भारत में इसके रोगी सबसे ज्यादा है।

प्रस्तुत अध्ययन में एक समूह में रोगियों को एक कल्पित औषध योग दिया गया। इस अध्ययन का मुख्य उद्देश्य औषधि का रोग पर चिकित्सात्मक प्रभाव विशेषत: रक्तगत शर्करा को कम करने में कार्मुकता को देखना था। शोध में परिणाम उत्साहजनक पाए गए।

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Prologue

Madhumeha is Vatik Prameha where a patient voids excess quantity of urine having Madhura Rasa, Kashaya Varna, Ruksha Sparsha & Pandu Varna. It is considered as Mahagada and best among Anushangis (Continuosly afflicting). The disease is described in detail in contemporary literature ranging from Vedik to present times thereby indicating its prevalence in every era. Enough evidences are available in Ayurveda and modern medical sciences which justify the correlation of Madhumeha to Diabetes mellitius. The genetic nature, overeating and underactivity etc. are endorsed as basic aetiological events in both Ayurvedic and modern perspective.

The disease Madhumeha has gained prime importance clinically due to its high prevalence globally, progressive preservation, severe complications and fatal outcome. Diabetes poses a major public health problem globally and is one of the top five leading causes of death in most of the developed and developing countries. The changes in environment and lifestyle interact multiple and yet poorly understood genetic factors that predispose susceptible persons to what has been called the dual epidemic of obesity and diabetes. Moreover because of chronic nature of disease it becomes one of the most expensive disease placing tremendous financial burden on patients as well as health care systems of Governments.

During present times research in Diabetes has increased considerably and has led to much improved understanding of pathophysiology of the disease. Dozens of clinical trials involving hundreds of investigators are already being conducted and are still continuing in the Ayurvedic and modern system of medicine which have made huge contributions to our understanding of both pathophysiology and treatment of diabetes. .Type 2 Diabetes Mellitus is a real epidemic all over the world and there is no sign that it is abating. Two third of world's diabetic persons live in developing world, predominantly in Asia.Type2 Diabetes Mellitus accounts for more than 90% of all cases. By 2030 there are likely to be 366 million diabetic patients globally. India will be having dubious honour of being capital of diabetics in the world by possessing 74.9 million diabetics by 2030

Considering the above facts present trial was conducted in search of safe and effective remedy for Madhumeha with Herbal drugs.

In ayurveda 'Madhumeha' is considered as one of the types of Vataj Prameha, disease of vitiated vata and kapha dosha and dhatvagnimandya is prime factor in madhumeha. Aacharya charaka has used the term *"bahudrava shleshma tatha avabadha meda"* in the description of Prameha and dushyas involved in it are mainly meda , mamsa, kleda, sukra, shonit, vasa, majja, etc. are all kapha vargiya.so ideally such drugs should be used in its treatment which are agnideepan properties and should pacify the effects of aggravated dosha like katu, tikta, kashaya, ruksha dravyas. Drugs chosen in the proposed kalpita herbal formulation bear all qualities and actions.

Aims & Objectives

The aim of the present research work is to evaluate the efficacy of an Herbal formulation in Madhumeha w.s.r. to its hypoglycaemic effect which is safe, economical, easily assessable and devoid of any side effects.

Materials & Methods

Selection of patients:

63 patients for therapeutic drug trial were registered on the basis of clinical history of

Madhumeha from OPD of hospitals (Seth Surajmal Bombaywala hospital, Aarogyashala, Sattelite hospital) and from diabetic camp held in the institute during WAC (World Ayurveda Congress) held from Dec 16-21, 2008. Out of 63 registered cases 50 patients completed trial and 13 dropped out . The patients were selected randomly irrespective of their sex, religion, socioeconomic status etc.

Inclusion criteria

- Diagnosed cases of type 2 diabetes mellitus
- Patients presenting with cardinal features of Madhumeha e.g. "Prabhoot aavil mutrata" etc. with FBS greater than 126 mg/dl
- Patients with mild hypertension (up to 140/90 mm Hg blood pressure) in uncomplicated Diabetes were included.
- Age- 20-70 yrs.
- Sexes- both

Exclusion criteria

- Patients of IDDM (Insulin dependent diabetes Mellitus)
- Patients with type 2 diabetes on insulin therapy
- Patients with serious co morbid disease like Tuberculosis etc.
- Patients taking drugs interfering with glucose insulin homeostasis like steroids, tricyclic antidepressants
- Patients presenting with complications of diabetes like diabetic foot, diabetic nephropathy, diabetic neuropathy etc.
- Patients taking drugs which affect weight like sibutramine, orlistat etc
- Other associated endocrine abnormalities like hypothyroidism, hyperthyroidism etc.

Laboratory investigations

- Hematological investigations like Hb, TLC, DLC and ESR were done
- Routine and microscopic examination of urine & fasting urine sugar (FUS) and postprandial Urine sugar (PPUS) were performed.
- Bio chemical examination – Fasting blood sugar, Postprandial blood sugar, glycated Hb

All investigations were done before and after trial period

Design of study: A single blind clinical study with pretest and postest design

Intervention: Oral administration of proposed herbal formulation in powder form in a dose of 5 gm empty stomach, twice daily with lukewarm water for 1 month.

Contents of drug:

S.No.	Herb	Botanical name	Parts used
1.	Neem	Azadrictha indica	Leaves
2.	Karela	Momordica charantia	Fruit
3.	Karira	Capparis deciduas	Fruit
4.	Daana Methi	Trigonella foenumgracecum	Seeds
5.	Haridra	Curcuma longa	Rhizome
6.	Asana	Pterocarpus marsupium	Heartwood
7.	Aamla	Embilica officianalis	Fruit

Method of Preparation

- The individual drugs were mixed and subjected to size reduction in a pulverizer to get crude powder
- The crude powder was then given bhavana with Asana decoction two times
- Medicated powder was fully dried and then packed in small polybags

Anupana- Ushnodak (lukewarm water)

Demographic profile: All registered cases for present trial were worked out for demographic profile in terms of their age, sex, occupation, marital status, socioeconomic status and dietary habits etc.

Assessment Criteria

1. Subjective improvement: All the patients under trial were specifically asked for any changes or improvement in their growing feeling of well being either physically or mentally and their clinical manifestations produced by the drug under trial.

2. Clinical improvement: For the assessment of clinical improvement the patients were assessed on symptomatic rating scale for various symptomatic relief like *Prabhuta mutrata, Avila Mutrata, Kshudha adhikya, Pipasadhikya, Atisweda, Janang kandu Karapada daha* and *supti* etc.Incidence of presenting features was worked out and severity of symptoms were rated in score pattern ranging from 0-4.

3. Laboratory investigations: Changes in various lab parameters like FBS, PPBS, GHb, FUS, PPUS were also worked out before and after the trial.

4. Physiological parameters: Body weight, BMI (Body mass index), Pulse rate and blood pressure were also assessed before and after treatment.

Observations:

Out of 63 patients Maximum no. of patients were observed in 4th decade (41-50) yrs.(34.9%) followed by 31.7% in 5th decade, Maximum no of patients were male(66.6%) while 49.2% were female. (85.7%) of patients were hindus, 92% patients were married, majority were graduates (36%). Highest no. of patients were from upper middle class (47.4%) .Most of the patients were pure vegetarians (74.6%) and 42.8% (27 patients) revealed positive family history.

Table1:
Depicting Relative incidence of various symptoms (lakshanas) seen in Madhumeha in present study (N= 63)

Sr.No.	Symptoms	No. of Patients	% age
1.	Prabhotamutrata (Polyuria)	43	68
2.	Avilmutrata (Turbidity in urine	44	70
3.	Pipasadhikya (Polydipsia)	50	79
4.	Kshudhaadhikya (Polyphagia)	35	56
5.	Atisweda(Excess Sweating)	44	70
6.	Hast Pada & Sandhi shoola (Pains in hands, feet and joints)	53	84
7.	Klama(Early fatigue)	59	94
8.	Mukha Shosha (Dryness of mouth)	38	60
9.	Aalasya(Lassitude)	44	70
10.	Vibandha(Constipation)	38	60
11.	Karpadatala daha(Burning sensation in hands & feet)	15	24
12.	Aasya madhuryam(Sweetness in mouth)	23	36
13.	Karapada supti (Numbness in hands & feet)	45	72
14.	Jannang Kandu(Genital pruritus)	40	64

From above table, it is evident that clinically most endorsed symptom was Klama (early fatigue) present in 94% of patients (59), followed by Hastapada & Sandhi shula Shoola (Pain in hands,feet and joints)in 84% of patients (53) Pipasadhikya (Polydipsia) in79% of patients (50) while approx. equal %age is seen in case of Aalasya(Lassitude) Atisweda(excess Sweating) and Avilmutrata (turbidity in urine i.e. 70%, Karapada supti (numbness in hands & feet) (72%), Prabhotamutrata (polyuria) (68%) Jannang Kandu(Genital pruritus) In (64%), Mukha shosha (Dryness of mouth) and Vibandha(Constipation) (60%) each followed by Kshudhaadhikya (Polyphagia) in 56% of patients while least no of patients were observed in Aasyam madhuryam (36%) and Karpadatala daha(Burning sensation in hands & feet) (24%) respectively.

Table2 : Showing pattern of symptomatic improvement after therapy in patients.

Symptoms	Mean				SD	SE	*"t"*	P
	BT	AT	Diff.	%	±	±	Value	Value
Prabhotamutrata (Polyuria)	2.26	0.65	1.62	71.43%	0.78	0.13	12.11	< 0.001
Avilmutrata (Avil mutrata)	2.19	0.89	1.36	60.49%	0.72	0.12	11.29	< 0.001
Pipasadhikya (Excess thirst)	2.16	1.05	1.11	51.22%	0.80	0.13	8.53	< 0.001
Kshudhadhikya (Polyphagia)	2.50	1.27	1.23	49.33%	0.77	0.14	8.73	< 0.001
Ati sweda (Sweating)	1.62	1.00	0.62	38.18%	0.95	0.16	3.78	< 0.001
Sarvaang shoola (generalised body pains)	2.53	1.08	1.45	57.43%	1.08	0.17	8.45	< 0.001
Klama (early fatigue)	1.89	0.73	1.16	61.18%	0.71	0.11	10.98	< 0.001
Mukha shosha	1.43	0.73	0.70	48.84%	1.06	0.19	3.63	< 0.001
(Dryness of mouth)								
Alasya (Lassitude)	1.97	0.79	1.18	59.70%	0.63	0.11	10.95	< 0.001
Vibandh (Constipation)	1.74	0.82	0.92	53.03%	0.49	0.08	11.67	< 0.001
Karapada tala daha (Burning	1.97	1.03	0.93	47.46%	0.52	0.10	9.82	< 0.001
sensation in hands and feet)								
Mukhamadhurya (Sweetness in mouth)	2.25	1.08	1.17	51.85%	1.40	0.41	2.88	< 0.025
Jananang Kandu (Genital Pruritis)	2.22	1.00	1.22	55.00%	3.00	0.50	2.45	< 0.025
Kara pada tala supti (Numbness in hands & feet)	1.66	1.16	0.50	30.19%	1.11	0.20	2.55	< 0.025

Table No.3
Showing pattern of changes in certain laboratory parameters in 50 patients after therapy:

Lab investigation	Mean				SD	SE	*"t"*	P
	BT	AT	Diff.	%	±	±	Value	Value
Fasting Blood Sugar	181.022	145.49	35.53	19.63%	33.95	4.80	7.40	< 0.001
Post Prandial Sugar	246.792	196.06	50.73	20.55%	50.84	7.19	7.05	< 0.001
GHB	8.29	8.13	0.16	1.93%	0.57	0.08	1.94	<0.1
Fasting Urine Sugar	0.48	0.12	0.36	75.00%	0.60	0.08	4.26	< 0.001
Post Prandial Urine Sugar	1.44	0.54	0.90	62.50%	0.91	0.13	7.00	< 0.001
HB gm%	13.514	13.89	0.32	2.36%	0.78	0.11	-3.88	< 0.01
ESR	21.38	17.84	3.54	16.56%	14.61	1.33	2.02	> 0.1
TLC	6666	6528.00	138.00	2.07%	853.06	120.64	1.14	> 0.1
Polymorph	62.78	61.48	1.30	2.07%	5.97	0.84	1.54	> 0.1
Leucocytes	28.188	29.30	-1.11	-3.94%	5.70	0.81	-1.38	> 0.1

Table No.4 showing pattern of physiological changes in 50 patients after therapy

Physiological parameters	Mean				SD	SE	*"t"*	P
	BT	AT	Diff.	%	±	±	Value	Value
Body Wt. (Kg)	72.8	72.09	0.71	0.98%	1.15	0.20	2.47	< 0.001
BMI (Body mass index)	27.37	27.11	0.26	0.96%	0.530155	0.074975	2.437951	< 0.001
Pulse (per minute)	78.44	78.02	0.42	0.54%	4.06	0.57	0.73	< 0.1
Systolic blood pressure (in mm Hg)	123.72	122.12	1.60	1.29%	6.34	0.90	1.79	< 0.1
Diastolic Bl ood Pressure (in mm Hg)	79.92	78.64	1.28	1.60%	5.39	0.76	1.68	< 0.1

Discussion

- From table no 2 it is evident that 71.43% reduction was observed in Prabhuta mutrata. Aavil mutrata showed reduction of 60.49 % which are statistically highly significant (p<0.01). Pipasaadhikya and Kshudha adhikya showed 51.22% &49.33% reduction respectively which are statistically significant. (p<.010). *Atisweda, Sarvaang shoola, Klama, Aalasya, Vibandh* revealed reductions of 38.18%, 57.43%, 61.18 %, 48.84%, 59.70% and 53.03% respectively. All are statistically highly significant at p<.001. Mukha shosha and Kara pada daha revealed reduction of 48.84%., 47.6% respectively which are statistically highly significant. Karapada supti and Mukha madhurya and jannang Kandu revealed percentage reductions of 30.19%, 51.85% and 55% respectively which are statistically significant.
- From Table No 3 it is reveled that **19.63%** reduction is there after therapy in FBS (Fasting Blood Sugar) while **20.55%** reduction is seen in PPBS (Post Prandial Blood Sugar) which are statistically highly significant. Statistically highly significant results are obtained in urine sugar with reduction in FUS (Fasting urine sugar) of

75% and in PPUS (Post Prandial Urine Sugar) 62.5%. Change in GHb (Glycated Heamoglobin) value after therapy is 1.93% which is statistically insignificant, Statistically significant results are obtained in haemoglobin changes i.e. increment of 2.365 is seen. ESR. TLC and DLC revealed statistically insignificant results.

- Table no. shows Body weight and BMI both revealed statistically highly significant reduction at $p<0.001$ though percentage improvement was 0.98% and 0.96% respectively. Statistically insignificant results were obtained in Pulse rate and blood pressure i.e. present therapy does not bear marked affect on blood pressure and pulse rate of patients.

Probable Mode of action of drug

Prime aetiopathological event in triggering samprapti of Apathyanimittaja Prameha is annexation of Avabhadda meda and Bahudrava shleshma. Due to Kaphavardhak Aahar Vihar sevan for prolonged periods Jatharagnimandya ensues owing to which aamrupi kapha is formed which is devoid of its normal saghanata and becomes bahudrava which is pathological to body. The increased bahudravata in body can be alleviated by consumption of Ruksha, Laghu guna pradhana Aaushdhis. As per the description available in ayurvedic classics , therapeutic effect of drug depends upon certain pharmacodynamic properties of its particular content. These pharmacodynamic properties are *rasa, guna, virya, Vipaka* etc.

Most of the drugs used in this herbal formulation have *Tikta, katu, kashaya rasa, katu Vipaka, laghu, ruksha* & *tikshna Guna Pradhana aoshdhi* may easily disintegerates the samprapti of Madhumeha. Jatharagni mandya is present in madhumeha and katu, tikta rasa present in it may act in vardhana of agni. Kashaya rasa is present up to 28.57% which produces Mutrasamgrahniya prabhava. Tikta, Kashaya rasa present in this formulation produces Shoshana effect. Hence the Prabhoota mutrata of Prameha tend to regress.

When predominant Guna in present research drug are assessed it becomes evident that most of the drugs possess Laghu, Ruksha Guna (i.e. up to 57.1%). Ruksha guna helps in alleviation of Bahudrava shleshma and Avbhadda meda, the annexation of two being initial triggering event in samprapti of disease. Ruksha and laghu guna helps in obstruction of vata by kapha, medas as kapha here is aarambhak dosha and vata is preraka dosha. Laghu and ruksha guna by virtue of their kaphaghana and medoghana prabhava help in reducing tissue weight. Now it can be suspected that kashaya rasa, laghu ruksha guna like properties can further aggravate vitiated vata dosha in madhumeha . In this context it is proposed that here it is obstructed vata (primarily by kapha & medas) which is causing trouble; vata here may not be increased quantity wise in body , only obstruction is there in its natural passages which can be alleviated by kapha hara, medohara drugs.

Further the role of certain drugs in Madhumeha has been proven clinically in various clinical trials like the pure protein termed as P-insulin extracted from fruits of M. charantia have been shown to exert antihyperglycemic effect (CCRAS database on med.plants, vol.)while in another study it was concluded that MC augments hypoglycaemic action of Rosiglitazone (Pubmed.com); 4- hydroxyl leucine, a AA from feengureek seeds increases glucose stimulated insulin release by isolated islet beta cells in both rats and humans (Pubmedcentral.nih.gov. (J.Clin.Biochem.Nutri) Assessed on 18-5-09. Pterostilibine, a constituent derived from wood of this plant caused hypoglycaemia in dogs. Flavinoid fraction from from wood of this plant has been shown to cause beta cell regranulation .Marsupin , pteroserpin, liquirtigenin obtained from plant showed antihyperlilpideamic activity.Epicatechin its active principle has been found to be insulogenic, enhancing insulin release and conversion of proinsulin to insulin in vitro (Pubmedcentral.nih.gov). Aqueus extract of Azadrictha indica decreased the blood sugar levels and prevented adrenaline ijnduced hyperglycaemia in dogs thus showing hypoglycaemic and antihyperglycemic effects. (Satyanarayan murty 1978) (Leaf. Com) Accessed on 12-06-2008

In the compound majority of drugs are found to have *ushana virya*. *Upadhaya* . et. al in 1979 at BHU, Varanasi has proved that substance having Ushana Virya is accountable for breakdown of fat at mitochondrial level. Meda is invariably involved in pathogenisis of disease. According to Ayurveda principles Ushana virya helps in alleviation of Kapha and vata.

As far as vipaka is concerned katu vipaka enhances jatharagni, dhatvagni and normalize metabolic process. Sheeta virya and Madhura vipaka helps in replenishment of ojus which become depleted with disease progression owing to continued exposure of body to vitiated |vata. The drugs in compound formulation also possess vayasthapana, Chakshushya, rasayan, Vrishya, grahi, Lekhana, deepana and pachana properties.

It has been clear from above account that proposed herbal formulation can well disintegerate Samprapti of madhumeha by acting at various levels i.e. alleviating dhatvagnimandya owing to presence of certain deepana pachana drugs in it like methika, Karvelleka and rukshata and laghuta present in drug will combat increased kapha and meda which similitude in their properties. Aamalki and Vijaysara are two drugs which are known to exert rasayan prabhava too thereby causing oja vardhana which is being depleted in body of madhumehi owing to chronic exposure to vata in body.

Conclusions

- The disease Madhumeha is well documented in all perennial sources of Ayurvedic wisdom.
- Madhumeha has been discussed in Prameha roga as one of the vataj Prameha .Literary evidences prove its modern correlate as diabetes mellitus
- Madhumeha mostly affects individuals in 4th and 5th decade of life with slight male preponderance.Prevalence is seen more in married..
- As every sort of *Prameha* (20 types) bear every possibility to terminate ultimately into madhumeha if left untreated so general aetiopathological factors,purvapupa etc can well be appreciated for Madhumeha too.
- The study confirms that herbal formulation (containing 7 herbs) is effective in management of Madhumeha and definetly reduces all the symptoms of illness that includes *Prabhoota mutrata, Avila Mutrata, Kshudhaadhikya, Pipasaadhikya,Atisweda, Daurbalya, Klama, Karapadatal daha, Karapada supti, Ati nidra, Aalasya,Mukha madhurya* and *Jannang kandu.*
- The chosen drug was effective in reducing blood sugar both fasting and postprandial; and urine sugar (both fasting and postprandial)
- All the patients tolerated medicines very well and no side effects were reported by any of the patients, suggesting there by that the drugs selected for current clinical trial are absolutely safe for internal use.

After overall scrutiny, it can be concluded that the proposed herbal formulation in current research exerts significant hypoglycaemic activity and can be given safely in patients of Madhumeha.

Suggestions

- The study should be carried out for longer duration for better results.
- Higher investigations should be incorporated in the study like HOMA IR (Homeostatic Model assessment of Insulin Resistance) etc.

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Clinical Study

A Clinical Study to Evaluate The Efficacy of Leech Therapy and *Panchatikta Ghrita* in the Management of Psoriasis

*Dr. Sudha Rani, **Dr. Rekha Rani, ***Dr. M.K. Shringi

Abstract

In *Ayurveda* almost all skin diseases are considered under *Kushtha*. Psoriasis is one of the common skin problem encountered generally in OPD patients but also cause a lot of discomfort in daily life and also reduce their confident level. A clinical study is done to evaluate the effect of *Panchatikta ghrita* with Leech application. 30 patients were selected from OPD/IPD of NIA, Jaipur. They were divided in to 3 groups, Group A- treated with Only Leech therapy, Group B-treated with Only *Panchtikta Ghrita* and Group C-treated with both leech therapy and *Panchatikta Ghrita*. The end of study it was found that results were highly significant in group C (combined therapy).

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Clinical Study

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Dr. Sudha Rani, Dr. Rekha Rani, Dr. M.K. Shringi

INTRODUCTION

Skin is the first organ of the body interacting with the environmental agents like physical, chemical & biological agents. Variations in the environmental stimuli & natural ability of body to deal with these factors result in spontaneous remissions & relapses. Interaction with these factors results in specific reaction pattern producing characteristic skin lesions in different parts of the body. Skin is the envelope of our body expressing the harmony inside. Skin is a mirror that reflects internal & external pathology & thus helps in diagnosis of diseases.

Large community prevalence studies have demonstrated that between 20-30% of the population have various skin problems requiring attention. (***Davidson, 18th Ed***.) Skin complains affects all ages from the neonates to the elderly & cause harm in a number of ways, such as discomfort, disfigurement, disability, etc.

All type of the skin diseases in ancient Indian classics have been described under the broad heading of **'Kushtha'**, which are further divided into Maha Kushtha & Kshudra Kushtha. Kushtha runs as a chronic disease which is generally considered as difficult to cure & even if it is cured relapses is common. In Ayurvedic classics, all types of Kushtha have been described as '***Rakta Pradoshaja***' Vikara. It is difficult to say what psoriasis is in terms of Ayurveda. There is no disease in Ayurveda, which can exactly be correlated with Psoriasis. Acharyas having mentioned the Chikitsa as raktamokshana by Jalauka in Alpa doshayukta Kushtha (Ch.Chi. 7/52).

29 October - has officially been declared "World Psoriasis Day"

Psoriasis is one of the most common dermatologic diseases, affecting up to 2.5% of the world's population. In India an estimated 0.8% population is suffering from Psoriasis. It is a papulo-squamous disorder of the skin. It is a chronic inflammatory skin disorder clinically characterized by erythematosquamous, sharply demarcated papules and rounded plaques, covered by silvery micaceous scale. It is notoriously chronic and is well known for its course of remission and exacerbation. The exact etiology is still unknown. It tends to run in families and is precipitated by climate, Streptococcal infections, etc. Psoriasis appears to be largely a disorder of keratinization. Males & females are equally predisposed & all age groups are affected. Psychological stress is emphasized as one of the major triggering factor in the exacerbation of the disease. Modern medical science treats psoriasis with PUVA, corticosteroids and Anti mitotic drugs. But the therapy gives serious side effects like liver & kidney failure, bone marrow depletion etc. Hence it is the need of time to find out safe and effective medicine without any adverse effect for Psoriasis and here comes the role of Ayurveda. The unique treatment modality of Ayurveda provides long lasting results and a better life to patients through its three basic principles of treatment i.e. - Nidana parivarjana, Shamana and Shodhana.

Nowadays, whole world is gradually turning towards Ayurveda for safe and complete cure of diseases. Especially in the field of skin problems Ayurveda can contribute remarkably. Shodhana (bio-purification), Shamana (pacification) and Nidana Parivarjanam are main route of treatment for any disease. So, in the present study, Jalaukavacharana has been selected as Shodhana, Panchatikta ghrita has been selected as Shamana , Nidana Parivarjanam and Pathya- Apathya has been advised to the patients.

Leech Therapy is a unique Para surgical Procedure of various chronic, auto immune, degenerative disorders etc. According to Acharya Sushruta Leech Therapy is a type of Rakta mokshana for Pitta and Rakta Doshas and Rakta mokshana is a type of panchakarma which is a Shodhana Karma.

Acharya Charaka has highlighted the role of Panchakarma therapy by stating that the disease treated by Shodhana will never recur whereas the treatment with Shamana therapy may recur in due course of time (Ch.Su.16/20). In addition if Shamana drugs are administered after taking the proper course of Shodhana then it provides additional relief and thus helps in eradicating the diseases completely.

Raktamokshana is treatment of choice in the Rakta vitiation as Shodhana process. Again for proving the Ayurveda's great attitude, the study was carried out.

Aims and objectives-

1) To study Leech Therapy.
2) To assess the efficacy of Leech Therapy in the management of Psoriasis.
3) To assess the efficacy of Panchatikta Ghrita in the management of Psoriasis.
4) To compare the effect of Shodhana karma (Leech Application) and Shamana karma (Panchatikta Ghrita) in the patients of Psoriasis.

a. Material & Method- Subjects:30 patients were selected by keeping the signs and symptoms mentioned in modern Text for Psoriasis.

b. Source of Subjects: The patients suffering from Psoriasis attending the O.P.D./ I.P.D. section of N.I.A., Jaipur (Raj.), were randomly selected who fulfilling the inclusion and diagnostic criteria of study.

c. Sample size and Grouping: For clinical trial, A minimum sample of 30 patients with Psoriasis have equally distributed in three groups,

- **Group A** - Only Leech therapy in 10 patients.
- **Group B** - Only Panchtikta Ghrita in 10 patients.
- **Group C** - Both leech therapy and Panchatikta Ghrita in 10 patients.

d. Inclusion Criteria:

1) Patient aged between 16 to 60 years.
2) Patient willing to sign the consent form
3) Patient not taking any other medicine for Psoriasis.
4) Patient with classical symptoms of Psoriasis.
5) Patient is not suffering with any systemic disorders.

e. Exclusion Criteria:

1) Patient below the age 16 years and above 60 years.
2) Patient with leprosy, Tuberculosis, and Paralysis.
3) Pregnant women and lactating mother.
4) Patient with uncontrolled Hypertension/ Cardiac problem/ Diabetes mellitus/ any systemic disorders.

f. Investigations:

1) Routine blood examination as – Hb %, TLC, DLC, ESR.
2) Urine Examination – Routine and Microscopic
3) Other examination like B.P., Pulse, Weight. etc.

g. Diagnostic criteria :

Patients were diagnosed on the basis of sign and symptom of Psoriasis.

Patients were carefully examined both subjectively and objectively. Detailed history pertaining to the mode of onset, previous ailment, previous treatment history, family history, astavidhapareeksha, dashavidhapareeksha etc. and physical examination findings were maintain systemically. Routine investigations were done to exclude the other pathologies.

h. CRITERIA FOR ASSESSMENT :

1. Subjective criteria. –

It will be assessed mainly on the basis of improvement in sign and symptoms of Psoriasis like-

- Itching,
- Induration

2. Objective Criteria -

- Scaling,
- Erythema (Redness)
- Number of patches

Psoriasis Area Severity Index (PASI) is the most widely used tool for the measurement of severity of psoriasis. PASI combines the assessment of the severity of lesions and the area affected into a single score in the range 0 (no disease) to 72 (maximal disease).
*(**Reference**-www.skinandaging.com/article/5394)*

It is a commonly-used measure in clinical trials for psoriasis treatments. Typically, the PASI would be calculated before, during and after a treatment period in order to determine how well psoriasis responds to the treatment under test (a lower PASI means less psoriasis, generally). *(**Reference** -J. dermatol. sci. (Amst.), 2006, vol. 44, no. 1, str. 21-27.)*

PASI Score was considered as both subjective and objective parameters because it covers both subjective as Thickness (Induration) and objective parameters as Erythema (Redness), Scaling (Desquamation), and area of Skin.

