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Contributions are invited in the form of :

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

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

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

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

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

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

EDITORIAL

On time, online and Indexed.....

"Knowledge and wisdom, far from being one,
Have oft times no connection.
Knowledge dwells
in heads replete with thoughts of other men;
Wisdom in minds attentive to their own.
Knowledge is proud that he has learned so much;
Wisdom is humble that he knows no more"

- Sir William Osler (1849-1919)

I take this charge of the chief editor of this esteemed journal fully aware of the legacy it carries as a journal that is read and respected. To be Read, Respected and **Cited** are the three most important attributes for any scientific publication. I am aware of the onerous responsibility of maintaining its standards and breaking new grounds. I am grateful and humbled.

The Journal of Ayurveda receives over 150 manuscripts every year. We publish 60 to 80 of them on nearly 500-400 pages, with acceptance rates varying from less than 10% for case-reports to over 50% for reviews. Over the next few months, we aim to achieve a few specific objectives. To be **On Time, Online and Indexed**.....

We aim to minimise the time between acceptance and publication. The obvious first step towards this is to hasten online presence, e-publication andsubsequent open access wider dissemination of the published work in public domain at the earliest. Thereafter, we aspire to get ourselves indexed with PubMed and other the Science Citation Indices and get an impact factor. Though debatable, impact factor remains a standard of scientific success.

Among the other important objectives, we need to target capacity building about scientific study design, research methodology, conduct, analysis, and publication. The twin problems of lack of good scientific papers and scientific misconduct are widespread. At the JOA, we understand that the problem is primarily ***a lack of knowledge rather than an intent to cheat***.[1] To address this issue, the JOA intends to conduct workshops for authors, reviewers, and editors, and will publish articles pertaining to this area regularly, in the future issues.

I welcome the new editorial team members who begin their tenures with me. Most of the existing members continue with their invaluable experience. I thank all our readers, authors, and reviewers for their support and solicit their continued patronage.

We aim to become the pre-eminent Journal in the "Ayurveda eco-system" and this will be possible only with your active support and contributions.

I feel blessed and thank all of you.....

"Not what we say about our blessings, but how we ***use*** *them, is the true measure of our thanksgiving"* – WT Purkiser

Prof. Sanjeev Sharma
Director

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Clinical Study

Clinical Study of *Samwardhana Ghrit* & *Hapushadi Yapan Basti* In The Management Of Children With Cerebral Palsy

*Dr.Kishor Gavali, **Dr.Shrinidhi Kumar K, ***Prof. Abhimanyu Kumar

Abstract-

Cerebral Palsy is the most common cause of disability in children with incidence of 2 to 2.5 per 1000 live birth. Although the lesion occurs in immature brain which is not progressive but the clinical manifestations change over time. Newer medications and therapies are being explored for managing the condition yet the disease has not been alleviated. So, the present study is the humble attempt for the effective and safe management of the disease which can be beneficial for patients. For this purpose, 14 clinically diagnosed patients of CP were treated with oral herbal compound named *Samwardhan Ghrita* explained by *Acharyas Kashyapa, Hapushadi yapan basti* explained by *Acharyas Charaka,* along with *abhyanga, shashtika shali pinda sweda* and physiotherapy. The other group of 14 patients was managed with physiotherapy alone as control group. The study showed more significant results in patient treated with *Ayurvedic* approach along with physiotherapy than physiotherapy alone.

Keywords – Disability, Kashyapa, Physiotherapy, *Samwardhana Ghrita, Abhyanga, Shsatika Shali*

सारांश-

बाल मस्तिष्काघात बच्चों में अपंगता का मुख्य कारण है जिससे विश्वभर में 1000 में से 2 से 2.5 बच्चे इसके प्रभावित होते है। वस्तुत: इसमें अविकसित मस्तिष्क में हुआ आघात अप्रगतिशील होने पर भी इसका व्याधि लक्षण प्रकटीकरण समय के साथ बदलता रहता है। यद्यपि बहतु सी नवीन दवाईयाँ एवं चिकित्सा पद्धतियाँ इसके निवारण के लिए आई है परन्तु फिर भी इस रोग में कोई कभी कमी नहीं आई है। अत: प्रस्तुत अध्ययन इस रोग की प्रभावी एवं सुरक्षित चिकित्सा खोजने का एक विनम्र प्रयत्न है, जिससे कि पीड़ित रोगियों को लाभ पहुँच। इस योजना के अन्तर्गत मस्तिष्काघ के 14 रोगियों को आचार्य काश्यप द्वारा निर्देशित संवर्धन घृत, आचार्य चरक द्वारा निर्देशित यापन बस्ति, अभ्यङ्ग व शाष्टिक शालि पिण्ड स्वेद के साथ फिज़ियोथेरेपी दी गई व दूसरे समूह के 14 रोगियों को केवल फिज़ियोथेरेपी दी गई जिससे यह निष्कर्ष निकला की आयुर्वेदिक उपचार के साथ दी गई फिज़ियोथेरेपी ने केवल फिज़ियोथेरेपी के बजाय ज्यादा अच्छा परिणाम दर्शाया।

*P.G. Scholar, Dept. of Balaroga, National Institute of Ayurveda, Jaipur. **Assistant Professor, Dept. of Balaroga ,National Institute of Ayurveda, Jaipur. ***Director, AIl India Institute of Ayurveda, New Delhi.

Clinical Study

Clinical Study of *Samwardhana Ghrit* & *Hapushadi Yapan Basti* In The Management Of Children With Cerebral Palsy

Dr. Kishor Gavali, Dr. Shrinidhi Kumar K, Prof. Abhimanyu Kumar

Introduction-

Cerebral refers to the cerebrum, which is the affected area of the brain (although the disorder most likely involves connections between the cortex and other parts of the brain such as the cerebellum), and *palsy* refers to disorder of movement. CP is caused by damage to the motor control centres of the developing brain[1,2] Cerebral Palsy is an umbrella term commonly referred to as 'Cerebral Palsy' and is one amongst common paediatric neurologic disorder described by loss or impairment of motor functions. It is actually caused by non progressive insult to brain. The brain damage is caused by brain injury or abnormal development of the brain that occurs while a child's brain is still developing- before birth during birth or immediately after birth.[6]

It is a chronic motor disorder which affects body movement, muscle control, muscle coordination, muscle tone, reflex, posture and balance. It can also impact fine motor skills, gross motor skills and oromotor functioning. It is non-progressive, which means the brain damage will not progress in severity in future. However, conditions resulting from the brain damage may develop and change over time. Over the course of the person's life, he or she may encounter any number of associative or co-mitigating factors.[7] The characteristic signs are spasticity, movement disorders, muscle weakness, ataxia, and rigidity. Cerebral palsy is the most common cause of severe physical disability in childhood.[7] The worldwide prevalence and incidence of the disorder are not clearly known. The overall reported prevalence in children aged 3–10 years is 2·4 per 1000 children, with variability in the reported rates in girls and boys. The commonest cause of CP remains unknown in 50% of the cases; prematurity remains the commonest risk factor.[8]

Various other impairments are associated with cerebral palsy like -Mental retardation (50-75%), Seizure disorders (25-33%), delayed growth and development problems (20-15%), Spinal deformities (5-6%), Impaired vision (15-20%), Hearing or speech (15-25%), Drooling of saliva (20-25%), incontinence (10 -15%), abnormal sensation and perception (15-20%).[9] 50-75% of such patients have mental disability which is more challenging for the treatment. Although antenatal, perinatal and neonatal care reaches to peak and attained great advance, there is no considerable decrease in the incidence of cerebral palsy.[9]

Present study has been planned by considering above facts and, is an attempt to provide and explore Ayurvedic treatment modules for such burning problems in the society. Which may helps the disabled child to carry out his own day-to-day activities.Various procedures of *Panchakarma* like A*abhyanga,* S*halishastik pinda sweda*, *Yapan Basti with some Ayurvedic preparations* are well known for reducing spasticity of muscles.[3,4,5]

Aims and Objectives

The present research trail has been undertaken with the following objective.

1. To conceptualise and evaluate the approach of Ayurvedic management in cerebral palsy.
2. To improve quality of life of the patients of cerebral palsy.
3. To enhance the functional capacities of the children in order to make him/her self dependent.
4. Early rehabilitation and to prevent further complications.

Materials and method-

Selection of Cases and Trial therapy

Source- Affected children of the age group 1 to 12 years were selected after evaluating them

clinically, from O.P.D. and I.P.D. of Bala roga department of N.I.A. Jaipur. 36 cases were registered for the study and were randomly divided in two Group A and Group B.

Group A- Patients received Physiotherapy treatment

Group B- Patients received Physiotherapy + *Ayurvedic* Procedures + *Samwardhana Ghrita*.

Physiotherapy being standard rehabilitation procedure in cerebral palsy, it was allowed in both groups. The trial was conducted for three months.

Dose and Duration

Samwardhana Ghrita[5] - (1 ml/kg/day) in 2 divided doses for 3 months.

Abhyanga[4] – Done with *Kshirabala taila* for 15-20 min/day for 3 months.

Shali Shashtika Pinda Sweda[4]- 25- 30 min/day continuously for 21 days with repeated gap of 7days for 3 months.

Hapushadi Yapana Basti[3] - For 21 days in 2nd month

Criteria Adopted

Inclusion criteria

- Age group 1 to 12 years of either sex.
- Diagnosed case of Cerebral palsy (spastic) without active seizures.

Exclusion Criteria

- Individuals below 1 yr and above 12 yrs. Of age
- Progressive neurologic disorders.

Assessment Criteria:[6,7]

- Gross motor function Classification Scale (GMFCS)
- CDC grading scale for motor milestones
- Spasticity – Modified Ashworth Scale
- MRC Power scaling

Results-

Table No-1 Results obtained regarding clinical and functional improvement in 28 registered case of cerebral palsy.

Scale	Grp.	Mean (n=14)			%	SD	SE	"t"	"P"	Res-
		BT	AT	Diff.	change	(±)	(±)	value	value	ults
GMFCS	A	4.143	4.071	0.071	1.713	0.267	0.071	1.000	>0.10	N.S.
	B	4.071	3.214	0.857	21.05	0.534	0.142	6.000	<0.001	E.S.
CDC Neck	A	2.929	3.286	-0.357	12.18	0.497	0.132	2.683	<0.10	S.
Holding	B	3.571	4.000	-0.500	14.00	0.650	0.173	2.876	<0.01	S.
CDC Sitting	A	2.286	2.571	-0.285	12.47	0.468	0.125	2.280	<0.01	S.
	B	2.857	3.571	-0.714	25.00	0.726	0.194	3.680	<0.01	S.
CDC Standing	A	1.000	1.357	-0.357	35.70	0.497	0.132	2.687	<0.02	S.
	B	1.357	2.071	-0.714	52.62	0.726	0.194	3.680	<0.01	V.S.
Spasticity Right	A	2.107	1.786	0.321	15.23	0.420	0.112	2.857	<0.02	S.
Upper Limb	B	1.821	1.464	0.357	19.60	0.412	0.110	3.238	<0.001	V.S.
Spasticity Left	A	2.107	1.786	0.321	15.23	0.420	0.112	2.857	<0.02	S.
Upper Limb	B	1.536	1.143	0.392	25.52	0.446	0.119	3.294	<0.001	V.S.

Spasticity Right	A	2.464	2.357	0.107	4.342	0.289	0.077	1.385	> 0.10	A
Lower Limb	B	2.179	1.893	0.285	13.07	0.378	0.101	2.828	<0.02	B
Spasticity Left	A	2.786	3.143	-0.357	12.89	0.497	0.132	2.687	<0.02	S.
Lower Limb	B	2.929	3.571	-0.643	21.95	0.497	0.132	4.837	<0.001	E.S.
Power Right	A	2.786	3.143	-0.357	12.89	0.497	0.132	2.687	<0.02	S.
Upper Limb	B	2.929	3.571	-0.643	21.95	0.497	0.132	4.837	<0.001	E.S.
Power Left	A	2.714	3.071	-0.357	13.15	0.497	0.132	2.687	<0.02	S.
Upper Limb	B	3.214	3.786	-0.571	17.76	0.513	0.137	4.163	<0.001	E.S.
Power Right	A	2.714	3.000	-0.285	10.50	0.468	0.125	2.280	<0.05	S.
Lower Limb	B	2.714	3.286	-0.572	21.07	0.513	0.137	4.163	<0.01	V.S.
Power Left	A	2.714	3.000	-0.285	10.50	0.468	0.125	2.280	<0.05	S.
Lower Limb	B	2.857	3.429	-0.571	19.98	0.513	0.137	4.163	<0.01	V.S.

Table No-2 Inter group comparison of group A and group B by using 'unpaired t-test with Welch correction' shows the following effect

	Inter group comparison	**Mean diff. (n=14)**	**'t' value**	**'p' value**	**Result**
GMFCS	A - B	0.501	2.914	<0.01	V.S.
CDC Neck holding	A - B	0.996	4.528	< 0.001	H.S.
CDC Sitting	A - B	-0.786	3.405	<0.01	V.S.
CDC Standing	A - B	-0.855	3.636	<0.01	V.S.
SPASTICITY					
Right Upper Limb	A - B	0.304	1.933	>0.05	N.S.
Left Upper Limb	A – B	O.607	3.707	<0.01	V.S.
Right Lower Limb	A – B	0.360	2.941	<0.007	V.S.
Left Upper Limb	A - B	0.695	5.605	<0.001	V.S.
POWER					
Right Upper Limb	A - B	-0.286	1.523	>0.05	N.S.
Left Upper Limb	A - B	-0.608	3.185	<0.003	V.S.
Right Lower Limb	A - B	-0.143	0.770	>0.10	N.S.
Left Upper Limb	A - B	-0.286	0.286	>0.10	N.S.

Effect on GMFCS grading-

Discussion on the Gross motor function scale –at the end of 3rd month in group A no significant change was observed statistically and in group B results become highly significant ($p<0.0001$) which are showing 21.05% of change. The inter group comparison showed that Group B had very significant advantage over Group A with $p<0.01$.

Effect on CDC grading

CDC scale for neck holding -In group A after 3months 12.18% change was observed which is statistically significant (p<0.01). In group B after 3months results become significant (p<0.01) showing 14.00 % of change. Inter group comparison was found highly significant for group A-B (p<0.0001).

CDC scale for sitting –In group A after 3months only 12.47% change was observed which as statistically significant(p<0.01). In group B after 3months results become significant (p<0.01) which are showing 25.00 % of improvement. Inter group comparison was found very significant for group A-B (p<0.01).

CDC scale for standing –In group A after 3 months 35.70% change was observed which is statistically significant(p<0.01) while in group B also results was significant (p<0.01) which are showing 52.63 % of improvement. The inter group comparison between Group A and Group B showed that Group B had very significant advantage over Group A with p<0.01.

Effect on Spasticity using Ashwarth scale

Right upper limb- at the end of 3rd month in group A there was decrease of 15.23% spasticity which was significant (p<0.02), while in group B there was decrease of 19.60% spasticity which was very significant (p<0.001).Inter group comparison was found very significant improvement in group B (p<0.01) among group A & B.

Left upper limb- at the end of 3rd month in group A there was decrease of 15.23% spasticity which was significant (p<0.02), while in group B there was decrease of 25.52% spasticity which was very significant (p<0.01). The inter group comparison showed that Group B had very significant advantage over Group A with p<0.01.

Right lower limb— at the end of 3rd month in group A there was decrease of 4.34% spasticity which was insignificant (> 0.10), while in group B there was decrease of 13.07 % spasticity which was significant (p<0.02).The inter group comparison showed that Group B had very significant advantage over Group A with (p<0.01).

Left lower limb- at the end of 3rd month in group A 4.34% improvement seen which was insignificant (p>0.10), while in group B 18.85% decrease in spasticity was seen which was very significant (p<0.01). The inter group comparison between Group A and Group B showed that Group B had very significant advantage over Group A with p<0.001.

Effect on Power-using MRC grading

Right upper limb— at the end of 3rd month in group A 12.89% improvement which was seen which was significant (p<0.02) while in group B 21.95% improvement was seen which was extremely significant (p<0.001). The inter group comparison between Group A and Group B showed that Group B had no significant advantage over Group A with p>0.05.

Left upper limb— at the end of 3rd month in group A shows significant result (p<0.02) observed, while in group B 17.76% improvement was seen which was extremely significant (p<0.001).The inter group comparison between Group A and Group B showed that Group B had very significant advantage over Group A with p<0.01.

Right lower limb— at the end of 3rd month in group A 10.50% improvement was seen which was significant (p<0.05) while in group B 21.07% improvement was seen which was very significant (p<0.01). The inter group comparison between Group A and Group B showed that Group B had no significant advantage over Group A with (p>0.10).

Left lower limb- at the end of 3rd month in group A there was 10.50% improvement seen which was significant (p<0.05), while in group B 19.98% improvement was seen which was very significant (p<0.01). The inter group comparison between Group A and Group B showed that Group B had no significant advantage over Group A with p>0.10.

Discussion

The results of both the groups were most of the time gained the statistically significance (p<0.05) proving physiotherapy as the standard management of the Cerebral palsy. However in most places group B was present with maximum improvement and some highly significant results then group A. Hence proving the efficacy of *Ayurvedic* modalities to be

new way of better management in the field of Cerebral palsy.

Decrease in spasticity and improvement in power was seen well in upper limbs than lower limbs in both the groups. Due to the small muscle mass these muscle upper limbs respond early then strong lower limb muscles.

Improvement in the power of the upper limb area aided improvement of daily activities. All those works where both upper limb and lower limb are required to complete the task, improvement is not much as expected due to tough spastic muscles of lower limb.

The combined effect of *Abhyanga* and *Swedana* is beneficial to patient by increasing blood circulation to muscles, providing nutrition to muscles, increasing strength of muscles, decreasing spasticity of muscles and contractures of joint, improving of power of muscles.

Hapushadi Yapana Basti is found to be effective in relieving constipation in most of the patients and also shows improvement in appetite.

Madhura Rasa, *Sheeta Veerya* and *Madhura Vipaka* of this yoga in form of *Ghrit* increases the effectivity of drug in terms of *Vatahara, Balya, Brihana, Medhya karmas.* Lipid solubility, neuro protective, free radical scavenging, antioxidant, nutritive effect of the drug had given additional benefit in nourishing the spastic and strenuous weakened muscles.

Very good improvement is seen in patients with lower age group than the patients with higher age group. Also improvement in patients with less spasticiy is better than the patients with relatively more spasticity.

The combination of Ayurvedic procedures proved to be effective in symptoms of recurrent respiratory tract infection with significant decrease in symptoms.

No any adverse effects of procedure and drug were seen in this trial.

Conclusion-

The results of both the groups were most of the time gained the statistically significance, proving physiotherapy as the standard management of the Cerebral palsy. However in most places group B was present with maximum improvement and some highly significant results then group A. Hence proving the efficacy of *Ayurvedic* modalities to be new way of better management in the field of Cerebral palsy. Therefore it can be concluded that combined therapy having study drug *Samvardhana Ghrit*, *Panchkarma* procedure along with physiotherapy are effective treatment modalities and can be used efficiently in the management of Cerebral palsy.

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Clinical Study

A Fundamental And Clinical Study On The Principle कार्यं नैकान्तिकं ताभ्यां प्रायः श्रेयोऽनिलापहम् ॥ च.चि. 17/148 In *Shwasa Roga*

*Pankaj Gahunge, **Dr. Asit K. Panja, ***Dr. Kedar Lal Meena

Abstract

At present, many chronic recurrent airway disorders are increasingly seen all over the global population. *Tamaka Shvasa*is one of such disorder in*Ayurveda*. The parallel in western medicine to this disorder i.e. Bronchial Asthma calls the attention of Medical world due to significant burden in terms of health care costs as well as lost productivity and reduced participation in family life.Hence it is necessary torecall the pathological processes that occur in *shvasa* roga in general. Vitiation of mainly *vata*and then kapha is observed in almost all the varieties of *shvasa* roga. Therefore aneffort is made to correct *vata dosha*.

Keywords -*Tamaka Shvasa, vata,shvasa.*

सारांश–

श्वास व्याधि मुख्यतः वात दोष का प्राणवह स्त्रोतस में वृद्ध होने से होती है। आचार्य चरक के अनुसार इस व्याधि में अनिलापह चिकित्सा करने से लाभ मिलता है।

इस लिये प्रस्तुत शोध में श्वास चिकित्सा में मनःशिलादि घृत, मनःशिलादि धूम दशमूल निरूह का प्रयोग कराया गया। प्रस्तुत शोध श्वास के 30 रोगियो पर किया गया। इस शोध का लक्ष्य श्वास व्याधि में अनिलापह चिकित्सा के महत्त्व प्रतिपादित करना है।

उपरोक्त शोध में यह देखा गया की मनःशिलादि घृत एवं दशमूल निरूह के प्रयोग से रोगियों में उत्तम लाभ मिला। सर्वोत्तम लाभ उन रोगियो में देखा गया जिन्हे मनःशिलादि घृत मनःशिलादि धूम दशमूल निरूह इनका प्रयोग कराया गया।

उपरोक्त शोध में यह देखा गया कि मनःशिलादि घृत धूम के साथ प्रयुक्त निरूह बस्ति में सांख्यिकीय दृष्टिकोण से उत्तम परिणाम प्राप्त है। यह परिणाम ये सिद्ध करते है की अनिलापह चिकित्सा श्वास व्याधि मे उत्तम है।

*MD Scholar, PG Department of Maulik Siddhant & Samhita, NIA, Jaipur. **Asstt. Professor, PG Department of Maulik Siddhant & Samhita, NIA, Jaipur. ***Associate Prof.,PG Department of Maulik Siddhant & Samhita, NIA, Jaipur. Corresponding Address: Dr.pankaj gahunge,MD(Scholar), PG Department ofMaulik Siddhant & Samhita, NIA,Jaipur. Email ID:pankajgahunge@rediffmail.com Contact no.07737039665

Clinical Study

A Fundamental And Clinical Study On The Principle कार्यं नैकान्तिकं ताभ्यां प्रायः श्रेयोऽनिलापहम् ॥ च.चि. 17/148 In *Shwasa Roga*

Pankaj Gahunge, Dr. Asit K. Panja, Dr. Kedar Lal Meena

Introduction

Ayurveda is the most ancient of all medical sciences. It is the only medical science which has withstood the ravages of time and still thriving steadily and triumphantly even amidst the modern medical sciences of the west. It is a rich heritage handed down to us by the ancient *hindu* sages of divine insight and unlimited experience.

Caraka says non equilibrium of *dhatus* is nothing but the *vikara*.[1] It brings in pain and discomfort. The equilibrium of the *dhatus* on the other hand, means health; it may also be called joy and comfort. *Sushruta* also says that anything which produces pain discomfort in man may be called as *vyadhi*.

Objectives

1. To explore etiopathological consequences of *'shwasa'*
2. To establish the importance of the consideration of *vatadosha* in various stages of treatment of *shwasa*
3. To establish main fundamental principle of *shwasa roga chikitsa* as *'anilapaha'*

Material And Methods-

Study Type : Interventional

Purpose : Treatment

Masking : Open label

Control : Not controlled

Timing : Prospective

End Point : Efficacy and Safety

No. of Groups : Two

Number of Patients to be completed in the clinical trial (Sample Size): 30

The selection of patients was done from O.P.D./ I.P.D. wing of P.G. Deptt. Of Maulik Siddhanta, N.I.A., Arogya Shala, Jaipur.

Time Lines -

Treatment Period-3 weeks

Follow-Up Period- After 2 weeks and 3 weeks.

Participants:

Inclusion Criteria

1. Age group between 20-60yrs
2. Both male & female patient were selected
3. Patient willing and able to participate for 3 weeks.

Exclusive Criteria

Ayurved :	Modern:
1. mahashwasa	1. cardiac diseases
2. urdhwashwasa	2. diabetes mellitus
3. chinnashwasa	3. lung Ca
	4. T.B.

1. Patients with PEFR < 50% and/ or FEV1 < 50% of the predicted value.
2. Patients with evidence of malignancy.
3. Patient with poorly controlled Diabetes Mellitus (HbA1c > 10%).
4. Patients with poorly controlled Hypertension (i.e. Systolic > 160 mm of Hg and Diastolic >100 mm of Hg)
5. Patients on prolonged (> 6 weeks) medication with corticosteroids, bronchodilators, mast cells stabilizers, antidepressants, anticholinergics, etc. or any other drugs that may have an influence on the outcome of the study.

6. Pregnancy or lactating women.

Discontinuation Criteria:

1. Patient who discontinued the treatment themselves due to any reason.
2. Patient who developed hypersensitivity for any constituent of selected formulation.

Drug Intervention

1) *Manashiladi Ghrit*

Dose & route : 2.5 gm twice daily twice daily; Oral

Anupana-- Lukewarm Milk

Duration of therapy- 3 weeks

2) *Manahshiladi Dhoom*

Dose : Two times in a day (mid day,evening) each time 3 *'AAVARTAN'*

Anupana - Lukewarm Milk

Dosage form Varti kalpana

Route of Administration Oral

Duration of therapy - 3 day

3) *Dashmuladi Niruha Basti*

Dose : 800-900ml

Dosage form: *Kashaya Kalpana*

Route of Administration: Guda marga

Time of Administration: In The Morning (on alternate day)

Duration of therapy: 21 days

Objective Parameters

These are based on Laboratory investigations

Haematology

Haemoglobin : T.L.C.: D.L.C. : E.S.R. :

Spirometry

1) PEFR

2) FEV

Table No. Showing basic Ayurvedic properties of the trial drug.

Sr.no.	Contents	*Rasa*	*Guna*	*Veerya*	*Vipaka*	*Dosha karma*
1.	*Manahshila*	*Katu,Tikta,*	*Guru, Snigdha*	*Ushna*	*Katu*	*kapha Vatashamaka*
2.	*Sarjaras*	*Kashaya, Madhura*	*Ruksha*	*Shita*	*Katu*	*Pitta kapha vatashamaka,*
3.	*Laaksha*	*Kashaya*	*Laghu, Snigdha,*	*Shita*	*Katu*	*Kaphapitta Shamaka*
4.	*Haridra*	*Tikta,Katu*	*Ruksha, Laghu*	*Ushna*	*Katu*	*Kaphapitta Shamaka*
5.	*Padmak*	*Kashaya, Tikta*	*Laghu,Snigdha*	*Shita*	*Katu*	*kapha pitta Vata shamaka*
6.	*Manjistha*	*Kashaya, Tikta, Madhura*	*Guru, Ruksha,*	*Ushna*	*Katu*	*Kaphapitta Shamaka*
7.	*Haratala*	*Katu, Tikta, Madhura*	*Tikshna, Laghu, Snigdha.*	*Ushna*	*Katu*	*Kaphavata Shamaka*
8.	*Goghrit*	*Madhura*	*Guru, Snigdha.*	*Sheeta*	*Madhura*	*Vata, Snigdha, pitta, Kapha Shamaka*

Observations And Results

The critical analysis of observed results based on *Ayurvedic Siddhanta* & scientific thoughts are described under this title.

Observations

Nidana (Aahara, Vihara)

Aahara-In the present study all 36 patients were found to take *garishta Aahara*. The excessive use of *Abhishyandi Aahara was* found to be an etiological factor in 75% of patients, *Dadhisevan* was found in 69.44% patients, 66.66% of patients were having history of consuming *vishtambhi Aahara - Sheetaambu &* food and *Ruksha anna*, 52.77% patients gave history of *gurubhojana,* 50% patients were taking *Jalaj, Aanup mansa*, 33.33% of patients were consuming *Vidhahi Aahara*. 25% patients were found to take different food articles prepared from *pishtha*. 22.22% patients were consuming *Aama kshira,* 19.44% were consuming *masha*. *Abhishayandi Aahara* can create the *Srotorodha* and vitiate the normal path of *Vata*. It is having *Guru* Property which is heavy for digestion & hampers the function of *Agni*. All other *Aaharaja Nidana* mainly acts as *Utpadaka* as well as *Preraka Hetu* shows the data pertaining to *Aaharvidh as nidana*. Maximum no of patients i.e.100% followed *VirudhashanVidhi,* 66.66% had *Vishmashan Vidhi*; *Adhyshan* and *Anashana Vidhi* were found in 44.44% & 22.22% patients respectively. *Viruddhashana, Adhyshana, Vishamashana* are responsible for aggravating all three *Dosha*. While *Anashana* aggravates *vata dosha*. All these are responsible for vitiation of *agni* which ultimately results in *Aama* formation.

***Viharaja Nidana*:** shows that among *Viharaja Nidana*, 66.66% patients were reported with excessive exposure to *Dhuma* & *vata*; 61.11% do *diwaswapa* regularly. 33.33% patients were regular in contact with with *Raja*, 25% patients has *apatarpana* history; 22.22% from *Vyayama*, 19.44% stay near *Sheetasthana*, 11.11% showed *Gramyadharm*. These factors act as predisposing factors. *Raja* and *Dhuma* contain number of allergens which adds to chronic airway inflammation in airways. 44.44% patients have given history of some kind of tension *(chinta)* which acts as a *Vataprakopaka* and *Agnidustikara Nidana*.

Among *Nidanarthakara Roga*, *Pratishyaya* was reported in 19.44% patients. While remaining *vyadhi* were not found as *Nidanarthakara Roga.Pratishyaya* results due to chronic exposure to different allergens which cause *Khavaigunya* in *Pranavaha srotas*. It is the manifestation of reaction, which further develops into Asthma. It is well established that viral respiratory infection can exacerbate Asthma, it acts as triggers.

History of past illness: In present study, it was observed that the majority of the patients (44.44%) did not have any significant history of past illness. It is to be noticed that 19.44% had frequent episodes of fever and cough, 16.66% were known hypertensive, 8.33% had each dysurea and disorders (urticaria etc). 2.77% patients had hyperthyroidism and amoebiasis. Systemic disturbances that can be possible precipitants were ruled out by physical examination and laboratory investigations. Medications also can precipitate the disease (especially aspirin, coloring agents, such as tartrazine, B adrenergic antagonists (B- blockers), sulfating agents, NSAIDs and Sulphasalazine, Carbamazepine, Grisofulvine etc). This was also ruled out by properly analyzing the treatment history.

Reported Signs and Symptoms: In current series of patients of Bronchial Asthma registered for the study, following clinical manifestations were observed with high incidence. : Breathlessness and paroxysms of dyspnea due to *megha ambu* cold weather found in every patient (100%). Insomnia was found in 97.22% Patients. *Ushnabhinandanti*in 94.44% patients. Cough was found in 91.66% patients. Orthopnea was reported in 88.88% patients. *Shleshma amuchyajanya dukha*and Fever were found in 86.11% patients. Wheezing was reported in 83.33% patients while 80.55% patients reported *Peenasa*. 50% patients were reported with Dryness of mouth and anorexia.

Above observations shows the predominance of *Vata Dosha* in this disease.

Subjective improvement:

In both Groups, after completion of clinical trial it was obsereved that there was considerable improvement in the feeling of well being, physical and mental illness observed in the patients.

Symptomatic Improvement:

Group I (*Manahshiladi Ghrit & Dashmula Niruha Basti*):- The patient of GroupI who were treated with *Manahshiladi Ghrit* & *Dashmula Niruha Basti* showed maximum percentage of improvement in symptoms of Anorexia (76.47%) followed by Paroxyms of dyspnoea due to*megha, ambu,* cold weather (72.4%), Wheezing (70.7%), Orthopnea (65.62%), Insomnia (48.2%), Ushnabhinandanti (43.3%), Weakness (37.5%), Fever (32.14%), Cough (29.73%), Breathlessness (27.02%), Dryness of mouth (15.78%) *Peenasa* (15.6%), *Shleshmamuchyat dukham* 14.2%

The overall improvement in the patient of Group Ist was found to be 42.2% which is moderate improvement symptomatically and statistically it is highly significant. ('t'= 6.704, P < 0.0001)

Group II (*Manahshiladi Ghrit, Manahshiladi Dhum* & *Dashmula Niruha*):-

In the patient of Group II, treated with *Manahshiladi Ghrit, Manahshiladi Dhum & Dashmula Niruha* the maximum percentage of improvement was recorded in the symptoms Breathlessness (91.8%), Paroxyms of dyspnoea due to*megha, ambu,* cold weather(78.12%), Orthopnea (77.77%), Wheezing(73.68%), Cough(72.97%), Insomnia (68.9%), Fever (52.77%), Ushnabhinandanti (45.16%) Dryness of mouth (45%) Weakness (43.3%), *Peenasa* (38%), *Shleshmamuchyat dukham* (31.2%), Anorexia (30%).

The overall symptomatic improvement in the patient of Group IInd was found to be less than other two Groups which was 57.59%, which is mild improvement symptomatically. statistically it is highly significant. ('t'= 10.168, P<0.0001)

On statistical basis, it is clear that there was highly significant improvement were observed in all the patients of two groups (P< 0.0001) but on the basis of mean percentage, maximum symptomatic improvement was observed in patients of Group II (57.59%), whereas comparatively less symptomatic relief was observed in the patients of Group I (42.2%). Thus the fastest and maximum improvement was found in Group II (*Manahshiladi Ghrit, Manahshiladi Dhum & Dashmula Niruha*) This shows that combined effect is better than Groups I.

Changes in Laboratory Parameters in the patients of all the three Groups:

The Hemoglobin gram percentage, Total leucocytes count, differential leucocytes count, ESR, PEFR, were carried out for evaluation of patients on the basis of laboratory parameters. Whereas chest x-ray (PA view) and sputum for AFB were carried out to exclude Tuberculosis.

Group I (*Manahshiladi Ghrit & Dashmula Niruha Basti*):-6.39%improvement was found in the Hb of patients of Ist Group which is statistically insignificant (p>0.1), there was 7.97% increase in TLC which is also statistically insignificant (p>0.1), In DLC, Neutrophil count showed -2.32% change, lymphocytes showed -3.578 change, Eosinophils count showed 15.5% change, Monocyte count showed -26.47 change, Basophil count showed 100% change which was statistically insignificant.5.8% reduction was observed in ESR which was statistically insignificant (P> 0.1). On Pulmonary function test, PEFR was increased by 6.3% which was statistically highly significant result. (P< 0.005)

Group II (*Manahshiladi Ghrit,Manahshiladi Dhum & Dashmula Niruha*):-

4.38 % improvement was found in the Hb of patients of IInd Group which was statistically insignificant (p>0.1), there was 13.6% decrease in TLC which is statistically significant (P> 0.1), In DLC, Neutrophil count showed 2.55% change, lymphocytes showed 6.95% change, Eosinophils count showed 33.3% change, Monocyte count showed -13.89 change, Basophil count showed 20.8% change which was statistically insignificant.28.7% reduction was observed in ESR which was statistically significant (P> 0.1).On Pulmonary function test, PEFR was increased by 7.24% which was highly significant result. (P < 0.1).

Probable Mode Of Action Of *Manahshiladi Ghrit*

It is very necessary to know how the drug performs their action. *Acharya Charaka* has mentioned that all drugs do their actions due to their five properties viz. *rasa, guna, virya, vipaka* and *karma*. ***Manahshiladi Ghrit*** possesses *Madhura, Tikta, Kashaya,* as predominant *rasa*, as well as

Sara, Tikshna, Sukshma and *Snigdha guna* and *Ushnas virya* and *katu vipaka.*

On the basis of *Rasa*

Shvasa is *vata kapha pradhana* and *pittasthana samudbhava vyadhi.* Maximum contents of ***Manahshiladi Ghrit*** possesses *Madhura, Tikta, Kashaya,* as predominant *rasa.* If the action of these *rasas* is considered individually, so far the relationship with the *doshas* is concerned, *Madhura rasa* is *vata shamaka tiktarasa* is said to be *kapha shamaka* and *kasaya rasa Pitta shamaka.* As such the gross action of ***Manahshiladi Ghrit*** on the *dosha* should be definitely *tridosha shamaka.* Thus by this way the drug does the *shaman* of disease initiating doshas i.e *vata- kapha* and disease originating place i.e *pitta sthana saamata.*

On the basis of *Guna*

When an analysis of *Guna* of individual ingredients is carried out, maximum had *Snigdha, Sara, Drava, Sukshma, Ushma, Tikshnaguna.*By this guna yoga helps in vata shaman and anulomana. *Sukshma, Ushma, Tikshnaguna does the kapha shaman by sroto vikasana* property which helps in relieving obstruction of pranvaayuand fascinates normal shvasa kriya.

On the basis of *Virya*

So far *Virya* is concerned, the analysis of all the contents reveal that maximum ingredients have *Ushna Virya* exhibiting *Deepana, Pachana, Vatakaphaghna, Anulomana, Kapha Shoshana.*

Effect- *Ushna Virya* helps in *Kapha* and *Vata Shamana.* Raised metabolic rate helps in fast destruction of cell debris and clearing the micro channels. As the micro channels are cleared the *Vata* become *Anuloma* that is the *Samprapti Vighatana* occurs. *Deepana, Pachana* helps in *aama pachana.*

On the basis of *Vipaka*

Regarding *Vipaka*, maximum contents have *Katu Vipaka. Katu Vipaka* is said to be *srotoshodhaka* which helps in relieving obstruction by kapha and fascinates normal *vata gati.*

On the basis of *Karma*:

The contents of ***Manahshiladi Ghrit*** are-

1. **The *Dosha-Prashamana* effect –** acts on the main *Doshas* which contribute to the *Samprapti* viz. *Vata* and *Kapha.*
2. ***Deepana-Pachana Karma-*** digest *Ama and relieves agnimandya.*
3. ***Vatanulomana* property -** Maintains the normal flow of *Vata.*
4. ***Shwasahara Prabhava-*** act on the symptoms.
5. ***Vishaghsna* & *rasayana***

Probable Mode Of Action Of *Manahshiladi Dhuma*

In the process of *dhumapana deep* seated sticky mucus is completely eliminatedfrom the bronchi, *dhoomapana* is indicated with the drugs described earlier. The drugs andthe procedure mentioned in *kasa* for *dhoomapana* are followed in *shwasa roga.*

Action of *dhumapana*

In the process of *dhoomapana* the fumes of medicinal drugs are in haled by the patient through the mouth. It is aimed at delivering the drugs to the site of action directly intobronchioles. (*tam urah kevalam praptam*)[2] Therefore the action of the drug is very quick (*vata shleshmottaraan kasaan achirena chirantanaan*)[3]. The drugs used in *dhoomapana* posses *teekshna* properties, so that they help inchedana of *kapha* situated in the lungs. In this context *chhedana* means the drugs which root out *kapha dosha* that has stuck in the *pranavaha srotas.* Similarly the drugs mentioned for dhooma pana act by liquifying the thick and tenacious sputum situated in the lungs (*Stira* and *Ghana kapha*)[4] and facilitates its removal by coughing which gives comfort to the patient. (*Thaikshnyat vichidhya shleshmaanamurasi stiram*)[5] This is called "*Vairechanika dhooma*". The *chedana* of *kapha* in the lungs is compared to mucolytic action.

- Dhooma reaches site of the action directly to उरस् (lungs)

- ❖ It liquefies the thick tenacious sputum and removed by cough
- ❖ It acts very fast.

Action Of *Basti*

Some scholars opine that by acting on *Muladhara Chakra, Surya Padma*, *Vata Chakra, Sushumna* and other *Chakras* present in the vicinity of *Guda Basti* influences the whole body[6] *Pakvashaya* is the place where *Poshaka* originates and supplies thenutrition to all *Vayus*. As *Basti* is introduced in its *Udbhavasthana*, ithas capacity to control all the five *Vayus*. However it acts more on *Samana* and *Apana* because it has direct contact with their places. Reaction sequel is produced by *Basti*, which passes over all cell-to-cell, to the every part of the body and owing to the specific affinity to the Pakvashaya; the waste products are thrown in to it. Basti may be absorbed by: *Agni*, diffusion, filtration, osmosis, hydrotrophy or by adsorption. The medicines may have specific affinity to a particular tissue, whether absorbed or causing reactionary changes without absorption, by their chemo-tactic action the results are broughtto every cell of the body. They give energy, strength and quality to the *Dhatus* and eliminate the morbid factory in to *Pakvashaya*. Production of Thiamin which is necessary for nerve conduction and which is producedin large intestine, may be controlled by *Basti*.[7]

Conclusion

On the basis of above facts the following conclusion may be drawn

1. The vitiation of *vata dosha* is predominantly responsible for pasthogenesis of *shwasa roga*
2. *Tamaka shwasa* is more prevalent category among the five of types *shwasa*
3. *Shodhana chikitsa* in the form of *basti*(*niruha*) plays an important role in *tamaka shvasa*
4. A good result (42.2%) were found by the use of *Manashiladi ghrit* with the *dashmula niruha* (GroupI) in the management of *Tamak Shwasa*
5. Comparatively better results were found in the patients treated by combination of *Manashiladi ghrit, Manashiladi dhuma & Dashmula niruha* (group II).
6. Significant improvement are found in both Groups with regards toAll subjective parameter i.e symptoms of *shwasa* and objective parameters (PEFR)
7. Above result signifies towards the action of drug asbronchodilator, anti inflammatory and mucolytic.
8. The drugs given in the said research work are well tolerated by the patients and no such significant ADR has been found.

Thus it can be concluded that *Manashiladi ghrit, Manashiladi dhuma & Dashmula niruha* can be used as safe can be considered as first line therapy in the management of *Tamaka Shwasa*.

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Clinical Study

Role of *Arshoghani Vati* In The Management of *Arsha* – A Clinical Study

*Ghodela Naresh, **Jain Vineet Kumar, ***Kumar Ashok, ****Singh Narinder, *****Shringi M. K.

Abstract:

Arsha (Haemorrhoids) are one of the common Ano-rectal disorders encountered. Bleeding per anum is the main feature associated with this condition. Pain, haemorrhoidal prolapse, mucous discharge, pruritus ani are the other features associated with this. Conservative management with haemostatics & bowel regulation is the treatment principle for Internal haemorrhoids of Ist & IInd Degree. Following this principle a humble effort is made to explore & validate the role of *Arshoghani Vati* in the Haemorrhoid Gr. I & Gr. II. It was carried out in 50 patients under the Dept. of Shalya Tantra, N.I.A, Jaipur. The effect of trial reveals that maximum percentage (86.25%) of relief was observed in the parameter of Bleeding per anum, along with 10.82% improvement in Hb gm/dl level and 51.43% relief was observed in the complaint of Prolapse.

Key Words: Bleeding piles, *Arsha, Arshoghani Vati*

सारांश –

अर्श एक प्राय: पाया जाने वाला गुद विकार है जो कि रक्त स्त्राव द्वारा अभिलक्षित होता है। मांसाङ्कुर भ्रंश, वेदना, श्लेष्म स्त्रवण, कण्डु आदि भी सहगामी लक्षण है। प्रारंभिक अवस्था में रक्त स्तंभक एवं अन्य औषधियों द्वारा इसकी चिकित्सा की जाती है। इसी मूलभुत चिकित्सा सिद्धान्त का अनुसरण करते हुए ''अर्शोघ्नी वटी'' का प्रयोग इस शोध कार्य में किया गया। यह शोध राष्ट्रीय आयुर्वेद संस्थान की शल्य चिकित्सा विभाग की बहिरंग एवं अन्तरंग इकाई के कुल 50 रोगियों पर किया गया। शोधकार्य उपरान्त रक्त स्त्रवण में रोगियों में 86.25 प्रतिशत लाभ, प्रतिरोगी हिमोग्लोबिन ग्राम प्रतिशत में 10.82 प्रतिशत की वृद्धि एवं मांसाङ्कुर भ्रंश में 51.43 प्रतिशत लाभ पाया गया।

*P.G.Scholar, ** Ph.D.Scholar, ***Assistant Professor, ****Asstt. Professor, *****Former Associate Professor, National institute of Ayurveda, Jaipur,

Clinical Study

Role of *Arshoghani Vati* In The Management of *Arsha* – A Clinical Study

Ghodela Naresh, Jain Vineet Kumar, Kumar Ashok, Singh Narinder, Shringi M. K.

Introdution:

Ayurveda is most rational and specific among the systems of medicine. This science of life aims at allevation of disease as well as maintenance and promotion of good health. The entire science of *Ayurveda* is based upon *Trisutra*, i.e. *Hetu*, *Linga* and *Oushadha*.[1] Among these three *Oushadha* plays an important role in *chikitsa*, i.e. *Bahya* and *Abhyantata prayoga* of *Oushadhas* is considered as the prime step.

Arsha is being described by all the classics of *Ayurveda*. *Acharya Sushruta* and *Vagbhata* even placed this disorder in the "ASHTA MAHAGADA".[2, 3]

In modern era piles are mostly considered to be cured radically i.e. surgical or parasurgical procedures. Unfortunately all these techniques are still not free from one or other complication which has compelled us to think over new and better type of treatment.

Acharya Sushruta the father of surgery, advocates the '*AUSHADHA CHIKITSA* (Medical treatment)' as the first step in the management of Arsha out of four methods.[4]

Bleeding, as the name haemorrhoid implies, is the principal and earliest symptom[5] to which patient shows his utmost concern and physician is always worried if it continues. Often the physiological effect of haemorrhoidal bleeding is not as graver as the psychological impact on the patient at the site of few drops of blood in the pan. *Acharya Sushruta* considered blood as origin of our body[6] *Acharya Sushruta* mentioned medicinal treatment for *Arshas* (haemorrhoids) which are recent origin with minimal vitiation of Doshasand with insignificant symptoms and having less complication.[7]

By following treatment principle of *Arshas* the *Arshoghani vati* was selected. It was carried out on the 50 patients under the OPD/IPD in Dept. of Shalya Tantra, N.I.A, Jaipur.

Aims & Objectives:

- To Assess & validate the *Raktastambhan* (Hemostatic action) effect of *Arshoghani Vati*.
- To provide cheap, economic and side effect free drug for the *Raktastambhan* in the management of Ist and IInd degree Haemorrhoids

Materials And Methods:

a) Sample size: Total 50 subjects were selected for the study, with ages ranging from 20- 60yrs, irrespective of sex, religion etc.

b) Source of subjects: OPD/IPD of Shalya Tantra, NIA, Jaipur.

c) Informed consent: The study explained clearly to the subjects and their signed, written informed consent taken before starting the trial.

d) Inclusion criteria:

- Patient willing to participate in the research trial.
- Patient aged in between 20-60 years.
- Patients of Ist and IInd degree internal Haemorrhoids.

e) Exclusion criteria:

- Patients associated with HBsAg and HIV was excluded from the study.
- Patient associated with prolapsed rectum, Fistula-in-ano, fissure, carcinoma of the rectum, ulcerative colitis, crohn's disease, Hepatic disorder, cardiac disorders mentally ill and non-cooperative patients were excluded from the study.
- Patient suffering from systemic disease like diabetes mellitus, tuberculosis and Hemophilic disorders.

A disease specific Proforma prepared and the observations recorded after doing General, Systemic and Local examinations.

f) Laboratory investigations

Basic aim of carrying out various investigations of patient was to assess the general health of patient, to check any under lying abnormality or lesions so as to rule out any such suspected case. Following routine laboratory investigations was performed in patients–

Blood Examination

- TLC, DLC, Hb%, ESR, CT, BT.
- Blood sugar – Fasting and P.P. and HIV, HBsAg.

Urine Examination

- Routine and microscopic.

g) Study design:

An Open Clinical Trial was conducted on 50 patients in a single group in accordance to the assessment parameters with specially designed Performa for the study.

h) Posology:- Drug: *Arshoghani Vati*[8]

Sr.No.	Contains	Ratio
1	*Nimba*	46 mg
2	*Mahanimba*	46 mg
3	*Khunakharaba*	46 mg
4	*Trinkanta Pisti* (*Kaharuba*)	92 mg
5	*Suddha Rasauta*(Solid Ext.)	276 mg

Dose of *Vati* - 03 tablets BD [Each tab. contains approx.500 mg]

Anupana- Water

i) Trial period : 1 month

j) Follow up– After the completion of trial period Follow-up is taken every second week up to 6 months

k) Assessment criteria:

- Bleeding per anum
- Prolapse
- Hb gm/dl

Assessment of the efficacy of the trial drug on the Parameters mentioned above is done on 0, 7th day, 14th day, 21st day and 28th day. & assessment of Hb gm/dl was done on 0 and 28th day.

Observations And Results:

(Table No.I) Effect of the trial drug on various parameters:

Sr. No.	Parameter	Mean		Diff.	SD ±	SE ±	P	% of Relief	Results
		BT	AT						
1	Bleeding Per Anum	2.62	0.036	2.26	0.7231	0.1023	<0.001	86.25	ES
2.	Prolapse	0.7	0.36	0.34	0.4849	0.06857	<0.001	51.43	ES

ES – Extremely Significant

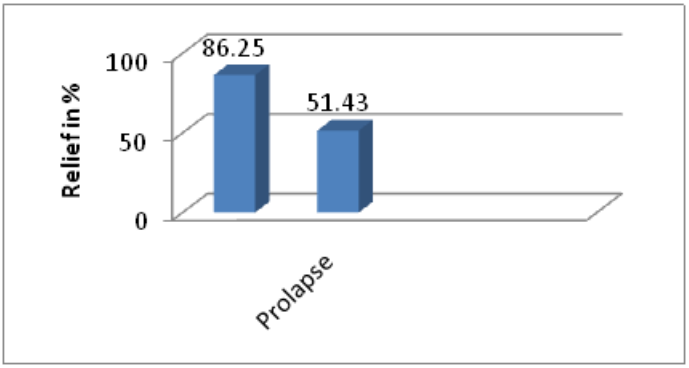

Figure No. 1 Graph shows relief in % of Bleeding per anum and reduction in prolapse of pile mass.

(Table No. Ii) Effect of the drug in Hb gm/dl

Sr No.	Parameter	Mean		SD ±	SE ±	t Value	P	% Improv.	Res-ults
		BT	AT						
1	Hb gm/dl	9.51	10.29	0.2122	0.0300	26.120	<0.001	10.82	ES

ES – Extremely Significant

TablesI & II depicting the effect of drug reveals that maximum percentage of Relief was observed in the parameter of Bleeding per anum (86.25%), in Hb percentage of relief was observed is 10.82% and in complaint of Prolapse total 51.43% relief was Observed in this study.

(Table No.III) - Overall clinical assessment of result

Result	1st week	2nd week	3rd Week	4th Week
Marked Improvement (75% to 100%)	00	05	17	32
Moderate Improvement (50 to 75%)	02	16	22	14
Mild Improvement (25 to 50 %)	10	21	11	04
No Improvement (<25%)	38	08	00	00

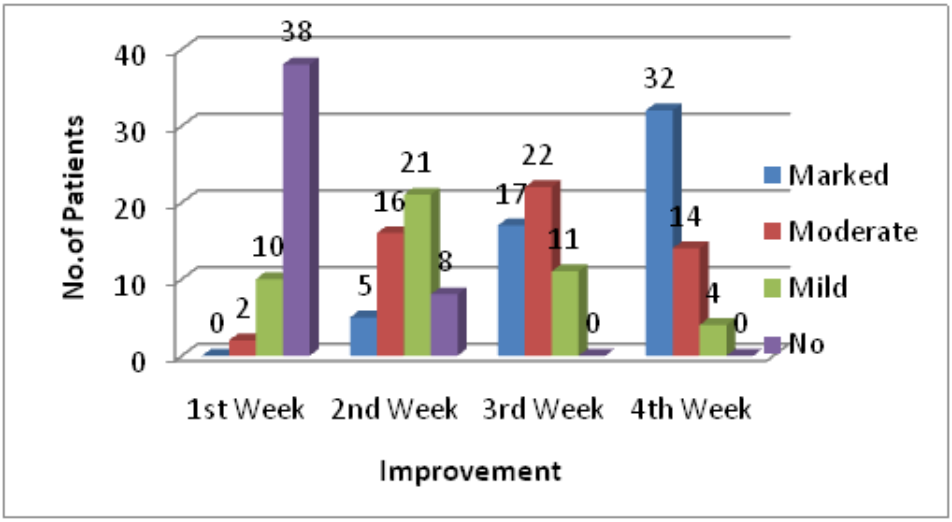

Figure No. 2 Weekly Assessment of Patients

Clinical assessment of Result shows that

- In 1st week 38 Patients show No improvement, 10 Patients show Mild improvement, 02 Moderate improvement and No Patient show Marked Improvement.
- In 2nd week 08 Patients show No improvement, 21 Patients show Mild improvement, 16 Moderate improvement and 05 Patient shows Marked Improvement.
- In 3rd week 11 Patients show Mild improvement, 22 Moderate improvement and 17 Patient show Marked Improvement.
- In 4th week 04 Patients show Mild improvement, 14 Moderate improvement and 32 Patient show Marked Improvement.

Discussion:

1. Discussion Upon The Demographic Observation:

- **Family History:** Maximum number of Patients i.e.50% were having family history of the same disease, suggesting that there is a direct relationship of family history and this disease.
- **AGE:** Out of the 50 patients in the study, 17 patients (34%) were between the ages of 20-30 years, patients in the age group 31-40 were 14 (28%) , in age group 41-50 were 11 (22%) and in age groups 51-60 were 8 (16%). Maximum number of patients- 17 (34%) were between the age group 20-30 years.

20-40 years is the age group when the individual is more active, enthusiastic and work hard to earn money for family without giving much time to personal. On the contrary 20- 30 years is the age when a person is most active engaged in building his carrier, not caring for his routine habits. He leads most irregular life. These are the cases that are most susceptible for developing constipation giving rise to a hard faecal matter inside the colon and the anal canal, resulting into piles. The occurrence of this disease in the old age is naturally common since all the muscles in this age including the external sphincters become lax and hardly offer any resistance. In this way the chances of piles formation in the old age is common.

Occupation: Incidence of occupational status revealed that Housewife-10 %,In-Service-22%,Student- 20%, Labour- 20%, Agriculture Person 18%,Businessman -10%. Occupational table shows that the people who were taking inappropriate, irregular diet and the sedentary life style were more prone to this disease.

Socio-Economic Status:- Majority of patients belongs to Lower class, those were 24 %, middle class 64 % & 12 % Rich patients found respectively. In case of socio economic status lower middle class patients were effected more because of negligency and due to unhygenic maintainence. This shows that middle class people do less physical activity & are prone to sedentary life style and also due to untimely food habits as all the day they are indulged in earning more and more money without giving proper attention to timely food habits. That's why incidence is more.

Dietary Habits: The present study revealed that maximum patients were practiced to mixed diet (66%) while (34%) patients were habituated to vegetarian diet. Though 66% were having mixed diet, incidence could be more due to less fibrous diet and more spicy diet which is a triggering factor for intestinal disturbances. Less fibrous diet and intestinal disturbance ultimately results in constipation which is the primary etiological factor of internal haemorrhoids.

Bowel Habit : Constipation and irregular bowel habit were found in 70% and 20% of cases respectively. Irregular bowel habits are itself cause of Arsha.

Deha-Prakriti: Incidence according to Prakritishowed that the majority of patients (52%) were of Pittaja Pradhan Deha Prakriti followed by Vataja Deha Prakriti (30%). This observation supports the presence of Pitta Dosha in the pathogenesis of disease.

Ahara Shakti And Jarana Shakti: Out of 50 patients maximum patients were having Avar Abhyaharana Shakti and Jarana Shakti i.e. 74% and 82 % respectively. Whereas 22 % and 14 % patients were having Madhyam Abhyavahrana & Jarana Shakti. The only possible conclusion here is that the difference in the incidence of Haemorrhoids in both these groups is very narrow. These are the cases which are most susceptible for developing Agni Vaishamya giving rise to constipation, resulting into Haemorrhoids.

2. Discussion Upon The Assessment Parameters

Discussion On Bleeding Per Anum :- During clinical Trial Among 50, 23 patients having 0-10 drops bleeding during and after defecation, 23 patients 10-20 drops bleeding during and after defecation and 04 patients were having profuse bleeding.

Percentage relief on the criteria of bleeding per anum is 86.25 %.

Bleeding occurs during and after defecation due to straining & trauma by hard stool that erodes

the mucosa of pile mass. This could be attributed to the haemostatic effect of the Arshoghani Vati.

Discussion on Hb gm/dl: - On the basis of observations the improvement in Hb gm/dl after the completion of trial, it is observed that there was 10.82 % increase in Hb gm/dl of its initial value in maximum number of the patients. This could be attributed to the haemostatic effect of the Arshoghani Vati.

Discussion on Prolapse: - During clinical trial 32% of patients complain of prolapse of pile mass and 68 % had no complaint of prolapse. This may be due to the spontaneous reduction of pile mass in patients having 2nd degree haemorrhoids, after defecation which may be neglected by them.

Percentage of relief in the complaint of prolapse is 51.43%. This can be explained on the basis of reduced congestion of the haemorrhoidal masses owing to the haemostatic effect of Arshoghani Vati.

3. Discussion on Overall Effect Of Therapy

The effect of drug reveals that maximum percentage of relief was observed in the parameter of

- Bleeding per anum is 86.25%.
- Hb gm/dl improvement is 10.82 %
- 51.43% reduction in the prolapse.

4. Discussion On Probable Mode Of Action Of *Arshogni Vati*

Probable Mode of Action of *Arshoghani Vati*:

Arshoghani Vati

↓

Tikta, Kashaya, Madhura Rasa Predominance

Guna:	***Karma:***
Laghu	***Kapha-Pitta Shamana***
Ruksha	***Vata Shamana***
	Kleda Soshana
	Lekhana
	Raktasthambahk
	Arshoghna

Rakta-Sthambhan

Conclusion

- *Bheshaja chikitsa* (medical therapy) is effective in early stage of *Arsha* (haemorrhoids) and has greatest advantage of wider acceptability of the medicine by patients. The trial medicine (*Arshoghani Vati*) of present study was found simple, safe and effective in treating *Raktarsha*.
- The drug selected for study "*Arshoghani Vati*" has *Raktasthambhak, Grahi* and *Tridosha Shamak* property.
- Clinical Study shows that the trial drug was having haemostatic potential (*Rakta- Stambhaka* action) & was found to be less efficacious in relieving the prolapse. Accordingly an average improvement of 10.82% is observed in the Hb gm/dl.
- As this was a small sample study, the obtained data needs to be revalidated with larger sample to validate the efficacy of trial drug to provide a safe and effective medication in *Raktarsha*.

- The content of this Vati having property of *Raktasthambhan Grahi* and *Tridoshshamak*, which is necessary for the treatment of *Arsha*.

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Clinical Study

Clinical Evaluation of *Simhyaadi Kwatha* In The Management Of *Tamaka Shwasa* W.S.R. To Bronchial Asthma

*Dr. Annapurna Dambal, **Dr. Ravindrakumar Arahunasi, ***Dr. Sharada

Abstract

Background & objectives : - Tamaka Shwasa is one of the life threatening disease. This disease requires Vegavastha and Avegavastha treatment modalities explained in Ayurveda. Although, many recent researches were done to evaluate or to search of newest and cost effective treatment but still there is no satisfactory treatment was evolved. Hence, to evaluate the efficacy of Simhyaadi kwatha in the management of Tamaka Shwasa study was conducted to find a new and safest drug to treat this dire disease. **Materials & Method:** - 40 pre diagnosed Tamaka Shwasa patients of both genders, were selected from O.P.D/I.P.D of RGES Ayurvedic Medical college Ron.(dist.Gadag,Karnataka). Simhyaadi kwatha was given in a dose of 48 ml per day in 2 divided doses, before meal for one month duration. The post treatment patients were assessed on changes of signs & symptoms, and Peak flow meter rate. Results were confirmed by subjective and objective criteria which are graded, and statistically analyzed by the Unpaired student 't'-test with 'Z' test. **Results:** The outcome of treatment for one month showed statistically highly significant results. After treatment improvement in cardinal symptoms were Shwasakricchrtata 78%, Frequency of attack 71%, Duration of attack 72% and Ghurghurkam 82% which were highly significant. Asinolabhate Saukhyam (91%), Kasa (87%), Kaphanistivanum (71%), peenasa (86%) Urashoola, (82%), Peak Flow Meter Rate (87%), which are showed highly significant results. **Conclusion:-** The Simhyaadi kwatha has shown satisfactory positive response on symptoms of Tamaka Shwasa. Hence, suggested formulation is better option for the management of Bronchial Asthma.

Key words:- *Tamaka Shwasa, Simhyaadikwatha,* Bronchial Asthma, Peak flow meter rate

सारांश :

तमक् श्वास इस समय की जानलवा बीमारियो में से एक है । इस व्याधि में आयुर्वेद में वर्णित वेगावस्थ और अवेगावस्था चिकित्सा पद्धतियों का उचित उपयोग अवश्यक है । हालांकि तत्कालीन कई अन्वेषणो और रीसर्च मे इस के सफल, नवीन और सस्ते इलाज की खोज का प्रयास किया गया परंतु अब तक इसमे कोई संतोषजनक सफलता प्राप्त नही हुई । अतः इस जानलवा बीमारी पर नियंत्रण पाने के लिए सिंहादी क्वाथ के उपयोग पर गहन अध्ययन किया गया।

सामग्री और तकनीक : आर.जी.ई.एस. आयुर्वेदिक मेडिकल कालेज की O.P.D. और I.P.D. से 40 तमकश्वास के रोगियों को सिंहादी क्वाथ 48 मि.लि. की मात्र में दिन मे दो बार खाना खाने से पहले, एक महीने तक दिया गया । इलाज के बाद जो परिणाम प्राप्त हुए वे आश्चर्यजनक थे । इन परिणामो को Unpaired student 't'-test और 'Z' test के द्वार प्रमाणित भी किया गया।

परिणाम : एक महीने के इलाज का परिणाम कुछ इस तरह था । श्वासक्रच्छ में लगभग 78% तक आराम मिला। तमकश्वास के की तीव्रता लगभग 71%, दौरो के समय में 72%, और घूर्घूरक लगभग 82% तक कम पाया गया। इसी प्रकार आसिनो लभते सौख्यं 91%, कास 87%, कफनिष्टिवन 71%, पीनस 86% तक कम हो गया।

निर्णय : सिंहादी क्वाथ के प्रयोग से तमक श्वास के इलाज में बहुत ही सकारात्मक परिणाम मिले। अतः तमकश्वास के रोगीयों के लिए यह औषधि एक आसान और उचित विकल्प का काम कर सकती है।

*Final year P.G.Scholar, Deptt. Of Kayachikitsa, ** Reader, ***Professor & H.O.D of Department Of P.G Studies In Kayachiktsa, Rajiv Gandhi Education Society's Ayurvedic Medical College, Hospital P.G Studies & Research Centre Ron. Gadag Dist, Karnataka

Clinical Study

Clinical Evaluation of *Simhyaadi Kwatha* In The Management Of *Tamaka Shwasa* W.S.R. To Bronchial Asthma

Dr. Annapurna Dambal, Dr. Ravindrakumar Arahunasi, Dr. Sharada

Introduction

The Shwasa is *"Tatparya pranaha"* it means that, Shwasa is synonym of Prana (life) (*Rajnighantu*). If any disturbances occur to *Shwasa*, life becomes threatened. Aacharya Charaka describes *Shwasa roga* as *'Shigra pranahaarinaam'* disease takes away the Prana (life) very soon. It can cause emergency condition at any time (Aashukarinaam). Hence it should be attended very quickly. Among the five types of Shwasa Roga, *Tamaka Shwasa* is one, as described in Ayurveda.

Acc.to GINA 2014, *Asthma* is a heterogeneous disease usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness & cough that vary over time & in intensity together with variable expiratory airflow limitation. Its clinical features resemble the Bronchial Asthma.

A combination of genetic and environmental factors, etc. also worsen the symptoms.

This condition is due to inflammation of the airway in the lungs & affects the sensitivity of the nerve endings in the airways, getting easily irritated. In an attack, the lining of the passage swells, causing the airways to narrow and reduces the flow of air in and out of the lungs.

World wide, deaths from this condition have reached over 180,000 annually.

India has an estimated 15-20 million Asthmatics. As of 2011, 235-300 million people worldwide are affected by Asthma. An additional 100 million people will be diagnosed by 2025

The management involves alleviation of an attack and preventation of new attack & improve the lung function. Acc.to *Sushruta, Shwasa* is one of the '*Durnivarah*'. While there is no cure for *Asthma*, symptoms can typically be improved. This disease requires *Vegavastha* and *Avegavastha* treatment modalities explained in *Ayurveda*. The easily available ingredients of this *Simhyaadi kwatha* are scientifically proved best Mucolytic, anti-inflammatory & mast stabilizing action. Thus relieving the bronchoconstriction minimizes the exacerbations or frequency of attacks. Reduces the symptoms of *Tamaka Shwasa* w.s.r to Bronchial Asthma.

Aims & Objectives:

- To evaluate the efficacy of *Simhyaadi Kwatha* in the management of *Tamaka Shwasa*.
- To review of *Tamaka Shwasa*, as per classical reference.
- To review the Aetiopathogenesis of Bronchial Asthma, as per Modern literature.

Materials And Method

Study Design: A Single group, Prospective observational clinical study with pre & post test design.

Selection of Patients: The patients who fulfilled the clinical diagnostic criteria of Tamaka Shwasa (Bronchial Asthma) 40 patients were randomly selected, irrespective of their sex, religion, occupation etc. From the OPD and IPD R.G.E.S Ayurvedic Medical College, Hospital P.G studies & Research Center, Ron. Also special camps were conducted. Drop out patients were excluded. A short clinical proforma was complied on the basis of principles of Ayurveda and Modern Medicine with detailed clinical history. The study was registered under CTRI (Clinical Trials Registry – India REF/ 2014/2/006430). Specific scoring pattern was made for btaining data about signs & symptoms.

Inclusion Criteria :

- Patients presenting with classical features of Tamaka Shwasa.
- Patients aged between 20-60 years with irrespective of gender.
- Patients with history of Tamaka Shwasa less than 5 years.
- Peak flow meter Rate more than 80 Lit/min & less than 300 Lit/min

Exclusion Criteria:

- Patient aged less than 20 yr and more than 60 yrs
- Patients with history of Tamaka Shwasa more than 5 yrs
- Peak flow meter rate less than 80 Lit/min are excluded.
- Asthma due to other systemic disorders and other respiratory disorders.
- Asthma in pregnancy
- Occupational Asthma
- Emergency condition of the patient, who requires oxygen inhalation

Diagnostic Criteria:

The diagnosis were carried out on the basis of signs and symptoms, as mentioned in Ayurveda & contemporary Medical science. An extensive proforma complied on the basis of principles of Ayurveda and Modern Medicine with detailed clinical history, *Dashvidha Pariksha, Nidana Panchaka* etc and respiratory examinations, signs and symptoms, of each patient was compiled and filled in the proforma. All vital signs like B.P, Pulse, Respiration rate, Temperature etc, were keenly monitored and some blood investigations were done & Peak Expiratory Flow Rate by using Peak Flow Meter.

Investigations.

For inclusion,	**For exclusion, (if necessary)**
• Peak Flow Meter Rate	* Hb%
• TLC	* Sputum est
• DLC	* RBS
• Absolute Eosinophil count	* Chest x-ray

Assessment Criteria :

- Patients were assessed before & after treatment depending upon the subjective & objective parameters, based on the gradation Index mentioned below.
- Statistical analysis: Observed data were analyzed by the Unpaired student 't'-test with 'Z' test.

Grading Of The Assessment Criteria :

Subjective Criteria :

1) Frequency of *Shwasa vega*

- ❖ No attack during 1 month - 0
- ❖ Frequency of attack once in a 1 month - 1
- ❖ Frequency of attack once in 2 week - 2
- ❖ Frequency of attack once in a week - 3
- ❖ Frequency of attack twice in a week - 4
- ❖ Frequency of attack one or more than 1 in a day - 5

2) Duration of attack

- ❖ No Episode of attack - 0
- ❖ Attack lasting for duration of ½--1hr - 1
- ❖ Attack lasting for duration of 1hr-6hr - 2
- ❖ Attack lasting for duration of 6hr-12hr - 3
- ❖ Attack lasting for duration of 12hr-24hr - 4
- ❖ Attack lasting for duration of more than 24hr - 5

3) *Shwasa kricchrata*

- ❖ No sign of shwasa kricchrata. - 0
- ❖ Mild intercostal retraction nasal alae flussing. Patient can speak complete sentence during dyspnoea - 1
- ❖ Intercostal retraction stercleidomastoid muscle use & speak in phrases or partial sentence during dysponea. - 2

- ❖ Tracheosternal retraction, Intercostals retraction, stercleidomastoid muscle use & speak single word during dyspnoea. -3
- ❖ Nasal alae flussing & can not able to speak during dyspnoea. - 4
- ❖ All accessory muscles are working, but can not able to speak. Express by body language only -5

4) Asino labhate *Soukhyam*

- ❖ Relief on lying position. - 0
- ❖ Temporarily feels better in sitting posture. - 1
- ❖ Sitting posture gives relief. - 2
- ❖ Spontaneous Sitting posture can not sleep. - 3

5) *Kasa*

- ❖ No cough. - 0
- ❖ Dry cough without pain. - 1
- ❖ Cough with mild pain & slight expectoration. - 2
- ❖ Cough with severe pain & feelings of Restlessness because of difficulty in expectoration. -3
- ❖ Frequent coughing due to which patient becomes fainting. - 4

6) *Kapha Nistivanam*

- ❖ No kasa nistivanam. - 0
- ❖ Kasa nistivanam only in the early morning. - 1
- ❖ Kasa nistivanam 2-3 times /day. - 2
- ❖ Always kasa nistivanam. - 3

7) *Ghurghurakam*

- ❖ No wheezing. - 0
- ❖ wheezing only at early morning. - 1
- ❖ Wheezing at early morning, required medicine. - 2
- ❖ Wheezing at early morning & occasionally during day time. - 3
- ❖ Wheezing throughout the day & require medicine. - 4
- ❖ Wheezing throughout the day & not responding any medicine requires hospitalization. -5

8) *Peenasa*

- ❖ No peenasa. - 0
- ❖ Peenasa during attack & subsided 1-2 days after attack. - 1
- ❖ Peenasa during attack & persist for week after attack. - 2
- ❖ Peenasa very often without attack. - 3
- ❖ Peenasa always persisting. - 4

9) *Urashoola / parshwa shoola*

- No *urashoola*. - 0
- *Urashoola* along with attack. - 1
- *Urashoola* without attack also. - 2

Objective Criteria :

Peak Flow meter Rate in Lit/m

● peak expiratory flow meter rate more than 300 Lit/m	- 0	(Normal)
● peak expiratory flow meter rate 200 –300 Lit/m	- 1	(Mild)
● peak expiratory flow meter rate 80—200 Lit/m	-2	(Moderate)
● peak expiratory flow meter rate less than 80 Lit/m	- 3	(Severe)

Rhonchi/Crepitation

- Absent on normal breathing. - 0
- A few scattered bilateral rhonchi on normal deep breathing. - 1
- Innumerable high pitched bilateral rhonchi/crepitation on breathing. -2

Respiratory Rate (/m)	Grade
Respiratory rate 12-20/m	0
Respiratory rate 21-25/m	1
Respiratory rate 26-30/m	2
Respiratory rate 31-35/m	3
Respiratory rate >35/m	4

Method of preparation of *Simhyaadi Kwatha*

Ingredients of the *Simhyaadi Kwath*

Sl.No	Ingredients	Part used	Quantity
1.	*Brhahati* (Solanum indicum)	(Fr.)	1 part
2.	*Vasa* (Adhatoda Vasica)	(Rt.)	1 part
3.	*Pippali* (Pipper Longum)	(Gt.)	1 part
4.	*Maricha* (Pipper Nigrum)	(Fr.)	1 part
5.	*Bharangi* (Clerodendron Serratum)	(Rt.)	1 part
6.	*Shunthi* (Zingiber Officinal)	(Rz)	1 part
7.	*Mustha* (Cyperus Rotundus)	(Fr.)	1 part
8.	*Haridra* (Curcuma Longa)	(Rz.)	1 part
9.	*Guduchi* (Tinospora Cordifolia)	(Rt)	1 part

The raw material procured from the Botanical Garden & D.G Dept.of RGES & AMC Ron and identified by the botanist & Dravyaguna experts.