Skin Sections: For the PASI, the body is divided into four sections. Head (H) (10% of a person's skin); arms (A) (20%); trunk (T) (30%); legs (L) (40%)). Each of these areas is scored by itself, and then the four scores are combined into the final PASI.

Area of skin involved: For each section, the percent of area of skin involved, is estimated and then transformed into a grade from 0 to 6:

Area involved	Grade
0%	0
< 10%	1
10-29%	2
30-49%	3
50-69%	4
70-89%	5
90-100%	6

Severity:

Within each area, the severity is estimated by three clinical signs: ***erythema***(redness), ***induration*** (thickness) and ***desquamation*** (scaling). Severity parameters are measured on a scale of 0 to 4, from none to maximum.

Severity	Score
None	0
Mild	1
Moderate	2
Severe	3
Very severe	4

The sum of all three severity parameters is than calculated for each section of skin, multiplied by the area score for that area and multiplied by weight of respective section (0.1 for head, 0.2 for arms, 0.3 for body and 0.4 for legs).

Skin sections	Severity Score*	Area Score	% of Skin Section	Total
Head	(E-head+I-head+D-head	x A-head	x 0.1	= Total head
Arms	(E-arms+I-arms+D-arms)	x A-arms	x 0.2	= Total arms
Trunk	(E- Trunk +I- Trunk +D-Trunk)	x A- trunk	x 0.3	= Total Trunk
Legs	(E-legs+I-legs+D-legs)	x A-legs	x 0.4	= Total legs

Finally, the PASI is Total-head+Total-arms+Total-Trunk+Total-legs.

{*__E__-Erythema (Redness), __I__-induration (thickness), __D__-desquamation (scaling)}.

The severity of PASI Parameters (Scaling, Erythema and Induration) and other parameters was assessed in the following manner.

1. Erythema (Redness)**:**

Score	Severity	Features
0	None	No Erythema
1	Mild	Patch with Reddish -white tinge
2	Moderate	Patch with Reddish tinge
3	Severe	Patch with dull red colour
4	Very severe	Patch with Bright Red in colour

2. Induration- Purely Subjective

3. Desquamation (scaling):

Score	Severity	Features
0	None	No Scaling
1	Mild	On scratching, scales settle in pits on nails
2	Moderate	If the scales falls on scratching
3	Severe	Scales founds on cloths without scratching
4	Very severe	Scaling found on bed without scratching

The Severity of itching was assessed in the following manner:

4. Itching:

Score	Severity	Features
0	None	No itching
1	Mild	Itching comes occasionally, Dose not disturb the mind duration 2-3min, Usually scratching is not required.
2	Moderate	Itching occurs frequently, Disturb mind last longer time, usally Scratching is required, recurs 3-4 times in 24 hrs
3	Severe	Itching occurs frequently, Disturb mind last longer time, Bleeding on scratching, recurs 3-4 times in 24 hrs.
4	Very severe	Itching occurs frequently, disturb Mind, last for 20-30 mins, scraching very essential, Bleeding on scratching, Recures 8-10 times in 24 hrs.

Administration of Drug and Treatment Schedule

- Duration of treating patients is three months.
- Dose of Panchatikta ghrita in the quantity of 1 TSF- B.D.
- Leech application is once in a week for three months.
- Two or three Leeches are applicable in the one setting of the patients.

I. Follow up Study:

After completion of the duration for administration of the drugs under trial patients were advised to report every fortnight for follow-up study, which was carried out for 1 months. During the follow up study, further improvement, deterioration,

or recurrence in the signs and symptoms were recorded.

Observation and Results-

Effect of Therapy-

Group A: In group A, mean percentage improvement of therapy on subjective and objective parameter was 45%. It is a mild improvement.

Group B: In group B, mean percentage improvement of therapy on subjective and objective parameter was 47%. It is a mild improvement.

Group C: In group C, mean percentage improvement of therapy on subjective and objective parameter was 65%. It is a moderate improvement.

By comparing the over all effect of treatment in this trial, it can be deduced that Group C i.e. combined group is better than individual groups i.e. Group A and Group B on both subjective and objective parameters. While Panchatikta Ghrita has given good results in comparison to Leech application group on both subjective and objective parameters.

Discussion-

- Keeping this as a view the discussion will be made on the following headings:

1. Literary Discussion
2. Drug Discussion
3. Clinical Discussion
4. Discussion on Results
5. Discussion on probable mode of action of the therapy.

1. LITERARY DISCUSSION:

The word *Kushtha* is a broad term used for all types of skin diseases. Kushtha is produced invariably by the vitiation of seven factors i.e. Doshas and Dushyas. *Kushtha* is always Tridoshaja in origin. Charaka opines at this context that most dominant symptoms of the Dosha should be tackled first and later the associated symptoms and their causative Doshas should be treated (Ch. Chi. 7/32). Chief place of etiopathogenesis, are Twak

(Adhisthana), Rakta (blood and lymph), Mamsa (deep cutaneous tissue) and Lasika (sweat gland apparatus). They have been included in Rakta Pradoshaj and Raktaja disorder.

According to Chakrapani, in Kshudra Kushtha, the symptoms are manifested in milder form as compare to Maha-Kushtha. Dalhana explained about the word 'Mahata' that is has the ability to penetrate to deeper Dhatus while the Kshudra Kushtha do not have ability to penetrate the deeper Dhatus. So when the manifestation of Kushtha roga are milder then it refer to Kshudra Kushtha but when the presentation of Kushtha are severe with generalized lesion, manifesting in a more severe form it is termed as Maha Kushtha.

Psoriasis is one of the most common dermatologic diseases, affecting up to 2.5% of the world's population. It is chronic inflammatory skin disorder clinically characterized by erythematous, sharply demarcated papules and round plaques, covered by silvery micaceous scale.

The aetiology of psoriasis is still poorly understood, but there is clearly a genetic component to psoriasis. Psoriatic lesions are characterized by infiltration of skin with activated T cells, which appear to have a role in the pathophysiology of psoriasis. The external factors may exacerbate psoriasis including infections, stress, trauma and medications (Lithium, Beta- blockers and antimalarials).

Despite of great advance in dermatology and the advent of potent antibiotics and antimitotic as well as steroids, Psoriasis continues to challenge the best effort of dermatologists.

Shodhana therapy is a specialty of Ayurveda and plays a key role as a preparatory procedure for further progressive treatment. In this process morbid Dosha the root cause of diseases are eliminated from main seat of lesion and thus the main cause of disease is eradicated. All the points have given an Impetus to review the problem Kushtha particularly, on the basis of Ayurvedic treatment. Describing the line of treatment, Charaka advised Sarpipanam, Vamana Karma and Virechana Karma with Raktamokshana for Vataja, Kaphaja and Pittaja Kushtha respectively.

It is difficult to say what psoriasis is in terms of Ayurveda. There is no disease in Ayurveda, which

can exactly be correlated with Psoriasis. Many research workers have tried to attribute psoriasis with one or other type of Kushtha. Max. Correlated it with Kitibha, Ekakushtha, Sidhma and Mandala Kushtha.

Charaka accepted as ***innumerable types*** due to depending upon the degree of affliction of etiological factors and their permutation and combination, But for only systemic study he classified them into two major types as 7 Maha Kushtha & 11 Ksudra Kushtha.

On the basis of Doshas, the symptoms of psoriasis are due to aggravation of Vata, Pitta and Kapha are as follow:-

Dosha	Symptoms according to Modern	Symptoms according to Ayurveda
Vata	scaling, dryness	Rukshata, Toda, Parushyata, Kharata,
Pitta	erythematous papules and plaques, pin point bleeding	Daha, Raga, Parisrava, Paka
Kapha	itching, thickening	Kandu, Sthairya, Utsedha, Gauravata

Samprapti of Psoriasis:

Acharya Sushruta has been described 5 types of Pitta Dosha, i.e. Ranjaka, Sadhaka, Aalochaka, Pachaka and Bhrajaka Pitta. Skin is the adhishthana of Bhrajaka Pitta. Therefore, vitiated Bhrajaka Pitta cause pathogenesis in the skin and produce disease with features like – Tvagdaha, Tvagavadarana, charmavadarana, Raktakotha, Raktavisfota, Raktapitta, Raktamandalani etc. The karma of Pitta which are presented in every Pittaja vikara as given below-

Therefore on the behalf of the above reference, we can say that itching and erythema which are the clinical feature of Psoriasis, are the karma of Pitta dosha presented in every Pittaja Vikara. These symptoms may be reduced by the action of Pitta shamaka dravya like – Panchatikta Ghrita & Jalauka Avacharana.

According to Acharya Sushruta, Ashastra Visravana is of 3 types –

1. Shringa – For Vata dushita Rakta
2. Jalauka – For Pitta dushita Rakta
3. Alabu – For Kapha dushita Rakta

According to Acharya Sushruta, leech has been used for shodhana of Pitta dushita rakta.

According to Acharyas Pitta and Rakta have same properties i.e. samana gunadharmi and Rakta circulate all over the body with pitta. So for shodhana of pitta dushita rakta, Jalauka is one of the most suitable anushastra (Para surgical Procedure).

Adhisthana of Bhrajaka Pitta is skin and vitiated Bhrajaka Pitta cause pathologenesis in the skin where as the disease Psoriasis also manifest the skin. According to Acharya Charaka " sthan jayeta hi poorvam tu" i.e. first of all our aim of treatment is to treat the sthanika dosha, so I have taken Jalauka avacharana for the shodhana of pitta dushita rakta and for the shaman of sarvadaihika vitiated dosha, I have taken Panchatikta Ghrita in the present study for the management of Psoriasis.

2. DRUG DISCUSSION:

Acharya Sushruta narrated varieties of diseases. He mentioned many surgical and para-surgical procedures. Among the Para-surgical procedures Jalaukavacharana is also one method. It is a type of blood letting (Shodhana therapy) which is done by leeches. Application of leeches is the most delicate method of blood letting prescribed particularly for the benefit of kings, wealthy persons, children, old, timid, debilitated woman and delicate persons (Su.Su.13/3).

Panchatikta Ghrita has been selected for Shamana therapy in present study, because it is specially indicated in classics for Kushtha. All the ingredients of it have Kushthaghna property.

Ingredients of Panchatikta Ghrita are -

S.No.	Drug Name	Latin Name	Used Part
1	Vrisha	Adhatoda vasica	Leaves
2	Nimba	Azadirachta indica	Leaves
3	Amrita	Tinospora cardifolia	Whole Plant
4	Vyaghri	Solanum surattense	Leaves
5	Patola	Trichosanthes dioica	Leaves
6	Go-Ghrita		

3. CLINICAL DISCUSSION:

The patients suffering from Psoriasis attending the O.P.D./ I.P.D. section of N.I.A., Jaipur (Raj.), were randomly selected who fulfilling the inclusion and diagnostic criteria of study. Total 30 patients were registered for the current trial and completed the therapy.

Sample size and Grouping: For clinical trial, a sample of 30 patients with Psoriasis have equally distributed in three groups,

- **Group A** - Only Leech therapy in 10 patients.
- **Group B** - Only Panchatikta Ghrita in 10 patients.
- **Group C** - Both Leech therapy and Panchatikta Ghrita in 10 patients.

Doses & Duration:

- Duration of treating patients is three months.
- Dose of Panchatikta ghrita in the quantity of 1 TSF- B.D.
- Leech application is once in a week for three months.
- Two or three Leeches are applicable in the one setting of the patients.

Progress:

All the O.P.D. patients were examined on every week to note the progress in symptomatology during the therapy. Whereas, the patients who were admitted in the hospital were visited once daily and the daily progress was recorded. Clinical screening of the patients was done before treatment and after completion of therapy.

4. DISCUSSION ON RESULTS:

Over all results was studied on basis of grading pattern as well as percentage relief, patients were classified as follows –

Complete Improvement	100% relief
Marked Improvement	More than 75% relief
Moderate Improvement	51 - 75% relief
Mild Improvement	25 - 50% relief
No Improvement	No relief or below 25% relief

And also with Overall PASI (Psoriasis Area Severity Index) Score. Overall PASI score was calculated in the following manner. Before treatment response of each patients was calculated first, then after treatment response of each of them was calculated with the help of statistics (paired t-test). The total PASI score of each individual was calculated and after calculation the overall response was made in the following manner:

01	Complete Remission	PASI Score 0 After Treatment
02	Marked Improvement	Reduction in PASI>75%
03	Moderate Improvement	Reduction in PASI Between 75%-51%
04	Mild Improvement	Reduction in PASI Between 50%-25%
05	Minimal Improvement	Reduction in PASI Score <25%
06	Unchanged	No Reduction in PASI Score

Discussion on Head Affected Patients of Psoriasis:

Effect of therapy on head Erythema: In group A head erythema was reduced by 36.36% which was statistically significant (P<0.01). In group B it was reduced by 47.6 % which was also statistically highly significant (P<0.001) and in Group-C (Leech application and Panchatikta Ghrita) it was reduced by 70.37% which was also statistically highly significant (P<0.001). Thus, group C was more effective in comparison to group-A and group-B.

Redness of head is due to vitiation of Bhrajaka Pitta. Panchatikta Ghrita is pitta shamaka due to Tikta rasa and leech application is also pitta shamaka. Therefore due to these properties both therapies are effective on reducing the symptom erythema.

Effect of therapy on head Scaling: Head Scale was reduced by 35.29%, 44.44%, 56.52% respectively in Group A, B & C which was statistically mild significant (<0.05) in group A while highly significant (<0.001) in group B & C. Maximum percentage relief was noted in the patients of Group C.

Scaling can be correlated with kharata of vata dosha. Some contents of Panchatikta Ghrita having ushna veerya and tridosha shamaka. Therefore due to these properties, Panchatikta Ghrita is effective on reduceing the symptom scaling.

Effect of therapy on head Thickness: In group A head thickness was reduced by 38.46% (moderate significant, P<0.02). In group B it was reduced by 53.84% (P<0.01) and it was reduced by 66.66% in Group-C (highly significant, P<0.001). Thus, group C (Leech application and Panchatikta Ghrita) was more effective in comparison to group-A and group-B.

Thickness can be correlated with Parushata of vata dosha and Gauravata of Kapha dosha. Some contents of Panchatikta Ghrita having ushna veerya and tridosha shamaka. Therefore due to these properties, Panchatikta Ghrita is effective on reducing the symptom thickness.

Effect of therapy on Head Surface Area: Head Surface Area was reduced by 47.3%, 35%, 60.8% respectively in Group A,B & C which was statistically highly significant (P<0.001) in group-A and group-C while moderate significant (P<0.02) in group B. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application and Panchatikta Ghrita i.e. group-C proved more effective to control the symptom.

Effect of therapy on Head Total PASI: Head Total PASI was reduced by 63.2%, 66.98%, 86.25% respectively in Group A, B, and C which was statistically highly significant (P<0.001) in all the three group. Maximum reduction was noted in the patients of Group C.

Discussion on Arm Affected Patients of Psoriasis:

Effect of therapy on Arm Erythema: Arm Erythema was reduced by 47.36%, 47.37% and 65% respectively in Group A, B & C which was statistically significant (P<0.01) in group A and highly significant (P<0.001) in group B & C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom{Table No.-70}.

Effect of therapy on Arm Scaling: Arm Scaling was reduced by 42.85%, 50%, 62.5% respectively in Group A, B & C which was statistically significant (P<0.01) in group A and group B while it was highly significant (P<0.001) in group C.

Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom{Table No.-71}.

Effect of therapy on Arm Thickness: In group A arm thickness was reduced by 44% (highly significant, P<0.001). In group B it was reduced by 35% (moderate significant, P<0.02) and it was reduced by 66% in Group-C (highly significant, P<0.001). Thus, group C was more effective.

Effect of therapy on Arm Surface Area: Arm surface Area was reduced by 36.36%, 30.43%, 50% respectively in Group A, B & C which was statistically moderate significant (<0.02) in group A and B while highly significant (P<0.001) in group C.

Effect of therapy on Arm Total PASI: Arm Total PASI was reduced by 65%, 64% and 80% respectively in Group A, B, & C which was statistically significant (P<0.01) in group A while it was highly significant (P<0.001) in group B & C. Maximum reduction was noted in the patients of Group C.

Discussion on Trunk Affected Patients of Psoriasis:

Effect of therapy on Trunk Erythema: Trunk erythema was reduced by 45.45%, 35%, 59% respectively in Group A, B and C, which was statistically significant (P<0.01) in group A and group B while also highly significant (P<0.001) in group C. Maximum percentage relief was noted in the patients of Group C.

Effect of therapy on Trunk Scaling: Trunk Scaling was reduced by 47.61%, 39.13%, 60% respectively in Group A, B & C which was statistically significant (P<0.01) in group A and group B while it was also highly significant (P<0.001) in group C. Maximum percentage relief was noted in the patients of Group C.

Effect of therapy on Trunk Thickness: In group A Trunk thickness was reduced by 35.71% which was statistically significant (P<0.02). In group B it was reduced by 41% which was statistically highly significant(P<0.01) and it was reduced by 61% in Group-C which was also statistically highly significant (P<0.01)

Effect of therapy on Trunk Surface Area: Trunk surface Area was reduced by 40.9%, 40% and 52% respectively in Group A, B & C which was statistically highly significant (P<0.001) in group A, B and C. Maximum percentage relief was noted in the patients of Group C.

Effect of therapy on Trunk Total PASI: Trunk Total PASI was reduced by 66%, 62.75% and 80.72% respectively in Group A, B, & C which was statistically highly significant (P<0.001) in group A, B & C. Maximum reduction was noted in the patients of Group C.

Discussion on Leg Affected Patients of Psoriasis:

Effect of therapy on Leg Erythema: Leg erythema was reduced by 38%, 42% and 60% respectively in Group A, B and C, which was statistically significant (P<0.01) in group A and group B while highly significant (P<0.001) in group C. Maximum percentage relief was noted in the patients of Group C. **Effect of therapy on Leg Scaling:** Leg scaling was reduced by 40%, 42.85% and 62.96% respectively in Group A, B & C which was statistically significant (P<0.01) in group A while it was highly significant (P<0.001) in group B and C. Thus Maximum percentage relief was noted in the patients of Group C.

Effect of therapy on Leg Thickness: In group A leg thickness was reduced by 37.5% which was statistically moderate significant (P<0.02). In group B it was reduced by 42.85% which was statistically significant (P<0.01) and it was reduced by 60.86% in Group-C which was statistically highly significant (P<0.001).

Effect of therapy on Leg Surface Area: Leg surface Area was reduced by 36.84%, 38.46% and 58.33% respectively in Group A, B & C which was statistically significant (P<0.01) in group A and group-B. It was statistically highly significant (P<0.001) in group-C. Maximum percentage relief was noted in the patients of Group C.

Effect of therapy on Leg Total PASI: Leg Total PASI was reduced by 58.26%, 62.56 % and 81.52% respectively in Group A, B, & C which was statistically highly significant (P<0.001) in group A, B & C. Maximum reduction was noted in the patients of Group C.

Discussion on Total PSAI of Psoriasis:

Effect of therapy on Total PASI: Total PASI was reduced by 63.6%, 63.2% and 81.54% respectively in Group A, B and C which was statistically highly significant in group A, B & C. Maximum reduction was noted in the patients of Group C.

Effect of therapy on Itching: Itching was reduced by 33.33%, 55% and 64% respectively in Group A, B and C which was statistically significant ($P<0.01$) in group A and group B while highly significant ($P<0.001$) in group C. Maximum percentage relief was noted in the patients of Group C.

Itching is the self properties of pitta and kapha doshas.(Ch. Su.20/15 & 20/18). Some contents of Panchatikta Ghrita having tridosha shamaka. Therefore due to these properties, Panchatikta Ghrita and Jalaukavacharana are effective on reducing the itching symptom.

Overall effect of therapy :

GROUP-A: In group A, mean percentage improvement of therapy on subjective and objective parameter was 45%. It is a mild improvement.

GROUP-B: In group B mean percentage improvement of therapy on subjective and objective parameter was 47%. It is a mild improvement.

GROUP-C: In group C mean percentage improvement of therapy on subjective and objective parameter was 65%. It is a moderate improvement.

Comparison of the effects of therapy:

- The overall effect of therapy in group A was 45%, in group B was 47% and 65% in group C.
- On comparing the effect of therapies, Leech application along with Panchatikta Ghrita proved more effective to reduce the PASI scoring (Erythema,thickness, scaling and area of involved skin) and itching of Psoriatic patients in comparison to Group A ad Group B.
- While Group B (47%) i.e. Panchatikta Ghrita is more effective than group A (45%) i.e. Leech application.

5. DISCUSSION ON PROBABLE MODE OF ACTION OF THE THERAPY:

Mode of action of the Panchatikta Ghrita: The contents of Panchatikta Ghrita are having properties like Katu, Tikta and Kashaya rasa, Laghu, Ruksha guna, Katu vipaka, Ushna veerya and Kapha-Vata Shamaka. All the ingredients of it have Kushthaghna property. Ghrita is mentioned as Vatapittashamaka, Rakta Vikarhar, Tvachya etc.

Vitiated Bhrajaka Pitta may be the main cause of Psoriasis and contents of Panchatikta Ghrita having Tikta rasa properties, therefore these drugs help in samprapti vighatana of Psoriasis.

Gudichi (content of Panchatikta Ghrita) reduces the stress level of Psoriatic patients due to medhya and Rasayana properties. Stress is a triggering factor of Psoriasis.

Mode of action of the leech application: Psoriasis is a skin disorder and all skin disorder are come under broad term Kushtha in our classics. Kushtha has been considered as Raktapradoshaja vyadhi (Blood born disease), Tridosha Prakopaka (vitiated body humour) and chirakari (chronic) diseases.

For excess quantity of dosha, Shodhana may be required (Ch.Vi. 3/44) so, Raktamokshana among the shodhana may provide better relief than other Shodhana particularly when Rakta is vitiated

Thus, it is well proved that Jalauka gives better effect in Raktaja Roga or Kushtha on the basis of classical references. Jalauka impure blood only with ideal example of Swana by Vagbhata, this concept discussed here with different angle (A. S. Su. 35/4).

According to Acharya Sushruta, leech has been used for shodhana of Pitta dushita rakta. The pathogenesis of Psoriasis can be correlate with pathogenesis of vitiated Bhrajaka Pitta because both are originated in the skin. And clinical feature of vitiated Bhrajaka Pitta are similar to the symptoms of Psoriasis. So Leech application have been used for the present study.

The results of the present study confirmed that the leech application is more beneficial, efficient and safe therapy in the management of Psoriasis. It

showed remarkable reduction in sign and symptoms.

- After application of leeches the salivary gland secrets hirudin which prevents the coagulation of blood and spread locally. While leech sucking the blood the collateral circulation will improve and the residual blood will clean off from the site.
- Hirudin is also having mild anti-inflammatory, analgesic and anaesthetic properties. Due to which patients can't feel pain during blood sucking.
- It promotes tissue regeneration by increasing collagen and elastin fibres in the connective tissue matrix.
- It improves the moisturising capacity of skin by the hyaluronic acid contents. Hence due to moistening properties, the psoriatic skin may be normal.
- After sucking of affected blood, blood circulation improved in the affected skin and skin tissue is oxygenized due to which keratinocyte of skin is reduces and affected skin may be normal.
- Immuno-stimulation and immuno-modulating effect.
- Expressed anti-inflammatory effect.

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 सुचारू 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

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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	SD	SE	*"t"*	P
		BT	AT		Change	±	±	Value	Value
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

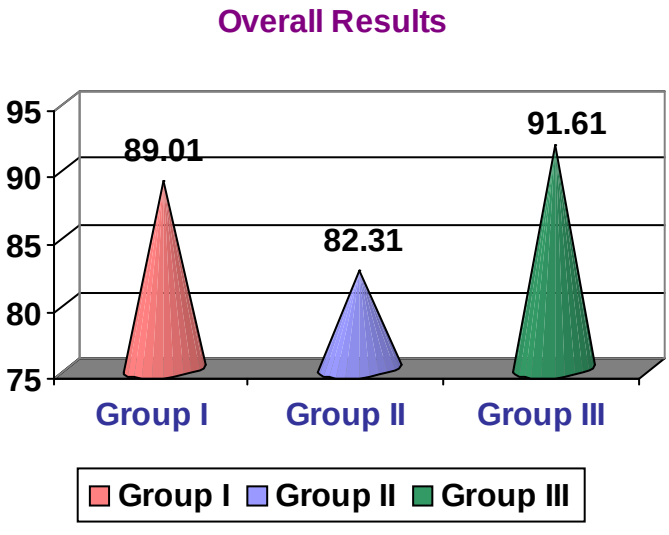
Symptoms	*n*	Mean		Diff.	% of	SD	SE	*"t"*	P
		BT	AT		Change	±	±	Value	Value
Jrimbha (yawning)	10	2.80	0.70	2.10	75.00	0.57	0.18	11.70	<0.001
Tandra (drowsiness)	10	2.80	0.40	2.40	85.71	0.52	0.16	14.70	<0.001
Bhrima (giddiness)	8	1.50	0.00	1.50	100.00	0.53	0.19	7.94	<0.001
Angamarda (Malaise)	9	1.44	0.00	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

An Epidemiological Survey Of Hypertension (*Vyanvikriti*) And *Upashayatmaka* Effect Of "*Vyan Vikritihara Ghan Vati*" (Kalpit Yog)

**Dr. Manoj Kumar Gupta, **Dr. Surendra kumar Sharma, ***Prof. Dr. Piyush Mehta*

Abstract -

Epidemiological survey of hypertension (Vyanvikriti) on 500 volunteers were conducted, in which 137 volunteers were hypertensive but only 30 patient out of 137 screened hypertensive. Patient were taken for clinical evaluation conducted at National Institute of Ayurveda (NIA) Jaipur. During the Epidemiological study, it was observed that sedentary life style, amapradoshaka aahar & vihar, snehyukta ahar & excessive intake of lavan rasa are the causative factor of hypertension. For the purpose of clinical study a hypothetical compound drug named **"vyan vikritihara ghan vati"** in a dose of 500mg two times daily with luke warm water was selected. After the trial of 21 days, statistically significant improvement was observed in both systolic & diastolic blood pressure. Besides these highly significant improvement was found in Anidra, Sirahshool & significant changes in Hriddrava, Klama and Krodh.

Key words - *Vyan vikriti, vyan bala, Raktavritta vata, Raktagata vata, Dhamani Pratichaya, Siragata vata, Rasabhara, Dhamani Prapurnata, Vyanavrita vata* etc.

सारांश-

यह अध्ययन 500 स्वयं सेवकों में उच्च रक्त चाप (व्यानविकृति) के लिए जनपदिक सर्वेक्षण किया गया जिनमें से 137 स्वयं सेवकों में उच्च रक्तचाप पाया गया लेकिन इन 137 उच्च रक्तचाप के मरीजो में से केवल 30 उच्च रक्तचाप के मरीजों पर चिकित्सकीय अध्ययन राष्ट्रीय आयुर्वेद संस्थान जयपुर में किया गया। संहिताओं में वर्णित निदानों में से आम प्रदोषक आहार-विहार, स्नेहयुक्त आहार, लवण रस का अत्यधिक सेवन एवं अनियमित जीवन शैली आदि को उच्च रक्तचाप के मुख्य कारणों के रुप में पाया गया। चिकित्सकीय अध्ययन के लिए कल्पित योग ''व्यान विकृतिहर घन वटी'' का प्रयोग 500 मि.ग्रा. कैप्सूल के रुप में सुबह तथा 500 मि.ग्रा. कैप्सूल के रुप में शाम को उष्ण जल से रक्तचाप के मरीजों को दिया गया। 21 दिन के चिकित्सकीय अध्ययन के बाद सिस्टोलिक ब्लड प्रेशर तथा डायस्टोलिक ब्लड प्रेशर में सार्थक लाभ पाया गया। इसके अतिरिक्त निद्रानाश, शिर:शूल में अत्यधिक सार्थक लाभ पाया गया तथा हृदद्रव, क्लम एवं क्रोध में सार्थक लाभ पाया गया।

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Clinical Study

An Epidemiological Survey Of Hypertension (*Vyanvikriti*) And *Upashayatmaka* Effect Of "*Vyan Vikritihara Ghan Vati*" (Kalpit Yog)

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Introduction-

High blood pressure (hypertension) is designated as either essential (primary) hypertension or secondary hypertension and is defined as a consistently elevated blood pressure exceeding 140/ 90 mm Hg. In essential hypertension (95% of people with hypertension) no specific cause is found. While secondary hypertension (5% of people with hypertension) is caused by an abnormality somewhere in the body such as in the kidney, adrenal gland & aortic artery etc. High blood pressure is called **"the Silent Killer"** because it often causes no symptoms for many years, even decades, until it finally damages certain critical organs like kidney, brain, blood vessel, eye etc. mostly its diagnosis is ruled out all of sudden when the person comes in contact of doctor or health worker etc. Heightened public awareness and screening of the population are necessary to detect hypertension early enough so it can be treated before critical organs are damaged. It is one of the major risk factors for cardiovascular mortality, which accounts for 20-25% of all deaths.