Simhyaadi Kwatha was prepared in the Dept.of Rasa shastra & Bhaisajya kalpana of R.G.E.S Ayurvedic Medical College, Hospital P.G Studies & Research centre, Ron. According to classical references.

The raw materials cleaned by removing impurities & unwanted things like stones, pebbles, thrones, mud, etc. The ingredients were kept under the shed and dried properly. Individual ingredient was made into Yava Kuta Churna (coarse powder) separately, all the Yava kuta Churnas were taken in equal quantity then mixed together thoroughly, and filtered by 80 no. mesh. After completion the procedure powder is packed in packing of 48 gms.

In the following way Patients were instructed to prepare Kwatha in the following way-

1) A 24 gm of Kwatha Churnas (approximately 4 teaspoon) added 200 ml of water taken in a vessel.
2) The vessel kept on Mandagni without closing the lid and boiled.
3) Boiling continued till reduction to 1/4th of water (50ml).
4) Prepared *Kwatha* filtered and divided into two equal doses (25gm).
5) The *Kwatha* was consumed before meal twice in a day, morning & evening.

{NOTE – The *Kwatha churna* left after filtration was asked to discarded.}

Posology :

Dosage : *Simhyaadi Kwatha* 48 ml in 2 divided dosage, before meal.

Duration : 1 month

Follow up : For one month.

Observations & Results

The observation showed that Maximum numbers of the patients were belonged to Age group of 31- 40 yrs & 41-50 yrs (30%), Lower middle (47.5%) and Poor (12.5%) class, Male (52.5%) and Female (47.5%), Hindu Religion (88%), Agriculturist (37.5%), Married (70%), Maximum cases belonged to Rural (70%), Illiterate(32.5%), Chronicity 1 to 3 years (55%), Vegetarian diet (67.5%). In *Sharirika Prakraiti* maximum patients were of *Kapha pittaja Prakraiti* (32.5%) and Maximum patients had *Madhyama sara* (85%), *Madhayama samhanana* (80%), *Madhyama Satmya* (75%) and *Madhyama Vyavyama shakti*. Maximum 95% of patients are observed with Non-atopic, in Pranavaha srotodushti maximum i.e.95% of cases had Wheezing sound.

Cardinal signs symptoms reported were *Shwasakricchrata* maximum i.e. (58%), Frequence of attack (48%), Duration of attack (53%) and *Ghurghurakam* (100%), *Kaphanistivanam* (88%). The associated symptoms found were *Peenasa* (80%), *Kasa* (80%), Asinolabhate *Saukhyam* (80%), *Urashool* (58%) found.

Effect of therapies

After treatment improvement in cardinal symptoms were *Shwasakricchrtata* 78%, Frequency of attack 71%, Duration of attack 72% and *Ghurghurkam* 82% which were highly significant. Asinolabhate *Saukhyam* (91%), *Kasa* (87%), *Kaphanistivanum* (71%), *peenasa* (86%) *Urashoola* (82%), Peak Flow Meter Rate (87%), which are showed highly significant results.

Table No. 1 Showing the effect of *Simhyaadi Kwatha* on Subjective & Objective Parameters

Parameter	Mean BT	Mean AT	% Of Imp.	SD (±)	SEM (±)	t Value	Z Value	P Value	Rem-arks
Frequency of attack	3.925	1.100	71%	0.63	0.10	22.6	<0.001	<0.001	H.S.
Duration of attack	3.775	1.075	72%	0.54	0.085	20.029	<0.001	<0.001	H.S.
Shwasa Kricchrata	1.825	0.4	78%	0.70	0.011	10.757	<0.001	<0.001	H.S.
Asino labhate soukhyam	1.125	0.10	91%	0.27	0.04	14.336	<0.001	<0.001	H.S.
Kasa	2.125	0.275	87%	0.44	0.06	19.289	<0.001	<0.001	H.S.
Kaphanistivanam	1.125	0.250	77%	0.40	0.06	10.029	<0.001	<0.001	H.S.
Ghurghurakam	2.025	0.350	82%	0.57	0.09	9.349	<0.001	<0.001	H.S.
Peenasa	1.475	0.22	86%	0.90	0.14	7.395	<0.001	<0.001	H.S.
Urashoola/Parshwshoola	0.875	0.150	82%	0.45	0.07	6.179	<0.001	<0.001	H.S.
Peak Flow Meter Rate in L/m	1.775	0.225	87%	0.50	0.07	16.391	<0.001	<0.001	H.S.
Ronchi/crepitation	1.25	0.125	80%	0.44	0.06	11.929	<0.001	<0.001	H.S.
Respiratory Rate /m	2.02	0.4	80%	0.46	0.07	14.274	<0.001	<0.001	H.S.

H.S.=Highly significant

Discussion

According to Acharya Charaka, Tamaka Shwasa is Vata-Kapha predominance and Pittasthana Samudbhava. (Cha.Chi.17/8) Charaka further has mentioned- Drugs having Kapha-Vatahara and Vatanuloman properties are used for the management of *Tamaka Shwasa*.

Here, the ingredients of the *Simhyaadi Kwatha* have *Katu, Tikta Rasa, Ushna Veerya,* and *Deepana, Paachana* and *kapha vata hara* as *Doshagnata* & *Shwasa, Kasa, Shothahara* as *Rogaghnata*. So, *Yoga* fulfills the all above the properties for the management of *Tamaka Shwasa*. Even recent researches showed proved efficiency of these drugs on respiratory system.

Probable mode of action:

On *Dosha*

Tamaka Shwasa is Kaphavata Pradhana. ThusYoga which contains the Katu, Tiktha Rasa, Ushna Virya act as Vatakapha hara property and Pita Avirodhi is essential for treatment of Tamaka Shwasa.

On *Dushya*

In *Tamaka Shwasa*, *Rasa Dhatu* is the main Dushy. *Rasa Dhatu dushti* is produced by *Rasa Dhatvagnimandya* and *Jatharagnimandya*. *Karma* like *Deepana, Pachana* and *Rasayana* corrects Agni that produce proper Rasa Dhatu which correct Kapha as it is Aasharya of *Rasa Dhatu*. According to Sushruta Pippali is having this property, Pippali is rejuvenative for the lungs, Pranavahasrotas, it is also removedAma from Rasa Dhatu and vitiated Kapha

On *Agni* and *Aam*

In *Tamaka Shwasa* vitiated *Kapha* will produce the *Agnimandya* & thus leads to *Ama dosha utpatti*. Contents of yoga like, *Brahati, Pippali, Maricha, Shunthi, Bharangi, Haridra*, are having *Tiktha, Katu Rasa, Ushna Virya* is in favor to increase *Agnibala*. Helps Amapachana to over come *Agnimandhya*. Drugs also have the properties of Deepana;Pachana will help in Agnideepana.

On *Pitasthasamudbhava Vyadhi*

Brihati, Vasa, Haridra, Bharangi, Guduchi, are having *Tikta rasa* which help to increase *Agnibala* & it keeps the vitiated Pitta in normal state.

On *Srotas*

Pranavaha, Udakavaha, Annavaha Srotasa are involved in *Tamaka Shwasa*. Drugs have *Ushna Virya* property which helps to *Amapachana* & *Srotoshodhaka* will clear Srotosarodha. Kwatha has the properties like *Laghupaki, Pramathiguna* and *Ushnatva* which helps in deblocking the *Srotovarodha*.

On *Rupa*

The clinical signs and symptoms of *Tamaka Shwasa* like *Peenasa, Ghurghurukam, Shayane Shwasha Peeditam* and *Kasa* are relieved as above *Srotasa* are corrected. Ingredients of *Simhyaadi Kwatha* have the properties like *Anulomaka, Kasa, Shwasahara,* & *Shothahara* properties by this rupas are relived.

On *Prakriti Sthapana*:

Pippali, Guduchi etc. drugs are act as Rasayana & proper following of *Pathya* which helps in Prakriti Sthapana.

Effect on *Shwasa Kricchrata* :

Ingredients of *Simhyaadi Kwatha* acts on Jatharagni and consequently on Rasagni. Due to proper action on Jatharagni and Rasagni Malaroopa Shleshma is not produced more and consequently Malaroopa Shleshma is decreased in Shwasamarga.

Effet on Asino labhate soukyam :

It is because of due to Vatanalomana, Kasa & Shwasahara properties of the drugs.

Effect of Kaphanistivanam :

This may be due to Ushna virya of the drugs. This does the action like kapha vilayana & Kaphashoshan properties of the drugs.

Effect of Ghurghurakam :

When Jatharagni doesn't work properly, conversion of Rasa Dhatu in next Dhatu is also disturbed and Malaroopa Shleshma is produced more and more. When patients come in contact with allergens this Malaroopa Shleshma is secreted in Shwasa Marga and musical sounds (Ghurghurakam) are produced. Drugs has Srotoshodaka, & Shwasahara property along with broncho dilatory action, there

by minimizing the obstruction as a result of reduced resistance to the flow of air, will reduces the Ghurghurakam.

Act as a Rasayana: The Simhyaadi Kwatha contents the drugs like Pippali, & Guduchi which not only helps in Agnideepana, Amapachana, Kaphahara, it also act as Rasayana. Which help to build up immunity.

Effect on Peak Flow Meter Rate :

Peak Expiratory Flow rate achieved while forcefully expelling air from the lungs, following maximal inspiration, expressed in Lit/ min. thus, it tells whether bronchioles are in spasm and if yes then their severity. Every patients had their baseline PEFR depending upon their weight, height, age and sex. If reduction is more than 20% of patients baseline value signifies severity of Asthma. In the present study out of 40 patients maximum are having average weight of patients was 58 kg, average height was 158 cm. Hence, maximum patients have PEFR value >200 L/min.

The Simhyaadi Kwatha which helps mainly act as Mucolytic as well as Bronchodilator so that lungs air entry will be increased. This shows by Peak Flow Meter Rate & Tidal volume of the lungs.

The scientific researchers are proved drugs are act as bronchodilator they are having the chemical constituents like Beta-sitosterol, Carpertrol, Antihistamine mast cell stabilizing action & which are acts as steroids on smooth muscles of the bronchi so acts as bronchodilator in Bronchial Asthma.

Conclusion

- The study shows the shamana line of treatment is also effective in *Tamaka shwasa*.
- It can be controllable disease by reducing the episodes of an attack.
- There is no correlation between the Gender & *Tamaka Shwasa*.
- The most useful diagnostic instrument for *Shwasa* was Peak flow Meter Rate, proved to be very expensive.
- The Simhyaadi Kwathaa helps in the relief from Shwaskricchtra, Shwasa, Kasa, Peenasa, Ghurghurakam, & Kaphanistivanam, and Asino labhate soukyam so it acts as Bronchodilator.
- There was no side effects of the drug was reported or seen, even when taken for one whole month.
- By taking the Simhyaadi Kwatha, all observations, & results showed high significant in parameters.

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Clinical Study

A Comparative Study of The Role of *Nasya Karma* And *Shirodhara* In The Management of *Ardhavabhedaka* w.s.r. to Migraine

*Dr. Mridul Ranajan, **Dr. Sarvesh Singh, ***Vd. Sriniwas Sharma, ****Prof. Ajay Kumar Sharma

Abstract-

Ardhavabhedaka is the disease of *Urdhawajatrugata Roga*. It is named because of its classical symptom of severe pain in half of the head, which lasts for hours or days. It reoccurs after three, eight, fifteen days, or a month. This disease is more commonly seen in the ladies and teenagers, which is felt at particular time intervals. The sign and symptoms of Ardhavabhedaka can be correlated with migraine in modern system of medicine. For management purpose of Ardhavabhedaka, Ayurveda has designed a variety of treatment modalities among which Panchakarma is most superior. Panchakarma mitigates the root causes of the disease and promotes the health.

The study had been conducted on 34 patients of Ardhavabhedaka (Migraine) which were divided in to three groups and were given treatment for 21 days and follow-up after 1 month.

- Group A : Nasya Karma done for 21 days with Kumkumadi Ghrita.
- Group B : Shirodhara done for 21 days with Dashmoola-Shrita Ksheera..
- Group C : Combined treatment for 21 days.

It was observed that group A and group C are more effective than group B i.e. Kumkumadi Ghrita Nasya is more effective than Dashmool shrita Ksheera Shirodhara.

Key Words: *Ardhavabhedaka,* Migraine, *Nashya Karma, Shirodhara*

सारांश–

अर्धावभेदक उर्ध्वजगत रोग है। अर्ध शिर में तीव्र शिरः शूल होने के कारण इस रोग को अर्धावभेदक कहते है। अर्धावभेदक में शिरःशूल कुछ घंटो से लेकर कई दिनों तक होता है जो कि 3, 8, 15 और 30 दिन के अन्तराल पर होता है। यह रोग मुख्यतः स्त्रियों एवं किशोरों में होती है। लक्षणों के आधार पर आधुनिकानुसार अर्धावभेदक की तुलना हम माईग्रेन से कर सकते है। चिकित्सात्मक दृष्टि से आयुर्वेद में अर्धावभेदक की विविध चिकित्सा उपक्रम मिलते है जिनमें से पञ्चकर्म चिकित्सा सर्वोपरि है पञ्चकर्म रोग के मूल कारण का समूल नाशा कर स्वास्थय की अभिवृद्धि करता है।

प्रस्तुत शोध में 34 अर्धावभेदक के रोगियों को 3 वर्गों में विभक्त कर 21 दिन तक चिकित्सा दी गयी। वर्गों का विभाजन निम्न प्रकार से किया गया–

प्रथम वर्ग – कुमकुमादि घृत से 21 दिन तक नस्य कर्म। **द्वितीय वर्ग** – दशमूलघृत क्षीर से 21 दिन तक शिरोधारा। **तृतीय वर्ग** – 21 दिन तक कुमकुमादि घृत नस्य कर्म में दशमूल घृत क्षीर से शिरोधारा।

तीन वर्गों के रोगियों में चिकित्सोपरान्त निष्कर्ष के विश्लेषण के बाद यह पाया गया कि प्रथम एवं तृतीय वर्ग द्वितीय वर्ग की अपेक्षा अधिक प्रभावी रहे अर्थात् कुमकुमादि घृत दशमूल घृत क्षीर शिरोधारा से ज्यादा प्रभावी रहा।

*M.D. Scholar, P.G. Dept. of Panchakarma, NIA, Jaipur **Asstt. Prof., P.G. Dept. of Panchakarma, NIA, Jaipur *** Asso. Prof., P.G. Dept. of Panchakarma, NIA, Jaipur **** Ex-Director, N.I.A., Jaipur

Clinical Study

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Introduction –

Man's ambitious nature, luxurious life etc. made him busy all the time which gave rise to stress, strain, mental disturbances. It is fact "A healthy mind is the cause for a healthy body", which sounds quiet true.

It is the brain, which controls all the voluntary and involuntary functions of the body. Thus, brain can be considered as supreme, important and major organ of the body. Our ancient sages have described three vital organs and have given prime importance to head i.e. Shirah, as the existence of body depends upon the vital organs. Shirah is that part of the body where life along with sense faculties resides. Almost all Acharyas have given prime importance to Shiro roga (diseases of head). All types of headaches have been described under the heading of '*Shiroroga*', which are further divided into eleven types according to *Sushruta*. *Ardhavabhedaka* one of the important type of Shiroroga.

According to *Charaka Vata* either alone or in combination with *Kapha*, seizes the one half of head and causes *Ativedana* (acute neuralgic pain) in the sides of the *Manya* (neck), *Bhroo* (eyebrow), *Shankha* (temple), *Karna* (ear), *Akshi* (eyes) or Lalatardhe (forehead of one side). This pain is very agonizing like that of churning rod (red hot needle). This disease is called *Ardhavabhedaka*. If the condition becomes aggravated, it may even impasse the functions of the *Nayana* (eye) and *Shrota* (ear).

According to *Sushrut Ardhavbhedaka* is cherecterised by one half of the head develops *Bheda* (severe tearing) and *Toda* (pricking pain), *Bhrama* (giddiness) and *Shoola* (piercing pain) suddenly after a fortnight or ten days. This should be diagnosed as *Ardhavabhedaka* caused by all the three *Doshas*.

In modern science *Ardhavabedhaka* is found to be identical to migraine characterized by half sided headache, moderate to severe headache and nausea.

According to Harrison's-principles of internal medicine migraine is benign and recurring syndrome of headache, nausea, vomiting and/or other symptoms of neurological dysfunction in varying admixtures like photophobia, phonophobia.

With advent of modern drugs, the pattern of disease has grossly changed, where the drugs only assuage the symptoms temporarily and the underlying pathology goes on progressively to worsen the condition. Though ample research is being carried out for alleviating the disease and new avenues are being explored for treating early stage of the disease.

Therefore, the Ayurvedic therapeutics especially Panchakarma (Bio-purification) therapy has attracted considerable glamour for providing safe and effective remedies. Numerous researches have been done time and again to reprove the worth of these medicaments. Yet there is a necessity for perusing further research to find out some safe, effective remedy.

Need of study:

Worldwide, migraines affect nearly 15% or approximately one billion people. It is more common in women at 19% than men at 11%. During adolescence migraines becomes more common among women and this persists for the rest of the lifespan, being two times more common among elderly females than males.

Taking all the above points into consideration, its nature of chronicity, the disease was selected, to find a measure that could help in restoring quality in life of patients.

Considering all the above factors the disease "Ardhavabhedaka" and 'Kumkumadi Ghrita Nasya' and 'Dashmool shrita Ksheera Shirodhara' were selected for the present study which is mentioned in Ashtang Hridaya for treatment of Ardhavabhedaka on various scientific parameters to evolve a safe, effective, readily available and economic treatment protocol.

Aims And Objectives:

1) To evaluate the role of Kumkumadi Ghrita Nasya and Dashmoola-Shrita Ksheera Shirodhara in the management of Ardhavabhedaka (Migraine), comparatively.

2) To provide economic, easily manageable, permanent and adverse affect free treatment for migraine.

Materials And Methods

Following materials and methods were adopted for conducting the present research project.

Selection of Cases/Patients:

The study was conducted on 30 clinical and pathological diagnosed patients of Ardhavabhedaka (Migraine). The patients were selected from O.P.D. and I.P.D. of National Institute of Ayurveda, Jaipur.

Sampling Technique:

In the present study 30 clinically diagnosed patients of Ardhavabhedaka (Migraine) were selected and randomly divided into three groups.

1. Group A- In this group 10 patients were registered for Kumkumadi Ghrita Nasya Karma.
2. Group B - In this group 10 patients were registered for Dashmoola-Shrita Ksheera Shirodhara Karma.
3. Group C - In this group 10 patients were registered for both Nasya and Shirodhara Karma.

The patients were selected randomly irrespective of sex, religion, education and occupation etc.

Duration of Trail: 21 days in each group

Nasya Dose: 6 drops in each nostrils

Shirodara with duration: continuous pouring of 2 lt. Dashmoola-Shrita Ksheera for 45 min/day.

Follow up: Follow up was carried out for 1 month after the completion of treatment to see the long standing effect of the therapy.

Diagnostic Criteria's Adopted:

- Age: 15 to 50 years.
- Patients presenting with signs and symptoms of Ardhavabhedaka-Migraine described as per Ayurvedic texts and Modern texts were included in the study. For this purpose a special research proforma was prepared as per the Modern and Ayurvedic view.
- The diagnosis of the disease was done on the basis of clinical manifestations like recurrent attacks of headache, mostly unilateral in nature, variable in intensity, frequency and duration, nausea, vomiting, Photophobia, phonophobia and vertigo.

Random sampling method was adopted for the selection of the patients.

Inclusion Criteria:

1. Age between 15 to 50 years.
2. Patients presenting with signs and symptoms of Ardhavabhedaka, described as per Ayurvedic and modern science.

Exclusion Criteria :

1. Pregnant and lactating women.
2. Patients suffering from major disease e.g. tuberculosis, cancer, diabetes mellitus, heart disease, hypertension etc.
3. Ophthalmoplegic migraine.
4. Complicated migraine.
5. Secondary Headache caused by sinus headache, meningitis, brain tumour, encephalitis, cervical spondylitis, refractive error and increased intra ocular pressure.
6. Patients using drugs for any other systemic illness.

Discontinuation criteria:

1. Aggravation of symptoms.
2. Patients not willing to continue.

Investigations Performed

Following investigations were advised-

1. Blood for CBC,ESR
2. Vision test

Criteria For Assessment:

Subjective Improvement

Improvement in the following subjective sign and symptoms are

1. Intensity of Headache
2. Episodic Interval
3. Duration of Headache
4. Nausea
5. Vomiting
6. Photophobia
7. Phonophobia
8. Vertigo
9. Visual Disturbance
10. Alteration of consciousness

Observations And Results:

For the clinical study, 34 clinically diagnosed and confirmed cases of Ardhavbhedak (Migraine) were registered on the basis of a specially designed proforma prepared for the purpose. Out of 34 patients, 4 patients discontinued the treatment.

The entire patient treated Nasya Karma with Kumkumadi Ghrita and Shirodhara with Dashmool shrit Ksheer were very well and no side or toxic effects in these trial were observed.

The observations made on the 34 patients of Ardhavbhedaka of this series showed that maximum number of patients were of age group of 21 – 30yrs (38.2%), Females (64.7%), Hindu (82.4%), Graduate (38.2%), Married (58.8%), House wives (32.3%), Student(35.3), Middle class (91.2%), Urban habitat (88.3%), Vegetarian (64.7%). Majority of the patients had disturbed sleep (70.6%), Vata-pitta prakriti (47%), Rajas prakriti (67.6%), Madhyama Sara (82.4%), Madhyama Samhanana (76.4%), Madhyama Satmya (61.7%), Madhyama Satva (58.8%), Madhyama Pramana (79.4%), Madhyama Abhyavaharana Shakti (64.7%), followed by Avara Jarana shakti (64.7%), Madhyama Vyayama shakti (64.7%).

The maximum nidanas (etiological factors) observed in patients were Anashana (64.7%), Ratrijagarana(61.8%), Chinta(58.8%), Vishamashana (55.9%) and Vega sandharana (47%).

The chief complaints reported from the patients were Headache (Shirahshoola) (100%), Nausea (67.6%), Vomiting (58.8%), Photophobia (64.7%), Phonophobia (75.6%), vertigo (52.9%) and Visual disturbance (41.1%).

Maximum patients were having unilateral headache (88.2%), Throbbing type of headache (61.7%). Severe intensity of headache was seen in (67.6%) with chronicity of 2 years (32.4%). The duration7-12 hours/day was seen in maximum (44.1%) with episode interval >7 days - < 14 days in 41.1% of patients.

The clinical data presented here is based on the 30 patients of trial work arranged in 3 groups, each had 10 patients.

Table No: 1- Results in Group A

Effect of *Kumkumadi Ghrita Nasya* various symptoms of *Ardhavabhedaka* (Migraine) in 10 patients (Wilcoxon matched-pairs test)

Symptoms	Mean Value			% of	SD	SE	P	Remarks
	BT	AT	Diff.	Relief	±	±		
Intensity of pain	3.20	1.0	2.20	68.75%	0.78	0.24	0.002	HS
Episodic interval	2.3	0.7	1.6	69.56%	0.51	0.16	0.002	HS
Duration of Headeche	2.4	0.8	1.6	66.66%	0.51	0.16	0.002	HS
Nausea	2.28	0.71	1.57	68.86%	0.53	0.20	0.0156	S
Vomiting	1.6	0.5	1.1	68.75%	0.87	0.27	0.0313	S
Photophobia	1.9	0.6	1.3	69.23%	0.48	0.18	0.0156	S
Phonophobia	1.62	0.5	1.13	69.23%	0.35	0.13	0.0078	HS
Visual disturbance	1.75	0.50	1.25	71.42%	0.50	0.25	0.1250	NS
Vertigo	1.40	0.4	1.0	71.42%	0.44	0.20	0.0625	NS
Alteration of consciousness	1.62	0.37	1.25	76.92%	0.70	0.25	0.0156	S

The present study shows 68.75% relief in Intensity of pain (Shirhshool) which was highly significant statistically (p =0.002), while 69.56% & 66.66% relief in episodic interval and duration of headache respectively was observed which was also highly significant statistically (p =0.002). The study also shows 68.86% relief in nausea which was significant statistically (p = 0.0156) and 68.75% relief in vomiting which was also significant statistically (p =0.0313), 69.23% of improvement in both photophobia and phonophobia was observed which was statistically significant (p = 0.156) and highly significant (p= 0.078) respectively. whereas 71.42 relief was seen in both the symptom of visual disturbance and vertigo which was also non significant statistically (p= 0.125, p = 0.0625 respectively) and 76.92% relief was seen in alteration of consciousness which was statistically significant(p = 0.0156).

Table No: 2 Results in Group B

Effect of *Dashmool shrit Dugdha Shirodhara* on various symptoms of *Ardhavabhedaka* (Migraine) in 10 patients (Wilcoxon matched-pairs test)

Symptoms	Mean Value			% of	SD	SE	P	Remarks
	BT	AT	Diff.	Relief	±	±		
Intensity of pain	2.9	1.7	1.1	37.93%	0.56	0.17	0.0313	S
Episodic interval	1.7	1	0.7	41.17%	0.48	0.15	0.0156	S
Duration of Headache	2.5	1.3	1.2	48%	0.91	0.29	0.0156	S
Nausea	1.71	1	0.71	41.66%	0.48	0.18	0.0625	NS
Vomiting	1.5	1.0	0.5	33.33%	0.54	0.18	0.0313	S
Photophobia	1.62	0.9	0.8	46.15%	0.46	0.14	0.0156	S
Phonophobia	1.55	0.77	0.77	50%	0.44	0.16	0.0156	S
Visual disturbance	2.2	1.2	1.0	45.45%	0.44	0.20	0.0625	NS
Vertigo	1.6	0.8	0.8	50%	0.44	0.20	0.1250	NS
Alteration of consciousness	2	0.71	1.29	64.28%	0.48	0.18	0.0156	S

The present study shows 37.93% relief in intensity of pain (Shirahshoola) which was highly significant statistically (p = 0.0039) and 41.1% relief in episodic interval which was significant statistically (p=0.0156), while 48% relief in duration of headache which was also significant statistically (p = 0.0156). The study also shows 41.66% relief in nausea & 33.33% relief in vomiting which were non significant statistically (p=0.0625) and significant statistically (p = 0.0313) respectively. 46.15% improvement in photophobia and 50% in phonophobia both were statically significant (p=0.0156) where as 45.45 % & 50% relief was observed in the symptom of visual disturbance & vertigo which were found non significant statistically (p=0.0625 & 0.125 respectively) and 64.28% relief was seen in alteration of consciousness which was statistically significant (p=0.0625).

Table No: 3 Results in Group C

Effect of *Kumkumadi Ghrit Nasya* & *Dashmool shrit Dugdha Shirodhara* on various symptoms of *Ardhavabhedaka* (Migraine) in 10 patients (Wilcoxon matched-pairs test)

Symptoms	Mean Value			% of	SD	SE	P	Remarks
	BT	AT	Diff.	Relief	±	±		
Intensity of pain	2.9	0.8	2.1	72.41%	0.56	0.17	0.0020	HS
Episodic interval	2.2	0.6	1.6	72.72%	0.69	0.22	0.0020	HS
Duration of Headache	2.2	0.7	1.5	68.18%	0.97	0.30	0.0039	HS
Nausea	1.71	0.57	1.14	66.66%	0.37	0.14	0.0156	S
Vomiting	1.5	0.5	1.0	66.66%	0.63	0.25	0.0313	S
Photophobia	1.4	0.4	1.0	70%	0.51	0.16	0.0313	S
Phonophobia	1.55	0.44	1.11	71.42%	0.88	0.31	0.0156	S
Visual disturbance	2	0.6	1.4	70%	0.54	0.24	0.0625	NS
Vertigo	1.83	0.5	1.33	72.72%	0.81	0.33	0.0625	NS
Alteration of consciousness	2	0.42	1.57	78.57%	0.78	0.29	0.0156	S

The present study shows 72.41% relief in intensity of pain (Shirahshoola) which was highly significant statistically (p = 0.002) and 72.72% relief in episodic interval which was highly significant statistically (p=0.002), while 68.18% relief in duration of headache which was also highly significant statistically (p = 0.0039). The study also shows 66.66% relief in nausea & vomiting which were significant statistically (p=0.0156 & 0.0313 respectively) and 70% improvement in photophobia and 71.42% in phonophobia both were statically significant (p=0.0313 & 0.0156 respectively) where as 70% & 72.72% relief was observed in the symptom of visual disturbance & vertigo which were found non significant statistically (p=0.0625) and 78.57% relief was seen in alteration of consciousness which was statistically significant (p=0.0156).

Table No.4 – Overall effect of therapy in all groups (Wilcoxon matched-pairs test)

Group	Mean Value			% of	SD	SE	P	Remarks
	BT	AT	Diff.	Relief	±	±		
Group-A	2.01	0.61	1.4	69.65%	0.35	0.11	0.002	HS
Group-B	1.82	0.98	0.84	46.15%	0.29	0.09	0.002	HS
Group-C	1.95	0.56	1.39	71.28%	0.33	0.10	0.002	HS

Group A, showed 69.65% improvement with p-value = 0.002, which is highly significant statistically. Group B showed 46.15% improvement with p-value = 0.002, which is highly significant statistically and Group C showed 71.28% improvement with p-value =0.002 which is statistically highly significant.

Fig. No. 1 Comparison of percentage wise improvement in all groups

No adverse effects of the trial drugs were observed during the study.

Discussion

Ardhavabhedaka can be scientifically correlated with Migraine due to its cardinal feature unilateral headache and paroxysmal nature. The various types of pain and paroxysmal nature of Ardhavabhedaka suggest the Vishama nature of Vata dosha. So We can say that prominent dosa in Ardhavbhedaka is Vata, Ardhavabhedaka can be differentiated from other Shiro-roga such as Suryavarta, Shankha, etc. only due to its cardinal feature "half sided headache" and also due to its paroxysmal nature.

Probable Mode of Action of *Kumkumadi Ghrita Nasya*: Generally, *Nasya* is effective in following 2 ways-

1. Therapeutic effect of medicament

The mode of action of the drugs under trial can be understood as under - on the basis of inherent properties of the drugs by which one can assume their pharmacodynamics is as follows :

Guru Guna, Snigdha Guna, Madhura Rasa and Madhura Vipaka present in Ghrita and Sharkara pacify the Vata dosha which is the most important factor responsible for Ardhavabhedaka. Snigdha guna has Kledana Karma which acts as a binding agent. Sheeta Virya present in Ghrita and Sharkara pacify the Pitta dosha which is responsible for nausea, vomiting & vertigo.

Katu and Tikta Rasa of Kumkuma, have Deepana – Pachana Karma, which having the property of Amapachana and thus provides proper metabolism and ultimately balances the Agni. Thus these Rasas works at Agni dushti level in the Samprapti of Ardhavabhedaka. Katu, Tikta Rasa and Usna Guna have Sroto-shodhaka property, which helps in expelling the morbid Doshas. Tikta Rasa shows its Shoshana Karma, more particularly Kleda Shoshana and Shlesma Prashamana properties. Ushna Virya of Kumkuma has Deepana – Pachana, Virechana, Vilayana properties, which softens and liquefies the morbid Doshas which are ultimately expelled out due to its Virechaka Karma.

Kumkuma has Medhya, Vedanasthapana, Raktaprasadaka, Kaphanissaraka and Katupaushtika. Ghrita acts as a helpful media by its Medhya and Smritivardhana properties. 'Sanskaranuvartanat' Guna of Ghrita is super most property of incorporating the quality of other drugs, which ever comes in contact with it, during processing.

Pharmacological studies also shows that Kumkuma has antinociceptive, anti-inflammatory,

antitumour, radical scavenger, hypolipaemic , anticonvulsant effects and improve activity on learning and memory.

2. Procedural effect of the *Nasya Karma*

Acharya Vagbhatta said that, *Nasa* (nose) is the Dwara (door) for Shiras. The drug administered through nose reaches the Shringataka Marma and spreads throughout Murdha, Netra, Shrotra and Kantha through their Siras (*Shringataka Marma* is a *Sira Marma* and formed by the Siras of *Nasa, Akshi, Jivha* and *Shrotra*). Thereby eliminates the morbid Dosha of Urdhwajatru and expels them from the Uttamanga and nutritive part of Nasya is nourishes the Shirah (head).

Nasya Dravya gets absorbed through the cells of mucous membrane of nose and paranasal sinuses and then comes into circulation through local capillaries and veins. When the drug reaches the upper part of nasal cavity it reaches the olfactory area from where there is possibility that it can ascend to higher centres in the brain including the pituitary, thalamus, hypothalamus and the limbic system through the olfactory nerve terminals. The olfactory nerve fibres are also enclosed with dura and arachnoid matter and there is circulation of CSF in these layers and there is possibility that the drug reaches the intra cranial structures of brain through this pathway.

Thus, the effect of the drugs extends to the whole neurovascular system.

Hence Nasya provided better relief in all signs and symptoms of *Ardhavabhedaka*.

In short, the drug was found effective to tackle with Ardhavabhedaka. The formulation worked through its *Vatahara, Vedanasthapana, Smritivardhana, Mastishkabalya, Medhya, Nidrajanana, Nadibalya* properties.

Probable Mode of Action of *Dashmool shrit ksheer Shirodhara*:

Although clinically the efficacy of Shirodhara is proved, it is a difficult task to understand the mode of action of Shirodhara. Generally, Shirodhara is effective in following two ways-

1. Therapeutic effect of medicament

Among the 10 Dravyas of Dashmoola 5 Dravyas (50%) have Vata-Kapha Shamak property, 4 Dravyas (40%) have Tridosaghna property and 1 Dravya (10%) has Vata-Pitta Shamak property. It means, in Dashmoola all Dravyas (100%) have Vata Shamak property and 9 Dravyas (90%) have Vata-Kapha Shamak property. Therefore, it will be a potent Vata Dosha Shamak, Vata-Kapha Shamak and Tridoshaghna compound. Thus over all it pacifies Vata, Vata-kapha Dosha or Tridosha and Ardhavbhedaka being a Vata Pradhana Vyadhi (Vata-kapha-Ch. or Ttridoshaja Su.), there is every possibility of Samprapti Vighatana of Ardhavbhedaka Roga.

Milk subsides Vata and Pitta Dosas by Madhura Rasa, Snigdha, Guru, Mridu, Sandra Guna properties. As the milk is having identical properties of Ojas, it promotes Ojas. The Cow's milk acts as Rasayana, Tarpaka, Jivaniya, Hridya, Ahladakara and Medhya.

2. Procedural effect of the *Shirodhara*

- The procedural effect of *Shirodhara* seems to be more powerful in relieving various sign and symptoms of *Ardhavbhedaka* (Migraine).
- The continuos pouring of medicated milk in a relaxed and comfortable position has an effect, which can be near comfortable position has an effect, which can be near compared to the cardling of a mother to her child. This acts as an sedative and soothing effect to the brain and induces sleep. Also the medicated milk or active ingredients of oil enters into the circulation acts as vatahar effects.
- The forehead and head are areas of many vital spots (Marma) as mentioned in Ayurvedic classics. Mainly *Sthapani, Utkshepa, Avarta Marma* are situated in this region. According to *Acharya Bhela*, the *Sthana* of *Chitta* (*Mana*) is *Bhrumadhya* i.e. *Sthapani Marma*. *Shirodhara* makes the patient to concentrate on this area by which the stability arrives in the functions of mind.
- In *Shirodhara* patient is asked to lie down in supine position as in *Shavasana*. This position

itself is used for relaxation in Yogic science. Again during Shirodhara patients concentrate on the fore head i.e.in between eyebrows. Then he is devoid of surroundings, which helps him to calm the stressful mind. As the patient concentrates on particular place, the thought process decreases and thus entire physiology relaxes.

In this way, Shirodhara is beneficial in eradicating Ardhavbhedaka (Migraine).It is useful in Vatadosha by its calming and penetrating effect whereas useful in Pitta dosha by its cooling effects.

Conclusion

The study shows that Kumkumadi Grita Nasya alone was more effective in alleviating symptoms of *Ardhavabhedaka* (Migraine) than *Dashmool shrita ksheer Shirodhara* but combined drug therapy had greater potential to ameliorate the symptoms of *Ardhavabhedaka* (Migraine).

In nutshell, *Panchakarma* therapy is proved better in the management of the disease i.e., Kumkumadi Grita Nasya along with Dashmool shrita ksheer Shirodhara proved to be a good effective therapy in curing the disease.

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Clinical Study

Management of *Anurjata* (Allergy) by *Anurjatari yoga* - A comparative study

*Vaidya Nisha Gupta, **Prof. O. P. Upadhyaya

Abstract-

Anurjata (Allergy) has been reported as global epidemic for last 20-30 years and prevalence rate is mounting significantly every year. Most alarming feature of allergic patients is their affliction to more than one allergic diseases as reported by WAO. This constellation of allergic manifestations tends them to multiple visits to 2 to 3 different system specialists and this is not enough to make a satisfactory and safe cure of the disease. With all above considerations Ayurveda could prove a better remedial measure with a safety profile to cure anurjata of all systems altogether. This was specifically tested with the allergies of pranavaha srotas(Respiratory system) and Rasavaha srotas(skin) i.e. Hypersensitivity Type1 with a compound drug Anurjatari yoga in two group study carrying 30 patients each. Anurjatari yoga was established as a drug of vinaghna effect and clinically proved anti-allergic and a safe alternative medicine in both the groups.

Key Words:*Anurjata, anurjaskara bhava, vishaghna, Anurjatari yoga,*

सारांश–

अनूर्जता (एलर्जी) को पिछले २–३ दशकों में वैश्विक महामारी के रूप में सूचित किया गया है और हर साल इसकी व्यापकता दर बढ़ती ही जा रही है। अनूर्जता में एक से अधिक स्रोतस का समावेश होना WAO द्वारा मारक लक्षण के रूप में सूचित किया गया है। यह अनूर्जता लक्षणों का चक्र रोगी को बार बार विशेष चिकित्सक के पास जाने को बाध्य करता है, तब भी इस व्याधि की संतोषप्रद व सुरक्षित चिकित्सा नहीं होती है। उपर्युक्त तथ्यों को ध्यान में रखते हुए आयुर्वेद सभी स्रोतस के अनूर्जता को पूर्ण रूप से चिकित्सा करने के लिए एक सुरक्षा प्रोफाइल के साथ एक बेहतर चिकित्सात्मक उपाय के रूप में साबित हो सकता है। यह विशेष रूप से अतिसंवेदनशीलता टाइप 1 की एलर्जी जिसमें प्राणवह स्रोतस् (श्वसन प्रणाली) और रसवह स्रोतस्(त्वचा) के दो समूह में प्रत्येक समूह में 30 रोगियों के अन्वेषणात्मक अध्ययन में औषध योग अनूर्जतारि योग के साथ परीक्षण किया गया। अनूर्जतारि योग का विषघ्न प्रभाव एक औषध के रूप में स्थापित किया और चिकित्सकीय रूप से दोनों समूहों में अनूर्जता प्रतिरोधक और एक सुरक्षित वैकल्पिक चिकित्सा के रूप सिद्ध किया गया।

*Assistant Prof. NIA, Jaipur, ** Vice Chancellor, Shri Guru Ravidas Univ. Hoshiarpur (Pb.)

Clinical Study

Management of *Anurjata* (Allergy) by *Anurjatari yoga* - A comparative study

Vaidya Nisha Gupta, Prof. O. P. Upadhyaya

Introduction

Ayurveda is an ancient but scientific system of medicine. The incidence of anurjata i.e. allergic diseases has become almost epidemic. Indeed, allergies are among the most common chronic problems of childhood and the most frequent complaints of adults in developed countries and incidences are rising in developing countries. This Increase of allergy in the present population is a matter of global concern. Every third person is allergic to one substance or other. This is more prevalent in youth. It has been proposed that there is a global epidemic of allergic diseases which is likely to be a consequence of the changing environment superimposed on a range of genetic susceptibilities. Allergy is an immunological disorder that could also be termed as dark side of immunity. Where immunity of a person is the tendency to fight disease, allergy increases sensitivity to disorders i.e. development of immediate and striking phenomenon that may be local or general in their manifestations.

Immunity is manifestation of the wisdom of the body but hypersensitivity might well be called the stupidity the body.

The subject of study *anurjata* (allergy) has not been mentioned anywhere in classics and Acharya Charaka has justified himself by notion that it is not always possible to name all disorders in definite terms. Also the diseases described in the ancient texts reflect their prevalence in that period of samhita kala. Diseases non prevalent in significant abundance were not given due importance to define by name etc. Cakrapani made it more justified by commenting that it is the thorough knowledge of etiological factors rather than names of diseases which accounts for the purpose of their treatment. The acquaintance with the names of diseases is important for the purpose of description only. Acharya Charaka has used the term avishkrtatama while mentioning nanatmajavikaras of vata, pitta and kapha that clearly indicate about the description of only those disorders is done in the Charaka samhita which mostly and commonly manifested at that time. In another relevant reference *Acharya Charaka* has indicated about the described matter in texts for the persons of low intelligence. People of high intelligence can exercise their own imagination for elaborating other diseases not mentioned here. Aggravation of a single dosha may cause manifold diseases depending upon the etiological factors and the sites of manifestations. So a physician should try to comprehend the prakrti (dosha) of a disease, the samutthana (etiological factors) and the adhishohana (site) of its manifestation. A physician who so initiates the treatment after having complete knowledge of the therapeutic properties of these three aspects and paying due regard to the scriptural instructions would never fail in his attempt to cure the disease.

It appears from the textual references that term allergy is nowhere in Ayurveda, but reaching on conclusion that allergy term as well as phenomenon was not known to great acaryas would be greatly misleading. Anurjata should be termed as a medical emergency disturbing the vitality of *sharirendriya sattvatmasamyogo*. *Anurjata* means lack of urjata. Deficiency of bala *vyadhikshamattva* (immunity) in body results in increased reactivity of specific dhatus or dhatuvaha srotas to certain substances i.e. anurjaskara bhava i.e. allergens which could be in the form of inhalants, ingestants, injectants and many others. This disease is seen only in persons with less of vyadhikshamattva and it has been clearly mentioned by *Acarya Caraka*. Ayurveda maintains that although allergens such as pollens, dust and dander trigger symptoms in susceptible people they are not primary cause of instead it is the accumulated toxin ama that plays the notorious role in manifestation of the disease.

Aims and Objectives:

1. To review the ancient literature and scrutinize the diseases of *anurjata* (allergic disorders) from the texts of *vrihattrayi*.
2. To study drug compound critically in all the cases of anurjata i.e. pranavaha and *rasavahasrotas* specifically hypersensitivity type1.
3. To establish the drug of *vinaghna* (anti poisonous) effect clinically as an anti-allergic drug.
4. To find out an efficient and safe ayurvedika alternative to modern anti-allergic drugs to combat the disease.

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1. According to a report by World Allergy Organization specialty training council-"Many allergy sufferers have more than one manifestation of their disease. Thus the overwhelming majority of patients with asthma also have allergic rhinitis and up to 40% have had or continue to have Eczema. This constellation of allergic manifestations often means that patients are required to see 2 or 3 different system specialists in order to handle the range of their allergic problems".

Materials and methods:

Study design: A simple two group comparative study

***Sample size*:** 60 patients were selected as the sample population for the study that was done in two groups carrying 30 each from the O.P.D. and I.P.D. of Arogyashala, National Institute of Ayurveda, Jaipur. The patients were registered after obtaining their due consent for participation in clinical trial.

***Randomization*:** simple

Grouping of patients: The study was done in two groups of Respiratory allergy and Skin allergy each comprising of 30 patients.

Group R.A.: 30 patients of anurjata primarily with the symptoms of pranavaha srotas (respiratory allergy)

Group S.A.: 30 patients of anurjata primarily with the symptoms of rasavaha srotas (skin allergy)

Criteria for Exclusion:

- Patients less than 10 years and more than 60 years.
- Patients suffering from chronic rhinitis, sinusitis, intrinsic asthma, cardiac asthma, pulmonary tuberculosis and other lung diseases.
- Patients suffering from chronic skin diseases.

Criteria for Inclusion

- Patients having signs and symptoms of allergy as mentioned in the modern medicine and relevant classical references were selected for present study.
- Patients with laboratory findings with more of TEC and IgE with Routine hematological investigations like Hbgm%, TLC, DLC and ESR

Drugs and posology: 10 gms of Anurjatari yoga was administered to all the patients in both groups twice a day with hot water. The duration of therapy was two months.

Criteria of assessment

§ Subjective symptoms were scored and compared according to standard methods.

§ Laboratory findings like Hbgm%, TLC, DLC, ESR, TEC and IgE were compared before and after the treatment.

FOLLOW UP STUDY

All the patients were advised to resume after one month of completion of therapy for follow up study.

Observations:

Age	Maximum Patients of age group 31-50((Group R.A.60% andGroup-S.A.47%)
Sex	Male predominance in both the study groups (Group R.A. 73% and Group S.A. 60%)
Religion	Maximum Hindu (Group R.A.97% and Group S.A. 87%)
Heredity	Heredity of respiratory diseases (Group R.A. 33% and Group S.A. 13%) Heredity of skin diseases (Group R.A.10% and Group S.A. 13%).
Occupation	Maximum patients (Group R.A.37% and Group S.A.46%) belonged to categories like house-wife, labour, drivers, agriculture related etc.
Diet habits	Vinamashana (Group R.A. -27% and Group S.A. -13%) Viruddhashana(Group R.A. -13% and Group S.A. -20%)
Rasa intake	Madhurarasa (Group R.A. -40% and Group S.A. -37%) Max. Amlarasa(Group R.A. -27% and Group S.A. -47%)
Socio economic status	Middle socio- economic status (Group R.A. -47% and Group S.A. -57%) Lower socio- economic status (Group R.A. -43% and Group S.A. -40%)
Status of Agni	vinama agni (Group R.A. -27% and Group S.A. -14%) followed by the patients (Group R.A. -03% and Group S.A. -03%) with mandaagni.
Koshtha	Maximum patients (Group R.A. -63% and Group S.A. -50%) with krurakoshtha
Prakriti	maximum number of patients (Group R.A. -57% and Group S.A. -40%) belonged to vata-pittaja prakriti
Sattva	Max. patients (Group R.A. -63% and Group S.A. -63%) with madhyasattva.
Satmya	Max. patients(Group R.A. -70% and Group S.A. -67%) with madhyasatmya.
Abhyaharana shakti	Alpaabhyaharana shakti in (Group R.A. -43% and Group S.A. -27%).
Jaranashakti	Alpajaranashakti in (Group R.A. -60% and Group S.A. -74%).
Vyayama shakti	Avaravyayama shakti (Group R.A. -63% and Group S.A. -57%)
Addiction	Tobacco addiction in majority (Group R.A. -23% and Group S.A. -17%).
Kala	Perennial occurrence in (Group R.A. -63% and Group S.A. -80%) seasonal occurrence with winter(Group R.A. -24% and Group S.A. -03%) and spring (Group R.A. -10% and Group S.A. -07%)
Pranavaha srotodushti	Alpalpam (Group R.A. -53% and Group S.A. -17%) Sashabda laknana in (Group R.A. -40% and Group S.A. -13%).
Rasavahasrotodushti	Tandra and angasadain maximum patients (Group R.A. -53% and Group S.A. -40%) and (Group R.A. -53% and Group S.A. -37%) respectively.

Annavahasrotodushti	Avipaka (Group R.A. -57% and Group S.A. -40%)and Arocaka(Group R.A. -20% and Group S.A. -17%)
Purinavaha srotodushti	Kricchrena in max.(Group R.A. -47% and Group S.A. -10%) Atigrathitam in (Group R.A. -37% and Group S.A. -17%)
Svedavaha srotodushti	Parunyam in majority of patients (Group R.A. -27% and Group S.A. -57%).
Anurjata Triggers	house dust was traced as the most potent anurjata trigger (Group R.A. -70% and Group S.A. -27%) followed by the weather changes (Group R.A. -70% and Group S.A. -23%) .
Ama laknanas grade	majority of patients (Group R.A. 50% Group S.A. 47%) were with moderate grade of Ama laknanas followed by patients with severe grade (Group R.A. 37% Group S.A. 23%)
Incidence of symptoms	Kshavathu (96.67%), Nasakandu (93.33%), Nasasravadrava (73.33%) and Shvasa (70%) were seen in great majority followed by Shushkakasa (53.33%) and Ghurghuraka (36.67%) of patients with Pranavaha srotas anurjata as chief complaints andAkshiraga (70%), Akshikandu and Akshisrava (each 76.67%)found as associated symptoms. Tvagkandu(90%), Tvagraukshya(63.33%) Kotha (60%), were found as chief complaints in skin allergy along with Akshiraga (46.67%), Akshikandu(53.33%) and Akshisrava (43.33%) as associated symptom

Result:

Table No.1 - Effect on signs and symptoms *Pranavaha srotas anurjata* in patients of Group R.A. (with graph)

Symptoms	***n***	**Mean**		**Diff.**	**% of change**	**SD (±)**	**SE (±)**	***t* value**	***p* value**
		BT	**AT**						
Nasakandu (Nasal itching)	28	2.11	0.46	1.64	77.97	0.62	0.12	13.99	<0.001
Kshavathu (Sneezing)	29	1.90	0.45	1.45	76.36	0.63	0.12	12.35	<0.001
Nasasrava drava (Runny Nose- clear discharge)	22	2.45	0.82	1.64	66.67	0.58	0.12	13.21	<0.001
Nasasrava ghana (Runny Nose- cloudy)	3	2.00	0.67	1.33	66.67	0.58	0.33	4.00	<0.001
Nasavarodha (Stuffiness)	6	1.50	0.33	1.17	77.78	0.41	0.17	7.00	<0.001
Gandhanasha (Loss of smell)	10	1.30	0.50	0.80	61.54	0.42	0.13	6.00	<0.001
Shvasa (Shortness of Breath)	20	1.70	0.45	1.25	73.53	0.79	0.18	7.11	<0.001
Shushkakasa (Dry cough)	16	1.94	0.56	1.38	70.97	0.62	0.15	8.88	<0.001
Ghurghuka (Wheeze)	11	1.45	0.55	0.91	62.50	0.30	0.09	10.00	<0.001

Vishushkasya (Dryness of mouth)	16	1.56	0.69	0.88	56.00	0.50	0.13	7.00	<0.001
Trishna (Thirst)	11	2.00	1.09	0.91	45.45	0.70	0.21	4.30	<0.001
Svarabheda (Hoarseness of voice)	11	1.82	0.91	0.91	50.00	0.94	0.28	3.19	<0.01

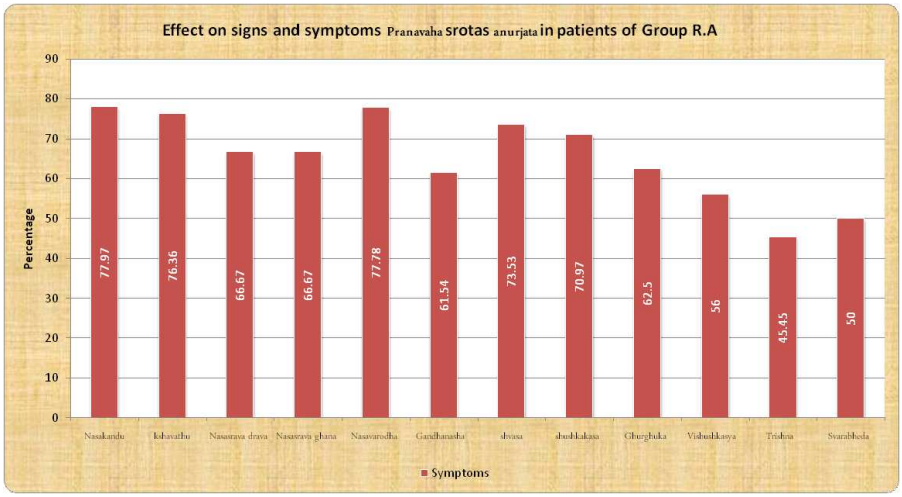


Table No.2 - Effect on signs and symptoms of *Pranavaha srotas anurjata* in patients of Group S.A. (with graph)

Symptoms	*n*	Mean		Diff.	% of change	SD (±)	SE (±)	*t* value	*p* value
		BT	AT						
Nasakandu (Nasal itching)	8	1.75	0.25	1.50	85.71	1.07	0.38	3.97	<0.01
Kshavathu (Sneezing)	12	1.75	0.42	1.33	76.19	0.65	0.19	7.09	<0.001
Nasasrava drava (Runny	11	1.91	0.64	1.27	66.67	0.47	0.14	9.04	<0.001
Nose- clear discharge)									
Nasasrava ghana (Runny Nose- cloudy)	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nasavarodha (Stuffiness)	3	1.00	0.33	0.67	66.67	0.58	0.33	2.00	<0.01
Gandhanasha(Loss of smell)	6	1.67	0.50	1.17	70.00	0.75	0.31	3.80	<0.01
Shvasa(Shortness of Breath)	10	2.00	0.70	1.30	65.00	0.82	0.26	4.99	<0.001
Shushkakasa (Dry cough)	4	1.75	0.50	1.25	71.43	0.50	0.25	5.00	<0.001
Ghurghuka (Wheeze)	5	1.80	0.40	1.40	77.78	0.55	0.24	5.72	<0.001
Vishushkasya (Dryness of mouth)	8	2.13	1.25	0.88	41.18	0.83	0.30	2.97	<0.01
Trishna(Thirst)	5	1.80	0.60	1.20	66.67	0.45	0.20	6.00	<0.001
Svarabheda (Hoarseness of voice)	3	1.33	1.00	0.33	25.00	0.58	0.33	1.00	>0.1

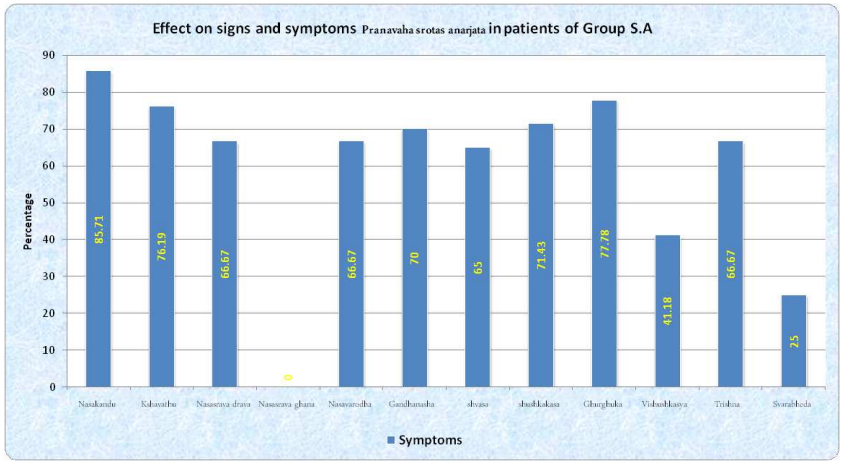


Table No.3-Effect on signs and symptoms of *Rasavaha srotas anurjata* in patients of Group R.A. (with graph)

Symptoms	*n*	Mean		Diff.	% of change	SD (±)	SE (±)	*t* value	*p* value
		BT	AT						
Tvagkandu (Itchy skin)	13	2.15	0.54	1.62	75.00	1.12	0.31	5.20	<0.001
Tvagraukshya (Dry skin)	6	1.83	0.33	1.50	81.82	0.84	0.34	4.39	<0.001
Kotha (Hives)	6	2.17	0.50	1.67	76.92	0.82	0.33	5.00	<0.001
Pidika (Rashes)	3	2.00	1.00	1.00	50.00	1.00	0.58	1.73	>0.1
Tvagragima (Erythema)	3	3.00	0.33	2.67	88.89	0.58	0.33	8.00	<0.001
Akshiraga (Red eyes)	21	2.19	0.33	1.86	84.78	0.57	0.13	14.85	<0.001
Akshikandu (Itchy eyes)	23	2.22	0.48	1.74	78.43	0.54	0.11	15.42	<0.001
Akshisrava (Watering of eyes)	23	2.09	0.48	1.61	77.08	0.72	0.15	10.68	<0.001
Akshishotha (Swelling of eyelids)	10	1.60	0.30	1.30	81.25	0.48	0.15	8.51	<0.001
Jvara (Fever)	11	1.09	0.00	1.09	100.00	0.30	0.09	12.00	<0.001

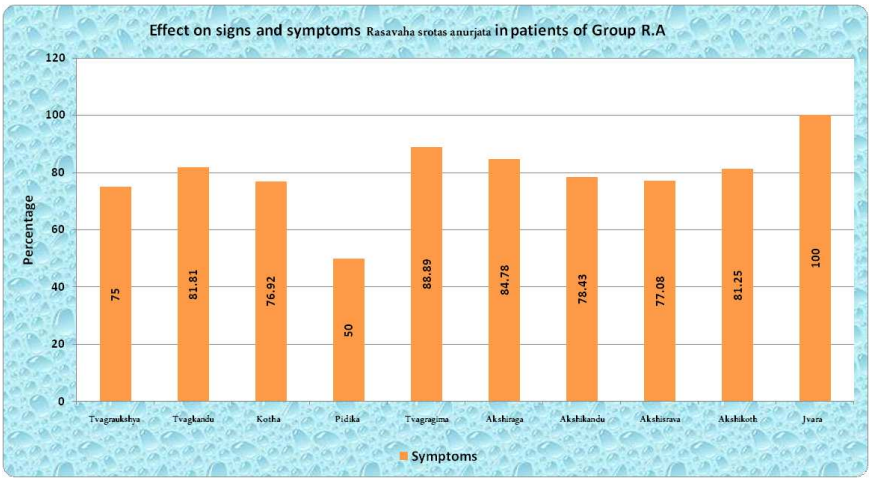


Table No.4-

Effect on signs and symptoms of *Rasavaha srotas anurjata* in patients of Group S.A. (with graph)

Symptoms	*n*	Mean		Diff.	% of change	SD (±)	SE (±)	*t* value	*p* value
		BT	AT						
Tvagkandu (Itchy skin)	27	2.37	0.52	1.85	78.13	0.82	0.16	11.76	<0.001
Tvagraukshya (Dry skin)	19	1.95	0.74	1.21	62.16	0.79	0.18	6.70	<0.001
Kotha (Hives)	18	2.33	0.50	1.83	78.57	0.92	0.22	8.42	<0.001
Pidika (Rashes)	9	2.44	0.67	1.78	72.73	0.67	0.22	8.00	<0.001
Tvagragima (Erythema)	10	2.60	0.40	2.20	84.62	0.92	0.29	7.57	<0.001
Akshiraga (Red eyes)	14	2.14	0.50	1.64	76.67	0.74	0.20	8.25	<0.001
Akshikandu (Itchy eyes)	16	1.81	0.25	1.56	86.21	0.89	0.22	7.01	<0.001
Akshisrava (Watering of eyes)	13	2.46	0.46	2.00	81.25	0.58	0.16	12.49	<0.001
Akshishotha (Swelling of eyelids)	9	2.22	0.33	1.89	85.00	0.78	0.26	7.25	<0.001
Jvara (Fever)	2	1.50	0.00	1.50	100.00	0.71	0.50	3.00	<0.01

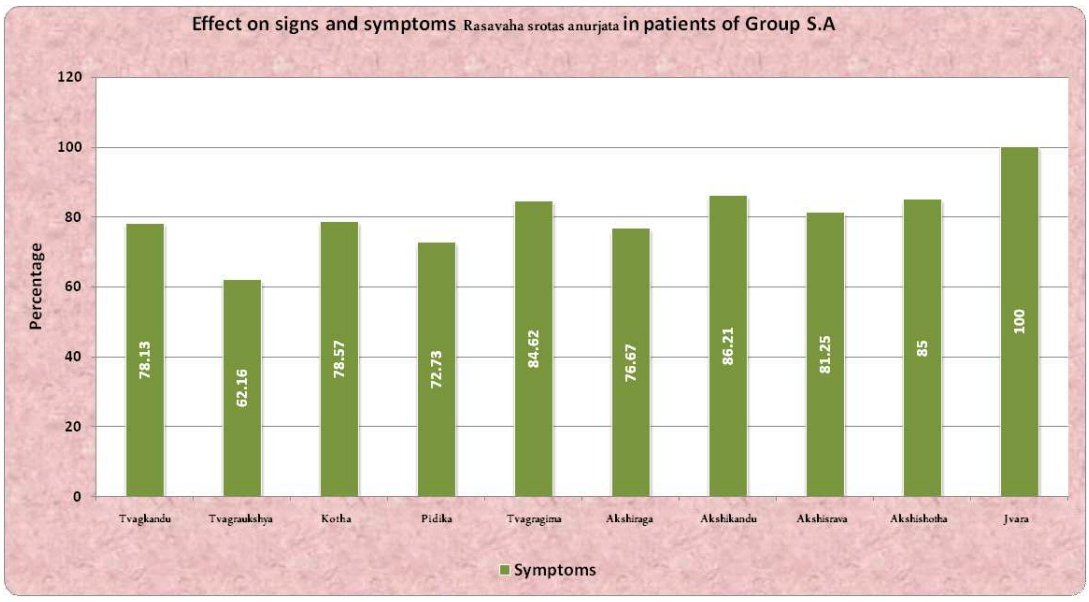


Table no.5- Effect on Haematological and Biochemical findings of patients of Group R.A.

Symptoms	*n*	Mean		Diff.	% of change	SD (±)	SE (±)	*t* value	*p* value
		BT	AT						
Hbgm%	30	13.92	14.01	0.09	0.67	1.51	0.28	0.34	>0.1
TLC	30	6816.67	6736.67	80.00	1.17	1282.08	234.07	0.34	>0.1
Eosinophils	30	4.00	2.83	1.17	29.17	2.88	0.53	2.22	<0.01
Basophils	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Neutrophil	30	59.80	64.53	4.73	7.92	7.02	1.28	3.69	<0.01
Lymphocytes	30	33.10	30.40	2.70	8.16	7.85	1.43	1.88	<0.01
Monocytes	30	2.60	2.23	0.37	14.10	0.85	0.16	2.36	<0.01
TEC	30	263.57	183.63	79.93	30.33	168.02	30.68	2.61	<0.01
ESR	30	14.67	10.77	3.90	26.59	13.56	2.48	1.57	<0.01
lgE	30	466.85	266.44	200.41	42.93	300.98	54.95	3.65	<0.01

Table No.6- Effect on Haematological and Biochemical findings of patients of Group S.A.

Symptoms	*n*	Mean		Diff.	% of change	SD (±)	SE (±)	*t* value	*p* value
		BT	AT						
Hbgm%	30	13.15	14.07	0.92	7.00	1.80	0.33	2.79	<0.01
TLC	30	6566.67	6216.67	350.00	5.33	1070.21	195.39	1.79	>0.1
Eosinophils	30	2.90	2.23	0.67	22.99	2.12	0.39	1.72	>0.1
Basophils	2	3.00	0.00	3.00	100.00	1.41	1.00	3.00	<0.01
Neutrophil	30	62.67	62.17	0.50	0.80	6.20	1.13	0.44	>0.1
Lymphocytes	30	31.80	32.03	0.23	0.73	7.22	1.32	0.18	>0.1
Monocytes	30	2.33	2.50	0.17	7.14	1.32	0.24	0.69	>0.1
TEC	30	185.80	168.17	17.63	9.49	192.74	35.19	0.50	>0.1
ESR	30	15.80	9.47	6.33	40.08	14.77	2.70	2.35	<0.01
lgE	30	396.81	250.54	146.27	36.86	195.11	35.62	4.11	<0.01

Maximum no. of patients of Pranavaha srotasanurjata were having *Kshavathu, Nasakandu, Nasasrava drava, Shvasa,Ghurghuka, Shushkakasa* and *Vishunkasya* in great severity followed by *Akshikandu, Akshiraga* and *Akshisrava* in association. Symptoms like *Nasasrava ghana, Nasavarodha, Gandhanasha, Trishna, Svarabheda* were traced in some of the patients. On the other hand Group S.A. with patients of rasavaha srotasanurjata primarily showed maximum abundance of *Tvagkandu, Tvagraukshya* and *Kotha* along with great association of again symptoms Akshikandu, Akshiraga and Akshisrava.

Kshavathu was encountered in maximum number i.e. 97% patients of Group R.A. and 40% patients of Group S.A. The highly significant relief ($p<0.001$) was seen in incidence as well as severity of both the Groups after the therapy of two months. The gain % was seen 76.36 and 76.19 in both the groups respectively.

Nasakandu was present in 93% patients of Group R.A. and 27% patients of Group S.A. After the treatment of two months severity and incidence were markedly reduced with the highly significant improvement ($p<0.001$) in Group R.A. and significant ($p<0.01$) in Group S.A. along with gain %age of 77.97 and 85.71respectively in both groups.

Nasasrava drava was found in 73% patients of group R.A. and 37% patients of Group S.A. A highly significant relief ($p<0.001$) was established in both the groups along with gain %age of 66.67 each.

Incidence of ***Shvasa*** was seen in great majority of patients in Group R.A. 70% and in small 33% of Group S.A. A highly significant recovery ($p<0.001$)was attained in the patients of both Groups along with gain %age of 73.53 in Group R.A and 65 in Group S.A.

Complaint of ***Shushkakasa*** was 53% in Group R.A and 13% in Group S.A before management. After therapy highly significant relief ($p<0.001$) was noted with gain %age of 70.97 in Group R.A. and 71.43 in Group S.A.

Mukhashosha was found in 53% of patients in Group R.A and 27% of patients in Group S.A. After two months of drug administration highly significant relief was observed in Group R.A. Relatively significant ($p<0.01$) recovery was seen in Group S.A. However 56% relief was seen in Group R.A. and 41.18% in Group S.A.

Incidence of ***Ghurghuraka*** in all the screened patients of anurjata was 37% in group R.A. and 17% in Group S.A. Highly significant result ($p<0.001$) was acquired in both the groups after treatment. Gain %age was seen 62.50 in Group R.A. and 77.78 in Group S.A.

Occurrence of ***Trishna*** was 37% in Group R.A. and 17% in Group S.A. In both the Groups highly significant progress was seen with gain in %age of 45.45 and 66.67 respectively.

Svarabheda is an important finding in Pranavaha srotasanurjata. Its incidence was 37% in Group R.A. and 10% in Group S.A. After two months course of therapy significant result ($p<0.1$) was achieved in group R.A. with gain percent of 50%. However insignificant ($p>0.1$) result was acquired in Group S.A. with gain percent of 25% only.

Gandhanasha was found in 33% in Group R.A. and 20% in Group S. A. Highly significant relief (0.001) with gain percent 61.54 was achieved in Group R.A. However Group S.A. showed a significant recovery (0.01) with gain percent of 70 in Group S.A.

Occurrence of ***Nasavarodha*** was traced in 20% in group R.A. and 10% in group S.A. Highly significant relief was seen in Group R.A. with gain percent of 77.78. Group S.A. showed significant progress with %age relief of 66.67.

Nasasrava ghana was found positive only in Group R.A. i.e.10% only. After completion of drug course highly significant recovery was seen with gain percent of 66.67 in the acquired group.

Tvagkandu was found in maximum no. of skin allergy patients of Group S.A.i.e.90% and 43% in Group R.A. After administration of trial drug for two months highly significant recession ($p<0.001$) was seen in both groups with gain in percent of 78.13 of group S.A. and 75 of Group R.A.