Aims & Objective

1) For find out how many individual suffered from Hypertension in randomized survey of 500 Individual in a particular area. The survey of carried out by survey proforma, questionnaire pattern & some criteria based on ayurvedic nidan, sign & symtoms.
2) The therapeutic trial of drug "vyan vikritihara ghan vati (kalpit)" on the screened hypertensive person.
3) To reduce the incidence of hypertension from the society by discarding the use of nidan (etiological factor) known by this survey.
4) Heightened public awareness about nidan (etiological factor mention in our samhita) by this survey.

Selection of sample & Patient Sample of 5 hundred people for epidemiological study was taken from OPD of National Institute of Ayurveda & local regional area. Out of 500 People for epidemiological survey 137 individual were found hypertensive. But only 30 hypertensive patient was taken for clinical study on the basis of who were fulfilling the criteria for clinical study.

Epidemiology - "The study of the distribution and determinants of health related stages or events in specified populations, and the application of this study to the control of health problems"

Patient Screening Criteria of Assessment:- based on survey proforma, questionnaire pattern and some criteria based on ayurvedic nidan, sign & symptoms.

Age group of year (People) :- 20-30/ 31-40/ 41-50/ 51-60/ 61-70/ 71-80

Sex - Male / Female, Religion - Hindu / Muslim/ Sikh/ Christian

Socio economic status-

Good - (Annual Income > Rs.2 lacs)

Fair - (Annual Income > Rs.75000 to 2 lacs)

Poor - (Annual Income > Rs.75000

Occupation - Government / Public/ Housewife

Education - Illiterate / Literate - Primary, Secondary, Higher

Habitat - Rural/ Urban/ Metro politician

Habits of Addiction - Yes/ No

If yes then which type of addiction - Alcohol / Tobacco / Tea/ Coffee/ Bidi/ Cigarette.

Amount of Addiction - .....ml. per day..... liter per week

Duration of Addiction - .....day/ .....month / .....year

Weight - normal / over / under

Normal weight = Height in Centimeter - 100.

Over weight = Height in Centimeter + more than 5 kg.

Under weight = Height in centimeter - more than 5 kg.

Height - Short/ medium / tall

Short = < 5 feets or 150cms.

Medium = between 5 to 6feets. or 150-180cms.

Tall = > 6feets or 180cms.

Diet - Non vegetarian / vegetarian / mixed

Ras you are more preferred in diet - Madhur/ Amala / Lavan/ Katu/ Tikta / Kashaya / All

Duration of Preferred Ras- day/ week / month/ year

What is your diet regime -

Breakfast/ Lunch/ Dinner/ Other

Any change your diet pattern- .....

Duration of change of diet pattern- .....

Exercise - Yes / No

If yes, duration of exercise in .....hour per day.

How many day / month / year you are doing exercise- .....

Duration of exercise in per day - .....hour

Physical Activity - Yes/ no If yes - mild/ moderate / hard

Mild work = As house work, Office work etc.

Moderate = Hackers etc.

Hard work = Labour etc.

How is your nidra- Samyak nidra / Alpa nidra / Atinidra

Samyak nidra = Between 6 - 8 hours per day

Alpa nidra = < 6 hours per day

Atinidra = > 8 hours per day

Which type of water you used - Supply / boring / purified / mineral

Intake of water - In between meal/ At the end of meal/ at the beginning of meal

Do you used fast moving vehicle - Yes / No

If yes how many .....day / .....week/ .....month/ .....year

Duration of used fast vehicle .....per day in hour.

During the past 12month have you ever been told by doctor or other health worker that you have hypertensive - Yes/No

Are you currently taking any herbal or traditional remedy for BP - Yes / No

Sign symptoms:-

Do you feel palpitation -	Yes/No
Do you feel tiredness in these day -	Yes /No
Do you feel any kind of respiration problem in night-	Yes/No
Do you have constipation -	Yes/No
Do you feel pain in calf muscles -	Yes/No
Do you feel vertigo -	Yes/No
Do you feel more anger now in these days -	Yes/No
Do you feel any time syncope -	Yes/No
Do you feel your memory is decrease now-a-days -	Yes/No

How do you feel after your digestion - Gaurava / Laghuta

Similarly various criteria are used in the survey of five hundred individual in a particular area. all the criteria is not possible to write down here.

Cross-sectional studies (Non-experimental) It is one time or at a point of time study of all persons in a representative sample of a specific population such as examination of all people in age group 20 to 80 years, detection of hypertension (HT) cases and study of the factors that lead to examination of people in age group 20 to 80 years for classifying into hypertension (HT) grades, finding prevalence in age group of 20 to 80 years of people or morbidity due to hypertension (HT).

Observation, result & Discussion

1) According to age the incidence of Hypertension should be more in old age but now in these days and also in this survey it is found that it is some what more in adult age group 25.35% in male & 27.27% in female.

   The probable causes of this may be because of the increased salt intake and influence by environmental factors which lead to increase sodium & water retention leading to increased blood volume which increases right arterial pressure & finally increased cardiac output & blood pressure (BP) are resulted

   According to Charaka pitta is more in middle age & when these people take more pitta vardhaka Aahar Vihar then it leads to increase in dusya rakta due to similarity in Pitta & Rakta. This increased dustha rakta finally produce Hypertension.

   In Indian culture women suppress their natural urges it leads to prakopa of Apana vayu. Vitiation of apana vayu hamper the execretion of mutra, so the body fluid level become imbalance & increases. Consequently increases right artrial pressure & cardiac output to produce high blood pressure. This survey shows that B.P. rise with age in both men & women is almost same in adult age.

2) In my survey the prevalence of hypertension is high in good socioeconomic status (40.14%) & government status (44.52%). The probable causes of this is sedentary life style, excessive stress meda & kapha vardhaka Aahar vihar (over nutrition) leads to produce Hypertension.

   In my survey the incidence of Hypertension is more in literate persons (71.54%) the probable causes of this may be the literate persons have more mental stress as compare to the illiterate persons.

   The role of stress in genesis and maintains of hypertension may be increasing the sympathetic tone through neuroendocrinal axis. Development of stress induced hypertension linked with adrenaline. The mechanism of this is given below:-

   The release, reuptake and presynaptic facilitation of noradrenaline release acts as positive feed back loop. Although the half life of adrenaline in plasma is only few minutes but, if it is stored in sympathetic nerves it may last for many hours. The growth of vascular smooth muscles can be influenced a number of stress related factor including angiotensin, catecholamine and corticosteroid raised the level of cortisol are found in high effort and high stress situation.

   Due to *chinta* the sympathetic & parasympathetic nervous system get over activated it enhance the cardiac output, pulse rate, respiration rate & blood pressure. According to Ayurveda, Chinta is a function of *mana* but excessive *chinta* leads to aggravation of *rajo guna* of *mana*. *Rajo guna* & *vata* are interlinked, aggravated rajo guna influence the prana *vata* & this *prana vata* has function over other *vata* in maintaining the blood pressure so aggravated *prana vata* will initiate the process of Hypertension.

3) In my survey the incidence of Hypertension is more in urban population 68.6% the probable causes is that due to over nutrition, sedentary life style & lack of exercise it leads to kapha meda vardhaka aahar which creates Hypertension.

4) Incidence of Hypertension is more in addicted patient (66.42%) by alcohols (25.27%) by Tobacco chewing (21.97%) & by tea & coffee (52.74%). The probable cause of this is that alcohols, tobacco, tea/coffee etc aggravates vata & *pitta*. These causes hyperacidity &

Agnimandya, Agnimandya produce *ama*, and *ama* produce sama ras dhatu, which *avrita vyana vayu* by this blood pressure is elevated.

Nicotine & carbon mono oxide (CO) is a product of Tobacco consumption are potent vasoconstrictor, cigarette smoking acutely raise BP by rising plasma norepinephrine, excessive use of alcohols increase BP perhaps by increasing plasma catecholamine. SBP is more effected than DBP it increase red cell volume & hence increase blood viscosity is another possible mechanism. Hypertension can be difficult to control in patients who consume more than 40 ml of Alcohols/day.

6) Incidence of Hypertension is more in over weighted patient (40.87%) perhaps due to medo dusti. According to modern obesity lead to hyperlipidaemia, insulin resistance, & increased blood volume, its lead to Hypertension.

7) 72.99% incidence was found in medium stature patient for this no any specific cause is found but it suppose that in this population more persons were of medium sized and hence this high percentage was found.

8) 56.93% of incidence was found in non vegetarians. Probable cause of this is that non vegetarians more uses snigdh, guru, medovardhaka aahar it leads to *ama* by mandagni which produce medo dusti and more Hypertension is occurs in these kind of patient.

9) 52.55% incidence of Hypertension was found in the patient to do mild work probable causes of this is that mild work or no exercise leads to mandagni by which ama is produced, this ama do medo dusti, by this rakta is also vitiated. This vitiated *rakta* avrit the *vyan vayu* which produce Hypertension. According to modern no exercise or mild work creates hyperlipidaemia which will leads Hypertension.

10) 48.90% incidence was found in the patient who was suffering from *Alpanidra* or *Anidra* (Insomnia) & only 10.22% are founding those who was taking atinidra probable cause of this is that *Anidra* vitiated the *vata* & *pitta* (Su.sha.chapter.4)

Vitiated vata increase force of contraction of heart & *pitta* increase volume of *rakta* (*vidagdha matratamaka rakta*) and this both will be leads Hypertension. Catacholamine & cortisol level will be increased in anidra (insomnia) it produce vasoconstriction that leads to Hypertension.

11) 20.44% incidence of Hypertension is found in patient who uses more Lavan rasa, the probable cause of this is consumption of more Lavan rasa aggravated the pitta it lead to hyperacidity & agnimandya produce ama which produces *sama rasa dhatu*, which *avrita vyan vayu* by this BP is elevated.

According to modern it has been postulated that essential hypertensive have a genetic abnormality of kidney which makes salt excretion difficult except at raise level of arterial pressure.

12) Incidence of Hypertension in more in the patient who suppress their natural urges was 51.09%, the probable causes this is follows-

Suppression of natural urges as Chhardi, Udgar Grimbha etc vitiated prana vayu and because prana vayu control heart then vitiation of this alter the function of heart which produce high B.P. Suppresson of sukra & mala, artva etc vitiate apana vayu. This vitiated apana vayu by vimarg gaman goes to brain and activate cerbrovasomotor centre which causes vasoconstriction & produce Hypertension, suppression of urine causes reabsorption to toxic susbstance as urea, uric acid, & creatinine in the blood. These toxic substance constrict blood vessels and increase blood volume which produce Hypertension.

13) The incidence of Hypertension is more in the patient who is taking more guru and snigdha ahara was 21.17%, 18.98% respectively and it was least in the patient whose aahar is ruksh (11.68%). The probable cause of this is that guru & snigdh aahar creates ama by mandagni this *ama* do medo dusthi which leads to hypertension.

14) 42.31% incidence was found in the patient who was taking *atimatrayukta aahar* probable cause of this is that *atimatra* produce *mandagni* this produce *ama* & it is causes *srotoavarodha* which

is produce hypertension.

15) 42.33% incidence was found in the patient of Adhyasan because adhyasan is vata aggravating factors and causes tridosha prakopa, aahar does not digest properly & ama produce & the time of kitta vibhajana vikriti vayu produce more in quantity, it goes pratiloma gati & sarvadaihika gets vitiate it help to produce pathogenesis of Hypertension.

16) 62.04% of incidence found in patients were not do any kind of exercise 73.72% of incidence was found in the patient who were using fast motor vehicle the probable cause of this is lack of exercise or sedentary life style.

17) 59.12% incidence was found in patient who were feeling gaurav after digestion the probable cause of this is due mandagni or ama production.

18) The incidence of Hypertension more in the patient of anxiety (36.50%) the causes of this is earlier discussed under observation (Point no.2)

19) 43.07% incidence was found in the patient whose sexual desire was more because excessive sexual activity causes oja kshaya. The site of oja & vyan vayu is Hridaya. Ojakshaya leads to the dusti of oja & vyan vayu this lead to produce Hypertension.

20) 35.77% incidence was found in the patient of visamagni because of vitiation of vata that also vitiate vyan vata which produce Hypertension. 32.85% incidence was found in the patient of mandagni because due to mandagni produce ?ma & ama paroduces Hypertension.

21) 35.04% incidence was found in the patient of krura kostha due to vitiation of vata and 33.58% incidence was found in the patient of Madhyam kostha due to mandagni.

22) 28.47% incidence was found in the patient of vatakaphaja prakriti. 26.28% was in the Tridoshaja prakriti, 24.09% was in the vatapittaja prakriti & 21.17% incidence was in the patient of pittakaphaja prakriti, incidence was slightly higher in the patient of vatakaphaja prakriti because Hypertension is suppose to be vatakaphoulavana tridoshaja vyadhi so vatakaphaja help in the production Hypertension.

23) 31.39% have family history of Hypertension it show there is more genetical factor who is responsible for Hypertension as well as 68.61% was not having family history. It shows that other factors such as sedentary life, over nutrition etc are more important than genetically factor to produce Hypertension.

24) In my survey the 48.90% having complain of Anidra (insomnia), 38.69 have complain constipation, 29.20% have complain klama, 20.44% have complain sirahshool, 18.98% have complain Swaskricchata (Dyspnoea) & 17.52% have complain Hriddrava (Palpitation) The probable causes of above is fast life style, stress, obesity, salt intake, use of saturated fat, alcohol, lack of physical activities and poor socioeconomic status.

Clinical Study

*** Selection of Drugs**

1. Shankhapushpi (convolvulus pluricaulis) = 1 part
2. Punarnava (Boerhavia diffusa) = 2 part
3. Vacha (Acorus calamus) = 1 part

The yog **"vyan vikritihara ghan vati"** will be prepared in the pharmacy of National Institute of Ayurveda Jaipur by means of classical method.

Dose - 500 mg BD

Duration - 21 days

Anupana - Luke warm water

Inclusion criteria

1. All patients persistence raise in blood pressure with clinical features of Hypertension will be selected for Hypertension
2. Age 20 to 80 yrs
3. Sex either sex

Exclusion criteria

1. Patient with severe grade of Hypertension

2. Who have earlier suffered from Myocardial Infarction, congestive cardiac failure & renal failure will not be registered.
3. Pregnant women
4. A non cooperative patient.

Discontinuous criteria

Patients who developed hypersensitivity for any constituents of the selected formulation and those patients who discontinued the treatment due to any reasons.

Criteria Of Assessment

During the trial and follow up study the patients were assessed on the following parameter

1. Clinical assessment

For the Assessment of clinical improvement symptoms and sign of the disease will be graded accordingly presence severity of the symptoms.

All the patients registered for the clinical trial will be looked for any change in their clinical manifestation and growing feeling of well being if any produced after the therapy like sirahshool (Headache), Hriddrava (palpitation), Bhrama (Dizziness), Karnnada (Tinnitus), klama, murchcha (Syncope), Swasakricchata (Dysponea) is noted & including in those grade which are fit for that grade.

Symptoms grading 0 = Absent, +1 = Mild, +2= Moderate, +3= Severe

Measurement of blood pressures every fallow up visit & BP the parameter of assessment was taken as follow. **1) Excellent:** Patient is said to have excellent response to therapy when the fall in DBP was found 14mmHg or more & SBP>30mmHg.

2) Good: patient was said to have good response to therapy when the fall in DBP was found 10-14 mmHg & SBP was 20-29 mmHg.

3) Fair: The response is named fair when the fall in DBP was 5-9 mmHg & SBP was 10-19mmHg.

4) Poor: The response remained poor when the fall in DBP was < 5mmHg & SBP was < 10mmHg.

2. Laboratory Investigation

Following major investigation were performed in all the patient before and after the trial.

* Haemogram
* FBS & PPBS
* ECG
* Lipid profile
- Serum Cholesterol
- Serum Triglycerides
- Serum HDLCx
- Serum LDL
- Serum VLDL

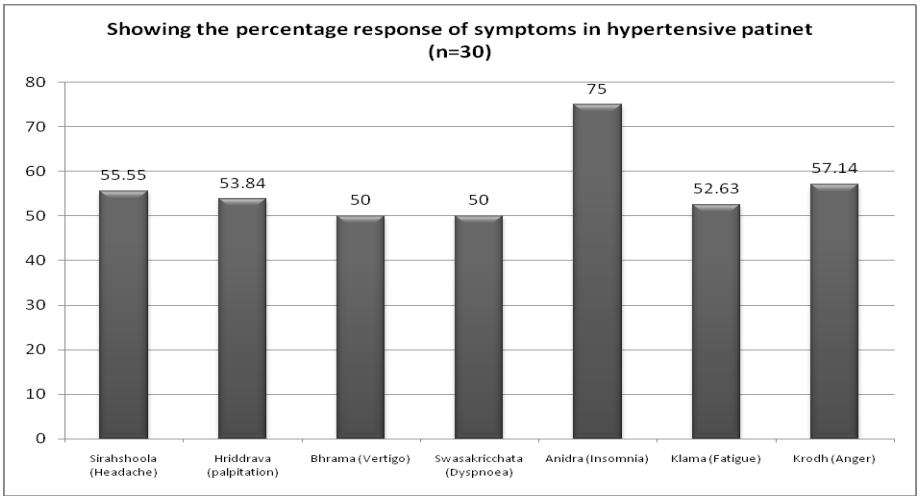
Follow-up

Patients will be followed up every 10 days

Observation & Result

Because my Research work was mainly emphasized towards knowing the etiopathological factor Hypertension by epidemiological survey & it was not mainly clinical research work so here only those clinical related data are described which are found somewhat significant in my Research work. This is given below (Figure no.1 & Table no. 1)

Figure no.1



S.No.	Symptoms	Before Treatment				After Treatment				Pts with Symptoms	No. of pts cured	% response	χ^2 (Chi Square)	'p' value	Result
		Severe	Moderate	Mild	Absent	Severe	Moderate	Mild	Absent						
1	Sirahshool (Headache)	0	5	22	3	0	2	10	18	27	15	55.55	16.99	<0.001	H.S
2	Hriddrava (palpitation)	0	3	23	4	0	2	10	18	26	14	53.84	14.22	<0.01	S
3	Bhrama (Vertigo)	0	2	18	10	0	1	9	20	20	10	50.00	9.67	<0.05	S
4	Swasakricchata (Dyspnoea)	0	0	8	22	0	0	4	26	8	4	50.00	1.67	<0.5	I.S.
5	Anidra (Insomnia)	0	3	25	2	0	1	6	23	28	21	75.00	30.28	<0.001	H.S.
6	Klama (Fatigue)	0	2	17	11	0	1	8	21	19	10	52.63	10.76	<0.02	S
7	Krodh (Anger)	0	5	16	9	0	2	7	21	21	12	57.14	9.605	<0.05	S

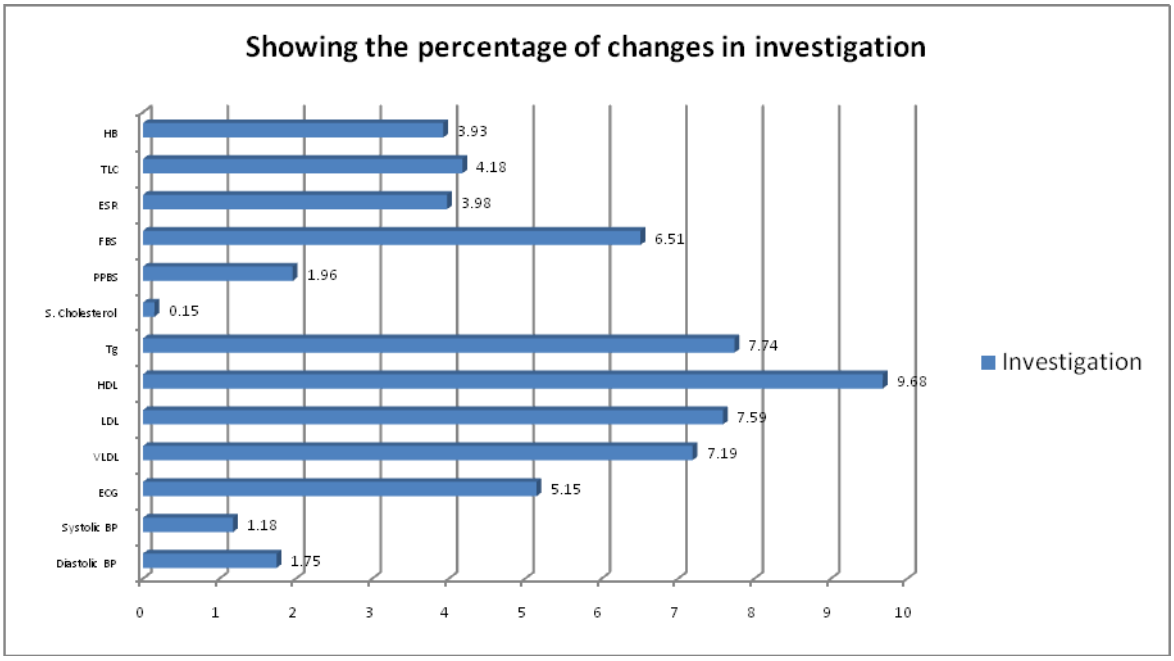
Changes in investigation before & after treatment is given in table no.2 & figure no. 2.

Table no.2

Changes in investigation before & after treatment (n=30)

Investigations	Mean		Diff.	% of Change	SD ±	SE ±	"t" Value	P Value	Res-ults
	BT	AT							
HB	12.64	13.14	0.50	3.93	0.92	0.17	2.97	<.01	S
TLC	7656.67	7336.67	320.00	4.18	1342.77	245.16	1.31	<.10	IS
ESR	20.10	19.30	0.80	3.98	7.51	1.37	0.58	<.10	IS
FBS	92.34	86.33	6.01	6.51	13.93	2.54	2.36	<.05	S
PPBS	138.43	135.71	2.72	1.96	30.35	5.54	0.49	<.10	IS
S. Cholesterol	210.72	210.40	0.32	0.15	33.25	6.07	0.05	<.10	IS
Tg	158.93	146.63	12.30	7.74	38.40	7.01	1.75	<.10	IS
HDL	50.57	55.47	4.90	9.68	9.17	1.67	2.93	<.01	S
LDL	126.84	117.22	9.63	7.59	34.54	6.31	1.53	<.10	IS
VLDL	31.96	29.66	2.30	7.19	9.53	1.74	1.32	<.10	IS
ECG	29.77	28.23	1.53	5.15	3.39	0.62	2.48	<.02	S
Systolic BP	152.13	150.33	1.80	1.18	4.74	0.86	2.08	<0.05	S
Diastolic BP	95.33	93.67	1.67	1.75	3.86	0.71	2.36	<0.05	S

Figure No. 02



Discussion

In this clinical study the medicine "vyan vikritihara ghan vati" was found highly significant in symptomatic treatment of *Anidra* & *Sirahshool* (p<.001) due to sedative *vedana sthapaka* & *medhya* effect of *vacha* & *shankhpushpi*.

- It is significant in the Management of hriddrava ('p<.01) bhrama ('p' <.05) Klama ('p' <.02), Krodh ('p' <.05) and ECG ('p <.02) perhaps due to reduce work load of Heart by diuretic action of punarnava, medhya, manas doshhara & sedative effect of shankhpushpi & vacha.
- SBP & DBP (p<.05) due to sedative, diuretic, Medhya & manas doshhara properties.
- The significant change in Hb ('p <.01) HDL ('p'<.0l) & FBS ('p'<.05) which is not clearly understood

Summary & Conclusion

After completion of my survey I have found the follow my most probable causes Hypertension.

1. Sedentary life style
2. ama pradoshaka aahar - atimatra, Aahayasana etc.
3. Taking more snehyukta ahara as excessive use of saturated fat etc.
4. Excessive use of lavan rasa
5. Vegavidharana & suppression of natural urges like - Apana vayu, mutra, purisha etc.

On the basis of this for the avoiding of hypertension the society should do the following things.

1. Do routinely exercise.
2. Taking their diet regularity at a fixed time & according to their agni bala.
3. Avoiding use of saturated fat in place of this use unsaturated fat.
4. Avoid excessive use lavana rasa.
5. Do not suppress their natural urges.
6. Do yoga or meditation to avoid mental stress chinta.

After completion of my clinical study I have found the highly significant changes in symptoms like anidra, sirahshool (p<0.001) and significant changes Hriddrava (P<.01) bhrama (p<.05), Klama (p<.02), Krodh (p<.05)

After completion of my clinical study I have found the significant changes in investigation like Systolic BP & Diastolic BP (p<0.05) Hb (p<0.01), FBS(p<0.05), HDL(p<0.01) & ECG (p<0.02).

Acknowledgement

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ABBREVIATIONS

ECG = Electrocardiogram, FBS = Fasting Blood Sugar, PPBS = Post Prandial Blood Sugar, LDL = Low Density Lipoprotein, HDL = High Density Lipoprotein, VLDL = Very Low Density Lipoprotein, MI = Myocardial Infarction, CCF = Congestive Cardiac Failure, SBP = Systolic Blood Pressure, DBP = Diastolic Blood Pressure, CO = Carbon Mono Oxide, Hb = Haemoglobin, ESR = Erythrocyte Sedimentation rate, COP = Cardiac Out Put, VR = Venous Return, HT = Hypertension, BP=Blood Pressure

Reference:

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Clinical Study

A Compretive Study on the Effect of *Avasadahara yoga* (*kalpit*) and Psychotherapy in the Management of Depression"

*Dr. Pankaj Kumar Jain, **Dr. Hem Raj Meena

Abstract -

In *Ayurveda*, Ayu (life) is defined as conjunction of body, soul, mind and senses. Each has been given due importance in the maintenance of health and prevention and cure of disease. The present project deal to Clinically evaluate the *Avasadahara Yoga* and Psychotherapy in the management of depression and in the result: Combined therapy proved better than individual Psycho as well as *Avasadahara Yoga* administered therapy.

Keywords : *Avsad*, Depression, *Manas Doshas*, *Avasadahara Yoga,* Psychotherapy, Meditation, Counseling,

सारांश–

प्रस्तुत शोध प्रबन्ध में मानस दोषों के शरीर क्रियात्मक अध्ययन एवं मानस दोषों के विक्षोभ से उत्पन्न रोग अवसाद से ग्रस्त 60 रोगियों का चिकित्सीय अध्ययन किया गया है। रोगीयो को तीन वर्गों में विभाजित किया गया। ग्रुप ए के रोगियों को औषध थेरेपी के रूप में कल्पित अवसादहर योंग दिया एवं ग्रुप बी के रोगियों को साइकोथेरेपी जिसमें ध्यान, जप, प्रार्थना और साक्षात्कार को प्रयोग में लिया गया। ग्रुप सी मे दोनो थेरेपी को सयुक्त रूप से प्रयुक्त किया गया। परिणाम में सयुक्त प्रयोग अधिक प्रभावी पाया गया।

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Clinical Study

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Dr. Pankaj Kumar Jain, Dr. Hem Raj Meena

Introduction

In today's metaphysical society, human life has become speedy, mechanized, less affections and more centered, which contribute to more production of Kama (Desire), Krodha (anger), Lobha (greed), Bhaya (fear), Shoka (Grief), Chinta (Worry) and Irshya (envy) etc. like Manasa Vikaras.

In this way, accurate knowledge of Manasa is necessary to understand about nature of life and health.

Raja and Tama are the Doshas pertaining to the mind and the types of morbidity caused by them, are Kama, Krodha, Moha, Lobha, Mada, Bhaya etc. Acharya Charaka has advised to suppress these factors, because they tend to elevate Raja and Tama Gunas, which cause Mano-dushti. These obnoxious states of Mana produces Mano-vikara with involvement of Sangyavaha or Manovaha Srotasa. (Chakrapani on Ch. Su. 24/25.).

''चित्त देहो ग्लानि।'' (Dalhan on Su.Su -15/9)

That means depression is a stale in which retardation of bodily and mind functions seen i.e. psychomotor retardation Chakrapani has explained the term as incapability of mind as well as the body to work (Ch.Ci.- 3/36)

''वाक् काय चित्तावसादो विषादः।''
(Dalhan on Su.Ka.- 3/21)

i.e. cannot think or guess properly or inability to respond properly by mind. body and speech.

''असिद्धिभयाद्विविधेषु सादोघ्रवृत्ति विषादः।''
(Dalhan on Su.Su.- 1/24/3)

According to Commentary of Dalhan pateint not doing any work due to fear of failure is called Vishad.

Drug Review

The main process in the Avsadahar Yog preparation the mixing of ingredients with four types Drava Dravya (Liquid), Madhura Dravya (Sweat), Sandhana Dravya (fermenter), Praksepa Dravya are performed following a specific order and is kept for the desired time to achieve process of fermentation.

Kwath Draya (Chief ingredients) - Bramhi, Satavari, Vidharika, Ushir, Abhaya, Adrakh (Sunthi) and Misi

Drava Dravya (Liquid) - Water

Madhura Dravya (Sweat) - Madhu (honey) and Sita (Sugar)

Sandhana Dravya (fermenter) - Dhatki

Praksepa Dravya - Renuka, Trivrat, Pippali, Lawanga, Kusth, Aswagandha, Vibhitak, Guduchi, Aila, Vidang, Tvak, Vacha

Kwath preparation - As the general rule for the Kwath preparation we used 1 part Dravya and 16 part of water and boiled them together till ¼ parts remain.

Selection of container- In the pharmacy of NIA Jaipur we used steel container for the fermentation of Kalpit Avsadahar Yoga with guidance of **Dr. P. Suresh** and try to avoiding disadvantages of metallic container.

Process Of Fermentation - The container was filled as ¾ part and remain ¼ part empty for the accumulation of gases liberated in the process of fermentation. Sealed the container for avoid the disadvantages to keep open container like chances of contamination and fermentation may get disturbed and environmental gases may prevent fermentation etc.

1 month later; the container was opened but before it, we had done Pariksha for complete the fermentation. After it Nirmalikarana process was done and filtered Avsadahar Yog was packed in 500 ml bottles (use only 450 ml space of bottle).

Ayuvedic view of psychotherapy :

Psychological counseling between the physician and the patient is undertaken (Prashna).

Acharya Shushrut has mentioned treatment of mental diseases (Manasa Roga) by counseling of patients (Shukhavaha Shabda).

Acharya Vagbatt has mentioned treatment of Bhuta Avesh in 5th chapter by Japa, Homa, Bali, Vrat, Tapa, Sheel, Shamadhan, Gyan, Dhyan, Daya for nonviolence manic patient.

Acharya Charak has mentioned in Sutra Sthan chapter 8 about Sadvrat Palan and Chikitsa Sthan cheptor 1 (part 4) about Achar Rasayan. These are the techniques of privation of mental disease. So it may also include in psychotherapy.

The term *Satwavajaya* implies the therapeutics for mental (emotinal stresses) disturbances. This is secured best by restraining the mind from desire for unwholesome objects and the cultivation of gyana, vigyana, courage, memory and *samadhi* (concentration).

''सत्वावजयः पुनरहितेन्योऽर्थेन्यो मनोनिग्रहः।'' (Ch.Su.11/54)

The techniques of Satwavajaya Chikitsa include all technique of modern psychotherapy.

Acharya Vagbhatta mentioned in Sutra Sthan that the treatment of Mano dosha (Raja and Tama) use of Dhee, Dherya and Atmadi Vigyana.

''धीधैर्यात्मादिविज्ञानं मनोदोषौषधं परम्।'' (A. S.Su. 1/49)

So in addition to the above, *Ayurveda* envisages a other method of treatment viz. – Meditation, Shirodhara, Shirobasti, Abhyanga, Yoga, Counseling etc.

In counseling, counselor hears any type of problem of patient and Suggests solution as much as possible. Many patients feel loneliness so counselors suggest for making friends and gives tips for it.

Modern view of psychotherapy :

These psychological approaches, in which the relationship was used actively through talking to promote self-awareness and change, are broadly understood as 'psychotherapy'.

Psychoanalysis and psychotherapy is having mostly same meaning. All these terms describe different approaches to understanding and helping individuals with psychological and emotional (mental) problems.

Psychotherapy was more to psychoanalysis than Freud's original remote and neutral exploration of the unconscious. The relationships formed in this intense treatment were themselves found to be influential. Analysts began to explore these relationships and experimented with more active approaches and with different types of therapy (time-limited therapies, more structured therapies, therapies in groups and in families, etc.).

Most of the early psychotherapies leant heavily on Freud's theories (often called 'psychodynamic psychotherapy' to emphasize the impact of thoughts and feelings over time) but several of the newer ones do not. These (e.g. non-directive counselling, existential psychotherapy, transactional analysis, cognitive analytical and cognitive behaviour therapy) draw on a range of theoretical backgrounds.

Psychotherapies for depression include:

1. Behavioral therapy
2. Cognitive therapy
3. Interpersonal therapy
4. Insight-oriented therapy

Materials & Methods :

(1) Aims And Objects

The aims of present study were

1) Conceptual and Physiological study of Manas Dosha and study of its imbalance in Depression.
2) Correlation between depression and Kaphaj Unmaad.

Clinical evaluation of Avasadahara Yoga and Psychotherapy in the management of depression on various scientific parameters.

(2) Selection Of Cases -

The patients of Depression fulfilling criteria for selection were registered from O.P.D. , N.I.A. Jaipur on the basis of Beck Depression Inventory II (BDI) rating scale.

[A] Inclusion Criteria -

The diagnosis of patients of depression was confirmed on the basis of detailed history, thorough clinical examination and scoring the Beck Depression Inventory II.

[B] Exclusion Criteria -

i) Patients superimposed with major psychiatric illness like Mania, Alzheimer's disease, Senile dementia, Schizophrenia, Obsessive compulsive disorders were not selected.

ii) Patients having fully diagnosed chronic disease like Malignancies, Hypothyroidism, Asthma, chronic renal Failure, cirrhosis of liver and other similar disorder were not selected.

iii) Patients with acute illnesses like myocardial infarction (M.I.), Cerebrovascular Accident (C.V.A.), Congestive Heart Failure (C.H.F.), Chronic obstructive pulmonary disease (C.O.P.D.), meningitis and other disorders.

iv) Patient suffering from drug induced Depressive illness.

[C] Discontinuation Criteria -

Patients were discontinued from the clinical trial; if they did not report for regular follow-up during clinical trial due to any reason. During trial period, if any other acute disease overlapped with classical manifestation of depression then also those patients were discontinued.

3. Administration Of Drug :

Selected patients of depression were divided into three groups on random basis for the drug administration as follows -

• Group A (Avasadahara Yoga Group) :

Drug : Patients of this group were given Avasadahara Yoga

Dose : 15 ml twice in a day

Duration: 30 Days

Anupana: With equal amount of water (lukewarm)

Time : After meal

• Group B (Psychotherapy Group) :

Drug : Psychotherapy including counseling, Mantra Jap, prayer and Meditation.

Duration: 30 Days

Time : Meditation with Mantra Jap done for 15-30 min. daily and given counseling 4 time in the period of 30 days.

• Group C (Combined Group)

Both therapy given in group A & group B as mentioned above (Psychotherapy and *Avasadahara Yoga*).

4. Criterias Of Assessment

During the trial and follow-up study the patients were assessed on the following parameters-

a) Subjective improvement.

b) Clinical improvement.

a) Subjective Improvement -

All the patients registered for the trial were specifically asked for any changes in their clinical manifestations and growing feeling of well being produced by the drug under trial.

b) Clinical Improvement -

For the assessment of clinical improvement, the incidence of presenting features was worked out and the severity of symptoms was rated in each case. For this purpose the following "Beck Depression Inventory (BDI)" was used.

The numerical system was used to rate or to report value on some measured dimension, for example, a scale ranging from 0 to 3, with 0 meaning strongly disagree and 3 strongly agree.In the scale various symptoms are graded into different grade as shown below -

Absent	0
Mild	1
Moderate	2
Severe	3

• Total BDI score can range from 0 to 63

0-9 - normal non-depressed state

10-18 - mild depression

19-29 - moderate depression

30-63 - severe depression

5. Duration Of Clinical Trial And Followup Studies -

All the patients of three groups were regularly followed up 2 times i.e. on 15th day and 30th day to evaluate the therapeutic effect of treatment given. The patients were asked to fill up the Beck Depression Inventory for diagnosis before and after the treatment.

Observations

The data of the present study depicts that the maximum number of patients i.e. 65 % were male and 80% of the patients were Hindus.

The study reveals that majority of the patients i.e. 45% were reported in the age group of 21 – 30 years and maximum 30% of the patients were having higher secondary education level and maximum number of patients i.e. 48.33% were from middle class and maximum 33.33% of the patients were in service.

The data of the present study depicts that the majority of the patients i.e. 55% were married and most of the patients (78.33%) were belonging to urban habitat and 40.00% patients were having family history.

The present study mentions that dietary habit of most of the patients i.e.55% was Niramisha (vegetarian), majority i.e. 33.33% of the patients were having Mandagni and 55.00% were having Madhyama Koshtha.

In the present study, the available data depicts that maximum number of patients i.e. 53.33% were taking tea/coffee, however 18.33% of the patients were having addiction of sleeping pills, while 15.00% were having habit of chewing pan/tobacco and 06.67% each were smoking and use alcohol. No patients were addicted of snuffing or drugs.

The data of clinical study represents, 60.00% patients were having disturbed sleep and 25.00% patients were having irregular Mala Pravritti, whereas 26.67% patients had constipation.

The present study shows that maximum number of the patients i.e. 40.00% were having Vata-kapha Sharirika Prakriti and 51.67% were having Tamasika Manasika prakriti.

The present study shows that maximum number of the patients 58.33% were having Madhyama Sara, 71.67% were having Madhyama Samhanana, 68.33% were having Madhyama Pramana, 46.67% were having Madhyama Satmya and 68.33% were having Avara Satva.

The present study reveals that maximum number of patients i.e. 41.67% were having Madhyama Abhyavaharana Shakti, 40.00% were having Avara Jarana Shakti, 60.71% were having Avara Vyayama Shakti, 90.00% were from Madhyama Vaya and 66.67% belonged to Jangala Desha.

Results :

Effect Of Avasadahara Yoga(Group A) :

The present study denotes that statistically highly significant result was found in Pessimism (70.97%), in Sadness (66.67%), in Loss of pleasure (64.52%), in Irritability (55.88%) and in Tiredness or Fatigue (54.70%),

Statistically significant result was found in Agitation (49.26%), Changes in sleeping patterns (48.78%), Loss of energy (48.65%), Indecisiveness (47.50%), and Self Dislike (43.97%)

Statistically not significant result was found in Crying (40.30%), Suicidal Thoughts or wishes (35.00%), Self criticalness (34.21%), Changes in Appetite (32.24%), Punishment feelings (27.50%), Guilty feelings (25.00%), Past failure (21.88%), in worthlessness (19.12%) and Loss of Interest in Sex (16.07%)

The initial mean score were 29.85, 15.75 reduction with 42.24% decrease of BDI Score was noted, which was statistically highly significant ($P<0.01$).

Effect Of Psychotherapy (Group B) :

The present study denotes that statistically

highly significant result was found in Sadness (65.38%), in Self Dislike (64.29%), in Self criticalness (61.54%), in Loss of pleasure (56.25%), in Suicidal Thoughts or wishes (56.25%), in Pessimism (51.85%), Guilty feelings (50.00%), in Agitation (50.00%), in Past failure (46.43%).

Statistically significant result was found in Indecisiveness (45.77%), Changes in sleeping patterns (45.71%), in Irritability (45.45%), in Crying (42.86%), in Punishment feelings (42.42%), in Tiredness or Fatigue (40.30%), Loss of Interest in Sex (38.86%), Loss of energy (37.84%).

Statistically not significant result was found in Changes in Appetite (30.85%) and in Worthlessness (27.83%).

47.86% decrease of BDI Score were observed which was highly significant (P<0.001).

Effect Of combine therapy (Group C) :

statistically highly significant results were found in Guilty feelings (87.50%) and in Self Dislike 79.41%, whereas statistically significant result was observed in Self criticalness 76.67%, Changes in sleeping patterns (75.61%), punishment feelings (72.73%), Sadness (70.14%), followed by significant result in Pessimism(63.16%), Suicidal Thoughts or wishes (61.54%), Indecisiveness (60.71%), Loss of interest (59.38%), Agitation (58.62%), Loss of pleasure (58.54%), Loss of energy (56.76%), Irritability(55.88%), Past failure (55.56%), Concentration difficulty (51.61%), Loss of Interest in Sex (47.37%), in changes in appetite (47.06%), in Worthlessness (45.00%) and in Crying (44.44%).

The initial mean score was 32.6 which was reduced to 12.0 with 63.19% decrease of BDI Score, which was statistically highly significant (P<0.001).

Discussion :

In this study we choose the two distinct therapy (Adravyabhut & Dravyabhut) and evaluated its efficacy on the current disease Depression.

A very minor mistake of the physician may drop the patient into dark and become life threatening for him.

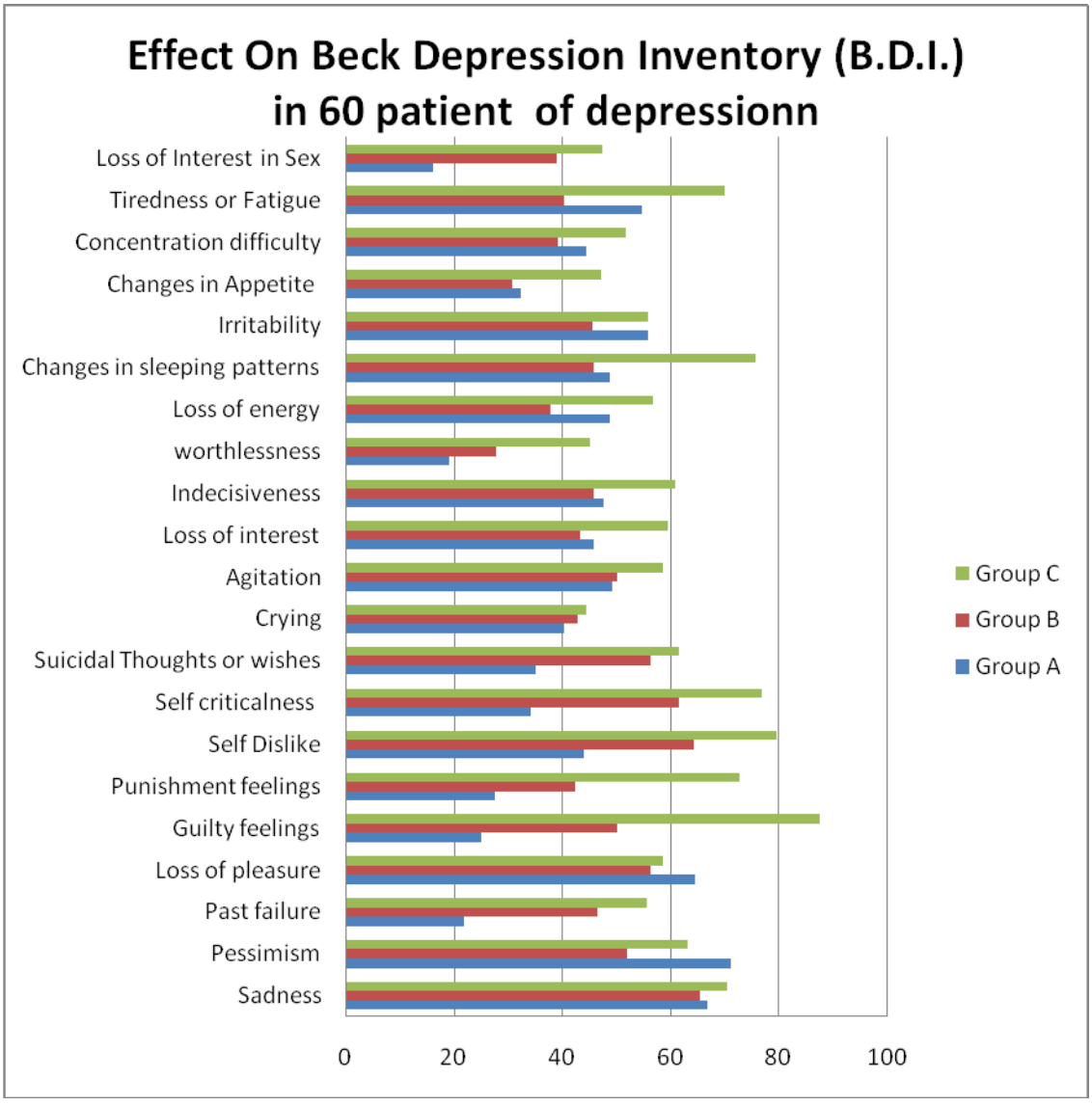
So we start our therapy in the both of dimension i.e. Satva to Sharir and Sharir to Satva

It is observed from our clinical study that the drugs having an aphrodisiacal effect, show a great role in mitigating the mental diseases specially those are depressive in nature.

Comparison of effect of therapies:

Symptom	Avasadahara Yoga (Group A)	Psychotherapy (Group B)	Combine therapy (Group C)
Sadness	66.67 %	65.38 %	70.45 %
Pessimism	70.97 %	51.85 %	63.16 %
Past failure	21.88 %	46.43 %	55.56 %
Loss of pleasure	64.52 %	56.25 %	58.54 %
Guilty feelings	25.00 %	50.00 %	87.50 %
punishment feelings	27.50 %	42.42 %	72.73 %
Self Dislike	43.97 %	64.29 %	79.41 %
Self criticalness	34.21 %	61.54 %	76.67 %
Suicidal Thoughts or wishes	35.00 %	56.25 %	61.54 %
Crying	40.30 %	42.86 %	44.44 %
Agitation	49.26 %	50.00 %	58.62 %
Loss of interest	45.77 %	43.33 %	59.38 %

Indecisiveness	47.50 %	45.77 %	60.71 %
Worthlessness	19.12 %	27.83 %	45.00 %
Loss of energy	48.65 %	37.84 %	56.76 %
Changes in sleeping patterns	48.78 %	45.71 %	75.61 %
Irritability	55.88 %	45.45 %	55.88 %
Changes in Appetite	32.24 %	30.85 %	47.06 %
Concentration difficulty	44.52 %	39.13 %	51.61 %
Tiredness or Fatigue	54.70 %	40.30 %	70.00 %
Loss of Interest in Sex	16.07 %	38.86 %	47.37 %



Effect On Total Bdi Score

Combined therapy (Group C) 63.19% provided better relief in BDI score followed by Psychotherapy (Group B) 47.86% and Avasadahara Yoga (Group A) 42.24 %.

Overall Effect Of Therapies

Complete remission was seen in Avasadahara Yoga (Group A) in 05.00% patients and in combined therapy (Group C) in 15.00% patients.

75.00% patients got markedly improvement by combined therapy and 55.00% by Psychotherapy and followed by 50.00% by Avasadahara Yoga.

Moderately improved patients were noted 45.00% each in Avasadahara Yoga (Group A) and Psychotherapy (Group B) and 10.00% in combined therapy.

Comparison Of The Effects

On the basis of the comparison of the effects of all three groups on individual symptoms, total B.D.I. Score and overall effect discussed earlier, it was found that combined therapy provided better relief in the most of symptom which were having significant relief than other two therapies.

So it can be concluded that combined therapy proved better than Psychotherapy or Avasadahara Yoga administered therapy alone.

Probable Mode of Action of Psychotherapy:

Though clinically efficacy of Psychotherapy is proved, the nature of its action is very complex. Therefore, to understand the mode of action of Psychotherapy is a difficult task. Meditation process enhance & the Sattva quality and Counseling itself seems to produce a relaxation response.

Probable Mode of Action of Avasadahara Yoga:

After considering the above description, it seems that all the drugs of Avasadahara Yoga having some action at psycho-neurological level and the combination of these drugs might be able to break the pathogenesis of depression at different levels.

All the drugs of Avasadahara yoga have Rasayana property, that replenish the vital fluids in the body. That nourishes the body, sense, mind & intellect successively. But apart from Rasayana property some of the drugs have Vrishya & Medhya Guna also.

As a result it acts over the target organ instantly. It is a big question that there any relation between hypogonadism and Depression. It is seen that impotent, figid or infertile (male & female) person are offenly depressive. That is seems to be due to their fruitless work.

Conclusion:

Conclusion of present study is that –

Physical and psychological ailments affect each other. Mana Plays an important role to controlling normal physiology and Manas Doshas (Raja and Tama) strongly afflict the haemostatic in every process and every step of life.

It is seen that Kaphaja Unmad may be correlated with disease depression to some extent.

Though mental diseases are chronic in nature but it may be fatal.

Short therapy is not sufficient to break down this complex phenomenon and so long term therapy is very essential. Any misleading treatment may be risky for the patient's life and that is why mental patient should be treated seriously.

The counseling is the life saving tool for depressive patients. Not only to the patient but it is applicable to the close relatives of patients too. Behavior of counselor should be like a friend for open conversation and lighting to problems specific.

Combined therapy proved better than individual Psycho as well as Avasadahara Yoga administered therapy.

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Antimicrobial Study

Antimicrobial Activity of Various Dosage Forms of Tridax Procumbens Against Different Pathogens -An Experimental Evaluation

*Dr. Pranit Ambulkar, **Dr. Swati Rahangdale, ***Dr. K. S. Rao, ****Dr. E. Menghani

Abstract

Introduction - *Tridax procumbens Linn.* (Tridax) is a common weed found all over India. It is commonly known as Peet Bhringraj, Jakhamjod, and Kambarmodi etc. It is traditionally being used from centuries for wound healing and haemostasis. Also for the treatment of diarrhea, dysentery, bronchial catarrh etc.

Hypothesis - Tridax procumbens Linn. (Tridax) is a traditionally being used in wound management. It is also known for its haemostatic action. As the antiseptic action of Tridax is observed traditionally, the hypothesis is that, Tridax has got some antimicrobial activity.

Objective - To evaluate antimicrobial activity of various Ayurvedic dosage forms of Tridax such as Swarasa, Kwatha, Taila, Ghrita, Kshara and solvent extracts against 11 pathogenic microbes- bacteria and fungi.

Materials and Methods - Above mentioned dosage forms of Tridax were tested for their antimicrobial activity against 11 common pathogenic microbes by culture and sensitivity method.

Results and Conclusion - The results were encouraging. Different dosage forms of Tridax exhibits good antimicrobial activity against many microbes. Some dosage forms have typical antimicrobial activity against some typical microbes. So the experimentation with different dosage forms has reviled the new dimension of antimicrobial activity of Tridax. The details of experiment and results are explained in this paper.

Keywords: Tridax procumbens, Antimicrobial, Dosage forms

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Introduction

Tridax procumbens Linn. (Tridax) is a common weed found all over India up to 2400 m above sea level and in all hot countries. The plant is native of tropical America and naturalized in tropical Africa, Asia, and Australia. In English it is popularly called 'coat buttons'. It is known for its various medicinal properties. Native healers of India are using this herb since ages for various treatment purposes. Bapalal vaidya in Nighantu Adarsha Part 1 has mentioned Tridax by the name 'Pardesi Bhringraj'. Shodhal Nighantu (Verse 80,584,670) has mentioned Tridax by the name Avanti.

Tridax is known by different names in various parts of India, such as, Kambarmodi, Jakhamjod, Ekdandi, Brahmadandi, Dagdi pala, Tan tani, Man modi in Maharashtra; Molia mehandi, Pathhargada, Raktrodhi, Raktashoshi in Rajasthan; Tumbi, Vettu-kkaya- thalai in Tamilnadu; Raavanaasuraadi talakaai, Kampu Chemanti in Andhra; Gabbu sanna savanthi, nettu gabbu savanthi, Tikki kasa, Tikki toppala, Gayad toppala, Kulae puduga, Kulae buskad, Hochod tasad, Robrobpuru in Karnataka; Vranaropini, Raktarodhi, Tikki kasa, Dandotpala, Sanjivani, Peet Bhringraj in north India.

It is traditionally known for its various medicinal properties like wound healing, haemostatic, Antiseptic, pain relieving. Also used in dysentery, diarrhea, bronchial catarrh, sore throat etc. It is eaten as vegetable in some parts. It is also fed to cattle as a nutritive feed

In Kenya the leaves are chewed followed by a drink of water by the Masai for stomachache and malaria, and in Tanganyika a decoction of the whole plant in water is taken for persistent low backache, and a root decoction for infantile diarrhoea. Traditionally local Yoruba population of Western states of Nigeria uses the leaf of the plant as treatment to reduce blood pressure, conjunctivitis, diarrhoea, and dysentery to wound healing and related inflammatory conditions.

Hypothesis

The microbe as the source of infection and disease is not an alien thing to Ayurvedic people. Various herbal and herbo-mineral formulations are working against all these diseases centuries prior to the invention of modern microbiology and germ theory of diseases. As mentioned above, Tridax is being traditionally used for various disease conditions especially infective in origin. So the hypothesis is that, Tridax possesses antimicrobial property.

Objective

Various dosage forms are prepared from crude herb for various purposes like preservation, reducing toxicity, increasing potency, increasing bioavailability, making cost effective etc.

The objective of the present study is to evaluate antimicrobial potency of each of the dosage form of Tridax and to suggest a conveniently usable dosage form of Tridax that have maximum potency and applicability in practice.

Materials and Methods

Preparation of dosage forms

As there is no textual reference of preparation of dosage forms of Tridax, these preparations were prepared according to the general guidelines of dosage forms from **Sharangdhar Samhita Madhyam Khanda**. Following dosage forms were prepared [Table-1]. Also as mentioned in Charaka Samhita, 'Bahu Kalpam' i.e. ability to be transformed in multiple dosage forms is one of the characteristics of excellent medicine.

Sr.No.	Dosage form	Reference of dosage form
1	Patra Swarasa (fresh leaf juice)	Sharangdhar Sam./Madhya/1/2
2	Pushpa Swarasa (fresh flower juice)	Sharangdhar Sam./Madhya/1/2
3	Mool Swarasa (fresh root juice)	Sharangdhar Sam./Madhya/1/2
4	Kwatha Ghana (reduced decoction)	Sharangdhar Sam./Madhya/2/1
5	Kshara (water soluble ash)	Sharangdhar Sam./Madhya/11/101
6	Taila (oil medicated with Tridax)	Sharangdhar Sam./Madhya/9/1,2
7	Ghrita (Ghee medicated with Tridax)	Sharangdhar Sam./Madhya/9/1,2

Organic solvent extracts were also prepared for comparison. The method employed was 'Continuous extraction by Soxhlet Apparatus' (Trease & Evans' Pharmacognosy)

1) Ethanol soluble extract
2) Methanol soluble extract
3) Chlorine soluble extract
3) Benzene soluble extract
4) Ethyl acetate soluble extract
5) Petroleum ether soluble extract

Microbial strains

The antimicrobial activity of different dosage forms was tested against different species of common pathogenic bacteria and fungi. The strains of different microbes were procured from 'Institute of Microbial Technology' (IMTECH), and 'SMS medical college, Jaipur' (#), as mentioned below in Table: 2

[Table: 02]

No.	Species	MTCC No.	Pathogenic activity
1	Bacillus subtilis	441	It may contaminate food but rarely causes food poisoning
2	Proteus vulgaris	744	Known to cause urinary tract infections and wound infections.
3	Shigella flexneri	1457	Diarrhea
4	Staphylococcus aureus	7443	*S. aureus* can cause a range of illnesses from minor skin infections, pimples, impetigo, boils furuncles, cellulitis, folliculitis, carbuncles, scalded skin syndrome, and abscesses, to life-threatening diseases such as pneumonia, meningitis, osteomyelitis, endocarditis, toxic shock syndrome (TSS), chest pain, bacteremia, and sepsis.
5	Enterobacter aerogenes	111	bacteremia, lower respiratory tract infections, skin and soft-tissue infections, urinary tract infections (UTIs), endocarditis, intra-abdominal infections, septic arthritis, osteomyelitis, and ophthalmic infections.
6	Chryseobacterium gleum	1916	meningitis, bacteremia, pneumonia, endocarditis, infections of skin and soft tissue, ocular infections, and other infections
7	Klebsiella pneumoniae	109	The most common infection is pneumonia. Ranks second to E. coli for urinary tract infections.