Incidence of ***Tvagraukshya*** was 2nd leading finding in the patients of skin allergy group. It was 63% in Group S.A. and 20% in Group R.A.

Highly significant relief (p<0.001) was attained in both the groups with %age relief of 62.16 and 81.82 respectively.

Kotha as a clinical feature was traced 60% in Group S.A. and 20% in Group R.A. Both the groups showed highly significant recovery (p<0.001) in incidence and severity after completion of therapy. %age relief was seen 78.57 and 76.92 respectively in both the groups.

In the entire group of anurjata as a whole ***akshikandu*** was the most prevalent symptom in both the groups. It was found in relatively great abundance in Respiratory allergy group. Occurrence was 77% in Group R.A and 53% in Group S.A. Highly significant result was obtained in both groups with gain percent 78.43 and 86.21 respectively.

Akshiraga was traced in 70%patients of Group R.A. and 47% in group S.A. Both the groups showed highly significant relief in the prognosis with %age relief of 84.78 in Group R.A. and 76.67 in Group S.A.

In association with above Akshi findings ***Akshisrava*** is another symptom that was found in 77% of Group R.A. and 43% of Group S.A. Highly significant relief was attained by both the groups with gain in percent of 77.08 in Group R.A. and 81.25 in Group S.A.

Tvagragima was screened in 33% of Group S.A. and 10% of Group R.A. Both the groups achieved highly significant relief with percent gain of 84.62 and 88.89 respectively.

Incidence of ***Akshishotha*** was seen in 30% in Group S.A. and 33% in Group R.A. After administration of drug for two months highly significant recession was shown by both the groups with relief in %age of 85 and 81.25 respectively.

Pidika was found in 30% patients of Group S.A. and 10% in Group R.A. Highly significant result was achieved by Group S.A. with gain in percent of 72.73 where as Insignificant recovery was made by Group R.A. with 50% gain.

Jvara was seen mostly in the patients of Respiratory allergy group. It was 37% in Group R.A. and 7% in Group S.A. Highly significant reduction was seen in Group R.A. with percent gain of 100%. On the other hand insignificant result was shown by the Group S.A. with %age gain of 100.

Significant increase in **Hbgm%** of Group S.A. (7.00%) indicates about the haemopoietic properties of the trial drug by improving the quality of rasa dhatu. Probably this was achieved by its ama pacaka and srotoshodhaka properties of punkaramula and punarnava by virtue of which dhatvagni mandya of rasa dhatu is cured , srotas are cleared of impurities, slug etc. Purified state of rasa dhatu and respective abode results in better circulation and therefore raktadhatu formation. Significant increase in Neutrophils in Group R.A.(7.92%) decrease in lymphocytes in Group R.A. (8.16%) and significant decrease in monocytes in the same group is suggestive of its immunomodulatory activity in the body.

Eosinophils are the chief cellular component in the inflammatory reactions of the body. **Significant reduction of eosinophils** (29.17%) and TEC (30.33%) in Group R.A. indicates about its anti-inflammatory and anti-allergic properties. Significant reduction of ESR in both groups (26.59%in Group R.A. and 40.08% in Group S.A.) justifies its anti-inflammatory activity. Significant reduction of IgE in both groups (42.93% Group R.A. and 36.86% Group S.A.) is indicative of its potent anti-allergic and immunomodulator activity.

Discussion

Anurjata is an un-precedential disease in Ayurveda but its incidence and phenomenon is quoted by great acaryas in various references at number of places. Example of jvara originated by odor of flowers simply indicates about allergy to pollens and strong fragrances. Anurjata is a hereditary disorder introduced by the terms of kulaja and sahaja and key role is played by bija dona that very evidently shows its relevance to chromosomal and genetic disorders. Also concept of dehaprakriti seeks significant attention here. Persons of dvandvajaprakriti with vata predominance are more susceptible to anurjata being similar in attributes of vatadona to ama vina i.eashukari, muhushcari.

Deficiency of urjata is important milestone in the pathogenesis of anurjata that is carried by number of anurjaskara factors. Latter deplete urja

content by direct or indirect invasion in body. These are described in the samhitas by the terms like asatmya, apathya and produce immediate or delayed anurjaskara effects in the body. ***Specific environmental anurjaskara factors like raja, dhuma, vata etc. are also mentioned in the etiology of pratishyaya andshvasa. These affect immediately to a person already sensitized by ama dona and amavina and produce type1 hypersensitivity reactions.*** On the contrary urjaskara factors promote urja, bala, ojas, vyadhiknamattva of a person and result in decreased incidence of disease or can reduce the severity of preexisting disease by local and systemic effect. This can be imparted by use of rasayana drugs and a variety of drugs mentioned in ganas like jivaniya balya brimhana etc. It seems that these drugs act on nutritional as well as pharmacodynamics.

Among other causative factors mention of duni vina, gara vina and asatmyaja vyadhi is noteworthy here. Former two elements might be produced by the toxic effects of allopathic drugs used indiscriminate use of allopathic drugs in the current scenario. These remain in a dormant state in the body and generally do not manifest themselves. The contact with an anurjaskara factors like raja, dhuma etc. works like a catalyst by enhancing their potency and results in the diseases of anurjata.

Ama is produced as a result of jatharagni, bhutagni and dhatvagni mandya. When this ama rasa becomes more subtle and exceedingly pathogenic to penetrate deep into the tissues then it is termed as amavina. This is tridona prakopaka hetu. Due to bhutagnimandya,vijatiya ahara rasa is not converted into sajatiya so body tissues start rejecting them. These suknma ahara rasa molecules behave like antigen and cause diseases like anaphylaxis, allergic skin diseases etc.

Among the *anurjatajanya* diseases of pranavaha srotas, rasavaha srotas and annavaha srotas the epidemiological graph of pratishyaya, shvasa, vicarcika, shitapitta and food allergy versus viruddhahara is quite high and generating interest among health professionals of all the health systems. Being anurjatajanya all these diseases are supposed to be vatolvana sannipataja followed by kapha and pitta. Also pitta sthanadunti is seen in all the diseases of anurjata.

Above factors reflect the need of a therapeutic measure that can act multidimensional with a safety profile. The drugs as an anti-allergic drug must have the properties of abhisamskara (prophylactic- rasayanaeffect), vinaghna (Anti toxic), langhana (Light food), agni dipana (Stimulate digestive fire), ama pacana (digestion of the ama),shodhana (cleansing the channels), systemic (lakshnika cure and local immunity booster) as well as generalized effect (General immunity promoter.

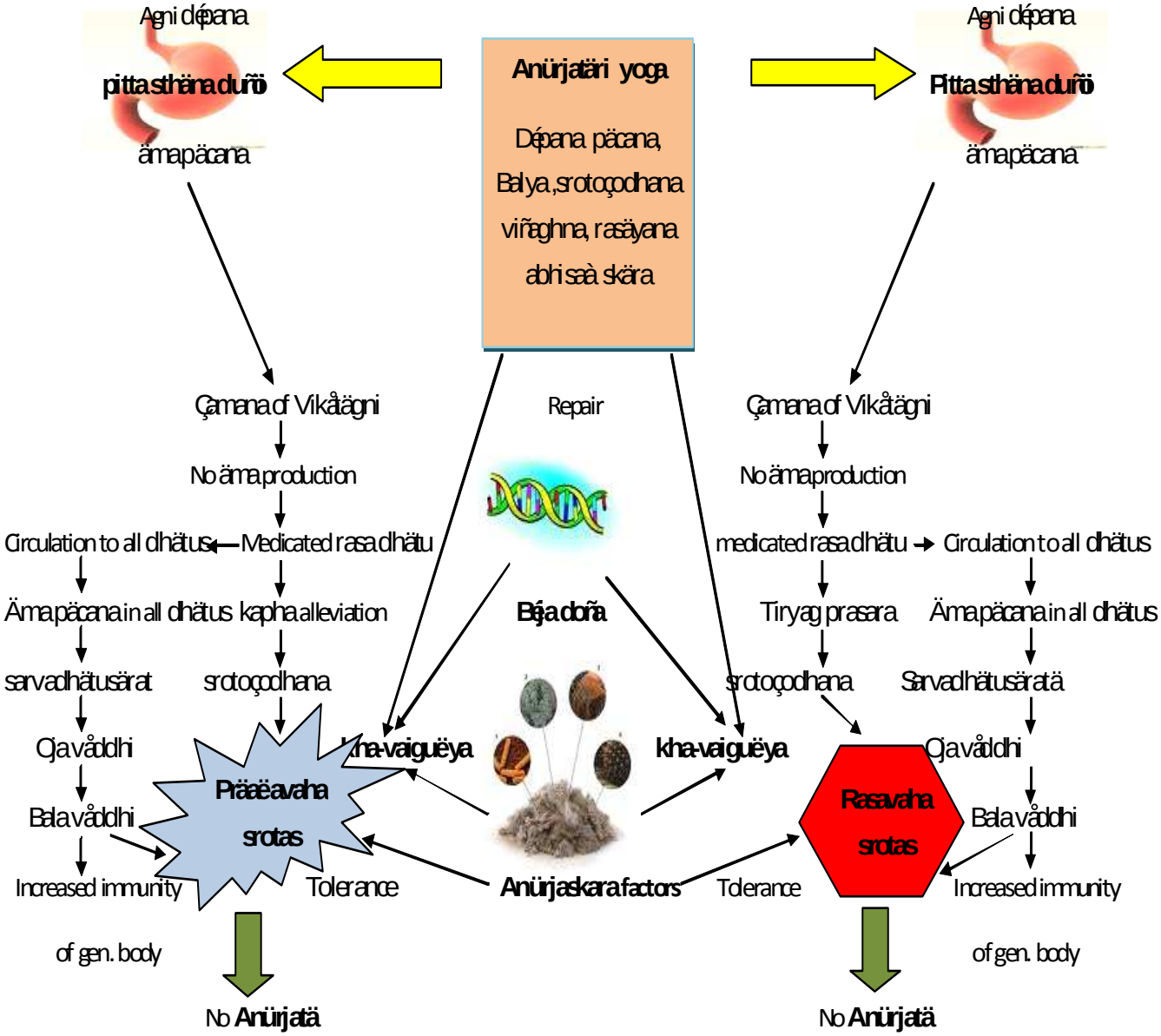
This drug dependent mode of disease and adverse effects of the modern drugs draw an attention to explore this disease in Ayurveda with a better and safe therapeutic measure. ***As in modern medicine common basic medicines like anti histamines are prescribed in both the types of allergy due to common course of disease, the same way having common pathogenesis of ama predisposition and precipitation in the both types of anurjata, administration of a drug formulation with vinaghna properties to both type of patients should serve an equally good therapeutic measure.*** With this consideration, Anurjatari yoga a drug formulation of kalpa sthana of Sushruta samhita serves all the purposes of an anti-allergic drug carrying all the above mentioned properties. The efficacy of drug on various parameters is being discussed in clinical discussion.

Discussion regarding possible mode of action of Anurjatari yoga

Anurjatari yoga consists of seven drugs namely *sindhuvaraka, punkaramula punarnava, shirina, vidang, kuravaka* and *manashila* purified by *ardraka svarasa.*

For a drug to act as anti-allergic it must carry the properties of *dipana pacana, rasayana, vinaghna, srotoshodhaka, shothahara, shvasahara, kasahara, kandughna* and *tvacya*. All the above drugs are well established for the requisite properties and this is justified by its inclusion in the kalpa sthana of Sushruta samhita as anti-toxic formulation. Their mechanism of action in anurjata is as shown in the following flow chart:

Flow chart as enclosed with tables



These therapeutic properties are further supported by the various researches on these drugs.

Sindhuvaraka - Anti-histaminic, anti-inflammatory and anti-asthmatic

Punkaramula - Anti-allergic, anti-asthmatic

Punarnava - Immunomodulatory activity, haematinic effect

Shirina - Anti-histaminic, anti-inflammatory, anti-asthmatic

Vidang - Anti oxidant, anti-inflammatory, anti pyretic

Kuravaka - Diuretic, anti-inflammatory

Ardraka - Anti allergic, anti-inflammatory, anti-oxidant, detoxifying.

Their above mentioned therapeutic effects are well validated by the various researches mentioned in the drug review.

Conclusion:

Statistical evaluation of overall subjective parameters shows highly significant result in both groups. As far as laboratory findings are concerned results are relatively more significant in Group R. A. as compared to Group S.A. Therefore the trial drug shows promising anti-allergic, anti-inflammatory and immunomodulatory activity in all the patients of anurjata. Severity and Incidence of symptoms were switched over to the mild mode of the disease after administration of trial drug for two months. Therefore it is concluded that Anurjatari yoga is efficacious in alleviating and reducing the morbidity of anurjata and *Anurjatari yoga*, drug of *vinaghna* effect is clinically established as an anti-allergic and a safe alternative medicine as no adverse effect was observed during the study period of trial drug. Almost equal efficacy was observed in both the groups.

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Clinical Study

A Comparative Clinical Study Of *Dashamoolajeeraka Kashaya* And *Panchakola Kashaya* In *Sutika Paricharya*

Dr. G. M. Kavya

Abstract –

Woman in this present era is struggling between increased responsibilities of her family and profession. She does not have time for herself. There is more incidence of back ache, loss of strength, feeling of weakness and even psychological instability seen today. To fulfill her responsibilities successfully, she has to be fit and fine. There is more necessity of *Paricharya* to such a busy scheduled new Mother.

The present study was carried out in 20 selected *Sutika* from IPD sections of *Prasooti tantra* and *stree roga*. Department, SDM *Ayurveda* Hospital Udupi, Selected patients will be randomly divided into 2 equal groups. For Group A Patients, 90 ml of *Dashamoolajeeraka kashaya* will be given and for Group B Patients, 90 ml of *Panchakola kashaya* will be given, thrice a day for a period of one month from the day 1 after delivery. All of them were followed up for next 2 months. Statistical significance of the study has been incorporated. Conclusion drawn from various section of the work is given as Both *Dashamoolajeeraka kashaya* and *Panchakola kashaya* are equally potent and can be advised in the *Sutika Paricharya*.

Key words: *Dashamoola jeeraka Kashaya*, *Panchakola Kashaya*, Puerperium. *Sutika Paricharya*.

सारांश –

आधुनिक युग मे महिलाओं को प्रसव के बाद अपनी देखभाल के लिए समय नही है। ज्यादातर माताओं को कमर दर्द, थकान, कमजोरी कि शिकायत रहती है। घर और बाहर का कामकाज संभालने के लिए महिलाओं का स्वास्थ्य ठीक होना बहुत जरूरी है।

व्यस्त जीवन चर्या के कारण प्रसव के बाद महिलाओं को सूतिका परिचर्या का पालन करना आवश्यक है। इस अनुसंधान मे 20 सूतिकाओं को 2 वर्गो मे विभाजित किया गया है। वर्ग ए मे दशमूलजीरक कषाय और वर्ग बी मे पंचकोल कषाय 90 मिलि उस दिन मे 3 बार दिया गया है। इस अनुसंधान के नतीजों के आधार पर दोनो कषाय सूतिका में प्रभावकारी सिद्ध हुए।

*Lecturer, Department of Prasuti tantra and Stree roga, Ashwani Ayurvedic Medical College & Hospital, Tumkur, Karnataka

Clinical Study

A Comparative Clinical Study Of *Dashamoolajeeraka Kashaya* And *Panchakola Kashaya* In *Sutika Paricharya*

Dr. G. M. Kavya

Introduction

New mothers may heave a sigh of relief after the nine months of pregnancy and a stressful delivery, there are many changes which have happened to pregnant lady during her antenatal period and even more are happening in post delivery period.

The body demand relaxation and rejuvenation to the normal stature. In fact it is the womanly wisdom and right to bring back the body Beautiful. Delivering a baby is tiring to say the least. The mother's body is weary and needs to recuperate. This wear and tear is further added by the swings of hormone levels which are more in the first week post delivery. The baby may be keeping her awake all the time. Her breasts feel sore, stitches are hurting. Many things add up to make her feel down.

Ayurveda an ancient science gives importance to *Swasthya rakshana* and *Vikara Prashamana* by explaining various procedures like *Dinacharya, Rutucharya, Sadvrutta* for maintaining the physical and mental health and preventing the disease. *Acharyas* were still ahead in this field of science pertaining to *Prasoothi Tantra*. They have also given guidelines for the management of *Prasootha stree*. *Acharya Kashyapa* narrating stage of *Prasava* says, it is like that her one foot is situated in this *Loka* and other in *Yama Loka*. The lady after such a difficult process of *Prasava* must be advised certain mode of life or a *Paricharya*.

In this period *Dashamoola, Jeeraka* and *Panchakola* are given importance for their actions like *Garbhashaya Shodhaka, Deepana, Pachana, Vatanulomana, Shoola Prashamana* & *Sthanya Janana*. Considering above factors this study is being selected with a hope to provide better results through the time tested Ayurvedic formulations like *Dashamoolajeeraka Kashaya* & *Panchakola Kashaya* in *Sutika Paricharya*.

First and foremost complete documentation regarding *Sutika* was seen in *samhita kala*. Description regarding *soothika paribhasha, kaala, paricharya* is available in all the *Grantha's* of *Bruhatrayee*[1, 2, 3] *and laghutrayee*.

Elaborate explanation of *Sutika paricharya* according to *desha* and *jaati* is found in *kashyapa samhita*[4]. A list of *Sutika vyadhis* are also explained with treatment[5, 6].

In *Bhela Samhita, Baishajya rathnavali, Harita samhita* also a brief explanation about *Sutika paricharya* with *chikitsa* of *Sutika roga* is available.

Description regarding *Dashmoola kwatha* especially in *Sutika* is available in *Kashyapa Samhita*[4], *Sharangadhara Samhita, Yogarathnakara, Bhaishajya Rathnavali* and also in *Bhava Prakasha*. Usage and indication of *Jeeraka* in *Sutika* is mentioned in *Bhavaprakasha* and *Bruhath Nighantu Rathnakara*. Reference regarding indication of *Panchakola* in *Suti*ka is available in *Bruhatrayee*.

Aims & Objectives Of Study

1. A detailed review of the Literature for the description of *soothika, soothika kala, Sutika samanya* and *vishista Paricharya, pathya* and *apathya* with modren description of puerperium.
2. A Conceptual study on *Dashamoola jeeraka kashaya* and *Panchakola Kashaya*.
3. To evaluate and Compare the efficacy of *Dashamoola jeeraka Kashaya & Panchakola kashaya* in *Sutika*.

Methodology

Research approach:

It is a clinical study. Where in a single blind comparative clinical study design is adopted with Pre-test & Post-test evaluations. On the conceptual

basis the objective was to develop an *Ayurvedic* understanding for *Sutika Paricharya* and comparison of effect of two different *kashaya* preparations in *Sutika paricharya*.

Source of Data

A Minimum of 20 *Sutika* will be selected for study from IPD of S.D.M. *Ayurvedic* hospital Udupi.

Plan of the study

It is a single blind comparative clinical study with pretest and post test design, where in 20 patients will be selected. The selected patients will be randomly divided into 2 equal groups. A special Performa will be prepared considering all the points pertaining to the history taking, physical examination, laboratory investigations as mentioned in our classics and allied sciences. The parameters of signs and symptoms will be scored on the basis of standard method of statistical analysis. (Using paired & unpaired "t" test)

Inclusion Criteria

Ø Patients within the age group of 18 to 35yrs.

Ø Both Primi para and Multipara are taken.

Ø Patients with full term normal vaginal delivery, assisted deliveries like forceps and ventous extraction.

Exclusion Criteria

Ø Patients with Systemic disorders like Diabetes Mellitus, Hypertension, Tuberculosis etc.

Ø Patients with complications like PPH, IUD, Retention of placenta, Subinvolution, Sepsis etc.

Ø Patients with Gynecological Complications like Huge Fibroid or Ovarian Cyst.

Ø Patients with Malnutrition and severe anaemia.

Ø Patients with LSCS.

Drug & Dose - For Group A Patients- 90 ml of *Dashamoolajeeraka kashaya* will be given, thrice a day. For Group B Patients - 90 ml of *Panchakola kashaya* will be given, thrice a day. Medicine will be given for one month period from delivery.

Follow up: Patients will be asked to follow up Once in a month for 2 months.

Assessment Criteria The patients were assessed on the basis of subjective and objective parameters before and after the treatment. Subjective parameters Graded as:

Appetite:

No Appetite – 0

Mild Appetite – 1

Moderate Appetite – 2

Good Appetite – 3

Bowel Habits:

Not Passed – 0

Passed – 1

Micturation:

Not Passed – 0

Once a day – 1

2-3 Times a day – 2

4-5 Times a day - 3

Abdominal Pain:

No Pain – 0

Mild Pain – 1

Moderate Pain – 2

Severe Pain – 3

Lactation:

Inadequate – 0

Adequate – 1

Excess - 2

Lochial Discharge:

Amount of Bleeding:

0 - ½ pad soaked /day – 0

1-2 Pads soaked/day – 1

3 Pads soaked a day –2

4 Pads soaked a day –3

5 Pads soaked a day –4

Color:

Bright Red – 1

Reddish brown - 2

Yellowish or pale white – 3

Any other – 4

Smell:

No Smell - 0

Normal Fishy Smell – 1

Foul Smell – 2

Back ache:

No Back ache – 0

Mild – 1

Moderate – 2

Severe – 3

Episiotomy Wound Healing:

0 – Healthy: No Tenderness, No Redness, No Swelling.

1 – Mild: Tenderness +, Redness +, Swelling+.

2 – Moderate: Tenderness ++, Redness ++, Swelling ++.

3 – Severe: Tenderness+++, Redness+++, Swelling, Gapping+, Secretions+, Wound Dehiscence+

Strength:

Reduced (Bed ridden) – 0

Moderate (Able to move around) - 1

Good (Able to do all activity) – 2

Investigations

Blood – Hb%

Urine routine – Albumin, Sugar and Microscopic. - If necessary.

Results

Table no –1 showing Effect on Involution of Uterus in Both Groups

Groups	BT – AT Mean	d	't' test				
			S.D	S.E M	t	P	df
Group A	3.8	-1.8	1.549	0490	2.072	0.053	18
Group B	5.6		2.452	0.775			

Table no –2 showing Effect on Amount of Lochial Discharge in Both Groups

Groups	BT – AT Mean	d	't' test				
			S.D	S.E M	t	P	df
Group A	1.000	0.400	0.483	0.153	0.000	1.000	18
Group B	0.600		0.675	0.213			

Table no –3 showing Effect on Color of Lochial Discharge in Both Groups

Groups	BT – AT Mean	d	't' test				
			S.D	S.E M	t	P	df
Group A	0.700	0.100	0.483	0.153	0.325	0.749	18
Group B	0.600		0.843	0.267			

Table no –4 showing Effect of Odour in Lochial Discharge in Both Groups

Groups	BT – AT Mean	d	't' test				
			S.D	S.E M	t	P	df
Group A	0.000	-0.400	0.516	0.163	0.447	0.660	18
Group B	0.400		0.483	0.153			

Table no –5 showing Effect on Episiotomy Wound Healing in Both Groups

Groups	BT – AT Mean	d	't' test				
			S.D	S.E M	t	P	df
Group A	1.7	0.6	0.675	0.213	0.717	0.482	18
Group B	1.1		0.568	0.180			

Table no- 6 showing Effect on Abdominal Pain in Both Groups

Groups	BT – AT Mean	d	't' test				
			S.D	S.E M	t	P	df
Group A	1.900	0.900	0.000	0.000	0.000	1.000	18
Group B	1.000		0.000	0.000			

Table no –7 showing Effect on Appetite in both Groups

Groups	BT – AT Mean	d	't' test				
			S.D	S.E M	t	P	df
Group A	1.200	0.400	0.707	0.224	0.000	1.000	18
Group B	1.600		0.707	0.224			

The difference in the mean values of the two groups is not enough to reject the possibility that the difference is due to random sampling variability. There is not a statistically significant difference between the groups.

Discussion

Dashamoola even though *tridoshahara* considered as best *vatahara,* the *vatanulomana* property is very much needed here for the proper excretion of mala, thus preventing the most common problem of constipation in puerperial women and even favors' excretion of *sashesha doshas* from *garbhashaya. Panchakola* considered as best *deepana pachana* in its action. *Agni vardana* property is very much needed in *Sutika* and is the first and the foremost aspect of this *paricharya.* The *panchakola* is the drug of choice in *Sutika*, It is beneficial in all the form of *kashaya kalpana.* Either by giving with *sneha pana* or with *yavagu pana* or with *ushna gudodaka* or in the *kashaya* form the drug will do miracles in *Sutika*.

Involution of Uterus - Good contraction of the uterus after delivery, followed by regular involution, is one of the significant changes in the puerperial women. Here the process of involution has occurred in normal pace in both the groups. *Panchakola* and *Dashamoolajeeraka kashaya* are having *teekshna ushna garbhashaya shodhaka, garbhashaya sankochaka* property, favored the

process of involution and made the uterus a completely a pelvic organ. This involution process is better in the Group B compared to Group A, even though both the groups have succeeded in proper uterine involution.

Lochial Discharge - Early in the puerperium, sloughing of decidual tissue results in a vaginal discharge of variable quantity is termed as lochia. Conventional obstetrical wisdom has for many years taught that lochia lasted for approximately 2 weeks after delivery.

Both the treatment groups showed very good result in normalizing the lochial discharges including all the sub-parameters. This desired positive result might be due to the *teekshna, ushna guna, katurasa, ushna veerya, vatanulomana, garbhashaya sanckochaka, garbhashaya shodhaka* properties of the drugs used in the treatment groups. Here there is better results in Group A compared to group B both in amount and color of lochia and in terms of odour of the discharge Group B showed better result compared to group A.

Episiotomy wound healing - The episiotomy taken in order to facilitate the second stage of labour, needs proper and complete healing in the postnatal period so as to make the perineum strong and healthy. Both the study groups have succeeded in healing the episitomy wound of the puerperium. The *deepana, pachana, vranaropana, shothahara, sandhaneya, vedanasthapana* and *tridoshara* properties in both the groups kept the wound healthy and made to heal faster. Here also the Group A is little ahead compared to group B.

Abdominal Pain - In primiparas the puerperal uterus tends to remain tonically contracted. Particularly in multiparas, the uterus often contracts vigorously at intervals, giving rise to afterpains. Even the desired effect is shown in both the study groups with reduction in the abdominal pain of the puerperal lady. The group A with *Dashamoolajeeraka kashaya* having all the good properties like *vatahara, shoolahara, vedana sthapana, grahi, balya, dhatu poshaka* etc. showed better result compared to group B.

Appetite - In the study most of patients presented with reduced appetite before treament, There is marked improvement in the appetite of the patients in both the groups. This desired effect is due to *deepachana, pachana* properties of the drugs used. Even the drugs have *rochana, vatanulomana, grahi* etc properties. Better result seen in Group B, compared to Group A.

Bowel Habits - Both the groups showed very good result in regularizing the bowel habits. The Group A with *Dashamoolajeeraka kashaya* showed much better result compared to Group B with *Panchakola Kashaya. Dashamoola* is having a good *vatanulomana* property, resulted in regular, non constipated easy bowel habits.

Micturation - Both the treatment groups showed satisfying result along normal diuretic action in the first few days of the puerperium. Both the groups showed good result. The micturation has been regularized in all the patients. There is no incidence of any sort of infection in any of the patients in the study. The Group A with *Dashamoolajeeraka kashaya* having *gokshura, shyonaka* etc important ingredients with *mutrala, shophara, bastirogahara* property respectively, might be the cause for showing better result compared to Group B.

Lactation – Establishment of lactation is one of the important measures in the management of puerperium. Desired results are found in both the groups with adequate lactation. The drugs by increasing *deepana, pachana* activity, will definitely increase the general condition of the mother. In the Study group with the additional drug being *jeeraka* with *sthyna janaka* property also adds the special effect. The study group with *Panchakola kashaya* showed very good result and better result compared to group A.

Back Ache – Incidence of backache in the women after delivery is one of the most common problems today. The musculoskeletal system has undergone much adaptation during the pregnancy period due to the changing position of the gravid uterus. Even there is much wear and tear during the process of labour and delivery the significant effect has been shown in both the study groups. The *dashamoolajeeraka kashaya* with special properties like *vatahara, vedanasthapana, shula prashamana, dhatu poshana, balya, rasayana* etc properties showed very good result compared to group B.

Abdominal Wall Thickness – The course of antenatal period, has contributed some amount of deposition of adipose tissues over the abdomen, back and hips of the pregnant women with the due increase of body weight of around 12 to 15 kg. . The drugs in the treatment groups were selected with the intension of reducing the abdominal fat of the postnatal woman. But the study showed negative results, there is no such property in the medications given so that it will reduce the abdominal wall thickness of the mother. This might be due to the lack of *karshana* or *lekhana* properties in the drugs given. Instead these drugs were having *dhatu poshana, rasayana* and *balya* properties.

Strength - Strength is one of the subjective criteria, after the process of strenuous labour, around 250ml of blood loss, mental stress, emotional variations etc during labour, the new mother definitely will experience loss of strength or weakness or debility. The study group showed good results, this might be due to the properties like *tridosha hara, deepana, pachana, dhatuposhana, hrudya, medhya, balya* etc of the dashamoolajeeraka and panchakola kashaya, and both the groups showed equally good results.

Conclusion

Ø Various procedure followed including diet and lifestyle for the purpose rejuvenation of the women itself is *Sutika paricharya*. It is the process of rejuvenation done for the purpose of protection of women's health. It is the *paricharya* followed in order to protect herself and her infant too.

Ø *Dashamoolajeeraka Kashaya* and *Panchakola kashaya* given in *Sutika* is not only to prevent her from diseases but also to get back all her prepregnancy energy and stamina.

Ø The very definition of *Sutika* finds relevance with the definition of puerperium that after placental expulsion only the lady can be called as puerpura. Regarding the duration of *Sutika* also there is similarity that both sciences accept six weeks of stipulated regimen to be followed. Even the list of complication or disease by not following proper *paricharya* is also almost the same.

Ø The study has shown fruitful results over increasing appetite, clears the passage of bowel, micturation, and vaginal discharges. Helps in proper involution of the uterus, prevents abdominal pain. Relieves back ache, gives energy and strength. Ensures proper episiotomy healing. In spite of all benefits to *Sutika*, there is adequate lactation beneficial for the proper growth and development of the newborn.

Ø Further evaluation of the action of *kashayas* for showing negative effect in reducing abdominal wall thickness, whether due to lack of any *karshana* or *lekhana* properties in drugs used or due to lacunae of not following complete *paricharya,* or medications must have been administered for still more number of days.

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Clinical Study

A Comparative study on Anti-diabetic effect of *Chakramarda ghanvati* and *Madhumehari churna* w.s.r. to *Madhumeha*

*Dr K Nagar, **Dr A Rammurthy, ***Dr Bidhan Mahajon

Abstract:

Diabetes mellitus is a growing health hazard in developing countries and it has grabbed the attention of health community all over the world. *Ayurveda* has a lot to offer in the management of *Madhumeha*. The *Chakramarda* (*Cassia tora* Linn) of Caesalpiniaceae family have role in *Madhumeha*. This study was done to evaluate the role of *Chakramardaghanvati* in comparison to *Madhumeharichurna* in the management of *Madhumeha* among 30 patients (15 in group A & 15 in group B) fulfilling the diagnostic criteria of Diabetes mellitus reporting from O.P.D of *Arogyashala* N.I.A Jaipur. The entire sample was selected randomly on the basis of careful history taking, examination and investigations. Pre and post-test design was planned and they were asked to take above said medicine twice daily before meals. It was found that *Chakramardaghanvati* was more effective in relieving the symptoms of diabetes, improving lipid profile and in improvement of physiological parameters but it was less effective than *Madhumehari churna* for lowering blood sugar.

Key words: Diabetes mellitus, *Chakramarda ghanvati, Madhumeharichurna*.

सारांश-

मधुमेह विकासशील देशों की बढ़ती हुई स्वास्थ्य समस्या है। और यह विश्व के स्वास्थ्य संगठनों का ध्यान अपनी और आकर्षित कर रही है। आयुर्वेद में मधुमेह रोग की चिकित्सा वर्णित है। चक्रमर्द Caesalpiniaceae द्रव्य का प्रमेहघ्न कर्म वर्णित है। इस अध्ययन में चक्रमर्द के साथ मधुमेहारी चूर्ण का तुलनात्मक अध्ययन किया गया है। राष्ट्रीय आयुर्वेद संस्थान के बहिरङ्ग विभाग से 30 रोगियो में 15 -15 के 2 समूह बनाये गये, समूह-ए तथा समूह -बी। जोकि मधुमेह के निदानात्मक मापक मानदण्ड को पूरा करते हो। लिए गए है तथा इनका उचित इतिवृत्त। परीक्षण के पश्चात् चयन किया गया है। अध्ययन में चिकित्सा के पूर्व व पश्चात् परीक्षण किए गए तथा प्रातः सायं भोजन के पश्चात् औषध की व्यवस्था की गई। अध्ययन में पाया गया कि चक्रमर्द घनवटी मधुमेह के लक्षणों में, लिपिड प्रोफाइल कम करने में तथा शारीरिक मापदण्डों में सुधार में प्रभावकारी पाई गई परन्तु यह रक्त शर्करा को कम करने में मधुमेहारी चूर्ण की अपेक्षा अल्प प्रभावकारी रही है।

*M.D scholar, PG Deptt of Dravyaguna, NIA, Jaipur. **Assistant Professor, PG Deptt of Dravyaguna, NIA, Jaipur ***Ph.D. scholar, PG Deptt of Dravyaguna, NIA, Jaipur. ***Corresponding Author: Dr Bidhan Mahajon, Ph.D. scholar, PG Deptt of Dravyaguna, NIA, Jaipur. Email-bidhanmahajon@gmail.com, Mobile-8593038842

Clinical Study

A Comparative study on Anti-diabetic effect of *Chakramarda ghanvati* and *Madhumehari churna* w.s.r. to *Madhumeha*

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Introduction:

Diabetes mellitus is a growing health hazard in developing countries. As a psychosomatic disease and due to most dangerous complications, diabetes mellitus has grabbed the attention of health community all over the world[1-2]. Diabetes affects 285 million people worldwide and is a major risk factor for cardiovascular disease (CVD). Almost 70 per cent of those affected by diabetes worldwide lives in low and middle income countries. Each year, nearly four million deaths are attributable to diabetes[3]. Around 3.2 million deaths every year i.e. six deaths every minute are attributed to complications of diabetes. The rise in type-2 diabetes (which accounts for 85% – 95% of all cases in high income countries) can be attributed to an ageing population, increased sedentary lifestyle, dietary changes and increased urbanization[5-8]. South Asia has the greatest number of worldwide diabetes-related ischemic heart disease and stroke deaths. According to etiological factors, pathogenesis and clinical features, It is very clear that Diabetes mellitus is being correlated with *Madhumeha* in *Ayurveda* system of medicine. *Madhumeha* is one among the 20 sub-types of *pramehas* and is predominantly a *vatika* disease. *Ayurveda* has a lot to offer in the management of *Madhumeha*. Its *Dinacharya, Sadvritta* rules can have significant roles in controlling such condition as effective treatments are mentioned in our classical texts. Till now, there is no permanent cure from this disease hence this is classified as *yapyaroga* i.e. it can be kept under control with selective adequate medications only. Therefore, it is an urgent need to find out an efficacious remedy to co-fight the challenges of diabetes and reduce human sufferings. Ancient Indian medicines mention various plant and mineral formulation in the treatment of Diabetes mellitus. There are different combinations of these plant and mineral which can be given orally and for prolonged periods without adverse effect.