8	Aspergillus fumigatus	#	In immuno-compromised individuals may cause a range of diseases generally termed aspergillosis
9	Candida albicans	3017	Causes oral and genital infections in humans. It causes Systemic fungal infections (fungemias) in immuno compromised patients.
10	Aspergillus niger	1344	Inhalation of spores causes a serious lung disease aspergillosis. A. niger is one of the most common causes of otomycosis (fungal ear infections).
11	Aspergillus flavus	#	Second most common agent of aspergillosis. May invade arteries of the lung or brain and cause infarction. May cause corneal, otomycotic, and naso-orbital infections

The antimicrobial Study was done at 'Mahatma Gandhi Institute of Applied Sciences', Jaipur.

Microbiological techniques adopted

1. Preparation of Media and Media Plates

In this regard, first of all Nutrient broth (13gms/1000ml of distilled water) was dissolved in distilled water in a conical flask then, Nutrient Agar (28gms/1000ml of distilled water) was also added and dissolved in a conical flask having Nutrient broth. Flasks were then plugged with cotton and autoclaved for complete sterilization. After autoclave, media was immediately poured in sterile Petri dishes aseptically in a Laminar flow cabinet. The Agar, which is added in a broth medium, hardens as it cools. After solidifying of Agar plates, they were kept in incubator at 37°C for overnight for checking any contamination.

2. Preparation of Discs

A standard Whatman filter paper No. 1 was used to prepare discs of diameter 5 mm with the help of punching machine. These discs were placed in a Mac-Cartney's bottle and autoclaved for 20 minutes. The sterile discs were then used for the study.

3. Disc Diffusion Method

In this method, sectors were marked on the media plate for different samples and one for control. A 24 hr. test bacterial subculture was prepared in sterile broth medium and then 100 ml of it was spread on the plate with the help of spreader. It was allowed to dry at room temperature for 30 min.

The sterile filter paper discs were charged with 10 ml of required concentration of drug with the help of micropipette. The disc was dried at room temperature to remove excess moisture. The charged discs were then applied on solid media in the previously marked zones according to the different concentrations.

The control was the solvent which was used for extraction purpose i.e. For Methanol extracts, control was methanol charged and so on. All the microbial work mentioned above was carried under aseptic conditions in a laminar flow cabinet. The plates were incubated at 37° C for 24 hours and then observed for the presence of inhibition zone.

4. Measurement of inhibition zone

The zone of inhibition of microbial growth around the disc was measured in mm. including the disc with the help of a scientific scale. The readings were taken at 4 different planes. Then the constant reading was considered as the final reading.

Observations and Results

Following table no. 03 & 04 shows inhibition zones in mm Tridax dosage forms against different microbes.

[Table: 03]

No.	Drug Samples	B. subtilis	P. vulgaris	S. flexneri	S. aureus	E. aerogenes	C. gleum
1.	Leaf juice	**28**	6	6	0	7	11
2.	Flower juice	7	7	0	6	0	10
3.	Root juice	8	8	6	8	7	13
4.	Kwatha Ghana	8	7	6	13	0	**14**
5.	Kshara	13	9	0	11	11	12
6.	Taila	8	0	8	0	8	9
7.	Ghrita	6	9	0	9	7	6
8.	Ethanol ext.	7	6	11	9	8	13
9.	Methanol ext.	7	6	13	7	6	8
10.	Chlorine ext.	7	6	12	7	0	13
11.	Benzene ext.	7	9	9	9	7	9
12.	Ethyl act. Ext	8	0	**19**	7	6	6
13.	Pet. Ether ext.	10	10	11	12	10	10

[Table: 04]

No.	Drug Samples (25 mg each)	K. pneumoniae	A. fumigatus	C. albicans	A. niger	A. flavus
1.	Leaf juice	0	8	9	8	9
2.	Flower juice	0	10	17	0	9
3.	Root juice	6	9	11	0	8
4.	Kwatha Ghana	9	8	0	0	0
5.	Kshara	8	10	12	7	13
6.	Taila	0	0	11	7	0
7.	Ghrita	0	0	7	0	0
8.	Ethanol ext.	0	0	17	0	8
9.	Methanol ext.	6	12	14	10	7
10.	Chlorine ext.	8	14	13	12	8
11.	Benzene ext.	7	9	8	7	8
12.	Ethyl act. Ext	0	8	8	7	7
13.	Pet. Ether ext.	7	7	11	7	9

Note: - Nil/0 = No Inhibition, Insignificant = 6 mm-9 mm, Significant= 10mm-13mm, Highly significant = 14mm and above.)

Images

Followings are the Images showing inhibition zone produced by different dosage forms of Tridax against Proteus vulgaris, Shigella flexneri and Staphylococcus aureus respectively.

Image I

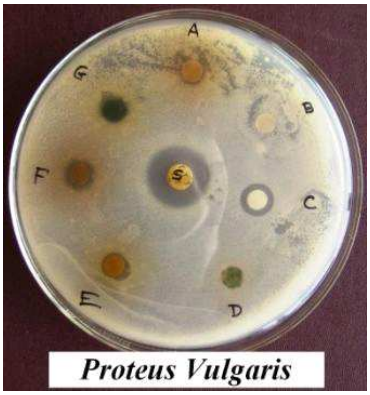
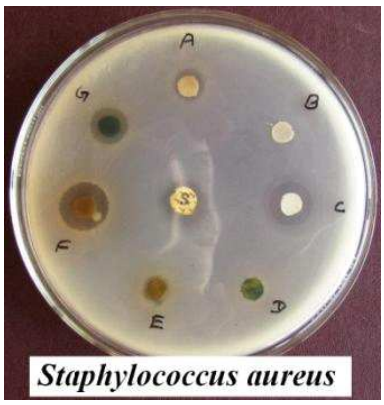


Image II

Image III



Results

1. Leaf juice: Leaf Juice has highly significant inhibition of 28mm against B. subtilis. Significant inhibition against C. gleum, with inhibition zone between 10 to 13 mm. It showed insignificant inhibition against P. vulgaris, S. flexneri, C. albicans, A. flavus, E. aerogenes, A. fumigates, A, niger with inhibition zone between 6 to 9 mm.

2. Flower juice: It has highly significant inhibition against C. albicans. Significant inhibition against C. gleum and A. fumigates. Insignificant inhibition against B. subtilis, P. vulgaris, S. aureus and A. Flavus. No inhibition against S. flexneri, E. aerogenes, K. pneumonia and A. niger.

3. Root juice: It has significant inhibition against C. gleum and C. albicans. Insignificant inhibition against B. subtilis, P. vulgaris, S. flexneri, S. aureus, A. fumigates E. aerogenes, K. Pneumoniae and A. flavus. No inhibition against A. niger.

4. Kwatha Ghana: It has highly significant inhibition against C. gleum. Significant inhibition against S. aureus. Insignificant inhibition against B. subtilis, P. vulgaris, S. flexneri, A. fumigates and K. pneumoniae. No inhibition against E. aerogenes, C. albicans, A. niger and A. flavus.

5. Kshara: It has significant inhibition against B. subtilis, S. aureus, E. aerogenes, C. gleum, A. fumigatus, C. albicans and A. flavus. Insignificant inhibition against K. pneumonia, A. niger and P. vulgaris. No inhibition against S. flexneri.

6. Taila: It has significant inhibition against C. albicans. Insignificant inhibition against B. subtilis, C. gleum, A. niger, E. aerogenes, and S. flexneri. No inhibition against S. aureus, K. pneumonia, P. vulgaris, A. fumigates and A. flavus.

7. Ghrita: It has significant inhibition against S. aureus. Insignificant inhibition against P. vulgaris, B. subtilis, E. aerogenes, C. gleum and C. albicans. No inhibition against S. flexneri, K. pneumonia, A. fumigates A. niger and A. flavus.

8. Ethanol soluble extract: It has significant inhibition against S. flexneri, C. gleum and C. albicans. Insignificant inhibition against B. subtilis, S. aureus, P. vulgaris, E. aerogenes and A. flavus. No inhibition against K. pneumoniae, A. fumigates and A. niger.

9. Methanol soluble extract: It has highly significant inhibition against C. albicans. Significant inhibition against S. flexneri, A. fumigates and A. niger. Insignificant inhibition against B. subtilis, P. vulgaris, S. aureus, E. aerogenes, C. gleum, K. pneumoniae and A. flavus.

10. Chloroform soluble extract: It has highly significant inhibition against A. fumigates. Significant inhibition against S. flexneri, C. gleum, C. albicans and A. niger. Insignificant inhibition against B. subtilis, P. vulgaris, S. aureus, K. pneumoniae and A. flavus. No inhibition against. E. aerogenes.

11. Benzene soluble extract: It has insignificant inhibition against all microbes.

12. Ethyl acetate soluble extract: It has highly significant inhibition against S. flexneri. Insignificant inhibition against B. subtilis, S. aureus, E. aerogenes, C. gleum, A. fumigatus, C. albicans, A. niger and A. flavus. No inhibition against P. vulgaris and K. pneumonia.

13. Petroleum ether soluble extract: It has significant inhibition against P. vulgaris, B. subtilis, S. flexneri, S. aureus, E. aerogenes, C. gleum and C. flavus. Insignificant inhibition against K. pneumonia, A. fumigates A. niger and A. flavus.

Discussion

One cannot always use the herb in its native form due to different reasons like undesirable test, smell, physical form, mal absorption etc. Also, drug cannot be obtained fresh in all seasons of the year. Hence, man started converting drug into some processed form that possesses desirable durability, good test, smell, form, potency, prolonged shelf life etc. This science then developed and called Bhaishajya Kalpana Vigyana.

Tridax is traditionally being used in its crude form. The most frequently used form of Tridax for medicinal purpose is Paste, fresh juice and rarely decoction. Now a day many researches are going on to uncover various medicinal properties of Tridax like anti-inflammatory, hepatoprotective, antioxidant, anti diabetic, immune modulator etc. But all these researches are being carried out using solvent extracts of the Tridax.

Ayurvedic system of drug manufacturing does not support the use of extracts derived using toxic and carcinogenic solvents. In Ayurvedic system all the things used are in edible form as a holistic approach. Also it has been found that compounds in their natural form are more active than their isolated form. Hence the need of the study of amtimicrobiological activity of various Ayurvedic dosage forms of Tridax procumbens is justified.

In the present study, it has been observed that different dosage forms inhibit different microbes. The nature of this antimicrobial activity cannot be categorized in a fixed format. It is clear that various dosage forms has its own typical characteristics and differentiated action. But the exact clarification of this behavior will be available only after detailed analysis with sophisticated equipments and techniques. This field is open for the researchers with respect to the Tridax and other Ayurvedic drugs also.

Conclusion

Tridax procumbens is traditionally being used from centuries for different ailments. Each dosage form has shown some antimicrobial property. Leaf juice has shown highly significant inhibition of Bacillus subtilis. Kwatha Ghana has highly significant results on C. gleum. Flower juice has shown highly significant result on Candida albicans. Kshara has significantly inhibited more than 50% of the tested microbes. Methanol soluble extract, Chloroform soluble extract and petroleum ether soluble extract has inhibited about 50% of the tested microbes. Various dosage forms of Tridax have got good antimicrobial potential and if developed according to their tendency to inhibit specific microbes, it may give us a good antibiotic drug of the future.

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Physiological Study

Physiological study of *Vasa Updhatu*

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Abstract-

The health has been defined as equilibrium of *dosha*, *agni, dhatu* and *mala,* including well being at the level of *mana* and *atma*. These *dosa, dhatu* and *mala* constitute the basis of the physiological and pathological doctrine of *ayurveda*. According to *Charak Vasa* is the *upadhatu of mamsa dhatu*. It is the pure *sneha of mamsa dhatu*.It presents or covers the whole body. Like Vasa cholesterol is a solid waxy-substance that is naturally produced by all animals during their normal metabolic processes. It is the most abundant steroid and is used as building blocks for cell membranes, maintaining healthy cells, as an aid to digestion, and in the manufacture of sexual hormones.

Key words- Vasa, Cholesterol.

सारांश–

आयुर्वेद में स्वस्थ को परिभाषित करते हुए बताया गया है कि दोष, धातु, मल अग्नि समावस्था में रहते हैं एवं आत्मा व इन्द्रियों का मन के साथ संयोग उचित प्रकार से होता है तो पुरूष स्वस्थ कहलाता हैं। दोष, धातु, मल को शरीर का मूल कहा गया है अर्थात् जब ये समावस्था में रहतें है तो शरीर स्वस्थ एवं जब विकृतावस्था में रहतें हैं तो शरीर व्याधिग्रस्त हो जाता है। धातु न केवल शरीर को धारण करने का कार्य करती है वरन् उत्तरोत्तर धातु एवं उपधातु को पोषण प्रदान करती है। वसा को मांस की उपधातु माना गया है। यह स्निग्ध द्रव्य होता है जो शरीर को आधार प्रदान करता है। कॉलेस्ट्राल भी मोम सदृश स्नेह पदार्थ होता है जो उपापचय क्रिया के दौरान जन्तु शरीर में निर्मित होता है। यह कोशीकीय स्तर के निर्माण में पाचन क्रिया में, जनन हॉर्मोन के निर्माण में भाग लेता हैं।

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Physiological Study

Physiological study of *Vasa Updhatu*

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Introduction

Ayurveda is the 'science and art of living'. It is the oldest and best developed natural science of humanity.

According to ayurveda: *sharir* is made up of *doshas, dhatus and malas.*

समदोषः समाग्निश्च समधातुमलक्रियः।
प्रसन्नात्मेन्द्रियमनाः स्वस्थ इत्यभिधीयते॥ (Su. Su. 15/48)

The term *dhatu* represent element which are responsible for formation of the basic structure of the body. Because of their supporting properties they are called *dhatus.*

Dhatus are seven in number *viz:*

रसासृंमांसमेदोस्थिमज्जाशुक्राणि धातवः॥ (As.Hr.Su. 1/13)

(1) Rasa (2) Rakta (3) Mamsa
(4) Meda (5) Asthi (6) Majja
(7) Shukra

The *upadhatus* are derived from the main *dhatus* though they are not as essential as *dhatus* still they serve important functions within the body by supporting the subsidiary tissues.

रसात्स्यन्य ततो रक्तमसृजः कण्डराःसिराः।
मांसाद्वसा त्वचः षट् च मेदसः स्नायुसम्भवः॥
(ch. chi. 15/16)

Dhatu	Upadhatu
1. Rasa	- Stanya and Artava
2. Rakta	- Kandara and Sira
3. Mamsa	- Vasa and shat twak
4. Meda	- Snayu

According to *charak*

Vasa is the *upadhatu of mamsa dhatu.* It is the pure *sneha of mamsa dhatu-*

शुद्धमांसस्य य स्नेहः सा वसा परिकीर्तिका॥
(Su.Sha.4/13)

The function of *vasa* is:

स्नेहना जीवना बल्या वर्ण उपचय वर्धनाः।
स्नेहा ह्येते च विहिता वातपित्त कफापहाः॥
(Ch. Su. 1/87)

It means *vasa* increases *snigdhata,* vital capacity, power, colour, metabolism in our body and is *tridosha shamaka* .

According to *ayurveda vasa* is a *sneha dravya* and in modern view cholesterol is a fatty substance. Cholesterol is actually a steroid. "Chol"=bile and "sterol"=steroid. Steroids belong to a large and varied group of chemical compounds that are naturally produced by the body. Cholesterol is the most abundant steroid and it is used as building blocks for cell membranes, maintaining healthy cells, as an aid to digestion, and in the manufacture of sexual hormones. Cholesterol is a solid waxy-substance that is naturally produced by all animals during their normal metabolic processes. Cholesterol can be classified with the lipid family: fat-like substances that are insoluble in water but soluble in fat solvents.

Present study and its aim:

The present study may be considered as independent study to elaborate the concept of *vasa upadhatu.* Before the selection of subject (problem) one may very rightly understand that this subject is not an easy task because *vasa* is very vast and complicated subject, which needs the interpretation in the *ayurvedic* and modern science, keeping the concept of *vasa upadhatu* in mind, the present study has been planned with the following aims and objects.

Aims and objects are as follows-

(1) Physiological study of *vasa* – ayurveda and modern view.

(2) Physiological study of cholesterol.

(3) Correlation between *vasa* and cholesterol.

Material and Methods:

(1) Materials-

(a) All available ayurvedic samhitas with their commentaries.

(b) Various books on ayurveda by recent scholars.

(c) Various modern texts.

(d) Previous research works.

(2) Methods-

(a) This work will be done after reviewing all the concerned ayurvedic samhitas.

(b) The literature of modern medical science and information necessary for study will be collected.

(c) Previous thesis work related to the subject will also be review.

(d) If necessary the support will be taken from various institutes where the related task is being pursue.

Discussion

The *vasa* is derived from the root '*Vas*' *dhatu*. That means '*Nivas*' (reside) and 'cover'

निवास – **वसति शरीरे विशेषतः मांसे इति वसा।**
आच्छादन– **आच्छादयति शरीरं मांसामुदरादिकं वा इति वसा।**

i.e. present and covers in whole body specially the *mamsa*, called *vasa*.

Formation: *Vasa* is formed from *prasadamsha* of *mamsa dhatu*. When *ahara* rasa reached in *mamsa*vaha *srotas* after the formation of *rasa* and *rakta dhatu*, then the action of *mamsa*gni takes place. The *poshakansha* of *ahara rasa* get digested and divided into three parts:

1. *Sthula bhaga* – The *mamsa dhatu* and its *upadhatu* i.e. *vasa* & twak get nutrition and originates.
2. *Suksham bhaga* – The successive *medo dhatu* gets nutrition and formed.
3. *Mala bhaga* – The byproducts are formed.

Site: *Mamsa dhatu* is present between twak and *asthi*. It covers whole body with *shakha*, *kostha*, *sira* (head) etc. except teeth and nails etc.

Vasa is also present or cover whole body specially in the *mamsa dhatu*. So *vasa* is also present under the skin cover all body organs like *mamsa dhatu*. So they give strength and by virtue of *sneha guna*, softness of *dhamanies* (Arteries) etc. takes place. In case of *mamsa kshya* symptoms like *dhamani saithilya* originates, just because, the *vasa* which give strength to wall of *dhamanies* (arteries), also decreases in *mamsa kshya*. As a result of this, flexibility and elasticity of wall increases.

Character of *vasa*

According to various *acharyas* the characters of *vasa* has follows –

विद्धभग्नाहतभ्रष्टयोनिकर्णशिरोरूजि।
पौरुषोपचये स्नेहे व्यायामे चेष्यते वसा॥
(ch. Su. 13/16)

The *vasa* is prescribed for the treatment of injury, fracture, trauma, prolapsed uterus, earache and headache. It enhances the virility of a person. It helps in oleation and it is useful for those who practice physical exercise.

Persons who are debilitated by exercise, who have lose of semen and blood, which are having dreaded diseases, which have very powerful digestive fire and *vata* greatly aggravated are best suited for drinking *vasa*.

Table – Action of *vasa*

S. No.	Action of Vasa and Majja	Charak	Sushrut	Astanga Samgrah	Astanga Hridaya	Kashyap	Sarang - dhar	Bhav prakash
1	Vidhwata	↓						
2	Bhagnta	↓						
3	Bhrist Yoni ruja	↓			↓			
4	Karna ruja	↓			↓			
5	Shiro ruja	↓			↓			
6	Paurush upchaya	↑						
7	Vyayam karshita							
8	Vata-atap kshirna dhatu				↓			
9	Adhava-bhara kshirna dhatu				↓			
10	Stri-vyayam kshirna dhatu				↓			
11	Rukshta				↓			
12	Klisha				↓			
13	Kshama				↓			
14	Atyagni				↓			↓
15	Srotorodha				↓			
16	Sandhi ruja				↓			
17	Asthi ruja				↓			
18	Marma ruja				↓			
19	Kostha ruja				↓			
20	Dagdhata				↓			
21	Pitta-Kapha			↑				
22	Vata			↓		↓		↓
23	Vrishya					↑		
24	Bala			↑		↑		
25	Samyata					↑		
26	Ayu					↑		
27	Istharikaran					↑		
28	Shukra retas							↓
29	Maha ruja							↓
30	Araktata							↓

Pramana* of *vasa

त्रयो अञ्जलयः वसाया। (ch. Sha. 7/15)

The measurement of *vasa upadhatu* is three *anjali*. Which pertains to ideal standard and this measurement undergoes (limited) changes even in a normal individual.

Cholesterol

Cholesterol is an essential organic compound of life. It is non polar white waxy solid substance. Cholesterol is a four ring hydrocarbon with an eight carbon side chain. In the blood about 2/3rd of the cholesterol is esterified. It belongs to sterol family and typically a product of animal metabolism (i.e. from meat, dairy products, and eggs). It occurs practically in all animal tissue, but not in plant tissue. The molecular formula is $C_{27}H_{46}O$. It was discovered in 1812. It is a major constituent of gall stones and its name arises from its occurrence in gall stones (Greek Chole-Steres-ol "bile solid").

Human body contains large quantities of cholesterol which is found in brain & nervous tissue(17%), liver, intestine, adrenal cortex, kidney, spleen & testis. Skin also contains fairly good amount of cholesterol. In cells cholesterol exists in the plasma membrane, mitochondria, golgi complex, & nuclear membrane. All body fluids contain cholesterol expecting cerebrospinal fluid in which the amount is negligible. Cholesterol constitutes about 0.3%of body weight of an average human. The total cholesterol is about 140gms in the body of a man weighing 70kgs.

Physiological importances of cholesterol

- It is the essential constituent of all cells. It is a part of the 'element constant' of the cells.
- Being constant constituent of the cell membrane it is believed to be related to the permeability of the tissue cells.
- In some unknown way it protects the red cells from being easily haemolysed. Low blood cholesterol level is associated with haemolysis.
- Cholesterol is intimately related to the defensive mechanism of the body. During acute infections blood cholesterol falls and tends to rise during recovery.
- A large part of fat is transported through blood as cholesterol esters.
- Cholesterol is the mother substance from which cholic acid is synthesized. Cholic acid is a constituent of bile salts.
- Rapidly growing tissues are very rich in cholesterol, such as, the granulation tissues of healing ulcer and rapidly growing tumors etc.
- Antilipotropic action- cholesterol feeding increases the deposition of fat in liver this effect is due to the formation of cholesterol esters and depression of phospholipids formation in the liver.
- Its physio-chemical properties are antagonistic to phospholipids, hence they are always found together.
- It is a parent substance of all the steroid hormones of sex glands, adrenal cortex, etc.

Cholesterol and vitamin D

Cholesterol's connection to vitamin D is intimate. It is the synthesis of cholesterol that ultimately provides for the synthesis of vitamin D, and it is cholesterol-rich foods that provide the dietary sources of vitamin D during times of the year when it is impossible for us to make our own.

Sleep, Memory, Learning, and Cholesterol

One of the many important roles cholesterol plays in the body is in our nervous system, enabling learning and memory to take place. In fact, one of the reasons that sleep is beneficial to our learning and memory is because it enables our brain to make more cholesterol!

Cholesterol and Bile Acids

The human body uses cholesterol to synthesize bile acids, which are important for the digestion of fats. The primary bile acid, cholic acid, is very similar in structure to cholesterol. Cholic acid is missing the double bond in the second ring, has two more hydroxyl (OH) groups attached to the steroid ring structure, and has a shortened hydrocarbon tail, the ending of which has been converted to a **carboxyl (COOH) group**.

Cholesterol and steroid hormones

- Glucocorticoids (blood sugar regulation)
- Mineralcorticoids (mineral balance and blood pressure regulation)
- Sex Hormones (many functions)

Cholesterol is the precursor to a hormone called pregnenolone, which has important functions itself, but is also the precursor to all other steroid hormones.

Co-relation between *Vasa* and cholesterol –

1. Main function of *vasa* is covering. It covers the wall of arteries, view ligament, and nerve.

   Cholesterol takes part in the formation of covering of nerve. Mylinated nerves are covered by sheath of myline and cholesterol contributes the formation of myline sheath and also in the formation of cell membrane, blood vessel membrane.

2. *Vasa* increases sexual power that is to say it participate in the formation of *sukra dhatu* (semen) in males and *artava* related to means in females.

   Cholesterol is precursor of sex hormones i.e. testosterome & progesteron.

3. During the digestion of food, *vasa* maintain normal status of *agni* (digestive fire). Which consequences normal digestion.

   Cholesterol is precursor of bile and bile is required for emulsification of fat. Emulsification enables the fat to be acted by lipases.

4. *Vasa* is required for the regeneration of vessels damaged by injuries.

   विद्धभग्न आहत भ्रष्टयोनि .....।
   (ch. Su. 13/16)

   Similarly cholesterol is also required for the regeneration of vessels.

5. *Vasa* inhibits the pain is bones, joints, muscles and strengthen them.

   Similarly cholesterol strengthens the bones & muscles.

6. *Vasa* increase the strength, adorn the complexion and colour.

   Similarly the cholesterol plays the same role by synthesizing vitamin D and increasing immunity.

Conclusion

Vasa is the *updhatu* of *mamsa dhatu*. Because of its character and *karma* (like *sneha*) it is also a *sneha* substance. Due to its *snigdha*, *guru, sheetal, mridu gunas*, it increases *snigdhata, guruta* (heaviness), vital capacity colour, metabolism of body. It alleviates *tridoshas*.

Cholesterol is a way substance like *vasa* which is naturally originated from animals during their normal metabolic processes. *Vasa* increases *shukra* and *artava*, covers the body parts, maintains normal status of *agni* regenerates the *vessls*, inhibit pain and increases the strength and colour of body. Cholesterol is used to manufacture sex hormones, produce bile acid for digestion of emulsified fat, to cover the nerve fibers, to maintain the structure of vessels and production of vitamin D for increasement of strength of bone, muscle, immune system and colour. So, functionally *vasa* is almost similar to cholesterol.

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Pharmacological Study

Phytochemical and Pharmacognostical analysis of *Haritaki* (*Terminalia chebula Retz.*) Collected from different *Bhumidesha* (Regions) and its effect on *Anulomana Karma*

*Dr. Mukesh Bhagwanrao Chincholikar, **Dr. Mita Kotecha

Abstract

Geographical factors like *Bhumidesha, Disha, and Bhumi* are having role in determining the expression or execution of *Guna* in *Dravya*. *Acharya* mentioned different types of varieties of *Haritaki* based on the concept of *Bhumidesha*. *Vibandha* is not a technical term related to only *Purishvaha Srotasa* but itself is a pathogenesis covering all comprehensive meaning. This can be rectified by applying the *Anulomana karma* of *Dravya Haritaki*.

Relation assessment between *Bhumidesha and Aturadesha* is essential in clinical context, so here an attempt has been made to standardize *Haritaki* collected from different regions of India with the help of Phytochemical and Pharmacognostical study and to evaluate its *Anulomana Karma* in the patients having Ayurvedic symptomatology of *Vibandha*.