The selected plant *Chakramarda* (*Cassia tora* Linn.) is of Caesalpiniaceae family and it is easily available throughout the India. Studies on *Chakramarda* have reported its action on liver which brings about the hypoglycaemic effect by altering liver metabolism, which is the main organ, contributing 75% of the total body metabolism. Till now no clinical study is available of this drug regarding its medicinal effects in diabetes mellitus. Keeping all above factors into consideration the present study was under taken to evaluate the clinical efficacy of *Chakramarda ghanavati* on Diabetes mellitus in comparison to *Madhumehari churna*.

Material and methods:

A randomized, single-blind, two group, pre and post-test study was done in Outpatient Department and In patient Department of the Hospital, National Institute of Ayurveda, Jaipur. 30 patients were enrolled for present clinical study.The patients were selected randomly and divided into two groups, Group A and B. In group A, 15 registered patients were treated with *Cassia tora* Linn. *panchangaghanvati* for one month with dosage 2 *vati* (each of 500 mg) before meal, twice daily, with lukewarm water**.** In group B, 15 registered patients were treated with *Madhumeharichurna* (control group) of one month with dosage-5 gm, before meal twice daily. The patients were followed up after 15 days and one month, laboratory investigations were repeated after completion of treatment. Improvement and other effects were recorded. All the patients were diagnosed on the basis of clinical signs, symptomatology of *Madumeha,* Raised Body Mass Index, Various Investigations i.e. Fasting Blood Sugar, Post prandial Blood Sugar, Lipid Profile, routine urine microscopic examination. All investigations were done before starting and after completion of the treatment. After the completion of

the treatment, the results were assessed by observing improvement in signs and symptoms of disease on the basis of symptoms score, improvement in laboratory Investigation (i.e. reduce levels) on the basis of lab reports and clinical evaluation.

Result and Observation:

General observation: More than 80% of the patients were aged above 40 years and 70% were males. All of the patients under study were Hindus and married. About two third (76.66%) of the patients belonged to middle class followed by lower (16.67%) and poor (6.67%). By occupation maximum no of patients were government employee (43.33%) followed by business (23.33%), housewives (20%) and labour and retired (6.67%). Most of the patients in this study were educated (26.67%) followed by middle education (23.33%), higher secondary (20%) and graduate (16.67%) while 13.33% of the patients were illiterate. Only 16.67% (5 patients) revealed positive family history of diabetes.This data reveals that Type 2 diabetes mellitus has a strong genetic component. *Ayurveda* also mentioned about the *beejadosha* which is responsible for establishment of the *madhumeha*.

Changes in parameters: Regarding clinical signs and symptoms, most endorsed symptom ***Hast Pada and Sandhishoola*** (Pains in hands, feet and joints) was present in most (96.66%) of patients, followed by ***Aalasya*** (Lassitude) in 96.66% of patients (29), ***Kshudhaadhikya*** (Polyphagia) in 90% of patients (27) while ***Klama*** (Early fatigue) in 80% of patients (24), 96.66% was ***Pipasadhikya*** (Polydipsia), ***Avilmutrata*** (Turbidity in urine) was in 73.33% of patients (22), 86.66% patients were of ***Atisweda*** (Excess Sweating) and ***Mukha Shosha*** (Dryness of mouth) was in 73.33% of patients (22), ***Prabhotamutrata*** (Polyuria) Presented 96.66% of patients, ***Vibandha*** (Constipation) was in 86.66% of patients (26), ***Karpadataladaha*** (Burning sensation in hands & feet) 73.33% of patients (14), 83.33% patients were case of ***Aasyamadhuryam*** (Sweetness in mouth 25) and ***Karapada supti*** (Numbness in hands and feet) was in 66.66% of patient (20), while least no of patients (22) were observed in ***Jananang Kandu*** (Genital pruritus) 73.3%.

Effect treatment on Symptoms (Group A): Statistical analysis revealed that 54.44%, 72.73% , 73.68%, 80%, 86.36%, 71.43%, 70%, 76.19%, 75%, 70% and 75%, 82.35, 60% reduction was observed respectively in *Prabhutamutrata* (Polyuria), *Atisweda* (Sweating), *Mukhashosha* (Dryness of mouth), *Alasya* (Lassitude), *Vibandh* (Constipation) *Pipasadhikya* (Excess thirst), *Kshudhadhikya* (Polyphagia), *Hastapada* and *Sandhi*, *Shoola* (Pain in hands, feet & joints), *Klama* (Early fatigue), *Karapada taladaha* (Burning sensation in hands and feet), *Mukhamadhurya* (Sweetness in mouth), *Jananang Kandu* (Genital Pruritis), *Avilmutrata* All the data were statistically highly significant.

Table No.1: Showing pattern of symptomatic improvement after therapy in patients (Group-A)

S. No.	Symptoms	Mean Value			% of Relief	SD ±	SE ±	t	P	Result
		BT	AT	Diff.						
1.	*Prabhotamutrata* (Polyuria)	1.47	0.67	0.80	54.55	0.56	0.14	5.53	<0.001	H.S
2.	*Avilmutrata* (Turbidity in urine)	1.25	0.50	0.75	60.00	0.71	0.25	3.00	<0.01	S.
3.	*Pipasadhikya* (Excess thirst)	1.40	0.40	1.00	71.43	0.65	0.17	5.92	<0.001	H.S
4.	*Kshudhadhikya* (Polyphagia)	1.33	0.40	0.93	70.00	0.46	0.12	7.90	<0.001	H.S
5.	*Ati sweda* (Sweating)	1.47	0.40	1.07	72.73	0.46	0.12	9.03	<0.001	H.S

6.	Hastapada & Sandhi shoola (Pain in hands, feet & joints)	1.40	0.33	1.07	76.19	0.70	0.18	5.87	<0.001	H.S
7.	Klama (early fatigue)	1.33	0.33	1.00	75.00	0.38	0.10	10.25	<0.001	H.S
8.	Mukha shosha (Dryness of mouth)	1.27	0.33	0.93	73.68	0.46	0.12	7.90	<0.001	H.S
9.	Alasya (Lassitude)	1.33	0.27	1.07	80.00	0.26	0.07	16.00	<0.001	H.S
10.	Vibandh (Constipation)	1.47	0.20	1.27	86.36	0.70	0.18	6.97	<0.001	H.S
11.	Karapada tala daha (Burning sensation in hands and feet)	1.33	0.40	0.93	70.00	0.59	0.15	6.09	<0.001	H.S
12.	Mukhamadhurya (Sweetness in mouth)	1.14	0.29	0.86	75.00	0.36	0.10	8.83	<0.001	H.S
13	Jananang Kandu (Genital Pruritis)	1.31	0.23	1.08	82.35	0.49	0.14	7.87	<0.001	H.S
14	Kara pada tala supti (Numbness in hands & feet)	1.20	0.33	0.87	72.22	0.52	0.13	6.50	<0.001	H.S

Abbreviation: H.S-Highly significant. N.S- Not significant. S- significant.

Effect treatment on Symptoms (Group B): Statistical analysis reveals that 80.77%, 58.82%, 50%, 52.94% 61.11%, 66.67%, 50%, 71.43%, 80% and 60% reduction was observed respectively in *Prabhutamutrata* (Polyuria), *Pipasadhikya* (Excess thirst), *Atisweda* (Sweating), *Hastapada* and *Sandhishoola* (Pain in hands, feet & joints) *Klama* (Early fatigue), *Mukhashosha* (Dryness of mouth), *Alasya* (Lassitude), *Karapadataladaha* (Burning sensation in hands and feet), *Mukha-madhurya* (Sweetness in mouth), *Karapadatalasupti* (Numbness in hands & feet) which was statistically highly significant.), Other symptoms like *Kshudhadhikya* (Polyphagia), *Vibandh* (Constipation), *Jananangakandu* (Genital Pruritis), (showed changes in 50%, 40%, 38.46% respectively) which are statistically significant and 7.69% changes was observed in the symptoms *Avilmutrata* which was statistically not significant.

Table No.2: Showing pattern of symptomatic improvement after therapy in patients (Group B)

S. No.	Symptoms	Mean Value			% of Relief	SD ±	SE ±	t	P	Result
		BT	AT	Diff.						
1.	Prabhotamutrata (Polyuria)	1.73	0.33	1.40	80.77	0.91	0.24	5.96	<0.001	H.S
2.	Avilmutrata (Turbidity in urine)	1.30	1.20	0.10	7.69	0.32	0.10	1.00	>0.01	N.S
3.	Pipasadhikya (Excess thirst)	1.42	0.58	0.83	58.82	0.58	0.17	5.00	<0.001	H.S

4.	Kshudhadhikya (Polyphagia)	1.72	0.64	0.64	50.00	0.67	0.20	3.13	<0.01	S.
5.	Ati sweda (Sweating)	1.54	0.77	0.77	50.00	0.60	0.17	4.63	<0.001	H.S
6.	Hastapada & Sandhi shoola (Pain in hands, feet & joints)	1.42	0.67	0.75	52.94	0.62	0.18	4.18	<0.001	H.S
7.	Klama (early fatigue)	1.50	0.58	0.92	61.11	0.67	0.19	4.75	<0.001	H.S
8.	Mukha shosha (Dryness of mouth)	1.33	0.44	0.89	66.67	0.33	0.11	8.00	<0.001	H.S
9.	Alasya (Lassitude)	1.67	0.83	0.83	50.00	0.58	0.17	5.00	<0.001	H.S
10.	Vibandh (Constipation)	1.25	0.75	0.50	40.00	0.52	0.15	3.32	<0.01	S.
11.	Karapada tala daha (Burning sensation in hands and feet)	1.27	0.36	0.91	71.43	0.54	0.16	5.59	<0.001	H.S
12.	Mukhamadhurya (Sweetness in mouth)	1.11	0.22	0.89	80.00	0.33	0.11	8.00	<0.001	H.S
13	Jananang Kandu (Genital Pruritis)	1.30	0.80	0.50	38.46	0.53	0.17	3.00	<0.01	S.
14	Kara pada tala supti (Numbness in hands & feet)	1.50	0.60	0.90	60.00	0.32	0.10	9.00	<0.001	H.S

Abbreviation: H.S-Highly significant. N.S- Not significant. S- Significant.

Effects of therapy on various lab parameters

In (group A): In the clinical trial changes in the laboratory parameters showed that 14.27%, 23.33%, 75%, 45.70%, 22.32% and 34.22% reduction respectively in Fasting Blood Sugar, PPBS, Fasting Urine Sugar, ESR and LDL Triglycerides which were statistically highly significant. Other laboratory parameters Sugar, Hb, TLC and Cholesterol also reduced in 66.67%, 6.11%, 2.61% and 9.51% respectively. Significant reduction in the symptom Post Prandial Urine was also observed after therapy.

Table No-3: Showing pattern of changes in certain laboratory parameters in 15 patients after therapy (Group A)

S. No.	Lab Investigation	Mean Value			% of Relief	SD ±	SE ±	t	P	Result
		BT	AT	Diff.						
1.	FBS	156.69	134.33	22.36	14.27	18.82	4.86	4.60	<0.001	H.S
2.	PPBS	226.93	174.00	52.93	23.33	44.08	11.38	4.65	<0.001	H.S
3.	FUS	1.71	0.43	1.29	75	0.76	0.29	4.50	<0.001	H.S
4.	PPUS	2.14	0.71	1.43	66.67	0.98	0.37	3.87	<0.01	S.
5.	Hb gm%	12.55	13.32	0.77	6.11	0.75	0.19	3.98	<0.01	S.

6.	ESR	29.47	16.00	13.47	45.70	8.50	2.19	6.14	<0.001	H.S
7.	TLC	8680	8906	226.67	2.61	328.34	84.78	2.67	<0.01	S.
8.	Lipid Profile									
	1.Cholesterol	187.13	169.33	17.80	9.51	22.48	5.80	3.07	<0.01	S.
	2.HDL	69.33	69.33	0.00	0.00	6.05	1.56	0.00	N.D	N.D
	3.LDL	165.20	128.33	36.87	22.32	29.16	7.53	4.90	<0.001	H.S
	4. Triglycerides	163.67	107.67	56.00	34.22	27.98	7.22	7.75	<0.001	H.S

Abbreviation: H.S-Highly significant. N.S- Not significant. S- Significant.

In (group B): In the clinical trial changes in the laboratory parameters were observed 28.75%, 29.90%, 76.92%, 83.33% and 4.93% respectively. Reduction was seen in Fasting Blood Sugar, Post Prandial Blood Sugar, Fasting Urine Sugar, Post Prandial Urine Sugar and LDL respectively which were statistically highly significant. Other laboratory parameters showed reductions in 0.16%, 1.79%, 1.90%, and 0.37% in Hb, TLC, Cholesterol and HDL respectively which was statistically insignificant. Changes in ESR and Triglycerides were also statistically significant.

Table No-4: Showing pattern of changes in certain laboratory parameters in 15 patients after therapy (Group A)

S. No.	Lab Investigation	Mean Value			% of Relief	SD ±	SE ±	t	P	Result
		BT	AT	Diff.						
1.	FBS	153.83	109.61	44.22	28.75	14.00	3.62	12.23	<0.001	H.S
2.	PPBS	214.93	150.67	64.27	29.90	21.95	5.67	11.34	<0.001	H.S
3.	FUS	1.44	0.33	1.11	76.92	0.78	0.26	4.26	<0.001	H.S
4.	PPUS	1.33	0.22	1.11	83.33	0.60	0.20	5.55	<0.001	H.S
5.	Hb gm%	12.80	12.82	0.02	0.16	0.83	0.21	0.09	>0.01	N.S
6.	ESR	18.80	17.20	1.60	8.51	3.60	0.93	1.72	<0.01	S.
7.	TLC	8571.40	8725.07	153.67	1.79	402.20	103.85	1.48	>0.01	N.S
8.	Lipid Profile									
	1.Cholesterol	144.13	141.40	2.73	1.90	5.69	1.47	1.86	>0.01	N.S
	2.HDL	54.07	53.87	0.20	0.37	2.18	0.56	0.36	>0.01	N.S
	3.LDL	106.03	100.80	5.23	4.93	5.00	1.29	4.05	<0.001	H.S
	4. Triglycerides	106.20	101.93	4.27	4.02	4.74	1.22	3.48	<0.01	S

Abbreviation: H.S-Highly significant. N.S- Not significant. S- Significant.

Physiological changes-

In (Group A): In the clinical trial Physiological changes showed 9.40%, 9.50% and 6.92% reduction in Body weight, BMI, Systolic blood pressure respectively which was statistically highly significant along with Diastolic Blood Pressure also revealed statistically significant result.

Table No-5: Showing pattern of physiological changes in 15 patients after therapy (Group A)

S. No.	Physiological parameters	Mean Value			% of Relief	SD ±	SE ±	t	P	Result
		BT	AT	Diff.						
1.	Body Wt. (Kg)	73.07	66.20	6.87	9.40	4.36	1.12	6.10	<0.001	H.S
2.	BMI (Body mass index)	28.09	25.42	2.67	9.50	1.72	0.44	6.01	<0.001	H.S
3.	Systolic blood pressure (in mm Hg)	139.67	130.00	9.67	6.92	8.12	2.10	4.61	<0.001	H.S
4.	Diastolic Blood Pressure (in mm Hg)	81.67	79.33	2.33	2.86	5.30	1.37	1.70	<0.01	S.

Abbreviation: H.S-Highly significant. N.S- Not significant. S- Significant.

In (Group B): In the clinical trial Physiological changes showed 2.44%, 2.32% reduction in Body weight, BMI respectively. Significant reduction in systolic blood pressure along with 0.33% improvement of Diastolic Blood Pressure was also observed. But this data was statistically non-significant.

Table No-6: Showing pattern of physiological changes in 15 patients after therapy (Group B)

S. No.	Physiological parameters	Mean Value			% of Relief	SD ±	SE ±	t	P	Result
		BT	AT	Diff.						
1.	Body Wt. (Kg)	62.73	61.20	1.53	2.44	1.51	0.39	3.94	<0.05	S.
2.	BMI (Body mass index)	22.01	21.50	0.51	2.32	0.52	0.14	3.78	<0.01	S.
3.	Systolic blood pressure (in mm Hg)	131.47	129.47	2.00	1.52	3.85	1.00	2.01	<0.05	S.
4.	Diastolic Blood Pressure (in mm Hg)	81.73	81.47	0.27	0.33	2.60	0.67	0.40	>0.01	N.S

Abbreviation: H.S-Highly significant. N.S- Not significant. S- Significant.

Discussion:

In comparative analysis of symptomatic improvement in group A and B: Group A (*Chakramarda ghanavati*) was found to be more effective than group B (*Madhumehari churna*) in case of relieving symptoms like *Avilmutrata* (Turbidity in urine), *Pipasadhikya* (Excess thirst), *Kshudhadhikya* (Polyphagia), *Atisweda* (Sweating), *Hastapada* and *Sandhi shoola* (Pain in hands, feet and joints), *Klama* (early fatigue), *Mukhashosha* (Dryness of mouth), *Alasya* (Lassitude), *Vibandh* (Constipation), *Jananang Kandu* (Genital Pruritis) and *Kara padatalasupti* (Numbness in hands and feet) but it was less effective in relieving *Prabhotamutrata* (Polyuria), *Karapadataladaha* (Burning sensation in hands and feet) and *Mukhamadhurya* (Sweetness in mouth).

In comparative analysis of lab investigation in group A and B: Group A (*Chakramardaghanvati*) was found to be less effective than group B (*Madhumeharichurna*) in lowering fasting and post prandial blood and urine sugar. But group A (*Chakramardaghanvati*) was highly effective than group B (*Madhumeharichurna*) in lowering blood cholesterol, LDL and Triglycerides.

In comparative analysis of physiological parameters in group A and B: Group A (*Chakramarda ghanvati*) is found to be more effective than group B (*Madhumehari churna*) in relieving physiological parameters like body weight, body mass index (BMI), systolic and diastolic blood pressure.

Probable mode of action of *Chakramarda* by Ayurvedic view: The researchers are trying to find out the best herbal hypoglycemic drugs. Hence to fulfil this agenda attention should be given to the *Sampraptighataka* of this disease. In the pathogenesis of the *Avaranajanya Madhumeha*, the *Kapha* and *Pitta* are the main *Dosha*, whereas the most important *Dushyas* are *Meda* and *Kleda*. So, in its management *chakramarda* suitable drug as it is effective against *Meda* and *Kleda* as well as having hypoglycaemic effect. It is direct evident in references i.e. *Sushruta Samhita* in *Shaak Varga*, *Sutra sthan* (46/262/263), *Kaidev Nighantu* (K.N.–*Ausadhivarga*-699-703), *Raj Nighantu* (R.N. 4/198-200) and *Shankar Nighantu* (*Prathamobhaga*, Drug No. 238).

Ayurvedic point of view *Chakramarda* can be explained as follows- *Guna – Ruksa*, *laghu* and *Tikshna*; *Rasa – Katu*; *Veerya – Ushna*; *Vipaka – Katu*; *Tridoshaja* action- *Kapha Vata shamaka*. As we know that *Prameha* is *tridoshajavyadhi* but in *Madhumeha*, *Vata* and *Kapha* are dominant. *Chakramarda* is pacified the *Kapha* and *Vata* due to its properties like *Katu*, *Laghu*, *Ruksha* and *Ushnavirya* etc. **S**tudy of the *samprapti* of *Madhumeha*, reveals that there is *dushti* of *dhatus* particularly *Meda, Rakta, Ambu, Vasa, Majja, Rasa ,Oja etc. Katu Rasa* has the property of *Kaphaghna*, *Agni deepana* by which it causes *Sroto-shuddhi* and *Kapha shaman*. *Ruksha Guna* has *Kaphashoshan* property so ultimately *Kapha* is pacified. *Laghuguna* have *laghupaka* and *Kaphahara* action so *Laghuguna* of drugs also causes *Kapha shaman*. *Laghuguna* is constituted of *Vayu* and *Agni Mahabhoota* so it promotes the *Jataraagni*, as a result ultimately *Amadosha* gets subsided. *Tikshanaguna* of *Chakramarda* clears the minute channels of the body, due to this *Sroto-shuddhi* occure, so ultimately leads to *Kapha Vata shaman*. *Tikshanaguna* is an attribute of *Agni Mahabhoota*, due to this *guna* it also possesses *Shodhan, Lekhan* and *Kaphahara Karma*. *Sheeta* is the common property of *Vata* and *kapha*. As we know that *Ushna* is opposite to *Sheeta*, due to *Ushnavirya* the *Chakramarda* have *Kapha* and *Vatashamaka* property.

Conclusion: The disease *Madhumeha* is well documented in all perpetual sources of *Ayurvedic* wisdom and discussed in *Prameharoga* as one of the *Vataja Prameha*. Literary evidences prove its modern correlation as diabetes mellitus. According to this clinical study data shows that diabetes mostly occurs in the persons with *Vatakaphaj prakriti*. In ancient time people of only upper economical groups were seems to be suffering from this disease but the present study has found that this disease is also spreading in middle as well as people of lower income group. The study confirmed that *chakramarda ghanvati* was effective in treatment of *Madhumeha* and significantly reduced majority of the symptoms of illness that includes *Prabhutamutrata* (Polyuria), *Klama* (early fatigue), *Alasya* (Lassitude), *Vibandh* (Constipation), *Atisweda* (Sweating), *Mukhashosha* (Dryness of mouth) and *Jananangakandu* (Genital Pruritis). *Panchanga* of *Cassia tora* Linn. was also showed good result in subjective and objective parameters. Group A (*Chakramarda ghanvati*) was more effective in relieving symptoms of diabetes, improving lipid profile and in improvement in physiological parameters but it was less effective than group B (*Madhumehari churna*) for lowering blood sugar.

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Clinical Study

Effect of an hypothetical herbal compound in Essential hypertension- A clinical study

*Dr. Vinod Bihari Kumawat, **Dr. Surendra Kumar Sharma, ***Prof. Uttam Kumar Sharma

Abstract

Present Study was conducted on 90 cases of essential hypertension to evaluate the effect of hypothetical herbal compound. The study revealed that this herbal compound is effective to some extent to control Essential hypertension results of this study shows that 7.52% reduction in diastolic blood pressure and 5.05% reduction in systolic blood pressure found in hypertensive cases. These results are also statistically significant.

सारांश–

प्रस्तुत शोध पत्र में उच्चरक्तचाप पर वानस्पति औषधि योग (कल्पित) एक चिकित्सात्मक अध्ययन आर्युवेद क्षेत्रीय अनुसंधान सस्थान ईटानगर अरूणाचल प्रदेश में किया गया कुल 90 आतुरो पर यह अध्ययन पूर्ण किया गया इसमें कल्पित वानस्पति औषध योग से चिकित्सा पश्चात् संकोचकालिक रक्तचाप में लाभ मान 7.52% प्रसार कालिन रक्तचाप में औषध प्रयोग के पश्चात् लाभ मान 5.05% रहा जोकि सांख्यिकी के 'p' मान की दृष्टि से अति महत्व का सिद्ध हुआ। इस प्रकार उक्त औषध योग रक्तचाप को नियन्त्रित करने में अत्यन्त प्रभावी रहा।

*M.D. (Ay.) Ph.D., Research Officer (Scientist-2) M.S. Ayurveda Central Research Institute Banipark Jaipur **M.D. (Ay.) Ph.D., Associate Professor P.G. Dept. Roga & Vikriti Vigyan NIA Jaipur ***M.D. (Ay.) Ph.D. Professor P.G. Dept. Punchkarma Rishikul State Ay. P.G. College & Hospital Haridwar.

Clinical Study

Effect of an hypothetical herbal compound in Essential hypertension- A clinical study

Dr. Vinod Bihari Kumawat, Dr. Surendra Kumar Sharma, Prof. Uttam Kumar Sharma

Introduction-

Hypertension is a clinical condition characterized by persistent rise in arterial blood pressure. There are different definitions of normal range of blood pressure. Normal blood pressure at rest is within the range of 100-140 mm Hg systolic and 60-90 mm Hg diastolic. High blood pressure is said to be present if it is often at or above 140/90 mm Hg. By the usual criteria of average three B.P measurements on three occasion 140 systolic and or 90 mm Hg diastolic.

Hypertension is classified as either primary (essential) hypertension or secondary hypertension about 90-95% of cases are categorized as **''primary hypertension''** which means high blood pressure with no obvious underlying medical cause. The remaining 5-10% of cases (secondary hypertension) are caused by other conditions due to impairment of the kidneys, arteries, heart or endocrine system. Severely elevated blood pressure (equal to or greater than a systolic 180 or diastolic of 110- sometimes termed malignant or accelerated hypertension) is referred to as a ''hypertensive crisis. Hypertension may be comparable with vyanbala vaishamya in Ayurveda. Vyanbala vaisrmya may either be considered as increased function addresses function of vyana vayu.

In this study the trial drug (churna) contains Mandukparni (Centella asiatica) Jatamansi (Nordostueus Jatamouns), Amalki (Embalica officinal) Shankpushpi (convolvulus puricolis, Gokshura (Tribulus terretsis), Rudharksha (Elaecarpus genitor roxd), Akik (Agate). These drugs were selected with considering the pathogenesis of hypertension according to Ayurveda, Selected drugs are supposed to work as samprapti vighatan (decomposition of pathogenesis) of the disease. This study work has been performed in 3 groups. Patients of groups A were administered the hypothetical anti hypertensive formulation and found significant in comparison to other two groups B and C, control and placebo respectively.

Material and methods

Selection of patients

90 patients of Essential hypertension (30 in each group) were selected from the OPD/IPD of R R I. Itanagar. All the cases were registered and the findings were recorded with the help of special proforma prepared for this purpose. Patients were subjected to detailed case history talking, physical examination and laboratory investigations for the study.

Criteria for inclusion

1. Diagnosed patients of essential hypertension of duration < one year without taking any anti-hypertensive medication for at least one month

   S.B.P. < 60 mm. Hg. and >= 140 mm Hg.

   D.B.P < 100 mm. Hg and >= 90 mm. Hg.

2. Age between 20 year to 65 years

Criteria for exclusion

1. Patient below 20 years and above 65 years of age.
2. Patients with
   S.B.P. < 160 mm. Hg. and > 140 mm Hg.
   D.B.P < 100 mm. Hg and > 90 mm. Hg.
3. Patient receiving on anti hypertensive drug
4. Complicated hypertensive cases e.g. Nephropathy and left vantricular hypertrophy, heart block, congestive heart failure, coronary artery disease and retinopathy
5. Patients suffering with Diabetes
6. Accelerated and malignant hypertension.
7. Patient taking steroids oral contraceptive pills, oestrogen replacement therapy or NSAID groups of drug.

8. Pregnant women or planning pregnancy with in six months.
9. Patient with severe other illness hepatic/renal failure.
10. Secondary hypertension.

Method of preparation of drug

The purchased drugs were indentified in the regional research laboratory Arunachal Pradesh. The extract (Ghana satva) of each drug among six herbal drugs i. e. Mandukparni (Centella asiatica) Jatamansi (Nordostueus Jatamouns), Amalki (Embalica officinal) Shankpushpi (convolvulus puricolis, Gokshura (Tribulus terretsis), Rudharksha (Elaecarpus genitor roxd) was mixed in equal quantity with same amount of Akik Pishti equal herb ghan satva.

Method of drug trial

Three groups were planned for the drug trial. 30 patients were selected in each group. Patients of group A were given the Herbo-mineral compound. 2 capsules containing 500 mg were given thrice a day with water.

Patient of group B were given well known anti hypertensive drug amlodipine 5mg before breakfast.

Group C was placebo group given capsule contain glucose.

Direction of study

Total direction of study was 2 months with a follow up in every one month for the assessment of improvement and occurrence of any adverse effect.

Criteria Of Assessment

Subjective criteria

In each group all the patients were assessed for the subjective improvement as per the features selected from texts. All these symptoms were divided in four grades (0-3) on the basis of severity of symptoms of disease.

objective criteria

Under the objective parameters before commencing the trial systolic and diastolic blood pressure was measured and after completion the trial again blood pressure was measured. In this study required left investigations were assessed before and after completion of the trial as follows : TLC, DLC, ESR, Hb, lipid profile, FBS, PBBS, blood urea. S.Creatinin, of every patient was done.

Demographic profile

In this study total male patients were 62.22% and female were 37.77% It may be due to more exposure to stress and irregularity in diet pattern in males in comparison to females.

Among the selected cases of study 55.5% cases belong to middle class followed by 23.03% of lower class and 21.11% of higher class.

In diet wise distribution the maximum cases were non vegetarian (82%) and vegetarian were 18%.

According to kostha maximum cases were found of kroora koshatha (33.33%) followed by 33.33% and 18.88% of madhyama and mridu kostha respectively.

According to Agni the patients having Vismagni were 50.50%, Samagni were 23.33%, Mandagni 15.55 and Tikshanagni 11.11% .

Most of the patients belongs to vata kaphaja prakriti (45.53%) followed by vata pittaja (31.11%) pitta kaphja (23.33%) prakriti.

It is clear from the study that clinical evaluation of drug in the patients of group A found highly significant (P<0001) in somatic as well as in psychological symptoms i.e. excessive anger, insomnia, memory loss, headache, vertigo, palpitations . Patients of group B show significant and somehow little better changes in almost all symptoms but the placebo group shows insignificant results.

The age wise distribution of patients show that majority of patients 65.55% were in 41-60 years age group followed by 29.94% in 30-40 years and 4.44% patients were more than 60 years of age.

The distribution of patients according to economical status shows that majority of patients 55.50% cases of the series reported to belong middle class and 23.30% patients belong poor class while only 21.11% patients belong to rich class.

The classification of patients according the Ahara showed that 82% patients were having occasional Samish Ahara (Non veg) and 18% patients were having niramis Ahara.

The classification of patients based on satva showed that 43.33 % patients were of madyam satva, 37.77% patients were of avar satva and while 18.08% patients were having pravara satva.

The classification of the patients according to grade of hypertension 55.70% patients were in moderate group, 36.6% patients were in mild group and 5.55% patients were in border line group.

The distribution of the patients based on the examination of the Nadi, 51.11% patients were having vatik nadi, 24.45% patients were having paittik nadi and24.4% patients were having kaphaja nadi.

Observation and result

Under the study of demographic profile of 90 patients it was noted that maximum number of patient (66.55) were age group with a maximum prevalence of diseases in middle age group. Gender destitution of the diseases found made (62.22%) were prone to the disease 63% of cases registered belong to Hindu community. Maximum 55.50% of middle status group indicating higher rate of prevalence of hypertension in middle income group. 45.11 of cases found to have vata kapha predominant prakriti 43.33% patients belong to middle mental stamina (Madhyam satva)

Analytical observation fond for fasting hand sugar in group A-4.11% (P >0.1) group B-2.29% (<0.001) and group C- 0.15. FB (P<0.1) significant changes in all groups after completion of trial in tasting hand suger. and PPB5 significant change were not found in FBS in all groups after completion the trial. This result was carried out after critical analysis at P valve similarly, improvement was seen in subjective assessment factor like group A- 73.81% in headache, 71.88% in tharm, kalm. The study was done on 90 patients with 30 patients in each group. The effect of the drug in group A in comparison to other groups on the various parameters were as follows:

Systolic Blood Pressure Herbal compound provided 7.52% reduction in systolic blood pressure, Amlodipine provided 9.26% reduction in systolic blood pressure and placebo provided 1.68 % reduction in systolic blood pressure. Group A and Group B showed statistically highly significant results (<0.001). Among group A and Group B, group B showed little better change.

Diastolic Blood Pressure Herbal compound provided 7.52% reduction in systolic blood pressure, Amlodipine provided 9.26% reduction in systolic blood pressure and placebo provided 1.68 % reduction in systolic blood pressure. Group A and Group B showed statistically highly significant results (<0.001). Among group A and Group B, group B showed little better change.

Statistical analysis of change in Systolic blood pressure after treatment

Group A

Group	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	Nos.	S.D. ±	S.E. ±	t	p
Systolic	160.47	148.40	12.07	7.52%	30	6.09	1.11	10.85	< 0.001

Group B

Group	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	Nos.	S.D. ±	S.E. ±	t	p
Systolic	159.13	144.40	14.73	9.26%	30	8.23	1.50	9.81	< 0.001

Group C

Group	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	Nos.	S.D. ±	S.E. ±	t	p
Systolic	150.53	148.00	2.53	1.68%	30	5.73	1.05	2.42	< 0.025

Statistical analysis of change in Diastolic blood pressure after treatment

Group A

Group	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	Nos.	S.D. ±	S.E. ±	t	p
Diastolic	100.90	95.80	5.10	5.05%	30	5.04	0.92	5.54	< 0.001

Group B

Group	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	Nos.	S.D. ±	S.E. ±	t	p
Diastolic	104.47	90.47	14.00	13.40%	30	7.75	1.42	9.89	< 0.001

Group C

Group	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	Nos.	S.D. ±	S.E. ±	t	p
Diastolic	99.80	98.20	1.60	1.60%	30	5.49	1.00	1.60	> 0.1

Statistical Analysis Of The Changes In Symptoms After Treatment

Group A

Group A	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	Nos.	S.D. ±	S.E. ±	t	p
Headache	2.21	0.58	1.63	73.81%	19	0.60	0.14	11.91	< 0.001
vertigo	1.68	0.47	1.21	71.88%	19	0.63	0.14	8.37	< 0.001
Lethargy	1.31	0.54	0.77	58.82%	13	0.60	0.17	4.63	< 0.001
palpitation	1.33	0.33	1.00	75.00%	3	0.00	0.00	-	ND
Loss of sleep	1.79	0.42	1.37	76.47%	19	0.76	0.17	7.84	< 0.001
Irritability	1.41	0.09	1.32	93.55%	22	0.48	0.10	12.97	< 0.001
Exertional dyspnoea	1.44	0.94	0.50	34.78%	16	0.73	0.18	2.74	< 0.025
Loss of memory	2.06	0.38	1.69	81.82%	16	0.48	0.12	14.10	< 0.001
Fainting	1.00	1.00	0.00	0.00%	3	1.00	0.58	0.00	N.D.
Feeling of grief	1.75	0.50	1.25	71.43%	20	0.55	0.12	10.16	< 0.001
Body ache	1.60	1.60	0.00	0.00%	15	0.00	0.00	-	N.D.

Tinnitus	1.46	0.62	0.85	57.89%	13	0.38	0.10	8.12	< 0.001
Loss of strength	1.50	0.56	0.94	62.50%	16	0.44	0.11	8.47	< 0.001
Angina	2.00	0.67	1.33	66.67%	3	0.58	0.33	4.00	< 0.05
Complication in eyei	1.50	1.50	0.00	0.00%	8	0.00	0.00	-	N.D.
Bolis	1.00	1.00	0.00	0.00%	6	0.00	0.00	-	N.D.

N.D.= Not Define

Statistical Analysis Of The Changes In Symptoms After Treatment

Group B

Group B	**Mean B.T.**	**Mean A.T.**	**Mean Dif.**	**Mean %**	**Nos.**	**S.D. ±**	**S.E. ±**	**t**	p
Headache	1.88	0.53	1.35	71.88%	17	0.49	0.12	11.32	< 0.001
vertigo	1.44	1.44	0.00	0.00%	16	0.00	0.00	-	N.D.
Lethargy	1.47	1.40	0.07	4.55%	15	0.26	0.07	1.00	< 0.1
palpitation	1.67	1.67	0.00	0.00%	3	0.00	0.00	-	N.D.
Loss of sleep	1.71	1.71	0.00	0.00%	21	0.00	0.00	-	N.D.
Irritability	1.91	1.91	0.00	0.00%	22	0.00	0.00	-	N.D.
Exertional dyspnoea	1.37	0.58	0.79	57.69%	19	0.42	0.10	8.22	< 0.001
Loss of memory	1.72	1.72	0.00	0.00%	18	0.00	0.00	-	N.D.
Fainting	1.50	1.50	0.00	0.00%	2	0.00	0.00	-	N.D.
Feeling of grief	1.55	1.50	0.05	3.23%	20	0.22	0.05	1.00	< 0.1
Body ache	1.35	1.00	0.35	26.09%	17	0.79	0.19	1.85	<0.1
Tinnitus	1.44	1.00	0.44	30.43%	16	0.73	0.18	2.41	< 0.025
Loss of strength	1.27	0.27	1.00	78.95%	15	0.00	0.00	-	N.D.
Angina	1.50	1.25	0.25	16.67%	4	0.50	0.25	1.00	< 0.1
Complication in eyei	1.40	1.40	0.00	0.00%	5	0.00	0.00	-	N.D.
Bolis	1.00	1.00	0.00	0.00%	7	0.00	0.00	-	N.D.

N.D.= Not Defined

Statistical Analysis Of The Changes In Symptoms After Treatment

Group C

Group C	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	Nos.	S.D. ±	S.E. ±	t	p
Headache	1.47	1.47	0.00	0.00%	17	0.00	0.00	-	N.D.
vertigo	1.57	1.57	0.00	0.00%	14	0.00	0.00	-	N.D.
Lethargy	1.75	1.75	0.00	0.00%	8	0.00	0.00	-	N.D.
palpitation	1.00	1.00	0.00	0.00%	1	-	-	-	N.D.
Loss of sleep	1.94	1.65	0.29	15.15%	17	0.47	0.11	2.58	< 0.025
Irritability	1.43	1.07	0.36	25.00%	14	0.50	0.13	2.69	< 0.025
Exertional dyspnoea	2.00	2.00	0.00	0.00%	10	0.00	0.00	-	N.D.
Loss of memory	1.83	1.83	0.00	0.00%	6	0.00	0.00	-	N.D.
Fainting	1.75	1.75	0.00	0.00%	4	0.00	0.00	-	N.D.
Feeling of grief	1.67	1.67	0.00	0.00%	9	0.00	0.00	-	N.D.
Body ache	1.93	1.93	0.00	0.00%	15	0.00	0.00	-	N.D.
Tinnitus	1.75	1.75	0.00	0.00%	4	0.00	0.00	-	N.D.
Loss of strength	1.83	1.83	0.00	0.00%	6	0.00	0.00	-	N.D.
Angina	-	-	-	-	0	-	-	-	N.D.
Complication in eyei	1.00	1.00	0.00	0.00%	2	0.00	0.00	-	N.D.
Bolis	-	-	-	-	0	-	-	-	N.D.

Discussion

The contents of trial drug ''Herbal compound'' are easily available. These ingredients have *Tridoshagna. Medhya, vata pitta shamak* and *Amapachan* properties.

This study shows that this compound is capable to decompose the pathogenesis of hypertension. *Amalaki* enhances the elasticity of arteries with having tridoshaghna property. Anxiolytic and stress reliving effect has of Jatamansi been proved in various studies It is why it may work in this way to reduce elevated blood pressure. Rudraksa is helpfull in hypertension with its specific effect (prabhva) Gokshura works as a diuretic and as well as improves renal function and expels excessive water from the body. in this way reduces and helps in treatment of hypertension.

Shankhapushpi and *Brahmi* works as a mood elevator and brings happiness. These drugs also affect heart and endocrine system positively and in this way helpful in treatment of hypertension. Akik is considered as pitta shamak and hridya and with these properties it affects cardiovascular system to control hypertension.

All durgs of this herbo-mineral compound have tridoshghna, medhya, vatahara and Amapachana properties. As per pathogenesis of hypertension this compound is suitable to ractify the pathogenesis of hypertension.

Conclusion

From the above study it can be concluded that the hypothetical herbo mineral compound is clinically very effective, tolerable and safe for treatment of hypertension. Constituents of this

preparation acts by their tridoshgna, manhaprashadan, hridya, Raktaprasadana properties. The Comparative Study Shows that hypothatical Compound has little slow but more persistent effect than amlodipine.

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Clinical Study

A Clinical Study Of *Kati Basti* And *Kala Basti* In The Management Of *Kati Shoola* W.S.R. To L-PIVD

*Dr. Pallavi Sharma, **Dr. Jeet Chand Kaushal, ***Dr. Pushpinder Singh

Abstract

Prolapsed inter-vertebral Disc (PIVD) is a common back problem, mainly caused by trauma with degenerative predisposition and is characterised by low backache & neurological deficit. The symptoms are often severe & prolonged and the existing methods of treatment are ineffective. A clinical study was carried out to evaluate the effect of Kati Basti along with Balaadi Niruha Basti as a Kala Basti course (16 days) in the management of Kati Shoola w.s.r to L-PIVD and the results were encouraging . Details of research are the contents of this paper.

Key Words – *Basti, Kala Basti, Balaadi Niruha*, Murcchita, Prolapse etc.

सारांश–

लम्बर इंटरवर्टेबल डिस्ट प्रोलेप्स पृष्टवंश की सामान्य व्याधियों में से एक है। अभिघातादि आगन्तुज कारण, धातुक्षयादि वात प्रकोपक कारण, कटिगत 'ख' वैगुण्य स्वरूप वायु कटि प्रदेश में स्थान संश्रय कर इस व्याधि को उत्पन्न करती है। लक्षणत: कटिशूल तथा वात नाड़ी विकार उत्पन्न कर यह व्याधि कष्टप्रद, चिरकालानुबन्धी तथा कृच्छ्रसाध्य है। 'वातादृते नास्ति रूजा' तथा 'वस्तिर्वातहराणां अग्रय'। अत: दोष प्रत्यनीक चिकित्सा एवं युक्ति व्यापाश्रय चिकित्सा स्वरूप कटि बस्ति एवं बलादि निरूह बस्ति को काल बस्ति क्रम से इस व्याधि में चिकित्सा परीक्षण हेतु किया गया, जिसके परिणाम इस शोध पत्र में वर्णित है।

*Lecturer Desh Bhagat Ayurvedic College and Hospital, Mandi Gobindgarh Distt. Fatehgarh Sahib (Punjab) ** H.O.D Department of Panchkarma, Rajiv Gandhi Govt Post Graduate Ayurvedic College and Hospital Paprola Distt. Kangra (H.P) *** Reader, Department of Panchkarma, Rajiv Gandhi Govt. Post Graduate Ayurvedic College and Hospital Paprola Distt. kangra (H.P)

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Introduction

Over 99% of back pain instances, arouse suddenly during physical loading of back[1] & this is one of the main reason for the prolapse of lumbar inter vertebral disc.Inter vertebral discs are specialised connective tissue, inter-posed between adjacent vertebrae, give spine its mobility by acting as a pivot point & absorbs compressive axial load of the body. Advancing age causing mineralization of disc thus decreasing the diffusion of nutrients to the disc and flexion strain with the spine causing rupture of tough annulus or tear in posterior longitudinal ligament leads to dull pain in lumbar region sometimes radiating to lower limb; altered gait; tenderness; restricted spinal movements in all planes; motor and sensory impairment etc.

Shoola (pain) in any part of the body is always caused by vitiated vata[2] and its predominant site is Pakwashaya[3]. Basti is the most effective treatment for vataja disorders[4]. Along with Basti (internally), the external measure of Kati Basti in the form of local Snehana (oleation) & Swedana (sudation) over the affected area is believed to be effective in relieving the symptoms of the disease.

Hence following a yukti vyapashraya chikitsa, it was planned to study the efficacy of these modalities in the treatment of Kati Shoola w.s.r.to L-PIVD .

Material And Methods

Inclusion Criteria

27 patients in the age group of 20-60 years irrespective of sex and religion ; diagnosed for L-PIVD based on MRI/ CT scan etc. ; presenting typical clinical findings suggestive of L-PIVD of <1 year duration ; having prolapse at any level of lumber region i.e. L1-L2 / L2 –L3 etc.; those who wilfully agreed for trial participation and were able to comply with the treatment schedule were selected from the IPD & OPD of R.G.G.P.G. Ayu. College & Hospital and included in the trial.

Exclusion Criteria

Patients below 20 & above 60 years of age; of L-PIVD >1 year duration; Traumatic Vertebral disorders, Lumbar Canal Stenosis, Infections of spine, Neoplastic disorders, Spondylolisthesis, Spondylosis, Ankylosing Spondylosis, Uterine prolapse, Fibroid, PID, IHD, Diabetes Mellitus, Hypertension, Endocrinal disorders , Piles , Rectal Ulcers, Intestinal Obstruction and Pregnant & Lactating women were excluded from trial.

Treatment Protocol

Kati Basti along with Balaadi Kala Basti – 16 days.

Murcchita Til Taila as advocated by Bhaishajya Ratnavali[5] (Bh.Ra.5/1268) was administered for Kati Basti for a period of 30- 45 mins. followed by gentle massage and nadi swedana over the lumbosacral region.

Balaadi Niruha Basti, comprising of Makshika, Saindhava, Sneha (Murchita Til Taila), Kalka (Madanphala) and Kashaya (Bala mool) with Kshira as Prakshepa churned sequentially into a homogenous mixture amounting 480ml (approx.) was given empty stomach alternating with Anuvasana Basti of Murcchita Til Taila of 60ml (approx.) with a pinch of saindhava & shatahva was given after a light meal , following a Kala Basti course for 16 days were administered.

Patient's were educated regarding restriction of forward bending & weight lifting, and encouraged for back strengthening exercises.

Asssessment Criteria

1. Visual Analogue Scale - By taking 0 for no pain and 10 for worst pain imaginable.

2. Degree of Severity -

No pain (0) - No pain at rest.
- No pain while working/walking.
- No disturbance of sleep due to pain.

Mild Pain (1) - No pain at rest.
- Mild and tolerable pain while working/walking.
- No disturbance of sleep due to pain.

Moderate pain (2) - Mild pain at rest.
- Moderate and tolerable pain while working/walking.
- No disturbance of sleep due to pain.

Severe pain (3) - Moderate/severe pain at rest.
- Severe and intolerable pain while working/walking.
- Disturbance of sleep due to pain.

3. Tenderness -

Gr. – 0 :- No Tenderness

Gr.– I :- Mild tenderness without any response

Gr. – II :- Wincing of face due to tenderness

Gr. – III :- Resists touch due to tenderness.

4. Straight leg raising test -

Left		Right	
Full free (90°)	(Gr.-0)	Full Free (90°)	(Gr.-0)
60° to 90°	(Gr.-I)	60° to 90°	(Gr.-I)
30° to 60°	(Gr.-II)	30° to 90°	(Gr.-II)
0° to 30°	(Gr.-III)	0° to 30°	(Gr.III)

5. Forward flexion:-

Touch his/her toes	(Gr. - 0)
Reach within 10 cm from floor	(Gr. – I)
Reach mid tibia	(Gr. – II)
Upto knees	(Gr. – III)
No bending at all	(Gr. – IV)

6. Lateral flexion:-

	Left	Right
Mid tibia	(Gr. – 0)	(Gr. – 0)
Knees	(Gr. – I)	(Gr. – I)
Mid thigh	(Gr. –II)	(Gr. –II)
No bending at all	(Gr. – III)	(Gr. – III)

7. Reflexes

Grading - 1 = Exaggerated
2 = Normal
3 = Reduced
4 = Absent

8. Sensations with special reference to dermatomes

Gr. 1= Increased,
2 = Normal,
3 = Reduced,
4 = Absent.

9. Motor Power -

Gr.- 1 - Movement against gravity &full resistance possible.

Gr. – 2 - Movement against gravity & moderate resistance possible.

Gr. - 3 - Movement possible against gravity on both legs.

Gr. - 4 - Movement possible with elimination of gravity on both legs.

Gr. - 5 - Flicker of movement .

Gr.- 6 - No movement at all.

Overall Assessment

Marked Improvement	Relief of 76 -100 % in sign/symptoms.
Moderate Improvement	Relief of 51-75 % .
Mild Improvement	Relief in between 26-50%.
No/Insignificantly Imprv	Relief of 0 - 25%
Deteriorated	Aggravation of symptoms.

Observation And Results

For individual symptom Students paired't' test was applied and significance levels were interpreted by Students paired 't' test as-

- Insignificant : $p > 0.05$
- Significant : $p < 0.05$
- Highly Significant : $p < 0.001$

The effect of therapy in relieving the symptom has been tabled in table number 01.

Table No. - 01

Symptom	BT(Mean)	AT(Mean)	% of change	't'	'p'
VAS (n=27)	8.74	3.67	58.05	12.28	<0.001
Severity of Pain (n=27)	2.44	1.04	57.38	8.67	<0.001
Tenderness (n=27)	2.33	0.82	64.81	9.83	<0.001
Forward flexion (n=27)	2.56	1.11	56.64	8.42	<0.001
Lateral flexion (n=27)	1.44	1.07	25.69	3.91	<0.05
SLR right (n=27)	2.19	1.00	54.34	9.04	<0.001
SLR left (n=27)	2.15	1.00	53.49	9.92	<0.001
Motor power (n=6)	2.50	1.50	40	2.24	>0.05
Knee jerk (n=08)	2.90	2.80	3.45	1.00	>0.05
Ankle jerk (n=16)	3.71	3.53	4.85	1.85	>0.05
Sensation (n=08)	3.12	2.38	23.72	4.58	<0.05

n = sample size or no. of patients presenting the symptom, B.T= Mean Score before treatment, A.T= After treatment.

Overall Effect Of Therapy

The overall result of therapy in relieving the symptoms of the disease has been summarized in table number 02.

Table No. - 02

Results	Number of Patients	Percentage
Marked Improvement	08	29.63%
Moderate Improvement	05	18.52%
Mild Improvement	11	40.74%
No/ Insignificantly	03	11.11%
Improved		
Deteriorated	—	—

Discussion

Pain, Tenderness, Restricted Forward and Lateral flexion, decreased angle during SLR test were the features presented by all subjects. Pain as per VAS & Severity of pain, Tenderness, Forward flexion and SLR (right& left) yielded highly significant results . Lateral flexion and Sensation demonstrated significant results. Only 6 patients presented diminished motor power and the effect of therapy on motor power was insignificant. Regarding the change in deep tendon reflexes, following the therapy both knee jerk and ankle jerk didn't show any significant change.

Dosha pratyaneeka chikitsa of Basti and Kati Basti with balya and vatahara properties of bala[6]; jeevaniye properties of Kshira[7]; snehana with Murcchita til tail containing manjishtha as a major component, having shothaghna(anti inflammatory) and sandhaniye (binding) properties[8]; and swedana reducing stiffness by increasing extensibility of collagen tissue and by gate control theory provides local pain relief. Madanphala having lekhana, shothaghna, kapha shamaka9 properties alleviates srotosanga (obstruction of micro channels) and ensures proper blood & nutrient supply to the tissues.

Conclusion

Kati Basti(externally) & Basti (internally) by targeting the site of vata prakopa i.e. pakwashaya and kati pradesh) yielded promising results . Preventive aspect and patient's education regarding restriction of forward bending and weight lifting, lying down on supine position with knee and hip slightly flexed, exercises strengthening the back muscles provided a complementary effect to therapy.

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Pharmaceutical Study

Study on *Sneha Avartana* w.s.r. to *Avartita Ksheera Bala Taila.*

*Dr. Hemant Pratap Sonawane, **Dr. V. Nageswar Rao, ***Dr. Mohar Pal Meena

Abstract

Ayurveda has its strong root in its own basic principles. It made the science to live so long. Nowadays, many drug industries are manufacturing a number of oil formulations but as *Ayurvedic* physician we can't depend on such pharmacies. There are many *Avartita Snehas* preparations are stated in *Ayurveda* but how these active principles are transferred is not mentioned yet. As such, there is no reference for *agni*. So, in order to standardize these coding languages and standard for agni in *Avartanas* with scientific explanation an oil preparation called *ksheera bala taila* was selected for the study.

Keywords :- *avartana, agni, sneha, ksheera bala taila.*

सारांश –

आयुर्वेद की विचारधारा अत्यधिक मौलिक एवं सैद्धान्तिक है, इसी कारणवश यह आधुनिक विज्ञान के सिद्धान्तों को भी पुष्ट करता है। वर्तमान में व्याप्त औषध निर्माण ईकाईयों द्वारा विभिन्न तैल कल्पनाओं का निर्माण किया जा रहा है किन्तु आयुर्वेदीय चिकित्सक के रूप में हम उन पर निर्भर नहीं रह सकते हैं। इसी क्रम में बहुत से आवर्तित स्नेह कल्पनाओं का भी वर्णन आयुर्वेदीय साहित्य में प्राप्त होते हुए भी इनमें उत्पन्न होने वाले कार्यकारी तत्वों का विवेचन अद्यावधि नहीं हो पाया है। इसके अन्तर्गत शास्त्रों में अग्नि का कोई प्रसंग प्राप्त नहीं होता है। अतः प्रस्तुत शोध में क्षीरबला तैल के संदर्भ में इन अवर्णित प्रसंस्करण एवं आवर्तन में अग्नि का आधुनिक परीक्षणों के आधार पर मानकीकरण करने का प्रयास किया गया है।

*M.D. Scholar, Deptt. Of Rasashastra & B.K., NIA, Jaipur, **Asso. Prof., Deptt. of Rasashastra & B.K., NIA, Jaipur, ***Assistant Prof,, Deptt. of Rasashastra & B.K., NIA, Jaipur, Address for correspondence: Dr. Hemant Pratap Sonawane S/O Mr. Pratap Sonawane, Head post Hated Tal Chopda Dist. Jalgaon (M.S.) E-mail-hmntsonawane2@gmail.com

Pharmaceutical Study

Study on *Sneha Avartana* w.s.r. to *Avartita Ksheera Bala Taila.*

Dr. Hemant Pratap Sonawane, Dr. V. Nageswar Rao, Dr. Mohar Pal Meena

Introduction

The *Aushadha Kalpana* is prepared by different processing techniques applied to the crude drugs. This processing results into transformation of good pharmacological actions to that of substance. This lending of other properties to the substance is known as *'Samskara'*[1]. In our *Ayurvedic* literature, references are available regarding potentiation of a drug or a formulation. *Acharya Charaka* defines *Samskara* as transformation of the inherent attributes of the substance. This is created by *toya* & *agni sannikarsha*, *shaucha*, *manthana*, *desha*, *kala*, *vasana*, *bhajana*, *bhavana* etc. It is important factor that contributes to the efficacy of the drug. The purpose of potentiating is –

a. To minimize the dose

b. For faster drug delivery

Bhavana is one such procedure which is abundantly employed in *Rasashastriya* preparations; where as in herbal formulations, concentrating *kasayas,* making Ghana or *Rasakriya* are such potentiating techniques. Potentiation (*gunadhana* or *viryadhana*) of the drugs are need of hour. Medicated oil or ghee can't be administered in large dosage forms for longer duration. May be this reason, has innovated the noble minds to go for *Avartana* techniques. *Achrya Charak* already mentioned about *avartana* process for *Bala taila*.

'Avartana' of a *sneha* is a special pharmaceutical procedure, in which the prescribed quantity of ingredients are added and *sneha paka siddhi*[2] is carried repeatedly, till the attainment of desired quantity of its potency. Here, initially prescribed quantities of ingredients are taken along with the base of *taila* or *ghrita* and *snehapaka siddhi* is carried out. The filtrate obtained is of 1st *avartana Taila*. After filtration, if successive *pakas* are to be carried the previous *avartita taila / sneha* is taken (in place *of sneha dravya*) and other ingredients are added in prescribed ratio and *sneha paka siddhi*[3] is carried.

Ksheerabala taila is one of the most popular *sneha* preparations of *Ayurvedic* medicine[4]. The *Ksheerabala taila* denotes the preparation contains *Ksheera, Bala* and *Taila*. It was first described by *Acharya Charak* in the name of *bala taila*[4]. Sushruta mentioned as *Shata pakabala taila* and *Ashtanga hridaya* mentioned as *Shatapaka- sahasrapakabala taila.* The term was first coined by *Sahasra Yoga* (1600-1800 AD) an authentic *Ayurvedic formulary of Kerala*. The *ksheera bala taila* begins with the word *ksheera*, may used due to the presence of large quantity of *ksheera*. The similar preparation has been described in almost all ancient *Ayurvedic* texts but with the different names. The ingredients of this preparation are *Ksheera* (Cow's milk), *Bala* (*sida cordifolia Linn)* and *Tila taila* (Sesame oil). Cow milk contains all the elements necessary for the growth and nutrition of bones, nerves, muscle and other tissues of the human body. It is found that *S. cordifolia* contains alkaloids to extent of 0.085 per cent. The main portion of the alkaloid is identified to be ephedrine. Sesame oil contains a crystalline substance *sesamin* and phenol compound *sesamol*. Sesame oil is used as a base for oil preparation.

Materials and methods:

Bala (Sida cardifolia Linn.) the raw drug needed for the preparation of *Avartit Ksheerabala taila*, was collected from the surroundings of Jaipur University Campus and from Chitrakoot, Satna (MP). The drug was certified by Botanist before the preparation of the medicine. Milk taken for practical was *Saras* Gold. Refined sesame oil was obtained from NIA, Jaipur pharmacy.

Method: *Avartita Ksheerabala taila* was prepared as per reference from *Sahasra Yoga (taila Aadhikara,* page 75). During the pharmaceutical process after different *Avartanas* Viz plain oil, first *Avartita ksheera bala taila,* Seventh *Avartita ksheera bala taila*, fourteen *Avartita ksheera bala taila,* and three samples of *Avartita ksheera bala taila respectively*. And the temperatures at these

different stages were recorded. We also collected untreated base oil (Sample I) for the comparative study.

Preparation of SOP for present Study:

To develop SOP of manufacturing process for these *Ayurvedic* formulations and their pharmacopoeial standard, each step of the process for each unit operation was considered as an independent procedure, so an attempt was made to validate each step. Hence a pharamcopoeial Performa was prepared and recorded every minute facts and observations regarding this process. Formulations were prepared by adopting classical as well as modern equipment to lay down pharmacopoeial standard for this formulation.

Observations

Table. No. 1

S. No.	Sample	Loss on Drying (in %)	Refractive Index	Specific Gravity	Acid Value	Ester Value
1.	Plain *tila* oil	0.018	1.3845	0.82611	2.435	187.397
2.	First *Avartana*	5.284	1.4695	0.83711	2.972	185.998
3.	Seventh *Avartana*	0.253	1.4680	0.93955	2.071	187.688
4.	Fourteenth *Avartana*	4.518	1.4675	0.93810	3.668	190.848
5.	21st *(Sample I)*	0.582	1.4660	0.93672	5.166	190.986
6.	21st *(Sam II)*	0.431	1.4680	0.93577	4.938	186.246
7.	21st *(Sam III)*	1.286	1.4675	0.96499	4.088	193.046

Table. No2

S. No.	Sample	Peroxide Value	Saponification Value	Un-saponification Matter (in w/w)
1.	Plain *tila* oil	37.641	189.832	0.239
2.	First *Avartana*	41.757	188.970	0.250
3.	Seventh *Avartana*	30.917	189.071	0.248
4.	Fourteenth *Avartana*	19.516	194.516	0.620
5.	21st *(Sample I)*	11.344	196.152	1.580
6.	21st *(SamII)*	9.912	191.184	1.880
7.	21st *(SamIII)*	6.975	197.134	2.000

Table no 3:- Showing the *Rf* values from the chromatograms of the sample of Unsaponifiable matter of plain *tila* oil

Sample	*Rf* value under UV light (254)	Under iodine expose
Plain *tila* oil	0.96	0.96
		0.87
		0.78
		0.54

Table no.4:-Showing the *Rf* values from the chromatograms of the sample of Unsaponifiable matter of first *Avartana Ksheera Bala Taila*

Sample	*Rf* value under UV light (254)	Under iodine expose
First *Avartana*	0.97	0.97
Ksheera Bala Taila		0.88
		0.77
		0.50

Table no. 5:- Showing the *Rf* values from the chromatograms of the sample of Unsaponifiable matter of seventh *Avartita Ksheera Bala Taila*

Sample	*Rf* value under UV light (254)	Under iodine expose
Seventh *Avartita*	0.97	0.97
Ksheera Bala Taila		0.86
		0.73
		0.49

Table no 6:-Showing the *Rf* values from the chromatograms of the sample of Unsaponifiable matter of fourteenth *Avartita Ksheera Bala Taila*

Sample	*Rf* value under UV light (254)	Under iodine expose
Fourteenth *Avartana*	0.99	0.99
Ksheera Bala Taila	0.51	0.85
		0.71
		0.48

Table 7:-Showing the *Rf* values from the chromatograms of the sample of Unsaponifiable matter of twenty first *Avartita Ksheera Bala Taila* (Sample I)

Sample	*Rf* value under UV light (254)	Under iodine expose
Twenty first Avartana	0.98	0.98
Ksheera Bala Taila	0.51	0.85
(Sample I)		0.71
		0.49

Table 8:-Showing the *Rf* values from the chromatograms of the sample of Unsaponifiable matter of twenty first *Avartita Ksheera Bala Taila* (Sample II)

Sample	*Rf* value under UV light (254)	Under iodine expose
Twenty first *Avartana*	0.97	0.97
Ksheera Bala Taila	0.51	0.85
(Sample II)		0.75
		0.50

Table 9:-Showing the *Rf* values from the chromatograms of the sample of Unsaponifiable matter of twenty first *Avartita Ksheera Bala Taila* (Sample III)

Sample	*Rf* value under UV light (254)	Under iodine expose
Twenty first *Avartana*	0.97	0.97
Ksheera Bala Taila	0.52	0.87
(Sample III)		0.76
		0.50

Observation of Internal temperature of *Avartita Ksheera Bala Taila of 21 Avartana* (Sample I)

Table 10 : Internal temperature of *taila paka* in various stages of *Avartita Ksheera Bala Taila. (Sample I)*

Avartana	Total time taken for *paka* (in Hr)	First Stage		Second Stage		Third Stage		Fourth Stage	
		Time period	Temp.	Time period	Temp.	Time period	Temp.	Time period	Temp.
1	8 ½	75	65-79	180	80-94	200	95-99	55	85-95
2	9	60	65-79	180	80-94	245	95-99	55	85-95
3	8 ½	65	65-79	190	80-94	205	95-99	50	85-95
4	8 ½	70	65-79	215	80-94	175	95-99	50	85-95
5	8 ¾	60	65-79	215	80-94	205	95-99	45	85-95
6	8 ½	65	65-79	215	80-94	170	95-99	60	85-95
7	7 ¾	60	65-79	215	80-94	125	95-99	65	85-95
8	8	55	65-79	195	80-94	170	95-99	60	85-95
9	8 ½	40	65-79	225	80-94	190	95-99	55	85-95
10	8 ½	50	65-79	170	80-94	250	95-99	40	85-95
11	7 ½	55	65-79	220	80-94	125	95-99	50	85-95
12	7 ¼	50	65-79	180	80-94	150	95-99	55	85-95
13	8	60	65-79	180	80-94	190	95-99	50	85-95

14	8 ½	65	65-79	190	80-94	195	95-99	60	85-95
15	7 ¾	75	65-79	215	80-94	110	95-99	65	85-95
16	7 ½	60	65-79	215	80-94	120	95-99	55	85-95
17	7 ¾	65	65-79	215	80-94	130	95-99	55	85-95
18	7 ½	60	65-79	215	80-94	110	95-99	65	85-95
19	7 ½	55	65-79	195	80-94	140	95-99	60	85-95
20	7	40	65-79	225	80-94	100	95-99	55	85-95
21	7 ½	50	65-79	170	80-94	190	95-99	40	85-95

Observation of Internal temperature of *Avartita Ksheera Bala Taila of 21 Avartana* (Sample II)

Table 11: Internal temperature of *taila paka* in various stages of *Avartita Ksheera Bala Taila. (Sample II)*

Avartana	Total time taken for *paka* (in Hr)	First Stage		Second Stage		Third Stage		Fourth Stage	
		Time period	Temp.	Time period	Temp.	Time period	Temp.	Time period	Temp.
1	8 ½	55	65-79	180	80-94	215	95-99	60	85-95
2	9	55	65-79	215	80-94	215	95-99	55	85-95
3	8 ½	50	65-79	210	80-94	195	95-99	55	85-95
4	8 ¼	50	65-79	170	80-94	225	95-99	50	85-95
5	8	45	65-79	215	80-94	170	95-99	50	85-95
6	8 ½	60	65-79	170	80-94	220	95-99	60	85-95
7	8 ½	65	65-79	180	80-94	210	95-99	55	85-95
8	8 ½	60	65-79	190	80-94	205	95-99	55	85-95
9	8 ½	55	65-79	230	80-94	175	95-99	50	85-95
10	7 ¾	40	65-79	160	80-94	215	95-99	50	85-95
11	8 ½	50	65-79	275	80-94	140	95-99	45	85-95
12	8	55	65-79	205	80-94	180	95-99	40	85-95
13	8 ½	50	65-79	220	80-94	180	95-99	60	85-95
14	8 ½	60	65-79	205	80-94	190	95-99	55	85-95
15	8 ¾	65	65-79	200	80-94	195	95-99	65	85-95
16	7 ½	50	65-79	130	80-94	200	95-99	70	85-95
17	7 ¼	45	65-79	140	80-94	190	95-99	60	85-95
18	7 ¾	60	65-79	145	80-94	195	95-99	65	85-95
19	7 ½	65	65-79	130	80-94	195	95-99	60	85-95
20	7 ½	60	65-79	155	80-94	180	95-99	55	85-95
21	7	50	65-79	150	80-94	180	95-99	40	85-95

Observation of Internal temperature of *Avartita Ksheera Bala Taila of 21 Avartana* (Sample III)

Table 12: Internal temperature of *taila paka* in various stages of *Avartita Ksheera Bala Taila. (Sample III)*

Avartana	Total time taken for *paka* (in Hr)	First Stage		Second Stage		Third Stage		Fourth Stage	
		Time period	Temp. °C	Time period	Temp. °C	Time period	Temp. °C	Time period	Temp. °C
1	8 ½	60	65-79	200	80-94	190	95-99	60	85-95
2	8 ½	60	65-79	190	80-94	185	95-99	75	85-95
3	8 ¼	60	65-79	180	80-94	195	95-99	60	85-95
4	8	55	65-79	180	80-94	180	95-99	65	85-95
5	8 ½	55	65-79	190	80-94	195	95-99	70	85-95
6	8 ½	50	65-79	215	80-94	185	95-99	60	85-95
7	8 ½	50	65-79	215	80-94	180	95-99	65	85-95
8	8 ½	45	65-79	215	80-94	190	95-99	60	85-95
9	8 ½	45	65-79	215	80-94	195	95-99	55	85-95
10	8	45	65-79	195	80-94	200	95-99	40	85-95
11	8 ½	45	65-79	225	80-94	190	95-99	50	85-95
12	7 ¾	45	65-79	170	80-94	195	95-99	55	85-95
13	8 ½	45	65-79	220	80-94	195	95-99	50	85-95
14	8 ½	40	65-79	230	80-94	180	95-99	60	85-95
15	8 ½	40	65-79	205	80-94	200	95-99	65	85-95
16	7 ½	40	65-79	175	80-94	185	95-99	50	85-95
17	7	40	65-79	135	80-94	175	95-99	70	85-95
18	7 ¼	40	65-79	140	80-94	195	95-99	60	85-95
19	7 ¾	40	65-79	180	80-94	180	95-99	65	85-95
20	7 ½	40	65-79	160	80-94	185	95-99	65	85-95
21	7 ¾	40	65-79	175	80-94	195	95-99	55	85-95

Discussion:

Sequence of Addition of contents

Firstly I prepared *kalka,* kept it in a bolus form. Then *sneha* was heated slightly in a vessel and slowly the bolus of *kalka* was added one by one, continue stirring the mixture was done to prevent over burning of *sneha* and *kalka*. After frying, on foam formation *drava dravya* added and the *sneha paka* was prepared.

Slightly heated oil ⇨ bolus of Kalka added on foam formation

Addition of *Drava Dravya*

Prepared it in a *madyamgni* till moisture content evaporated.

Pharmaceutical Study

Rasa Shastra In Ancient India- A Glimpse Through *Koutilya's Arthashastra*

*Sakhitha K. S., **Ramakant Vyas, ***K. Shankar Rao

Abstract

Arthashastra is a Sanskrit treatise of immense importance which throws light in to the administrational setup of ancient India. The central theme of the work being political affairs of the state, information regarding chemical practices, metallurgy, agriculture, animal husbandry etc is also vividly described in the text. Though the author ship as well as the time period of the work is disputed, it is ascribed to the famous *Brahmana Kautilya*. As far as the subject matter of *Rasa Shastra* is concerned, the book offers knowledge on different gems and their qualities; various types of metals, extraction of metals from ores, their purification, etc. In the present article which is based on the translated works of Dr. Raghunath Singh and R. Shama Shastry an effort has been made to explore the status of *Rasashastra* in ancient India. It was found that the majority of the *rasa dravyas* classified under the groups like *Maharasa, Uparasa, Sadharana Rasa, Ratna, Uparatna* and *Dhatu* in the classical texts of *Rasa shastra* have been described in detail. Another significant observation was the description of terms like *Rasa paka*, *Rasavidha suvarna* etc which directly points to the alchemical aspects of *Rasa shastra* that prevailed during the period.