Key words – *Vibandha, Anulomana Karma, Bhumidesha, Aturadesha, Disha, Bhumi, Purishvaha Srotasa, Dravya, Haritaki.*

सारांश –

भौगोलिक घटक यथा भूमिदेश, भूमि, दिशा आदि द्रव्यों के द्रव्यगत गुण तथा उनके उत्कर्ष आदि का निर्धारण करने में महत्वपूर्ण भुमिका निभाते हैं। आयुर्वेदीय आचार्यों द्वारा भूमिदेश या द्रव्य के उत्पत्ति स्थान पर आधारित ही हरितकी के विभिन्न प्रजाति का वर्णन शास्त्रों में दृष्टि गोचर होता हैं। विबन्ध संकल्पना केवल पुरिषवह स्रोतस से सम्बन्धित न होते हुए यह वास्तव में बहुआयामी संप्राप्ति अवस्था है जिसे अनुलोमन कर्म द्वारा संतुलित किया जा सकता है।

भूमिदेश तथा आतुरदेश में सम्बन्ध प्रस्थापित करना चिकित्सा के दृष्टिकोण से आवश्यक है। अतः प्रस्तुत शोधप्रबन्ध में भारतीय भू–भाग के विभिन्न स्थानों से संगृहित हरितकी को उपलब्ध आधुनिक प्रायोगिक विधि द्वारा मानकीकृत करने का विबन्ध के रुग्णों में अनुलोमन कर्म के अध्ययन का प्रयास किया गया है।

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Pharmacological Study

Phytochemical and Pharmacognostical analysis of *Haritaki* (*Terminalia chebula Retz.*) Collected from different *Bhumidesha* (Regions) and its effect on *Anulomana Karma*

*Dr. Mukesh Bhagwanrao Chincholikar, **Dr. Mita Kotecha

Introduction

The science of *Ayurveda* was developed to impart the knowledge with regard to what substances, properties, and action are promotive of life[1] and what are not so and to relieve the pain in the every form (*Kshudha*, *Pipasa and Punarjanma*). To deal with this problem man is always in search of remedy that relieves this pain. Search of food was primarily developed right from *Vaidic Kala* in man and later on it gradually developed leaving system like plants, aquatic animals etc. For remedy purpose *Dravya* are used (*Chikitsitam*). It means pain relieving factor are itself remedies i.e. *Prashamanam* according to *Charaka*; which may be in the form of *Aahara or Aushadha*. In gradual and stepwise evolution nature has produced medicinal plants firstly before he created the first man on the earth or even before any leaving creature. That means existence of life on the earth basically starts from the plants as stated in *Aushadhi Sukta* from *Rig-Veda*.

Conceptual Review

1. *Bhumidesha*

In *Ayurveda* different places of collection are mentioned. Northern region followed by Eastern region[2] are considered best for the collection of medicinal plants in general. *Bhumidesha, Disha, and Bhumi* are having role in determining the expression or execution of *Guna* in *Dravya*.

Desha and *Dik* although literary signify different meanings; merely denote more or less similar meanings in clinical aspect and aspect of collection of drug.

2. *Vibandha*

The term *Vibandha* in general means cessation of stool but after going through the classics it seems to be pathogenetic condition. *Vibandha* is condition which is emblematic of *Sanga Srotodushti* predominantly. Therefore state of *Vibandha* manifests in certain condition such as *Raktapitta, Arsha, Udara and Grahani.*

It carries different meaning in different context like *Urovibandha, Indriya Vibandha*[3] etc. The terms such as *Vishtambha, Avarodha* are comes under multidimensional concept of *Vibandha* condition.

In present study *Vibandha* related only with *Purishavaha Srotasa* is taken into consideration and tried to rectify it by applying the *Anulomana karma* of *Dravya Haritaki*.

3. *Anulomana karma*

Although *Anulomana* term enormously found in *Samhita* but *Sharangdhara* was the first to quote its definition[4]. *Prakritsthapanam* synonym of *Bheshaja* is correctly matched with *Anulomana* because it establishes (*Sthapanam*) the normalcy (*Prakriti* or *Anulomata*). As long as these channels are in a condition of health so long as the body is free from disorders[5]. *Haritaki* has been quoted as best *Anulomana Dravya* by *Sharangdhara* so in order to evaluate *Haritaki* as *Anulomana Dravya* ; in the present dissertation comparative analysis of *Anulomana Karma* by *Haritaki* collected from different *Bhumidesha* is done.

4. Seven varieties of *Haritaki*

Ancient *Acharya* have mentioned different types of *Haritaki* based on concept of *Bhumidesha* from all regions i.e. East, West, South and North region of Indian country.

- *Vijaya from Vindhya* (presently *Madhya Pradesh* - **Central Region**)
- *Putana* from *Sindha* (presently *Pakistan* i.e. **North-West Region**)

- *Amrita, Abhaya from Champa* (presently *Bhagalpur*, *Bihar* - **Eastern Region**)
- *Chetaki* from *Himachal* (**Northern Region**)
- *Jivanti* from *Saurashtra* (presently *Gujarat*, **Western Region**)
- *Rohini* from *Pratisthanka* (presently *Paithana*, Maharashtra; **Southern Region**)

It is revealed that all verities of *Haritaki* were available in the then, *Akhanda Bharat*.

Need of study:

Sushruta[6] has mentioned that the properties of *Dravya* depends upon qualities of place of origin or region from which it originates i.e. **द्रव्याणि यत्र तत्रैव तद्गुणानि विशेषतः।** so with taxonomical knowledge a good physician has to know the habitat of plant because according to *Samhita* text there is a variation in the properties and efficacy of same drug collected from different regions. origin. So to gain expected results there is need to standardize it with the basic and fundamental concept of *Ayurveda* & with help of available modern techniques.

Ancient *Acharya* have given broad & fundamental outline for the study and research of medicinal plants.[7] *Acharya* have said that pharmaceutical research **(बहुकल्पं)** pharmacological research **(बहुगुणं)**, Pharmacognostical research **(सम्पन्नं)** and clinical research **(योग्यं)** of a plant should studied simultaneously.

So here an attempt has been made to standardize *Haritaki* collected from different regions of India with the help of Phytochemical and Pharmacognostical study and to evaluate its *Anulomana Karma*.

Aims and Objectives

1. To evaluate phytochemical & Pharmacognostical study of *Haritaki* collected from different *Bhumidesha* (regions).
2. To evaluate the *Anulomana karma* of *Haritaki* collected from different regions.
3. To access the effect of *Bhumidesha* on the properties of *Haritaki*.
4. To access which *Haritaki* is better collected among different regions (East, West, South and North) comparatively both phytochemically as well as clinically.

Materials and Methods

Haritaki collected from four different *Bhumidesha* namely; **Sample A** from Eastern region (Guwahati, Assam), **Sample B** from Western region (Sawantawadi, Maharashtra), **Sample C** from Southern region (Tripunethura, Kerala) and **Sample D** from Northern region (Jogindernagar, Himachal Pradesh) has been taken for present study.

A) Organoleptic Character:-

Touch, colour, odor and taste

B) Physiochemical:

Ph value, Loss on drying, Ash value, Acid insoluble ash, Water soluble ash, Extraction in different solvents, Foaming Index.

C) Phytochemical Analysis:-

1. Detection of Alkaloids
2. Detection of Carbohydrates
3. Detection of Starch
4. Detection of Fatty acids/fats
5. Detection of Glycosides
6. Detection of Tannins
7. Detection of Saponins
8. Detection of Electrolytes
9. T.L.C
10. H.P.L.C,

CLINICAL STUDY

Selection of Patient

For this research work 40 clinically diagnosed patients of *Vibandha* were selected randomly irrespective of age, sex, religion etc from the OPD of NIA, *Jaipur* (Rajasthan) and are divided into four groups i.e. Group A, B,C and D respectively

Inclusion Criteria

Men and Women age between 15-45 years.

Exclusion Criteria

- Chronic diseases
- Contraindicated for *Haritaki Sevana*

(*Adhwatikhinno, Balvarjit, Garbhini*)

Duration of Trial 7 days

Dosage: In each Group *Haritaki Churna* was prescribed 3gm after meal at (*Nisha kala)* bed time with *Koshna Udaka* (lukewarm water).

Preparation of the Formulation

In present study *Churna* was preferred harmoniously as the form of internal administration.

Assessment Criteria

Anulomana karma of *Haritaki* is assessed with the help of objective and subjective parameters. To evaluate effect of drug on objective parameters; Hematological, urine routine and microscopic and stool investigations were carried out in *Roganidana Vikriti Vigyan* laboratory of NIA, *JAIPUR*.

For the assessment of *Anulomana* karma a subjective criteria was developed with 8 parameters i.e. ***Frequency of defecation, Initiation of defecation, Time taken for defecation, Process of defecation, Consistency of stool, Abdominal feeling after defecation, Kshudha, Nidra and Utsaha.*** All the normal states, mild, moderate, severe state of symptoms were graded as 0,1,2,3 respectively.

Observation And Results

I. Pharmacognostical study

North region sample is having more weight (Avg.11 gm) and that collected from eastern region is having least weight (Avg.5.5gm) as compare to other samples. Out of seven verities mentioned in the classics *Abhaya* with five ridges is predominantly available today. According to researcher opinion *Vijaya, Rohini* may be related to immature green stage of fruit of *Haritaki*. As in immature stage fruit is like *Alabu or Alabunabhi* and rounded in shape which turns ridged with shrinkled appearance.

II. Phytochemical study

1. Loss on Drying/Determination of Moisture Content

Moisture content is found to be less in sample D i.e. 8.56% it means it has less % of water or moisture as compared to other samples.

Sample-C is having more loss on drying i.e.8.95% which indicates that it has more % of water or moisture

2. Foaming Index

Foaming index is found more i.e.100 in sample D as compare to other samples. It means sample D contains more Saponins

3. Ash Value

The percentage of total Ash, acid soluble ash is less and water insoluble ash is more in sample D as compare to other samples it means sample taken from North region contains less inorganic constituents.

4. Extractive Values

Sample D taken from North region contains higher water and ethanol soluble extractive values as well as in all the solvent systems as compare to other three samples therefore hence sample D is much more chemically rich and contains more active principles than other samples.

5. Ph value

All the samples are having acidic pH i.e.in sample-A (4.8) sample-B (4.7), sample-C (4.6) and sample-D (4.9) with negligible variation

6. Qualitative Tests/ Organic Tests

All extracts of four sample of *T.chebula* are rich source of carbohydrates, tannins, proteins, phenols, glycosides, alkaloids, and lipids hence it is fantastic source of bioactive ingredients.

7. Inorganic Analysis

From inorganic test it is revealed that only iron and potassium were found in all four samples and rest of all the minerals, electrolytes, metals were absent in all the samples.

8. TLC

The TLC of water soluble extract and ethanol soluble extract made by the maceration technique were carried out by using different mobile phases. With their corresponding R_f values. The Chromatography of water soluble extract and ethanol soluble extract of sample D under short wave radiation revealed 5 and 7 spots respectively

compare to other samples.

9. HPLC

Chemically sample C and D are found very much similar regarding peaks; similarly sample A and B are found very much similar in peaks.

Spectra of sample A and B have similarity in highest area containing RT values near about 26 and 35 min; while Spectra of sample C and D have similarity in highest area containing RT values near about 23 and 35 min.

As per the number of peaks in the spectra the aqueous extract of sample A is having least number.

Results on Objective Parameters

For group A and group B% of changes was 3.217% and 6.234% after treatment while 3.727% and 6.561% changes was seen in and group C and group D respectively. But statistically all the groups are Insignificant (P<0.05)

Results on Subjective Parameters

Percentage of change in group A, B, C and D was found to be 42.88%, 50.24%, 48.05% and 62.27% respectively. Statistically all the groups are highly significant (P>0.02)

Conclusions

1. The concept of *Bhumidesha* is the expertise of Ayurveda and is established as the one of the foremost principles. *Disha* is one of the *Karana Dravya* having influence on *Bhumidesha*. Combined effect of them have important role in deciding the (execution/suppression of *Guna*) efficacy and potency of *Dravya* collected from particular place. *Dik* and *Desha* although differs the literally but in clinical aspect and aspect of collection of drug they reveal more or less same meaning.
2. *Anuloma* refers to the phenomenon in which different constituents such as *Dosha, Dhatu* and *Mala* circulate in the body in accordance with their haemostatic proportion and rhythm through their concerned *Srotasa* (channel). Alteration in this normalcy ultimately is responsible for disease development i.e. *Vibandha*
3. *Vibandha* though in present study is concerned with the *Purishavaha Srotasa* but it is also considered to be related to body phenomenon like *Mana* (Mind), *Indriya, Dosha, Dhatu, Mala* and *Srotasa* etc.
4. *Anulomana* is the best treatment principle to rectify the underlined pathology of Vibandha.
5. Phytochemical Analysis reveals that the quantity of the active principles of Haritaki sample collected from Northern region is more as compare to other sample.
6. Clinical trial revealed that Haritaki collected from Northern region is more effective in comparison to other regions which eventually justify the Samhita text.
7. Haritaki from Northern region should be taken if available where potent Anulomana Karma is required
8. Haritaki collected from Northern region proved to be more effective or potent phytochemically as well as clinically, which proves the concepts established by our ancient Acharya i.e. Aushadhi (drug) collected from Himavana Bhumi (Northern region) are more potent

References:-

1 Ch.su.30/23

2. दिशि पूर्वस्यामुत्तरस्यां वा। Dalhana Su.su.36/17

3. Ch.Chi.3/173

4. Sha.M.Kh 4/3

5. तदेतत् स्रोतसां प्रकृतिभूतत्वान्न विकारैरूपसृज्यते शरीरम्॥ Ch.vi.5/7

6. Su.su. 37/15

7. बहुकल्पं बहुगुणं सम्पन्नं योग्यमौषधम्। A .H.su.1/28

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Pharmacological Study

A study on the Anti-Ageing effect of *Mandukaparni* (*Centella asiatica* Linn.) on skin.

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Abstract:

The most common problem encountered today by most of us is premature ageing of skin. Consequently, there are lots of cosmetics prepared for overcoming this effect of our lifestyle like anti-ageing creams and lotions. *Mandukaparni* is one of those herbal drugs that are very frequently used such anti-ageing creams. The present study is undertaken to explore the anti-ageing effect of *Mandukaparni* on skin in the field of Ayurveda. The trial was conducted on 45 healthy volunteers, divided equally in three groups-A, B and C, taking *Kumkumadi Lepa* for the control group i.e. group-C. *Mandukaparni* was taken in the form of *Churna*, Triturated with the Cold infusion of the same along with the cream, prepared with the cold infusion of the *panchanga* of *Mandukaparni* in group-A and Cream only in group-B.

Overall there was 32.44% improvement in group-A which was lesser than group B (40.64%). In group C, 42.50% improvement was there. *Kumkumadi Lepa* showed more improvement in wrinkles, blemishes, hyperpigmentation, dryness and sun damage. In case of pimples, freckles, blackheads and pores *Mandukaparni churna* with cream worked more. Whereas when only *Mandukaparni* cream was given only oiliness showed improvement.

Key words: wrinkles, anti-ageing,

सारांश –

आज की जीवनशैली के कारण लोगों में वृद्धावस्था समय से पहले ही पायी जाने लगी है। जो हमारी त्वचा के द्वारा साफ झलकती है। इसका फायदा प्रसाधन उद्योग खूब उठा रहा है। जो बहुतायत में एन्टी एजिंग क्रीम व लोशन का उत्पादन करने लगा है। मण्डूकपर्णी ऐसा ही एक द्रव्य है जो इन लोशन व क्रीम में एक सक्रिय घटक के रूप में प्रयुक्त होता है। प्रस्तुत शोध काय आयुर्वेद के क्षेत्र में मण्डूकपर्णी के इसी प्रभाव को विस्तृत में जानने के लिये किया गया है। इसके लिये 45 स्वस्त व्यक्तियों पर प्रयोग किया गया जिन्हें 3 बराबर वर्गों में विभक्त किया गया–वर्ग–अ, वर्ग–ब तथा वर्ग–स। जिनमें वर्ग 'स' के व्यक्तियों को कुमकुमादि लेप दिया गया। वर्ग 'ब' के व्यक्तियों को मण्डूकपर्णी चूर्ण जिसे शीत की भावना दी गयी थी के साथ मण्डूकपर्णी की क्रीम दी गयी। वर्ण – 'अ' के व्यक्तियों को केवल मण्डूकपर्णी की क्रीम दी गयी।

इस शोध कार्य के परिणाम स्वरूप लगभग 32.44 प्रतिशत वर्ग 'अ' के व्यक्तियों में, जो कि वर्ग 'ब' के व्यक्तियों से कम है (40.64 प्रतिशत) सुधार पाया गया। वर्ग 'स' में 42.50 प्रतिशत सुधार पाया गया। कुमकुमादि लेप से त्वचा की झुर्रिया (झांईया) सूखापन व सूर्य की हानिकारक किरणशें के प्रभाव में कमी हुयी। चेहरे के दानो (छेद) दागधब्बें में सुधार मण्डूकपर्णी चूर्ण एवम् क्रीम (वर्ग–ब) से पाया गया। जबकि तैलिये त्वचा वाले लोगों को केवल क्रीम से भी लाभ हुआ।

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Pharmacological Study

A study on the Anti-Ageing effect of *Mandukaparni* (*Centella asiatica* Linn.) on skin.

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Introduction

Our skin contains elastin and soluble collagen due to which, it can absorb moisture and plump up. This ongoing process of moisturization and swelling keeps skin young. But with the exposure to sun, stress, pollution, smoking and normal ageing comes oxidative stress and free radical damage to skin occurs. This process causes formation of insoluble collagen which is inelastic and is unable to absorb water well and does not plump up. As a result, skin form crevices and furrows, known as *wrinkles*. Man has been obsessed with youthful appearance and rejuvenation probably from the beginning of time growing old is an individualized experience. Most of us fear ageing. We all read and hear a lot of kinds of remedies and procedures which can delay ageing but either all these procedures are complicated technical ones which need expertise help or costly affairs which require a lot of time and money spending. A large number claim to be herbal in origin but we all know that these products do have some chemical adulterants which may have hazardous effects on skin. Therefore, there is a need for standardization of the content present in these products.

In the present study we have selected a well known *Medhya dravya, Mandukaparni* (*Centella asiatica Linn*.) belonging to family *Umbelliferae (Apiaceae)*. It is widely used in skin care products by the cosmetic companies and is traditionally used in skin disorders since long time but this aspect of *Mandukaparni* still needs to be explored in the field of *Ayurveda*. So, to evaluate the efficacy of *Mandukaparni* w.s.r to its anti-ageing effect on facial skin when used as cream for topical application and to provide a natural, economic, safe and easily available herb for anti-ageing of skin without any side effects this trial was performed.

It has *Tikta Rasa, Laghu Guna, Madhur Vipaka, Shita Virya and Medhya Prabhava*. It is *Kapha-Pittashamaka*, vasodilator on skin, blood purifier, *vrana shodhana* and *ropaka, pushti, ayu, balakar* in properties.

In *Ayurvedic* texts it is one of the four well known *medhya dravyas*. In *Charaka Samhita and Ashtanga Samgraha* it is placed under *Vyasthapaka Mahakashaya (Ca.Su.4/18, A.S.Su.15/49)* it is also classified under *Shaka varga*.

It is indicated for several therapeutic conditions like *kasa, kshatkshina, vishvikar, prasuta* etc. it is also used for *tarunya, palitya, valli, kushta chikitsa, varnya karma* which indicates its effect on skin. *Panchanga* of *Mandukaparni* are used as various preparations like *swarasa (mandukaparni swarasa prayojya*) *shaka*, decoction or with ghee. It is an important content of *Brahma Rasayana (A.S.Utt.49/21),* vali, palit etc.

Materials and methods:

Selection of the volunteers:

For this Research work 45 volunteers, fulfilling the clinical criteria are selected randomly irrespective of their sex, religion, occupation etc. from the N.I.A. Jaipur.

Inclusion Criteria:

- Volunteers willing to participate in the trial.
- Males and females between 25 to 50 years of age are taken.
- Volunteers having signs of pre-mature ageing.

Exclusion Criteria:

- Volunteers below 25 and above 50 years of age.
- With present or past history of any skin disease i.e. psoriasis, atopic dermatitis etc.
- Extremely fair and dark complexions.
- Any fungal or bacterial infections or under medication with antibiotics or antifungals.

- Pregnant and lactating women.
- Immunodeficiency state.
- History of hypersensitivity.
- Big or dark scars on face.
- Viral infections like Herpes.
- Chronic diseases
- Autoimmune skin disorders.

Discontinuation Criteria:

- Any sort of allergy caused by drug.
- Unable to follow the trial schedule.

Administration of Drug:

- The drug was given as cream to be applied externally.
- Before the application of cream the volunteer is required to wash the face properly with tap water and mild face wash.
- The cream is to be massaged twice daily with circular upwards and outwards motion for two minutes.
- The *churna* of *Mandukaparni* will be given twice daily with luke warm water.

Study Design :

Trial group: Total 45 volunteers were registered. All the selected individuals were studied under three groups.

Group A- 15 volunteers will be given cream prepared from *panchanga* of *Mandukaparni*.

Group B- 15 volunteers were given *churna* of *Mandukaparni* with cream prepared from *panchanga* of *Mandukaparni* in the dose of 2.5 gm B.D. with luke warm water.

Group C- 15 volunteers as control group which were given *Kumkumadi lepa*.

Duration of trial: 30 days

Observation and Results:

Table No. 1 Showing the effect Mandukaparni cream in volunteers of Group-A

Signs & Symptoms	*n*	Mean		Diff.	% of Change	SD ±	SE ±	*"t"*	P	Results
		BT	AT							
Wrinkles	11	.80	.53	.27	33.75	.46	.12	2.26	<0.05	S.
Blemishes	02	.13	.07	.07	53.85	.26	.07	1.00	>0.10	N.S.
Pimples	11	1.67	1.00	.67	40.11	.72	.19	3.57	<0.01	S.
Complexion	15	8.87	8.40	.47	5.30	.52	.13	3.50	<0.01	S.
Freckles	03	.20	.13	.07	35	.26	.07	1.00	>0.10	N.S.
Blackheads	06	.53	.27	.27	50.94	.46	.12	2.26	<0.05	S.
Til	09	.60	.53	.07	11.67	.26	.07	1.00	>0.10	N.S.
Moles	03	.20	.20	.00	.00	.00	.00	.00	–	–
Hyperpigmentation	06	.53	.13	.40	75.47	.51	.13	3.05	<0.01	S.
Dryness	06	.53	.27	.27	50.94	.46	.12	2.26	<0.05	S.
Oiliness	06	.87	.67	.20	22.99	1.25	.82	.56	>0.10	N.S.
Pores	12	1.67	1.27	.40	23.95	.51	.13	3.05	<0.01	S.
Sundamage	07	.73	.60	.13	17.81	.35	.09	1.47	>0.10	N.S.

Table No. 2 Showing the effect Mandukaparni churna and cream in volunteers of Group-B

Signs & Symptoms	*n*	Mean		Diff.	% of Change	SD ±	SE ±	*"t"*	P	Results
		BT	AT							
Wrinkles	13	1.53	.73	.80	52.29	.56	.14	5.53	<0.001	H.S.
Blemishes	6	.53	.27	.27	50.94	.46	.12	2.26	<0.05	S.
Pimples	7	.73	.27	.47	64.38	.52	.13	3.50	<0.01	S.
Complexion	15	8.07	6.73	1.33	16.48	1.05	.27	4.93	<0.001	H.S.
Freckles	3	.33	.20	.13	39.39	.35	.09	1.47	<0.1	N.S.
Blackheads	9	.87	.27	.60	68.70	.51	.13	4.58	>0.02	S.
Til	5	.27	.27	0	0	0	0	0	–	–
Moles	4	.20	.20	0	0	0	0	0	–	–
Hyperpigmentation	9	1.00	.40	.60	60	.51	.13	4.58	<0.02	S.
Dryness	9	1.00	.47	.53	53	.52	.13	4.00	<0.01	S.
Oiliness	4	0.40	.27	.13	11.50	.52	.13	1.00	<0.10	N.S.
Pores	11	1.13	.47	.67	59.29	.62	.16	4.18	>0.001	H.S.
Sundamage	19	1.53	.73	.80	52.29	.68	.17	4.58	<0.001	H.S.

Table No. 3 Showing the effect Kumkumadi lepa in volunteers of Group-C

Signs & Symptoms	*n*	Mean		Diff.	% of Change	SD ±	SE ±	*"t"*	P	Results
		BT	AT							
Wrinkles	9	.93	.40	.53	56.99	.52	.13	4.00	<0.01	S.
Blemishes	2	.33	.13	.20	60.61	.56	.14	1.38	<0.10	N.S.
Pimples	9	1.08	.40	.67	62.04	.62	.16	4.18	>0.001	H.S.
Complexion	15	7.07	5.13	1.93	27.30	.88	.23	8.47	<0.01	S.
Freckles	2	.20	.13	.07	35	.26	.07	1.00	>0.10	N.S.
Blackheads	9	.73	.33	.40	54.79	.51	.13	3.06	>0.02	S.
Til	5	.33	.33	0.00	0	0	0	0	–	–
Moles	4	.27	.27	0	0	0	0	0	–	–
Hyperpigmentation	7	.60	.13	.47	78.33	.52	.13	3.50	<0.01	S.
Dryness	9	.93	.40	.53	56.99	.64	.17	3.23	<0.01	S.
Oiliness	5	.60	.47	.13	21.67	.52	.13	1.00	<0.10	N.S.
Pores	8	.87	.53	.33	37.93	.49	.13	2.65	<0.02	S.
Sundamage	12	1.20	.47	.73	60.83	.46	.12	6.21	<0.10	N.S.

Table No. 4 Showing Comparative Overall Relief in 3 Groups.

Groups	*n*	Mean		Diff.	% of Change	SD ±	SE ±	*"t"*
		BT	AT					
Group A	15	1.33	1.08	0.25	32.44	0.46	0.16	1.92
Group B	15	1.35	0.87	0.49	40.64	0.48	0.12	3.12
Group C	15	1.16	0.70	0.46	42.50	0.46	0.12	2.98

Although the volunteers of group C were benefitted most with the percentage of change of 42.50% but volunteers of group B followed them closely (40.64%) and in group C 32.44% of change was observed (Table No.4). *Kumkumadi Lepa* showed more improvement in wrinkles, blemishes, hyperpigmentation, dryness and sun damage. In case of pimples, freckles, blackheads and pores *Mandukaparni churna* with cream worked more. Whereas when only *Mandukaparni* cream was given only oiliness showed improvement, it also closely followed *kumkumadi lepa* in reducing hyperpigmenttion (75.47%,Table No.1).

Along with the above effects the volunteers also reported the improvement in their cracked heels, minor cuts, burns and scars with the cream of *Mandukaparni*.

Discussion and conclusion:

It is clear from the above results that we cannot restrict the use of *Mandukaparni* as *medhya dravya* only, it can be widely used for cosmetics also. Regarding the probable mode of action of Mandukaparni on skin following points can be well thought-out -

- *Mandukaparni* has *Tikta Rasa*. *Tikta* rasa provides firmness to skin and muscles. (Ca.Su26/ 43.5). It is also cold and light due to which it is an appetizer and digestive. It increases vitality by stimulating digestion. By increasing nutrition it strengthens the body, and give proper tone to muscles and tissues, it increases elimination of toxins, waste products and purify the blood. Since this is cold it mitigates pitta, when pitta is in excess in skin it causes photosensitivity and is likely to accumulate sun damage over the years in skin. It is pitta-kapha shamaka.

According to some texts Mandukaparni also possess Madhura Rasa. Madhura rasa promotes rasa, rakta, mamsadi all the dhatus, is conducive to life span, promotes strength and lusture and is beneficial for skin. (Ca.Su.26/43.1)

- *Mandukaparni* is *Laghu* in guna. It *Srotoshodhaka*, easily digestible, and *Agnidipaka*. (Su.Su.46/) .
- *Veerya* of *Mandukaparni* is *Sheeta*. It subsides *pitta*. It karma are stated as *Sthirikarana*, *Prasadana*, *Kledana and jivaniya* (*Su.Su*.41). It promotes tissue firmness.
- *Mandukaparni* is *Madhura* in *Vipaka* due to which it shows Vayasthana karma.
- *Mandukaparni* is well known for its *Medhya prabhava*. It possesses brain tonic effect, promote natural tranquility of mind and mental competence, it also helps to sustain and adopt in stress and senescence. Stress produces free radicals which bring about destruction in the cells of body tissues.
- The branch of body's peripheral conduction network is concerned with perspiration, perception of cutaneous pleasure and pain sensations, as well as circulation of tissue fluid. Conduction of the activity or potency of the regimen or agent into the body, after conversion (transduction) in the skin, also forms their attribute.

  After diffusion, the drug released from the vehicle (cream) is absorbed via subcutaneous capillaries into the systemic circulation. Application of heat (by massage) causes relaxation of the muscles, improves blood supply and activation of metabolic processes.
- When our skin is exposed to the skin damaging factors like UV rays, stress, pollution, etc. skin

get damaged and ageing signs appears on it. On application of Mandukaparni cream over skin it releases its active principles which enters in skin through romakups and swedvahi srotasa, it is then digested by bhrajakagni and gets converted into new metabolites that can pacify the dushit doshas which were causing ageing of skin. Thus, the skin get repaired and is prevented from damaged.

- Also Mandukaparni had some Anti enzymes that inhibit the activity of collagenase enzyme (MMP) which breaks down collagen thus providing firmness to the skin.

So, according to above facts Mandukaparni can act as an anti ageing agent for skin. Cream of *panchnga* of *Mandukaparni* when used along with Churna of the same is more effective than the cream alone. It can also give the reducing effects on cracked heels, scars, pimples, freckles and Complexion. The volunteers with oily skin are more benefitted than the other types. *Kumkumadi lepa* works as an anti ageing agent but *Mandukaparni* very closely follows it, when cream of *Mandukaparni* is given along with the *churna* of the same.

This study is a pilot study carried out on a limited number of volunteers with limited sources. But the successful results obtained with *Mandukparni* on skin ageing are pioneering contribution to the *Ayurveda*. This trail does not end here, but it opens a new field of assessment by other *Ayurvedic* researchers on the role of *Mandukaparni* on premature ageing of skin.

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HERB OF THE QUARTER

Amalaki as *Rasayana*- A Wisdom

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Abstract-

Amla or Indian Gooseberry holds highly regarded place in ancient Ayurvedic texts. It may be great solution for a variety of problems. With intake of all the junk food in today's so called modern era, amalaki with its high content of antioxidants reduces the toxins, strengthens the immune system and fights the signs of ageing. Amalaki contains a complete and balanced spectrum of Antioxidants (Superoxide Dismutase), Phytonutrients, and Bioflavanoids(Quercitin). It is the most concentrated and bio-available source of Vitamin C in nature. It has a high concentration of aminoacids and minerals. Important tannins found in amalaki are ellagic acid and gallic acid, a naturally occurring major antioxidant polyphenol. Ageing can be defined as gradual irreversible changes in structure and function of an organism that occur as a result of the passage of time. It is caused by a chain action of free radicals which destroy healthy molecules. Although research is on the way to increase the average lifespan by using medicines for various age-related illnesses, India with its traditional heritage of Ayurveda promotes the principle that body can heal itself when given high quality nutrients as close as possible to nature.*23

KEY WORDS: *Amalaki*, antioxidants, free radicals, ageing

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HERB OF THE QUARTER

Amalaki as *Rasayana*- A Wisdom

*Dr. Mehra Raakhi, **Makhija Renu, ***Dr Vyas Neera

Botanical Name: *Emblica officinalis* Gaertn.

Family Phyllanthacea

Sanskrit Amalaki

Plant Part: Fruit

To be seventy years young is sometimes far more cheerful and hopeful than to be forty years old. ~Oliver Wendell Holmes

Indian gooseberry *(Emblica officinalis)*, also known as amalaki, is a small- to medium-sized deciduous tree belonging to Euphorbiaceae family. It is 8 to 18 m in height and native to India and the Middle East. The fruit itself is greenish yellow and is usually available from October and finishes up in April. The plant portion used for consumption is the amalaki fruit. Amla known as amritphala in Sanskrit, means the fruit of heaven or nectar fruit. It is so called because it is rich in many desirable qualities. It was described in a 7th century Ayurvedic medical text. According to several scholars, the sage Chyawan is reputed to have restored his vitality with this fruit.

English names: Emblic, myrobalan-tree, Indian gooseberry

Indian names: *amalkamu, uririkai* (Andhra Pradesh); *amlaki, amluki* (Assam); *amla, amlaki* (Bengal); *amali, ambala* (Gujrat); *amla, aonla* (Himachal Pradesh); *amla, aonla, onilika* (Hindi); *amalaka, nelli* (Karnatka); *nelli* (Kerala); *alathanda, khondona, anola* (Orissa); *aonla* (Punjab); *adiphala, dhatri, amalaka, shriphala, vrittophala* (Sanskrit); *nelli* (Tamilnadu)

Nomenclature due to Medicinal propertiesin traditional medicine:

- **Amla:** Sour in taste
- **Kalpa vruksha** : The plant which cure all disorders
- **Amruta phala:** The fruit of this plant is used for regeneration
- **Rasayani**: With properties of Rasayana
- **Amalaki** - 'Means 'Sustainer of health'
- **Dhatri:** ' Means "Nurse" as it nourishes so many aspect of human health'
- **Amrita :**' Means "nectar" because of its nutritive and rejuvenative value

Nomenclature due to Physical properties:

- **Sookshma patra:** The plant with small leaves.

Amalki (Emblica officinalis) is revered by Ayurvedic herbs as a 'wonderful Rasayana' capable of delivering a diverse range of benefits to the physiology. It is priceless among rejuvenative herbs (Charak Samhita, Ayurvedic text).

Ageing can be defined as gradual irreversible changes in structure and function of an organism that occur as a result of the passage of time. It is a process that is genetically determined and environmentally modulated. Free radical theory is one of the most important theories of ageing. Free radicals damage the body in many ways .To remove the free radicals anti oxidants are the drug of choice. Ageing is caused by chain reaction of free radicals which destroy healthy molecules and in turn convert the healthy molecules into free radicals. Environmental factors such as pollution, radiation, cigarette smoke, food and herbicides are major

contributors in formation of free radicals in the present day.

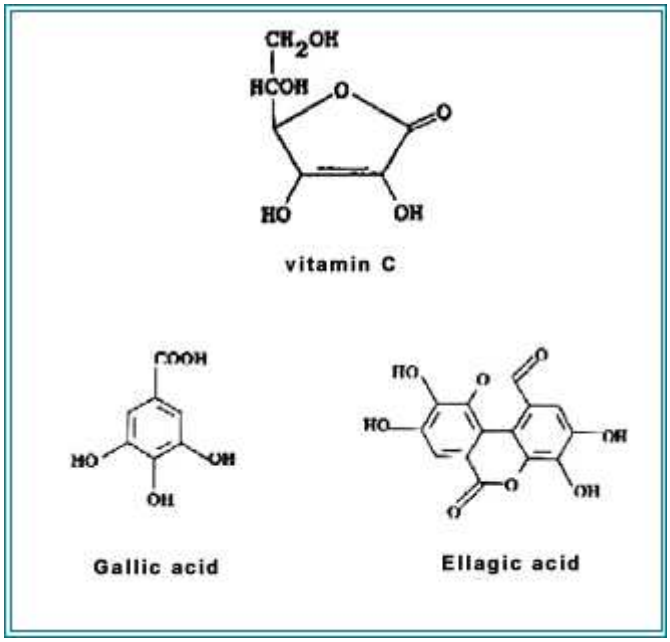
Ageing manifests itself as dementia, presbyopia and cataract, loss of hearing, loss of teeth, greying hair, insomnia, loss of muscle mass, decreased reflexes, decline in the ability to taste, reduced sensitivity to growth factors and hormones, hormonal changes etc. All these changes may be associated with or without pathological changes. Amalaki contains plenty of anti-oxidants. So Charaka described amalaki as the best vayasthapak drug (which restore age) (Ca.Sa. 25/43). Although fruits are reputed to contain high amounts of ascorbic acid (vitamin C), 445 mg/100g,[1] the specific contents are disputed and the overall antioxidant strength of amla may derive instead from its high density of tannins and other polyphenols.[2] The fruit also contains flavonoids, kaempferol, ellagic acid and gallic acid.[2][3]The antioxidants in Amalaki are powerful free radical scavengers thus denuding the cells of harmful toxins.

Chemical composition / key active constituents

The taste of Indian gooseberry is sour, bitter and astringent, and is quite fibrous. Amla is highly nutritious and is an important dietary source of Vitamin C, minerals and amino acids. The edible fruit tissue contains protein concentration 3-fold and ascorbic acid concentration 160-fold compared to that of the apple. The fruit also contains considerably higher concentration of most minerals and amino acids than apples. Glutamic acid, proline, aspartic acid, alanine, and lysine are 29.6%, 14.6%, 8.1%, 5.4% and 5.3% respectively of the total amino acids. The pulpy portion of fruit, dried and freed from the nuts contains: gallic acid 1.32%, tannin, sugar 36.10%; gum 13.75%; albumin 13.08%; crude cellulose 17.08%; mineral matter 4.12% and moisture 3.83%. Amla fruit ash contains chromium, 2.5 ppm; zinc 4ppm;andcopper,3ppm.[4]

Key Active Constituents

Emblicanin A&B, Puniglucanin, Pedunculagin, 2-keto-gluconolactone (Vitamin-C equivalents). Ellagic acid, Hexahydroxy-diphenic acid and conjugates. [4][5]



Pharmacological actions:

A human pilot study demonstrated reduction of blood cholesterol levels in both normal and hypercholesterolemic men. [6] Another probed the effects on a formula containing Amla on memory, total serum cholesterol levels and brain cholinesterase activity in mice. The researcher concluded that "Anwala churna may prove to be a useful remedy for the management of Alzheimer's disease on account of its multifarious beneficial effects such as, memory improving property, cholesterol lowering property and anticholinesterase activity." [7] Among other benefits, research has shown that amla has in vitro antiviral and antimicrobial properties [8], as well as a possible efficacy in relieving or treating inflammation, cancer, age-related renal disease, and diabetes. [9,10,11] Other research has linked Amla to the inhibition of Aldose Reductase (AR) and the possible prevention of secondary complications of diabetes including cataract. [12] According to researchers: "The inhibition of AR by Amalaki tannoids is 100 times higher than its aqueous extract and comparable to or better than quercetin. Furthermore, the isolated tannoids not only prevented the AR activation in rat lens organ culture but also sugar-induced osmotic changes. These results indicate that tannoids of Amalaki are potent inhibitors of AR and suggest that exploring the therapeutic value of natural ingredients that people can incorporate into everyday life may be an

effective approach in the management of diabetic complications."Another study revealed that Amla may play a part in the prevention of dyslipidaemia and oxidative stress in the ageing process. [13]Several animal studies have shown that amla can help prevent a toxic build-up of heavy metals caused by frequent exposure to metals like aluminium lead and nickel. When vitamin C alone was used equivalent to that found in amla fruit, only partial protection from heavy metals was provided. However, when whole amla fruit was used almost complete protection was achieved thus indicating that it is the combined action of various ingredients found in the fruit that effectively helps shield DNA from heavy metal poisoning.[14] The use of amla as an antioxidant has been examined by a number of authors [Bhattacharya; Chaudhuri]. Experiments conducted at the Niwa Institute of Immunology in Japan have shown Amla to be a potent scavenger of free radicals. The studies showed that Amla preparations contained high levels of the free-radical scavenger, superoxide dimutase (SOD), in the experimental subjects. (Treadway)

Properties and Action of *Amla* according to Indigenous System of medicine:

***Rasa* -** It contains all the six tastes except *Lavana* (Salty one) but *Amla* (Sour) dominate over the others.

Vipaka (Post digestion effect) - *Madhura* (sweet)

Veerya (Potency) - *Sheeta* (Cool and calm)

Rasayana:

Sarngadhaara defined Rasayana as the therapy which prevents from aging and disease. *Caraka* defined Rasayana as a way to attain excellent rasadi dhatu and it imparts healthy long life, good memory and other benefits. *Chakrapani* defined that if Rasayana is taken by healthy persons it bestows strength to the ojus and dhatus of the body. *Sushuta* defined *Rasayana* as a measure that prolongs longevity, improves mental faculties, develops positive health and provides resistance and immunity against disease. *Dalhana* defined that *Rasayana* is a measure to yield excellent pharmacokinetics and it restores the youthful healthy long life. Although ageing is inevitable, to age gracefully is a biggest challenge. The word for rejuvenation in Ayurveda is Rasa yana, which literally means the path of Rasa. "To walk the path of Rasa it is necessary to purify and nourish physical Rasa Dhatu, since Rasa is the raw material from which other Dhatus are formed. Healthy Rasa Dhatu is the physical production of healthy Shukra, from which Ojas is directly produced. Careful selection of food tastes (Rasas) and control of emotions (Rasas) ensures production of healthy Rasa Dhatu and therefore healthy Shukra and Ojas". [15] Rasa is described as: One which has the capacity to assimilate and enhance all Dhatus and which is praised for the alleviation of old age, disease and death that is called Rasa'. [16] Rasayanas enhance ojas, the most refined product of digestion and metabolism. Ojas is equated with immunity and strength. The more ojas your digestion produces, the greater your immunity to disease. By strength of ojas, the muscle tissue becomes full, all movements become free and perfectly coordinated, voice and complexion become clear, the activity of the organs of action and the sense organs become intelligent and evolutionary-Sushrut Samhita. Rasayanas convert easily into ojas and infuse qualities of ojas into the body. The skin becomes lustrous, eyes sparkling, temperament stable and blissful, mind intelligent and calm, and the body free of disease. Ojas supports the experience of higher states of consciousness. Rasayana is a mainstay of Ayurveda in prevention and therapy of diseases of old age. Ayurveda also has described the life-spans of plants, animals etc. [17] The lifespan of man is described to be of 100 year. In the same chapter, the features which denote a long or short life are described. Thus,the major ingredient Amla - Phyllanthus emblica has remarkable pharmacological properties. [18]Amalaki is considered best among Rasayanas. It clears all the three doshas present in human body. A regular use of amalaki is presumed to prolong lifespans, upto 120 years for humans. Its use not only increases human life but also improves quality. It imparts memory, balanced intellect, health, youthfulness, lustrous body, and a clear voice. It helps reduce tendencies for headaches, confusion of thought, psychic disorders and memory loss. Amla when administered with ghee ,honey and oil is a general tonic for general debility, lack of disease resistance and memory loss. It overcomes the degenerative effects of old age. Amla is an example of Vatatapika Rasayana, that is the

Rasayana which can be administered even if the individual is exposed to the wind and the sun.

Therapeutic uses :

Amlaki pacifies all the three doshas i.e. maintains the balance of all doshas that is why it is one of the best rejuvenator according to Ayurveda. Amalaki is specific to Pitta due to its sweet taste and cooling energy. However, amla is thought to balance Vata by virtue of its sour taste, and Kapha due to its astringent taste and drying action. It may be used as a Rasayana (rejuvenative) to promote longevity, and traditionally to enchance digestion (dipanapachana) treat constipation (kasahara), alleviate asthma (svasahara), strengthen the heart (hrdaya), benefit the eyes (chakshushya) stimulate hair growth (romasanjana), enliven the body (jivaniya), and enhance intellect (medhya).[19]

- Provides a stronger immune system[20]
- Enhances the body's food absorption
- Balances stomach acids
- Assists liver in elimination of toxins
- Lowers cholesterol
- Reduces fevers
- Acts as a desired aphrodisiac
- Controls blood sugar
- Provides nourishment to the brain and boosts mental functioning
- Acts as a cardiac stimulant
- Nourishes and strengthens the lungs
- Prevents constipation and encourages regular elimination
- Acts on endocrine system
- Acts like a natural diuretic
- Conditioner for the skin and hair[21]
- Increases metabolism
- Increases vitality
- Flushes out toxins from the body.

Amalaki for active ageing:

Active ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age. It applies to both individuals and population groups.(WHO Active Ageing: A Policy Framework) Active ageing aims to extend healthy life expectancy and quality of life for all people as they age. Although efforts are being made to increase the average life span of individuals by treating their illnesses with modern medicine, it is still more important to improve the quality of life in elderly by easing their age related symptoms thus maintaining their autonomy and independence. Ayurveda offers new avenues to promote positive health and graceful ageing. Pollution, processed foods, and everyday stress deplete the body of nutrients which need to be replaced. As a rejuvenative herb, Amla nourishes all the body tissues and accelerates the cell regeneration process. It also cleanses the rasa dhatu (plasma) and rakta dhatu (blood). Amalaki is given the status of prime Rasayana as "Amalakam Vayastapanaanaam". At its core, Ayurveda aims to empower every individual by placing the ability to heal back into their own hands. Through the use of botanical medicines, healthy dietary practices, and sensible lifestyle routines, ayurveda embodies an unparalleled. "whole health" approach to life and healing. Indian goosbery is the source of Oxygen free radicals (OFRs) have now been implicated as important pathologic mediators in many clinical disourders. A free radical (oxidant) is an atom or a molecule that contains one or more unpaired electrons. The disballance between OFRn and antioxidants results in cellular damage. Progressive accumulation of free radical through out life causing ageing. They cause random damage to DNA, RNA, Proteins and enzymes, induce polymeriozation of membranes and are capable of eventually causing cell death. [22]

Thus, it can be concluded that in adults, anabolic and catabolic, that is 'wear and tear' processes, balance each other. By improving the qualities of tissues, the balance is maintained for a longer period delaying the onset of ageing. In old age the faster catabolism speeds up ageing processes. By improving the qualities of the tissues with rasayana therapy, ageing can be slowed down. These

Rasayanas are special gifts of Ayurveda to mankind for prolonging life, retaining youthful vigour in old age and preventing diseases. But Rasayanas are effective only in persons with detoxification of body and mind which can be acquired with the Panchkarma technique and Achar Rasayan of Ayurveda.

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LITERARY REVIEW

Role of *Ayurveda* In Contemporary Health Care System

*Dr. K.V.Narasimha Raju, **Prof. Radhey Shyam Sharma

Abstract:

W.H.O, with its declarations and health reports is said to be recognizing Ayurveda, the 'Conventional Wisdom Of Life Attuning Nature', which has a history that dates back to 5000yrs, as an emerging Health Care System with comprehensive and contemporary modules towards life. The epidemic threats, life style disorders and pollution hazards were foreseen and remedial elaborations were given in Ayurvedic texts which are cynosure for the global medical fraternity. Ayurveda is being served academically and clinically and has attained a reputed status in its indigenous India. Major stakes in herbal trade, holistic treatments with panchakarma and dietetics, eco-friendly postulations etc., have made ayurveda an indispensable adaptation to the generation next. The present article highlights the efficacy, health contributions, upliftment, National & International scenario and prospects of Ayurveda.

Key words: Deciphering, Contemporary, Herbal Trade, Health Care, Dietetics, Pandemics.

सारांश–

आयुर्वेद एक व्यापक एवं समकालीन चिकित्सा पद्धति है, जिसका इतिहास 5000 वर्ष पुराना है। विश्व स्वास्थ्य संगठन (WHO) की घोषणाओं तथा रिर्पोटों में इसको मान्यता दी जा रही है। जीवनशैली की अव्यवस्था, महामारी एवं प्रदूषण के खतरे एवं उनके निवारण का वर्णन आयुर्वेद में होने के कारण आयुर्वेद आकर्षण का केन्द्र बन गया है। भारत में शैक्षणिक एवं चिकित्सा के माध्यम से आयुर्वेद की उन्नति रही है। प्रस्तुत लेख द्वारा आयुर्वेद की क्षमता, स्वास्थ्य क्षेत्र में योगदान, राष्ट्रीय तथा अन्तरराष्ट्रीय परिदृष्य में आयुर्वेद की संभावनायों को उजागर करने का प्रयास किया गया है।

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LITERARY REVIEW

Role of *Ayurveda* In Contemporary Health Care System

*Dr. K.V.Narasimha Raju, **Prof. Radhey Shyam Sharma

Introduction:

Medical science is advancing by leaps and bounds, exploring the intricacies and unraveling the mysteries of human life.

Ever since the dawn of his turbulent history, man has evolved several ways of coping with illness. Eventually every country has developed a medical system presenting a unique configuration designed to be compatible with its own future and meeting the needs of its own population. Thus the 'Traditional medicine' which is full of experiences, astute observations and fancy formulae reflecting a combination of inspiration, intuition, information, facts and results has incarnated.

A group of experts at a WHO sponsored meeting at Brozzaville in 1976 has defined Traditional medicine as 'the sum total of all knowledge and practices and elimination of physical, mental or social imbalance and relying exclusively on practical experience and observations handed down from generations to generations, verbally or in writing'.

It has been said that 'the spirit must lean on science as a guide in the world of reality and that science must turn to the spirit for the meaning of life', and there exists an indigenous system which deals and co-exists with life, 'Ayurveda', construed as 'Conventional Wisdom of Life Attuning Nature', with an impressive evolutionary history that spans a period of over 5000yrs. The origins of other medical systems can be traced to Ayurveda, 'The Mother of all Health Care'.

When the history of medicine is observed, one finds it difficult to locate the time of separation of modern medicine from this Traditional medicine. And it is to note that in a WHO publication, John Canary said 'the earliest beginnings of modern medicine appear to include detailed description of medical condition including Diabetes, found in Vedic Hymns'.[1]

Even the 'Encyclopedia Americana' (1985) mentions that 'Echoes of Indian classical medicine are traceable in the works of Hippocrates and Plato Timaens'.

If Ayurveda is looked in the light of contemporary medical thought, one finds that it is an extremely precise science elucidating several intricate exercises in logic and offering a system which emphasizes promotion and preservation of Health.

Ayurveda explored the secrets of nature, by way of substantiated hypothesis, without experimental analysis. Every fact of observation has been constantly reexamined for a number of centuries. However, some concepts are apparently beyond the realm of rational and experimental analysis in contemporary terms. This is enunciated in the words of Charakacharya that 'there is very little that can be obtained from direct proof. The province beyond direct experimental evidence is vast'.[2]

Deciphering Ayurveda

Sanctified, as they are, by time and experience, the Ayurvedic doctrines, concepts and principles have a great deal to contribute to the world of Medicine today. Herein the hitherto elusive concepts of Ayurveda are explored in terms of contemporary scientific thought.

A. Human Code

Ayurveda engenders life and fosters the reconciliation among Body, Mind and Soul.[3] This system understands human being as the epitome of microcosm and a creature of relatively smaller external environment in whom the organoleptic properties of sentient material are oligodynamic in nature.

Dosha: The 3 primary functional forces viz, Vata(motion), Pitta(energy), Kapha(inertia), produced and regulated endogenously are the irreducible system and sustain the whole body metabolism by controlling the cellular function and

altering the milieu interior in a very subtle but intricate manner.

The concept of Humors existed in western medicine since the time of Galen. Empedocles of Agrigentum (Fire, Earth, Air, Water) and Aristotle (Blood, Phlegm, Yellow bile, Black bile) believed in the existence of 4 humors.[4] Later in medieval times it is Temperaments (Sanguine, Phlegmatic, Melancholy, Choleric).[5]

Though the concept of humors as such does not exist, we know that cellular integrity is dependent on certain extracellular factors governing the functioning of intracellular organelles, well supporting Ayurveda.

Dhatu: Seven basic functional units of the body, represented by cell groups, known since the time of Virchow. These form tissues, organs and finally organism.

With the advent of cell culture techniques it is known that Serum, with isolated Growth Factors (PDGF) is highly beneficial for multiplication and propagation of cells invitro. But, an abnormal amount of the same is implicated in diseases like atherosclerosis and cancer, which explains the Ayurvedic concepts of disease occurring due to excess or imbalance of normally occurring endogenous system.

An interdependence of different Dhatus is proved through Clonal Assay system and Cell Separation technology which shows that the Haemopoietic progenitor cells mature to form peripheral blood cells under the influence of Secretory products of peripheral cellular elements. In terms of Ayurvedic hierarchy, Rasa generates Rakta.

Mala: The knowledge of oxygen derived free radicals best proves the production of metabolic end products from the cells. They are essential for normal metabolism but are destructive unless tightly controlled.

Free radicals produced by leucocytes during respiratory burst helps in bactericidal function but if produced in excess may cause tissue damage as in Rheumatoid and Gouty arthritis.

Srotas: Srotas when translated as 'Channels' are restricted to blood vessels and lymphatics which carry nutrients to different tissues. If one interprets as 'Receptor-Channel' mechanism, the area of molecular biology opens up exciting possibilities to explain how a Srotas can be specific for the modifications by physiological and pathological processes.

***Agni*:** This is the subtle heat in the form of enzymes or hormone molecules existing in its own locus in all tissues and is responsible for their proper functioning and development. It comprehends all the Bio-Physical and Bio-Chemical sequences in a living organism.

It appears proper at this juncture to quote Zimmer, a scholar in Hindu Medicine who said about Ayurveda that 'There lurks a secret truth from which modern research might take its flight towards a new insight'.[6]

B. Health Perception

Health is the primary requisite for the pursuit of the highest goals of life and human being is constantly called upon to adapt and condition his internal environment in tandem with the ever-changing vicissitudes of external environment and maintain steady state equilibrium of Dosha, Agni, Dhatu and Mala – a comprehensive and ever contemporary perception of 'Health' in Ayurveda.[7]

A true articulation of this explanation is given by WHO which defined Health as 'A state of complete physical, mental and social well being and not merely the absence of disease or infirmity'.[8]

C. Disease Depiction

The inability of man to achieve and maintain his internal equilibrium due to varied etiology, dietary indiscretions or emotional stressors etc will initiate the process of disease.

A six staged morphology of pathogenesis i.e., Shatkriyakalas,[9] and a fivefold aetiopathological considerations i.e., *Nidana Panchaka* are comprehensive tools for clinical approach.

A quote by Charaka which says that 'Those alone are wise who act after investigation' is a sine qua non for disease diagnosis.[10]

D. Comprehensive Therapeutics

'Life', the purview of Ayurveda, connotes a combination of Shareera (body), Indriya (perceptors), Satwa (mind) and Atma(soul).[11] Soul, an imbroglio to other medical systems is one among the treatment concerns of Ayurveda, which emphasizes the holistic approach of its therapeutics.

The redemptive power of Ayurveda is appreciated as the herbal and mineral drugs used concomitantly with the purificatory procedures exert their effect not only for prophylactic and therapeutic purposes but also for convalescence, concupiscence and rejuvenescence.

Preventive, Conservative and Preservative objectives are achieved by Rasayana and Vajikarana which bestow longevity, reproductivity and homeostasis.

Cure is obtained through Samshodhana (alleviation) and Samshamana(palliative) methods while Dinacharya(daily routine), Ritucharya(seasonal routine) and Sadvrittha(ethical routine) forms the therapeutic adjuvants. ***(See Schematic Diagram 1 & 2)**

Contemporary Ayurveda

Contrary to the present trend of specialization for the treatment of diseases in different parts of body in isolation, Ayurveda believes in the functional unity of the body as a whole and no disease is ever treated in isolation. While modern treatment remains disease - oriented, Ayurveda is always patient - oriented.

Following western colonization, Ayurveda was relegated to the background. But over the past more than half a century this system has reemerged and is now a well documented, full-fledged medical practice with training upto PG & PhD levels. Now Ayurveda has crossed the boundaries of India to reach other parts of the world.

A. Informatics

As a result of greater interest in the use of medicinal plants, research efforts and the resultant literature have increased manifold during the last 3 decades. In this context, the importance of services for systematic collection, processing, storage and dissemination of information on medicinal plants cannot be overstated.

There are above 500 significant periodicals published worldwide which are devoted to disciplines such as Phytochemistry, Pharmacology, Medicine and Botany. Derwent World Patents Index (DWPI)-London and International Patent Documentation Centre, integrated to European Patent Office (EPO), offers rapid access to patent documents of 41 countries.

National Agricultural Library, American Chemical Society (ACS) and Biosciences Information Services (BIOSIS) are the suppliers of software information.

WHO document DPM 80.3, Chopra's 'Indigenous Drugs of India', Kirtikar & Basu's 'Indian Medicinal Plants' & 'Glossary of Indian Medicinal Plants', Council for Scientific & Industrial Research (CSIR), Medicinal Plants of India - Vol I &II (ICMR) and 'Wealth of India' (20 volumes) are the comprehensive and authentic sources for information on medicinal plants.

International Journal of Ayurvedic Research (IJAR), Global Ayurveda and Indian Journal of Medical Research (IJMR) are a few sources of current research works.

- **National Scene**

Ayurveda being indigenous to India derives the current research information from Central Council for Research in Ayurveda and Siddha (CCRAS), National Information Centre for Drugs And Pharmaceuticals (NICDAP), CSIR, National Center for Complementary and Alternative Medicine (NCCAM), Medicinal and Aromatic Plants Information Services (MAPIS) etc.

- **International Scene**

A number of world bodies like WHO, UNIDO and UNESCO have pinned their faith in traditional medicinal systems like Ayurveda.

Due to interest of people and support of government organizations, a number of private and semi – private organizations have mushroomed all over the world. Society Of Ancient Medicines, Platonic Academy Of Herbal Studies, European

Society For Ayurveda-Holland, International Association For Ayurveda And Naturopathy-France, Centre For Science And Culture-Singapore, Lestari Foundation-Indonesia, School Of Ayurveda-Australia, Shivanand Institute Of Health-Bahamas, Wellpark College Of Natural Therapies- Newzealand——to name a few.

- **Herbal Trade**

Medicinal plants form a significant and economically important group of products in international trade.

The trade statistics (ITC, UNCTAD/GATT, Geneva) shows that import of medicinal plants increased from $355 million in 1976 to $551 million in 1980. According to UNCTAD / WTO, sales of herbal medicine alone exceeded $12.5 billion in 1994 and $ 30 billion in 2000.

Substantial markets have developed in Infusions & Medicinal Teas in France and Germany. A number of Pharmaceutical manufacturers have set up Health food divisions, such as Beecham in U.K with sales turnover of about £ 200 million. Herbal preparations are even in greater demand in European countries than in U.K, attaining a 'Green Sweep' status.

B. Health Care System–The Raison D'etre Of Ayurveda

A concerted effort has been made by governments, trade unions, charities, religious bodies and coordinated bodies to deliver planned health care which touches everyone and embraces all goods and services designed to promote health, whether directed to individuals or to population.

But, as the countries grapple with basic issues, new challenges are emerging in the face of depleting resources and today's health care system poses new risks and uncertainties for access to quality care particularly for those suffering from chronic diseases.

An ideal health care system as defined in Ayurveda is 'one which cures a disease without causing or precipitating other illnesses'.[12]

Ayurveda in India is regulated by Deptt. Of AYUSH, while the Modern medical system by Medical Council of India (MCI). In 1946 Bhore Committee recognized the socialization of medicine through Primary Health Care (PHC) long before it was conceived by WHO and expressed in Alma Ata Declaration in 1970s. World Health Report – 2008 (Now More Than Ever) is completely dedicated to Primary Health Care.

Indian government implemented 'National Rural Health Mission' (NRHM) in 2005 to dispense integrated Health Care System, which remarkably uplifted Ayurveda. The mission concentrates on a few key health indicators like Infant Mortality Rate, Maternal Mortality Ratio, Vaccination Coverage and Percentage of Institutional Delivery to be accomplished by 2012.[13]

Thus, world is beckoning Ayurveda, the oldest and ever contemporary Health care system for its conducive and futuristic methodologies. ***(See Schematic Diagram 3)**

- **Universal Dietetics**

'Some people live to eat, while others eat to live', but the tragic fact is most people of this generation are actually eating to die or at least exist in a sort of living death. 'Chinese Restaurant Syndrome', 'Junk Food Syndrome' And 'Gastro Intestinal Syndrome' have proved this.

A host of recommendations in Ayurveda laid emphasis on Pathyam- a moderation in food intake and a balanced therapeutic diet which enhances the physiological state of the individual and the drug action.

A vivid portrayal in Ayurveda explains that the wholesome nutrition consumed in the form of Eatables, Drinks, Electuries and Masticables will imbue entire body where in the metabolic process proceeds without respite and growth, strength, complexion, happiness and life are attained.[14]

Hence is the distinction between pleasure (health) and pain (disease), a result of difference between wholesome and unwholesome diet.

Coppen et al and Gelenberg et al successfully treated Mental depression with dietary constituents.[15]

Darlington (1985) showed that Rheumatoid patients treated with exclusion or specific diets are

benefited significantly.[16]

- **Pharmacology – The Path Finder**

Ayurvedic system has been practiced for a number of centuries which has an inbuilt safety device whereby ineffective or toxic remedies are dropped from use over time, while those which are curative are used increasingly.

'Nothing exists in the realm of thought or experience that cannot be used as a medicine. An appropriate substance only needs to be used appropriately to be effective'- well said by Charakaacharya.[17]

He even cautions that 'a drug that is not understood perfectly is equal to poison, while that understood is comparable to ambrosia'. [18]

Every Medical system is bound to bear the brunt of disadvantages and limitations. Ayurveda vindicates the prevailing false notion regarding the metallic preparations by saying that ' even a potent poison is converted into an excellent medicine by the right method of preparation and usage, while a good medicine may act as strong poison if improperly administered'.[19] This gives the notice for a proper manufacture.

And, Father J. Gnelian, a Philippine Priest says about Ayurveda that 'our medicine has no side effects, only side benefits'[20]- an establishment out of experience.

- **Panchakarma – The Apotheosis Of Ayurveda**

The adventitious disease is treated surgically, the physical disease medically, the mental disease psychologically and natural disease spiritually – this is Ayurveda in a nut shell.

Panchakarma is an imperative and indispensible treatment speciality and a realm where the holistic principles are unleashed in their full strength. Five different therapies encompassed are Vamana (emesis), Virechana (purgation), Vasti (enema), Nasya (nasal medication) and Rakta Mokshana (blood letting).

In its Traditional Medicine Strategy, WHO in 2001 conducted a meeting exclusively on Panchakarma which is first of its kind, where they discussed the explorable areas.[21]

- **Ayur-Way-The Boon In Disguise For Life-Style Disorders**

Life is a constant and continuous union and amalgamation of body, Senses, Mind and Soul. Basic principles of Ayurveda are eternal truths as they are based on sound scientific facts. It is a system rooted in nature's wealth and man's relation to the universe. In short it is a lifestyle programme that includes learning what to eat and how to live.

Globalization and Industrialization rendered a mechanical life to the modern man and eventually the vulnerability of body organs is emerging as life style disorder.

Ayurveda framed the phenomenal moieties - Swasthavrittha (Daily & Seasonal healthy routine), Achara Rasayana (Code of impressive conduct) and Sadvrittha (Practice of impressive conduct) to improvise quality of life style.

Rasayana, the Rejuvenation and a Prohost therapy which imparts Immunomodulation is substantiated by Psycho-Neuro-Immunology (PNI) studies, proving detrimental to life style disorders.

Yoga and Callisthenics plays sheet anchor role in maintaining the integrity of cells for a disease free body & mind.[22]

- **Pandemic Subjugation**

Pandemics, the threats of generation next, are posing challenge to the universal medical systems while the beleaguered nations beset with anxiety and seek to douse the prevailing panic.

There is an understandable inclination to proactively treat the pandemics like Chikungunya and Swine flu and in this regard the health services are mounting a containment response involving Case Isolation and Contact Tracing. Despite medical care there is compounding loss of lives.

A well established citation in Ayurveda, Janapadodhwamsa (Epidemic / Pandemic) spelt out a series of strategic steps involving Panchakarma and Rasayana therapies as the main line treatment.[23]

With these, Ayurveda extended its healing

hand, well appreciated by the medical fraternity. Ayurvedic medicines have been beneficial to the patient and the Nation in case of Chikungunya.

Swine flu has been intractable so far and earned itself the notorious distinction of being the fastest moving pandemic in history, due to the permutation combinations of two surface antigens making the virus invincible.

Prof. B.M. Hegde in this regard appraised that 'Ayurveda is now known to modern hi-tech science to be better than most chemicals. There are wonderful and very effective methods of immune boosting in Ayurveda and one must take advantage of these in the stressful times'.[24]

Douglas C. Wallace, a noted Geneticist in US, after performing ultramodern tests using MITO CHIP made of mtDNAs said that 'Herbal drugs are the right choice for therapeutics', thus proving the scientific mettle of Ayurveda.[25] ***(See Schematic Diagram 4)**

Conclusion

Ayurveda is a traditional & axiomatic science and by far the most veracious, empirical and perpetual Health Care System existing on earth which seeks exploration of its potential principles and integration with the technical breakthroughs.

Need based strategy is the need of the hour for a Health Care System which should operate not only taking modern advancements but also traditional fundamentals into consideration.

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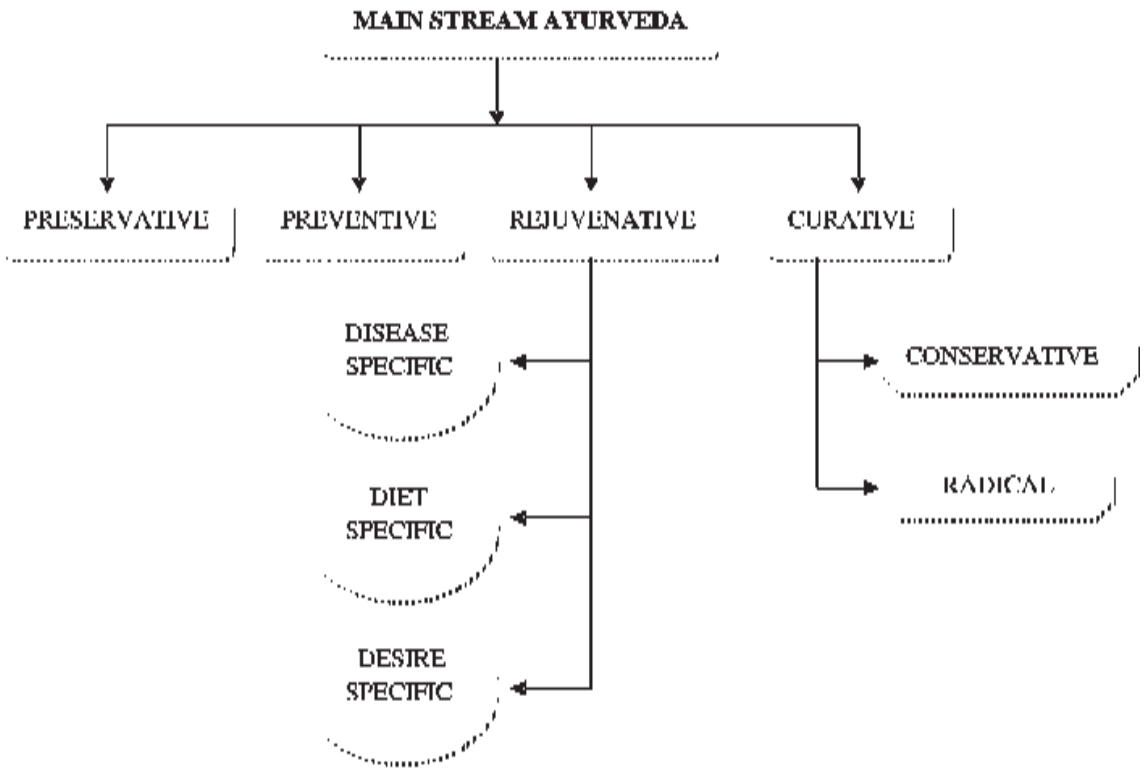
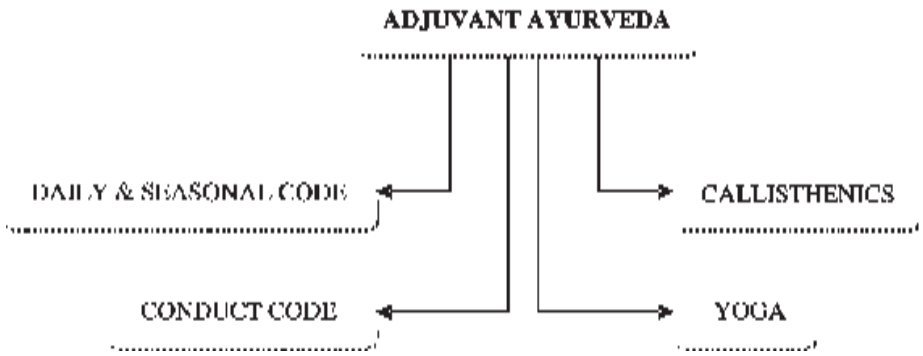
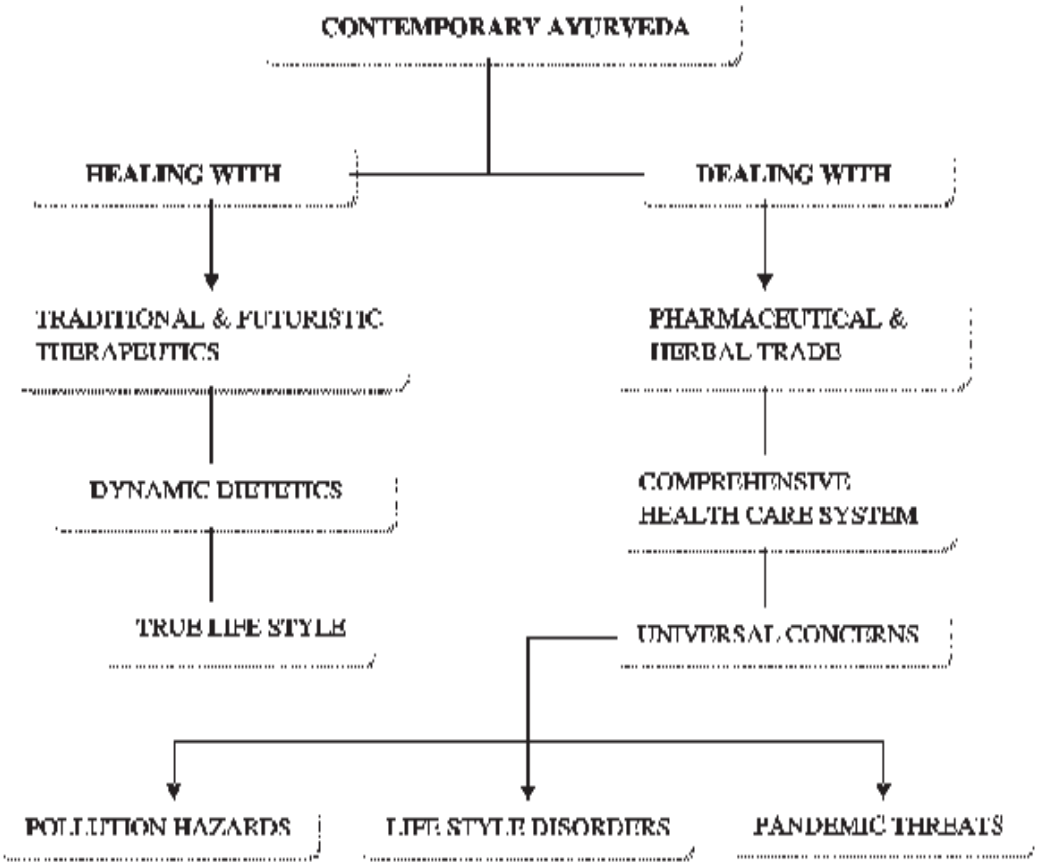
Schematic diagram:1



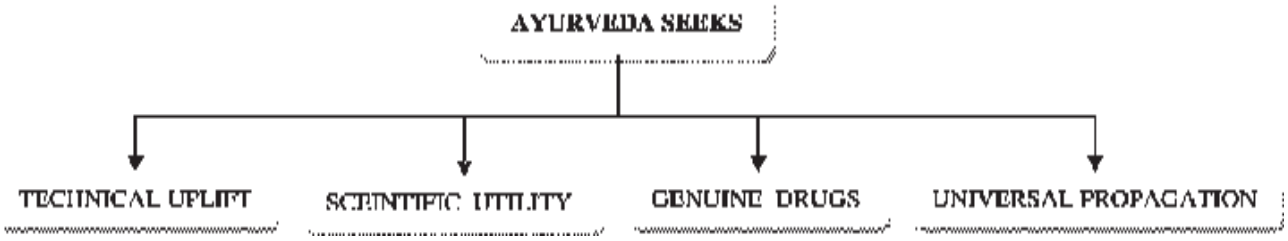
Schematic diagram: 2



Schematic diagram: 3



Schematic diagram: 4



LITERARY REVIEW

Medicinal Plants Used Some Ethnic Populace Of Andhra Pradesh In Female Reproductive System

*Dr. G. Babu, **Dr. S. Anitha, ***Dr. HML Meena, ****Dr. R.K. Joshi

Abstract

Andhra Pradesh is rich in traditional and indigenous plant knowledge. The major users of plant diversity in India are traditional healers and practitioners of Indian medicine, such as Ayurvedic, Siddha, Unani, Amchi etc, tribal and folk healers, herbal pharmaceutical companies, manufacturers of allopathic medicine etc. Today there is a great need of translation of this information cluster through scientific validation. Andhra Pradesh is an ideal abode of 33 categories of aboriginal populace. However, in recent times, due to operation of various anthropogenic factors connected with march of urbanization, the forest cover has been depleted. This has affected the general life style of many ethnic groups of Andhra Pradesh. Further due to over exploitation of potential indigenous plants by the traders, the aboriginal medicine men have been affected considerably. It has been observed that the growing tendency among the tribal people to adopt modern therapies. This has caused declination of traditional therapy adopted by various ethnic groups. This study has been carried out with the intention of bring out the medicinal plants used by the ethnic groups residing in the Mulugu and Eturunagaram forest range of Warangal district. While visiting the Ramappa temple, during the year 2007 and 2008, and we met with the Koya tribal traditional Vaidyas and collected folklore claims which were used in ailments of female reproductive system. In this study 27 selected potential medicinal plants and their uses with their correct nomenclature were collected and have been appended with correct family names and also medicinal use in female reproductive system.

Keywords: female disorders, Medicinal Plants, Ethno-medicine, Warangal district, Andhra Pradesh.

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Introduction

Recently ethno-botany is receiving great attention throughout the globe, for its wide scope and application in understanding the primitive societies and plant utilization. The main objective of ethno-botany is not only to trap the old traditional folk knowledge but also testify and to find out the new resources of various utilizations [Faulks, 1958; Schultes, 1962; Core, 1967; Bye, 1985; etc.].

Although ethno-botany, in India is not new, as primary information in our Ayurvedic system is based on the folk experimentation on medicinal plants and there are several other types of folk utilizations. [Dymock et al, 1890-93; Keertikar and Basu, 1935; Chopra et al, 1956, anonymous, 1986 etc.]. However, during recent decades the importance of ethno-botanical studies has been revived and consequently a large number of workers are engaged on various aspects of the subjects [jain, 1991].

Andhra Pradesh is endowed with rich and varied flora due to its specific geographical location, topographic situation and climatic factors. Ayurveda the traditional system of medicine is recognised globally as a system of medicine. It is estimated that there are around 10 million global species on earth and out of which only two million are scientifically named. Approximately 35000 species are used for medicinal purpose. However according to reports of W.H.O. around 21000 plants are used in the medicine and more than 80% of people in developing countries used herbal medicine for healthcare needs. Most of the Materia Medica from plant origin, forests being the chief source of medicinal plants, plays a pivotal role to meet the demand. The population, especially the ethnic populace surrounding the forest solely depends on their livelihood particularly for food, shelter and health care etc. thus they collectively protect the forest but the local medicine men in particular conserve the medicinal plants in their natural for habitat for use by the posterity.

Andhra Pradesh which is popularly known as Annapurna means which provides the sufficient food for Indian needs. It has a fertile lands spreading around the Krishna and Godavari rivers. There they will cultivate mainly paddy and other crops. Various medicinal plants will naturally grow at these regions. Andhra Pradesh having the population of 76, 210, 007 and it spreads 275, 069 sq. kms and has 23 districts. It is a natural habitat of larger number of medicinal and aromatic plants which are used for management of diseases. Andhra Pradesh has rich floral diversity. Total forest coverage is about 81 lakhs of hectares which constitutes 23% of state area. 2586 plant species are found in biota of Andhra Pradesh, out of which 1800 plant species are medicinal plants, many of them are used for the different ailments of female reproductive system. Andhra Pradesh is a very rich in traditions so are the practices of healing.

Tribes of Andhra Pradesh have added grandeur to the region with their rich heritage of culture, innocent lifestyle and age-old ethnicity. In other words, customs, rituals, fairs, festivals of these tribes of Andhra Pradesh have drawn the attraction of all the anthropologists of the country who have conducted surveys on them with enthusiasm and vigour. In Andhra Pradesh presently there are 32 lakh tribals, 50 lakh nomads and other backward people in Andhra Pradesh. Their habitat spreads along the coastal and mountain strip of the Bay of Bengal from the Srikakulam district to the Khammam and Godavari districts right up to the north-eastwards to the Adilabad region. Maximum of these tribes of Andhra Pradesh have built their settlements in the hilly and forest regions of the state. In the manner of making houses also, these tribes of Andhra Pradesh have also left their marks of exuberance and artistry. Thirty-three types of tribals are found in eight districts of Andhra Pradesh. The most prominent among them are the Khonds, Kolamis, Nayakpods, Koyas, Kondadoras, Valmikis,

Bhagatas, Savaras, Jatayus, Gadabas, Yanadis and Chenchus.

The tribes of Andhra Pradesh worship their own pantheon of nature gods and goddesses and continue to revel in their ancient customs and manners. The language which they use does not have a proper script and it has come down by the word of mouth. These tribes are firmly grounded by traditions. The laws of society and tradition are followed very strictly by the tribes of Andhra Pradesh. The leader of the tribal society is a very important figure. All other members strictly obey him and he is the person who has control on all the aspects of tribal life. The tribal communities happily participate in the feasts and festivals of the community. They sing and dance. The Koya tribes of Warangal district were typical in their way of life. They are simple people. They have no artificiality among them. They are basically honest and true people.

The authors are compilation of traditional health practices of Warangal region and came across various traditional healers popularly Known as Koya in folks, an effort has been made to enlist some of the important medicinal plants used by the Koyas for the management of various gynaecological disorders in their common practice.

Materials and methods

Periodical field trips were made in the tribal areas of Eturnagaram, Mulugu in Warangal district, while visiting the Ramappa temple and the state festival Medaram jatara a sacred place, during the year 2007 and 2008, and we met with the Koya traditional Vaidyas and collected folk lore claims which are used in ailments of female reproductive system. In this study 27 selected potential medicinal plants and their uses were collected and preserved as a herbarium specimen. The nomenclature of the plants was up dated following the principles and articles of ICBN (International Code of Botanical Nomenclature, Greuter, 1994). The identification of taxa has been made in consultation with the regional flora (Indian Meteria Medica by K.M. Nadkarni and Andhrapradeshlo Mandu Mokkalu by Koppula Hemadri, 1998.) in the enumeration, the species have been alphabetically arranged under related disorders with correct binomial nomenclature, with correct family names.

Enumeration

Contraceptive

1. Abrus precatorius linn (Fabaceae): Two seeds of white variety of Gunja soaked overnight in 20ml of water and swallowed with water in empty stomach by women on 4th day of menstruation prevent conception for two years. To attain permanent sterility 11/2, 21\2, 31\2 41\2, and 51\2 of dehusked white gunja seeds are taken on3rd, 4th, 5th, 6th and 7th day of menstruation respectively.

2. Butea monosperma (lamk) taub (Fabaceae):Seed paste mixed with honey introduced in to the vagina for 7 days from 5th day of menstruation prevents conception for one month.

3. Plumbago Zylanica Linn (Plumbaginaceae):

   a. A fresh root of 4-5 cm in size, grounded with water and taken on the 4th day of menstruation for 3concecutive days, acts as contraceptive.

   b. 5ml of root juice with 10ml of decoction of horse gram (Dolichus biflorus) twice daily and given from the 4th day o f menstruation till 7th day prevents pregnancy.

4. Strychnous nuxvomica linn (Strychnas ceae\Loganiaceae): seeds are rubbed with water on stone to make past, one gram of paste internally mixed with country liquor (obtained from Madhuka longifolia) acts as temporary contraception.

Galactogogue

1. Amaranthus viridus linn. (Scrophulariaceae): Ten grams of root decoction mixed with rice water is taken once daily to increase lactation.

2. Barleria prionitis linn. (Acanthaceae): 5gm of dried root powder with a cup of cow's milk given to lactating mother twice daily to increase the flow of milk.

3. Euphorbia hirta Linn (Euphorbiaceae):

   a. 3-5gm of leaf powder, with some rice made in to paste is given in the morning for 3

consecutive days enhance milk secretion.

b. Two grams of leaves with fresh water, fish and salt are wrapped in the leaf (3-4 covering) and roasted in moderate fire, and given to mother for increasing breast milk.

4. Hemidesmus indicus (linn) R .BR.: Two- three grams of leaves with some salt, fried in moderate fire and given to mother, act as galactogogue.

Female infertility

1. Butea monosperma (lamk) taub (Fabaceae): 10gm of wet leaves taken and grounded in to paste make into small balls given on the first day of menstruation will correct the infertility.

Leucorrhea

1. Abrus precatorius .L (Fabaceae): 5gm of leaves of white seed variety with the garlic rounded in to paste and given thrice a day for three consecutive days checks leucorrhoea.
2. Mimosa pudica linn. (Mimosaeceae): Two parts of whole plant paste is mixed with one part of sugar candy and made in to 5gm tablet. One tablet given twice daily for two weeks controls leucorrhoea.
3. Musa paradisica linn. (Musacaceae): About 20ml of stem decoction given thrice daily checks leucorrhoea.

Menorrhagia

1. Abrus precatorius .L (Fabaceae): Water infusion of 5gm fresh / dried leaves were given orally for three consecutive days for Menorrhagia
2. Sida acutabum. F. (Malvaceae): Decoction of 10gm whole plant taken once daily for 15 days to control menorrhagia.
3. Tamarindus indica linn, (Ceasalpinaceae): 5gm of seed decoction is taken orally for three consecutive days to treat menorrhagia.

Obstructed Labour

1. Achiranthes aspera linn. ((Amarathaceae): five to six cm long fresh root, pulled out in one breath, is tied around the waste or stuck to the hair knot to induce labour pains. Soon after delivery the root piece is removed and thrown in to a running stream of water.
2. Adhatoda Vasica Nees (Acanthaceae) Apiece of Freshly collected root is tied in the left hand of the woman to induce labour pain, immediately after delivery the root is to be removed.
3. Gloriosa Superba Linn (Liliaceae): The rhizome is tied around the left arm for easy delivery.

Post natal body pain

Acalypha indica linn. (Euphorbiaceae): 5gm of fresh leaf with 7 nos of black pepper is grounded in water and the infusion is prepared. This taken thrice daily for5-7 days reduces body pains.

1. Alianthus excels Roxb. (simaronbaceae): Leaves boiled with sugar candy and administered orally to women for debility after child birth.
2. Vitex negundo linn (Verbinaceae): Leaves are boiled in equal quantity of water to prepare decoction, and it is used orally20ml twice daily, as well as bath to reduce debility, headache and body pains.

Secondary amenorrhea

1. Cassia fistula (L.) (Leguminosae :Tender leaf juice taken in 2 spoonfuls once in morning for about 10 days
2. Sesamum indicum.lnn. (Pedaliaceae): Black sesamum seeds are boiled with triple quantity of water to prepare decoction, and it is used orally 30ml in empty stomach, for 10 consecutive days will induce menstruation.

Termination of Pregnancy

1. Abrus precatorius linn (Fabaceae):For termination of pregnancy powder of two seeds with jaggery is taken early morning in empty stomach for 2 days.
2. Bambusa arundunacea (retz) wild(Graminaceae); Leaves ground with seed of sesamum and trigonella and the paste mixed with honey is given to abort the first trimester of pregnancy.
3. Calotropis Gigantia Linn R.Br (asclepiadaceae): A fresh root introduced in to the cervix induces early abortion.

4. Costus Speciosus (Koenig) Sm. (Zingiberaceae); the rhizome extract (one cup) is used to induce abortion.

   a. Five ml of root juice mixed with 5ml of hibiscus rosa–sinensis and 15ml of country liquor (obtained from madhuca longifolia) is given in the early in the morning for termination of pregnancy.

   b. 5ml of root juice with 10ml of decoction of horse gram given in the morning on empty stomach causes termination of pregnancy.

5. Lawsonia innermis linn (Latheraceae) 5gm of root paste mixed with rice wash water is given internally for termination of pregnancy.

6. Woodfordia fruticosa (linn) kurz (Lythraceae) : Ten gm of root paste is given internally to terminate pregnancy.

Conclusion:

Ethno-medicine is still practiced by various ethnic populaces of remote areas by making use of plants found around them for meeting their primary medical needs .There have been many instances of new and interesting claims employing herbals that do not belong to classical treatise of Ayurveda. Such ethno-botanical explorations have brought many unknown medicinal uses of plants to light. It is a matter of concern that there is a gradual degradation of ethnic use of medicinal plants due to advancement of modern civilization. Thus it is the time to protect the tribal heritage for scientific validation and in corporate them in the main stream of Ayurveda. The data collected from the tribal people of Warangal district pertaining to the treatment of various female ailments by herbal preparations in the form of decoctions, extracts, paste, etc., should prove useful for researchers in the field of medicine, bio-technology, pharmacology, etc.

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