Key words: *Arthashastra, Chanakya,* Metals and minerals, *Rasa shastra*

सारांश–

अर्थशास्त्र संस्कृत का एक महत्वपूर्ण ग्रन्थ है जो प्राचीन भारत की प्रशासनिक व्यवस्था पर प्रकाश डालता है। इसमें मुख्यतः राज्यसम्बन्धित राजनीतिक मामले, रसायनिक प्रभावों सम्बन्धित सूचना, धातुविज्ञान, व कृषि, पशुपालन आदि का वर्णन किया गया है। पुस्तक के लेखक का काल का विषय विवादित है, परन्तु ब्राह्मण कोटिल्य को इसका श्रेय दिया जाता है। रसशास्त्र संबन्धित विषयों में विभिन्न रत्न व उनके गुण, विभिन्न धातु उनका निष्कर्षण व शोधन आदि का वर्णन प्राप्त होता है। प्रस्तुत लेख जो डॉ रघुनाथ सिंह व आर शाम शास्त्रि के अनुवादिक कार्य में अन्वेषण करता है। अन्य महत्वपूर्ण अवलोकन रसपाक वा रससिद्ध स्वर्ण आदि का प्राप्त होता है जो कि उसकाल में रसविद्या के महत्वपूर्ण दृष्टिकोण का वर्णन करता है।

*,**Ph.D Scholars, Dept.of Rasashastra & Bhaishajya Kalpana, NIA, Jaipur ***Professor & Head, Dept.of Rasashastra & Bhaishajya Kalpana NIA, Jaipur

Pharmaceutical Study

Rasa Shastra In Ancient India- A Glimpse Through *Koutilya's Arthashastra*

Sakhitha K. S., Ramakant Vyas, K. Shankar Rao

Introduction

Ayurveda, the ancient wisdom of healthy living has been taking care of the ailing humanity since antiquity. Drugs from the nature belonging to herbal, animal and mineral origin adorn the armamentarium of *Ayurveda*. Though the use of metals and minerals in therapeutics has been in practice in *Ayurveda* since centuries, their use has been flourished only after the development of *Rasashastra*. *Rasashastra* is branch that deals with the therapeutic application of metals and minerals including their various processing techniques like *shodhana, marana* etc. Although the roots of this science (*Rasa Shastra*) exist in the ancient texts of Indian civilization, its development as an independent system of therapy started around the 8th century A.D. In this paper an attempt has been made to explore this science during the medieval period through the pages of *Arthashastra* which is one of the most celebrated work of that era. *Arthashastra* is a Sanskrit treatise of immense importance which throws light in to the administrational setup of ancient India. The central theme of the work being political affairs of the state, information regarding chemical practices, metallurgy, agriculture, animal husbandry etc is also vividly described in the text. Though the author ship as well as the time period of the work is disputed, translators like Dr. Raghunath Singh (Hindi translation) and R.Shama Shastry (English translation) ascribed the work to the famous *Brahmana Kautilya* also known as Vishnu gupta also known from others sources as *Chanakya*. The work accordingly claims to date from the period 321-296 B.C[1]. The whole treatise is divided in to 15 *adhikaranas* (sections),150 *adhyayas* (chapters),180 *prakaranas* (subjects) and 6000 *slokas*. As far as the subject matter of *Rasa Shasta* is concerned the book offer knowledge on different gems and their qualities; purification methods of ores and their extraction, types of metals etc. It is evident from this text that knowledge of metallurgy was at its zenith during the period of *Mouryan* empire.

Materials And Methods

For the present review *Kautilya's Arthashastra* English translation by Dr.R.Shamashastry and Hindi translation by Raghunath Singh were considered.

Observations

§ Screening the pages of *Artha shastra,* it can be seen that almost all the *rasa dravyas* mentioned in the classical texts of *Rasashastra* has found a place in this treatise.

§ It was found that among the eight *maharasa dravyas* six of them have been referred except *Chapala* and *Rasaka* while all *uparasa* except *kamkusta* and among *sadharana rasa; hingula* have been referred in this work.

§ In book two chapter 11 dealing with the examination of gems that are to be entered in to the treasury a detailed description of various gem stones are described. Ten types of pearls, six types of diamonds, two types of coral, four types of *sphatika* and other precious stones like *manikya, indranila*, *gomeda, vaidurya* etc are described.

§ Metals like *suvarna, rajata, tamra, teekshna loha, kamsya, pittala, trapu sisa* are mentioned.

§ *Kalayasa, tamra, vritta, kamsya, sisa, trapu vaikranta and arakuta* are considered among the *loha varga*[2].

§ *Saindhava, samudra, vida, yava kshara, souvarchala* and *udbija* are considered in *lavana varga*[3] while *phanita, guda, matsyandika and khanda sarkara* are considered under the *kshara varga*[4].

§ Other group of drugs like *Sukta varga, Sneha*

varga, Amla varga and *Visha varga* is also mentioned.

§ Identification of various mineral ores of gold, silver, copper, lead, tin, iron etc are dealt with and their extraction and purification is also mentioned. It is stated that in the case of all ores when there is increase in heaviness there is increase in the metal content.

§ The artisans of *Kautilya's* time were skilled in making solid and hollow articles of gold and silver and they were adept in mixing the metals in molten state in various proportion.

§ Therapeutic utilization of metals and minerals were obviously absent considering the subject matter of *Arthashastra*. Gems and precious metals added to the wealth of treasury while iron etc were used for making weapons. The concept that mines namely mineral wealth are a source which form the finance was always upper most during that period. Many substances like *haritala, manashila, anjana etc* were used as pigments, dyes etc.

§ No direct reference regarding mercury is found. However there are descriptions of *rasa paka* and *rasa viddha*. While describing the qualification of the *Aakaradyaksha* (the superindent of mines) *rasa paka* is a quality ascribed to him[5]. *Rasa vidha suvarna* is one of the varieties of gold mentioned in the treatise[6]. The above references points to the alchemical aspect of *Rasa shastra* which prevailed during the era.

Table no:1 List of metals and minerals which are mentioned in *Kautilyas Arthashastra*.

Sl no	Metals /minerals	Reference	Sl no	Metals /minerals	Reference
1.	*Abhraka*	2:14:39	18.	*Pravala*	2:11:40
2.	*Anjana*	2:12:34	19.	*Pushpa kaseesa*	2:13:9
3.	*Gairika*	2:13:19	20.	*Roupya*	2:13:9
4.	*Gomedaka*	2:11:30	21.	*Sasyaka*	2:11:35
5.	*Haritala*	2:12:23	22.	*Shanka*	2:12:28
6.	*Heeraka*	2:11:37	23.	*Saurashtri*	2:13:49
7.	*Hingula*	2:13:19	24.	*Souvarchala lavana*	2:14:23
8.	*Indraneela*	2:11:31	25.	*sphatika*	2:11:32
9.	*Kamsya*	2:12:23	26.	*Suvarna*	2:13:1
10.	*Kalayasa*	2:13:14	27.	*Shilajatu*	2:12:4
11.	*Manashila*	2:14:25	28.	*Tamra*	2:12:23
12.	*Lauha*	2:12:23	29.	*Tikshna*	2:12:14
13.	*Manikya*	2:11:29	30.	*Vanga*	2:12:13
14.	*Mani*	2:11:28	31.	*Vimala*	2:11:35
15.	*Mukta*	2:11:2	32.	*Vritta*	2:12:23
16.	*Naga*	2:12:12	33.	*Vaidurya*	2:11:30
17.	*Pittala*	2:12:22			

§ **Pearls**

Tamraparnika, (that which is produced in the *Tamraparni)*; *Pandyakavataka*, (that which is obtained in *Pandyakavata)*; *Pasikya*, (that which is produced in *Pasa)*; *Kauleya*, (that which is produced in the *Kula)*; *Chaurneya*, (that which is produced in the *Churna)*; *Mahendra*,(that which is obtained near the mountain *Mahendra)*; *Kardamika*, (that which is produced in *Kardama)*; *Srautasiya*,(that which is produced in the *Sortasi)*; *Hradiya*, (that which is produced in *Hrada*-a deep pool of water *)*; and *Haimavata*, that which is obtained in the vicinity of the *Himalayas* are the ten varieties of pearls. *Shukti* (oyster), *Shanka*(conch shell) and *Prakirnaka* are the three sources of pearls[7]. The word *prakirnaka* is attributed to the sources like *gamataka*(elephant tusk) *sarpa phana*(snake hood) etc[8].

Sthula (big), *vritta*(circular), *nistala* (without base) *brajishnu*(brilliant), sh*weta* (white), *guru* (heavy), *snigdha*(soft to touch), and *deshavidham* (properly perforated) are the attributes of an auspicious pearl while *masuraka* (having the shape of *masura*), *triputaka* (having three joints/ resembling one type of grain called *triputa*), *kurmaka* (resembling a tortoise), *ardhachandrika* (semicircular pearl), *kanchukita*(pearl covered by *kanchuka*),*yamaka* (double), *kartak* (which is broken or scratched), *kamandaluk* (resembling a *kamandalu*- water pot used by ascetic), *kharaka* (rough surfaced) *siktaka* (resembling the colour of sikta ie bees wax), *syava* (syava varna), *neela*(bluish coloured) and *durvidha* (that which is badly perforated) are the thirteen attributes of inauspicious pearl[9].

§ **Gems**

The text describes about three types of gems based on the occurrence namely *Kouta* (obtained from the mountains of *Kuta*), *Maleyaka* (obtained from mountains of *Malaya*) and *Parasamudraka* (obtained from *Simhala dwipa*)[10].

Further gems like *Sougandhika, Vaidurya, Indranila* are explained. *Padmaraga*(resembling red lotus), *anavadhya raga*(*kumkuma varna /kesar varna*), *parijata pushpaka*(resembling *parijata pushpa*), *bala suryaka*(resembling rising sun) are the five characteristics of the *Sougandhika* gem[11]. But Dr. Raghunath Singh considers the above as five types of *manikya*(ruby)[12] rather than the characteristics.

Utpala varna (resembling colour of blue lotus), *shirisha pushpaka* (resembling shirisha flower), *udakavarna* (colour of water), *vamsharag* (colour of bamboo), *suka patravarna* (colour of feathers of parrot) are considered as the characteristics of *Vaidurya* while *Pushya Raga*, *Gomutraka* and *Gomedika* are considered as the varieties of *Vaidurya*[13]. Dr.Raghunath Singh included the characters like *utpala varna* as the variety of *Vaidurya* thus mentioning eight types of *Vaidurya*[14]. Further eight types of *Indranila* are described. *Indraneela* which is characterized with blue lines, *neelavaliya* (though white having bluish tint), *kalaya pushapka* (that which is of the colour of the flower of *Kalaya*-a kind of Phaseolus) *maha neela* which is intensely blue, *jambvabha* which possesses the color of *jambu* fruit (rose-apple), *jeemuta prabha*(blue as the clouds), *Nandaka* (inside white outer blue) and *Sravan Madhya* (that which appears to pour water from its centre) are 8 types of indranila[15]. Dr.R.Shamashastri in his commentary mentions all these as characteristics of the *Indranila* and not its types[16]. Moreover he consider *Nandaka, Sravanmadhya, Sitavristi* and *Suryakanta* as other forms of gems[17]. Types of *Sphatika* are found missing in Shamashastri's commentary while Raghunath Singh has mentioned *Shudha sphatika*(extreme white), *Mulata varna*(colour of curd) *Sitavrshti* (chadrakanta mani/moonstone), *Suryakanta* (sunstone) as the four varieties of *Sphatika*[18].

Qualities and defects of Gems

Shatkona (hexagonal), *chatushkona* (quadrangular), *vritta* (circular), *tivra raga* (possessed of dazzling glow), *samsthanavan*, *acchha* (pure), *snigdha*(smooth), *guru* (heavy), *archishman* (brilliant), *Antargataprabha* (transparent) and *prabhanulepi* (illuminating) are the eleven qualities of gems while *mandaraga* (faint color), *manda prabha* (not brilliant) *sasharkara* (presence of sand grains), *pushpachidra* (having dot like perforations), *khanda* (perforated /broken), *durvidha* (bad perforation), and *lekha kirna* (consisitng of *rekha*/ lines or scratches) are considered as the seven defects of Gems[19].

Inferior varieties of Gems

The text has elaborated eighteen varieties of inferior gems which include *Vimalaka, Sasyaka, Anjanamulaka* (dark blue), pittaka (like the bile of a cow), *Sulabhaka* (easily procurable)/white, *Lohitaka/ Lohitaksha* (red), *Amrtamsuka* (of white rays), *Jyotirasaka* (glowing), *Maileyaka* (colour of asafoetida/ colour of *sindura* or *hingula* obtained from malaya), *Ahi chchhatraka* (procured in the country of *ahichchatra*), *Kurpa* (sandy layer/colour of salt inside), *Putikurpa/Pratikurpa* (resembling the colour of bees wax), *Sugandhikurpa* (like phaseolus /*mudga varna*,) *Kshirapaka* (like milk), *Suktichurnaka* (multi colour *silapravalaka* (like coral), *Pulaka*(dark inside), *Sukrapulaka* (white inside) are varieties of inferior gems[20].Besides these *Kachamani* the artificially prepared metallic beads are also described[21].

Diamonds

Six varieties of diamonds are illustrated in text depending on their place of origin like *Sabharastraka* (obtained from a place called *Sabharastra* in Vidarbha), *Tajjamarastraka/ Madhyamarastraka* (obtained from the place called *Madhyama rashraka* the central province), *Kasteera rashtraka /Kasmaka* (obtained from *Vahika* village), *Srikatanaka* (found near the vicinity of the mountain *Vedotkata*), *Manimantaka* (from the mountain of *Manimantaka*) and *Indravanaka* (obtained from *Indravanak* in *Kalinga*)[22].

Khani (mines), *srotasa* (streams) *prakirnaka* (like *hastidanta, sarpa phana* etc) are considered as the source of origin of vajra[23].

Auspicious, inauspicious qualities of Diamond

The colour of diamond may be like that of *marjarakshaka* (cat's eye), *sirisha pushpaka* (flower of Albizia lebbeck), *gomutraka* (urine of a cow), *gomedaka* (bile of a cow),*sudha sphatika* (white in colour), *mulati varna* (colour of *mulata pushpa*) or like that of any of the gems[24].

Diamond, which is *sthula*(big), *guru*(heavy), *Praharasaham* (tolerant of hitting), *Samakotika* (regular), *Bhajanalekhi* (capable of scratching on the surface of vessels) Tarkubhrahmi/*Kubhrami* (refractive of light) and *brajishnu* (brilliant) is considered the best while the diamond which is devoid of angles, uneven and bent on one side is inauspicious[25].

Coral

Alakandaka(from a place called Alakanda near sea, Lakshadweep according to some) and *Vaivarnaka* (from *yavana dweepa*) are the two varieties of coral. They occur in two colours; *rakta*(red) and *padma raga*(ruby red). Corals which are eaten by insects or which are having a bulged middle portion is not considered auspicious[26].

Gold

Five varieties of gold are mentioned which include *jambunada*(obtained from the river *Jambu* and having the colour of *jambu* fruit). *Satakumbha* (from the mountain *Satakumbha* and having the colour of padma kesara) *Hataka* (obtained from *Hataka* mine) *Vainava* (obtained from the *Venu* mountain and having the colour of *karnikara* flower). *Sringashuktija*(obtained from *sringashukti* and having the colour of *manashila*)[27].

Gold obtained in the pure form(native gold) is termed as *Jaata rupa*, those obtained from mines along with impurities are termed as *Aakarodhbhava* while artificially prepared gold with the help of mercury is termed as *Rasavidha suvarna*[28] .

Gold having *Kinjalkavarna* (colour of pollens of lotus) which are soft, unctuous, not capable of producing sound and glittering is the best variety. That which is having *rakta peeta varna*(yellowish red) is of medium quality while *rakta varna*(red colour) is inferior. Gold that is whitish in colour is considered impure[29].

Silver

Three types of silver are mentioned viz *Tuttodgata* (that which is extracted from the mountain *Tutha*), *Gaudika* (that which is obtained from the Gauda province), *Kambuka* (obtained from mountain Kambu) and Chakravallika (from mountain Chakravala)[30].

Silver which is soft unctuous and white is considered as the best variety while those having the opposite qualities are inferior. Silver containing globules, which is glittering and having the colour of

dadhi(curd) is considered pure silver[31].

Identification of the different ores

1. Gold

Liquids which have the colour of fruits of *jambu, amra,* and *talaphala*; which are as yellow as ripe turmeric and resembles the colour of jaggery, orpiment, realgar, honey, cinnabar, lotus, *suka pankha*(the feathers of a parrot), *mayura pankha* (the feathers of a peacock); which are adjacent to water or shrubs of similar colour; and which are greasy and very heavy are *kanchanika rasa* (ores of gold)[32].

The above *kanchanika* rasa when dropped on water, spread like oil, to which dirt and filth adhere are capable of converting hundred times the weight of copper and silver into gold[33].

Those ores which are obtained from plains or slopes of mountains; which are either yellow or as red as copper or reddish yellow; marked with blue lines when broken; which have the colour of *Masha* (black beans), *Mudga* (green beans) and sesamum; which are marked with spots like a drop of curd and resplendent as turmeric resembling the colour of *haritaki* (*Terminalia chebula*), *saivala*(an aquatic plant), *yakrit* (liver), *pleeha* (spleen) petals of a lotus; which possess a sandy layer within them and are marked with figures of a circle or a *Svastika*; which contain globular masses; and which when roasted do not split, but emit much foam and smoke are the ores of gold (*Suvarnadhatavah*)[34]**.** They are capable of converting copper and silver to gold by *prativapa*[35]

2. Silver

Those ores which have colour of *shanka* (conch shell), *karpura* (camphor), *sphatika* (alum), *navaneeta* (butter), *paravata* (pigeon), *Vimalaka*, *Sasyaka* (peacockcoloured copper ore), *Gomedaka* (agate), *Guda* (cane-sugar) and *matsyandika* (granulated sugar); which has the colour of flower of *Kovidara* (*Bauhnia variegata*), of lotus, of *Patali* (*Stereospermum suaveolens*), of *Kalaya* (a kind of Phaseolus), of *Kshauma* (flax), and of *Atasi* (Linum usitatissimum); which may be in combination with lead or *Anjana*; having an obnoxious smell, even though white but when broken blackish inside and are disjoined and are marked with lines or spots; and which, when roasted, do not split, but emit much foam and smoke are silver ores[36].

3. Shilajatu

Those which are similar in appearance to gold and silver ores but having a piercing smell and taste is shilajatu[37].

4. Copper

Those ores, which are obtained from plains or slopes of mountains; and which are heavy, greasy, soft and are having the colours like yellowish red, green, dark bluish-yellow, pale red, or red are the ores of copper[38].

5. Lead

Those ores that have the colour of *Kakamechaka* (similar to *Solanum indicum*/black as a crow), *kapotavarna* (colour of a pigeon), *gorochana*(cow's bile), and which are marked with white lines and having an obnoxious smell are the ores of lead[39].

6. Tin

Those ores which are as variegated in colour, as saline soil (white) or which have the colour of a burnt lump of earth are the ores of tin[40].

7. Tikshna

Those ores that are of *pandurohita* (pale red) or *Kurumba*(orange colour) or of colour of the flower of *Sinduvara* (*Vitex trifolia*) are the ores of *Tikshna* (Iron)[41].

8. Vaikranta

Those ores that are of colour of leaf of *Kanda* (*Artemisia indica*)/ *Kakanda* (crows egg) or of *Burja patra* (leaf of birch) are the ores of *Vaikrantaka*[42].

Qualities of *Aakaradyaksha* (superintendent of mine)

In chapter 12 regarding conduction of mining operations and related manufacturing processes, author mentions the following qualities of the *Aakaradyaksha* ie the superintendent of mine. He should be an expert in *Shulba shastra* (science dealing with copper), *dhatu shastra* (science dealing with various metals) *rasapaka* (processing of

mercury), *maniraga* (colouring of gems) etc. He should be aided by experts in mineralogy and labourers equipped with necessary instruments. They should inspect the mines looking in to various factors present like *lohakitta, musha*(crucibles), *angara* (charcoal), *bhasma* (ashes) etc and should decide whether it has been an exploited mine or a newly found .They should possess the quality of identifying mineral ores and its abundance in a particular mine by considering the weight, colour, intensity, taste etc of the ores[43].

Purification and softening of ores.

The impurities of the ores can be removed by melting the ore and then treating them with *tikshna mutra* and *teekshna kshara*[45]. Dr Raghunath Singh in his commentary has taken *teekshna mutra* for human urine while Shamashastry has mentioned *tikshna* for human urine and *mutra* for urine of other animals[45]. Other methods of purification include the utilization of a mixture of herbs like *Rajavriksa(Cassia fistula)*, *Vata*(*Ficus bengalensis*), *Pilu*(*Salvadora persica)* along with cow's bile and urine and dung of buffalo and elephant[46]. Purification of silver and gold is done by the addition of lead and then heating and quenching in *taila*, *Gomaya*, *Vajrakanda* etc[47].

Metals are rendered soft with the addition of powders of *yava(Hordeum vulgare), masha(Vigna mungo), tila(Sesamum indicum), palasha(Butea monsperma), pilu(Salvadora percica), kshara(alkali) gokshira(cow milk), ajakshira(goat milk), kadali(Musa paradisiaca)* etc[48]. Trituration with *madhu*(honey), *madhuka (Maduca indica), ajakshira (goat's milk), taila*(sesame oil), *ghrita*(cow's ghee), *guda* (jaggery), *kinwa*(ferment), *kadali(Musa paradisiaca)* and also treating with *godanta(*cow's teeth*)* and *goshringa*(cow's horn) renders the metals soft[49].

Discussion And Conclusion

Rasa shastra which started as a pursuit for the alchemical dream, progressed through iatro chemical period abandoning the dream and later concentrated more on medicines derived from metals and minerals. Classical texts of *Rasa shastra* compiled after 14th century gave more importance to the therapeutic utilization of metals and minerals. A glimpse in to the *Kautiliya's Arthashastra* reveals the treatise as a remarkable compendium on mines and metallurgy even though the text dealt with political affairs of the state. Screening the pages of *Arthashastra,* it can be seen that almost all the rasa *dravyas* mentioned in the classical texts of *Rasa shastra* has found a place in this treatise. Ten varieties of pearls, three types of gems, six varieties of diamonds, two varieties of coral, five varieties of gold, three types of silver and other groups of drugs like *lavana varga, kshara varga, amla varga* etc is mentioned in the text. However therapeutic utilization of metals and minerals were obviously absent considering the subject matter of *Arthashastra.* Many terminologies related to *Rasashastra like prativapa, nisheka etc* has also found a place in the treatise. Purification methods of various ores has been later incorporated in to *Rasashastra* which can be seen in the texts *like Rasendra mangala*[50] etc. Though *rasa vidha swarna* and *rasa paka* points to the alchemical aspects no direct references related to mercury is found anywhere in *Arthashastra*. While translators has mentioned the term rasa as mercury a few others quoted contradictory-"*Arthasastra* used the word *rasapaka* meaning smelting of ores involving liquid *(rasa)* through heat and melting"[51]. Thus it can be seen that a considerable interest in metallurgy, minerals, gems, metals etc existed during the era of *Arthashastra* and it has made a significant contribution to the subject of *Rasashastra.*

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Conceptual Study

Kriyakala- An algoritham to Ayurvedic Pathology

*Dr. Ashwathy Kutty.V, **Dr. Pawankumar Godatwar, Dr. Reetu Sharma

Abstract

Shatkriyakala refers to the various stages in the evolution of a disease. The concept as such is introduced in *Susruta Samhita* eventhough the similar idea is conveyed by *Caraka* & *Vagbhata* also. *Atreya* school of thought identify three stages which include even the regression of the pathology. The *Shatkriyakala* primarily discuss the activities of doshas in the disease process relative to their actual sites in the body. The three stages entirely discuss the activities of doshas while the fourth stage Sthanasamsraya describes the onset of the actual disease process. While the disease fully manifest in *Vyakta* stage, the complications and persistence of the disease are described in Bheda. Even though it discusses so many important clinical aspects like linatva ,it fails to address the factors like *Ama, Agnimandya*, *Ashayapakarshagati, Avarana* etc. The stages are so subtle to be identified that the clinicians generally miss out in regular practice. The proper understanding &accurate interpretation of newer technologies of biomedicine like biomarkers may support the clinicians in the years to come. In this study, an attempt is made to understand the concept of Kriyakala given in Samhitas and to apply this in individual diseases.

Key words: *Kriyakala, Ama, Asayapakarshagati, Avarana.*

सारांश-

व्याधि के उत्पत्ति क्रम में होने वाली विभिन्न अवस्थाऐं षड्क्रिया काल के अर्न्तगत आती है। षड्क्रिया काल का उल्लेख नामतः सुश्रुत संहिता में मिलता है लेकिन चरक एवं वाग्भट्ट ने भी इस सिद्वान्त का वर्णन किया है। आत्रेय सम्प्रदाय में तीन अवस्थाओं का वर्णन किया है जिसमें रोग-विकृति क्रम भी समाहित है। षड्क्रियाकाल में व्याधि के उत्पत्ति क्रम में दोषों के क्रिया विधि उनके स्थान के अनुसार में वर्णित है। तीन अवस्थाओं में दोष की विभिन्न क्रियाविधि का वर्णन मिलता हैं। एवं स्थान संश्रय, चतुर्थ अवस्था में रोग की उत्पत्ति होती है। व्याधि के पूर्णतः अभिव्यक्तिव्यक्तावस्था में एवं व्याधि के उपद्रव एवं जीर्णावस्थान का वर्णन भेदावस्था में मिलता है क्रियाकाल में कई महत्वपूर्ण चिकित्सीय पक्ष जैसे लीनत्व का वर्णन मिलता है। लेकिन आम, अग्निमांद्य, आषयापकर्षण, आवरण आदि प्रमुख पत्रों का वर्णन नही मिलता। विभिन्न अवस्थाओं का ज्ञान अत्यन्त सुक्ष्म होने के कारण सामान्यतः चिकित्सकों द्वारा इनका निर्धारण नही हो पाता। नई तकनीकी जैसे बायो-मार्कर इन अवस्थाओं के सम्यक एवं सही निर्धारण के लिए सहायक हो सकती है। इस शोध पत्र में संहिता में वर्णित क्रियाकाल के सिद्वान्त का सम्यक विवेचन किया गया है जिसमें इसका विभिन्न व्याधियों में उपयोग किया जाता है।

*PG Scholar, NIA, Jaipur **H.O.D, Asso.Proffessor & Dept. Rog evam Vikriti Vijnan, NIA, Jaipur ***Asst. Proffessor,Dept.Rog evam Vikriti Vijnan, NIA, Jaipur

Conceptual Study

Kriyakala- An algoritham to Ayurvedic Pathology

Dr. Ashwathy Kutty.V, Dr. Pawankumar Godatwar, Dr. Reetu Sharma

Introduction

In any medical system, understanding a disease involves the bridging between the clinical symptoms manifested and fundamentals of the system. Every system have their own unique way of understanding the disease. For such an evaluation it is very much important to follow the pathophysiology of the disease closely at every stage of its progression. Modern system of medicine has made remarkable advances in the study of human disease mechanism. But Ayurveda was much advanced in this regard. About 2000 years ago, Acharya Susruta has beautifully outlined the stages of a disease process in general under the term Shat kriya kala. Unfortunately the later authors and successors largely failed to apply this concept to individual diseases' and to develop it further. Assessment of the disease in terms of Shatkriya kala can bring about a true ayurvedic method of understanding the disease. In this study, an attempt is made to understand the concept of Kriyakala given in Samhitas and to apply this in individual diseases.

Review and Discussion

Shatkriyakala describe the mode and stages of development of the disease. The concept of kriyakala as such is introduced in Susruta Samhita, VranaPrasnadhyaya.Dalhana commenting on the term says Kriyakala as karmavasara ie opportunity to intervene. Dr.C Dwarakanath in his work Introduction to kayachikitsa, refers the term kala to Avasthika kala and the term kriya to measures such as oushadha, Ahara and charya. These are the six stages in the evolution of the disease where the physician is supposed to intervene or initiate the treatment so as to prevent its further progression .Susruta being more surgically oriented, identify Vrana as a prime pathological event .Here the term Vrana does not merely mean an inflammatory process or an ulcer but a disease process which involve all the three doshas.In any such process, pain is due to vata dosa, paka is attributed to pitta and purulence or pus formation to kapha.In this light the term kriya can also be referred to the abnormal functions of the dosa ie dosa kriya. The shadkriya kalas are Sancaya, prakopa, prasara, sthana samshraya, vyakti &bheda.

Atreya school of thought

We find the similar concept in Caraka Samhita and Vagbhata Samhita, but given in 3 distinct stages sanchaya, prakopa, and prasama.It addresses not only the progression of the disease but the regression also.Susruta being surgically oriented, could properly differentiate the distinct stages in the pathology hence the six stages clearly indicate the evolutive phases of the disturbed doshas and does not include the prasama stage.

1. *Sancaya*

This is the accumulation of doshas in their principal abode(A.Hr Su 12/22).This stage denote the aversion towards the specific causes and desire for the factors which are opposite in gunas.As Hemadri commented, chaya is simply dosha vridhi and includes the first three stages of shadkriyakala under chaya ie Sancaya, Prakopa, Prasara.He attributes desire for the factors which are opposite in gunas to the increase in dosha vridhi in its own seat (*Prakopa*) and aversion towards the specific causes is attributed to doshas which are ready to enter the seat of other doshas.

2. *Prakopa*

Accto *vagbhata*, *Prakopa* is the dissemination of *doshas* from their principal seats. This is the stage where doshas exhibit the signs of morbidity leading to disease proper. As Arunadatta comments this stage should be identified with any of the three distinct featuresie manifestation of the symptoms, feeling of non well being, and manifestation of the disease proper. Hemadri identifies the rest of the three shatkriyakalas under Prakopa. He attributes manifestation of the

symptoms to the sthanasamsraya of the doshas, feeling of non well being to vyakti and manifestation of the disease proper to bheda stages of shatkriyakala.

3. *Prasama*

This stage denotes the reversal of pathology. Hemadri distinguishes it into 3 symptoms.

Trividha Kriyakala is just an extension of Dosha gati or a pattern of dosha gati as explained in Kiyanta shirasiya adhyaya. These are greatly influenced by seasons and these imbalances in doshas are expected even in a healthy individual in particular seasons. Therefore the pathology always cannot be illustrated on the above lines.

Shatkriyakala

Acarya susruta commences the description of shatkriyakala only to follow that of the sites of doshas which are the cause for Vrana or disease.It highlight the activities of doshas relative to their principal sites in a pathological process.

Sancaya

In this stage accumulation of doshas occur in doshastanas and the cause for these dosha chaya is as explained in ritucharyadhyaya. Cakrapani define it as the intense augmentation of the doshas in their prime seats while dalhana view it as a solid form of accumulation. Susruta has given both Samanya and vishesha lakshanas for Sancaya. Aversion towards the causes for sancaya is the samanya lakshana.

Stillness and fullness of any hollow space / viscera is ascribed to vata, yellowish tinge and slight rise of temperature to pitta, heaviness and laziness to kapha.

Prakopa

It is the second stage. Susruta has given specific nidanas for prakopa of each dosha with particular timings which exacerbate them. It is worthy to note here that rakta is given similar status as that of tridosha stating precisely the causes for its prakopa. But immediately, it is reminded that rakta cannot undergo prakopa unless any of the tridosha get vitiated.

Dalhana clearly distinguishes between *sancaya* and *prakopa* stating the differene between the consistency of aggravated doshas.In this stage, doshas acquire more of fluidity. Elsewhere, Dalhana describes two types of prakopa, chaya purvaka prakopa and achaya purvaka prakopa indicating that it is always not mandatory that prakopa should follow chaya.

Depending upon the type of Prakopa, even the intervention also changes. In achaya purvaka prakopa, it may yield even to samana mode of treatment while the other may need shodhana treatment. The very same concept is mentioned by Cakrapani as kathinyad and unabhavad(Ca.Ci.30) .Here unabhava vridhi represent the Acaya purva prakopa for which the nidanas mainly being the extrinsic factors.Kathinya vridhi represent the caya purva prakopa and it has specific nidanas and are precipitated in certain time period. Hemadri again classifies prakopa into two types Pathya and Apathya nimittaja.Even pathya ahara vihara can cause prakopa and mostly yield to samana mode of treatment and he other need shodhana treatment.

As for sancaya, two symptoms each are ascribed to specific doshas in this stage also.Pricking pain, and Irregular movement of vata in koshta, sour belching, excessive thirst, generalised burning sensation for pitta, aversion for food and excessive salivation for kapha.

Here the doshas are more dynamic and compared to sancaya, severity in symptoms is also more.Achaya purvaka prakopa should be understood as alpa chaya purvaka prakopa yielding to samana therapies.

Prasara

This is the 3rd Kriyakala.In this stage doshas leave their own seat to move to other sites.(Harana chandra).Cakrapani also acknowledge that deshantara gamana as the cardinal feature of prasara considering prasara as prakopa bheda itself .Prof G J Muelenbeld in his work address this stage as stage of diffusion. Vata dosha plays a pivotal role in the prasara of doshas because of its rajoguna.Doshas exhibit the symptoms wherever they get spread, be it locally or generally. Dr. C Dwarakanath interpret that quiescence and exacerbations are the characteristic features of prasara.Prakupita doshas when not sufficiently excited can remain dormant

and may wait for favourable conditions to exhibit themselves.

Causative factors for prasara are same as that of prakopa, the distinguishing factor being the dushti hetu samavaya. This factor is illustrated by the similey of overflowing of doughflour kept in a vessel.

According to Dalhana, here doshodreka occurs due to anyonya gunanupravesha.Here more than one potent etiological factors are involved exchanging the qualities mutually. The same concept is explained through another analogy ie when large quqntity of water is getting collected, it breaks the boundary and move to mixup with water in other areas.The first analogy denote the qualitative change and acute dosha excitation where as the second analogy denotes the quantitative change and chronic spread of Dosas.

Susruta has mentioned 15 types of Prasara with various permutations and combinations of Tridosha and Rakta.Rakta is raised to the status of Dosha in this context considering its extremely vitiating flowing nature.

Manifestation also differ in prasara and prakopa as illustrated by dalhana.The solid ghee when melted, change its consistency and start to move as in prakopa but when overheated start to overflow forming the froth(prasara). Some specific symptoms are enlisted for each dosha in prasara stage, comparatively with greater severity.

As the pathological process becomes more complex here, specific guidelines are given for treatment.The treatment should aim at the local dosha than the extrinsic one.

Hence it may be concluded that in prasara stage there will be mixing up of doshas leading to their qualitative and quantitative changes which are already excited in specific localised pockets due to specific nidanas, when those nidanas are continuously practised.This fact may justify the 15 types of Prasara explained in Samhitas. Different causative factors may excite different doshas in different degrees leading to various permutations and combinations. According to some later scholars, dosha move in three rogamargas during prasara stage, but this point need further clarification based on the thorough understanding of Rogamargas.

Sthanasamsraya

1. This stage marks the actual onset of disease process as the interaction between dosha and dushya begins. Dosas which have spread over the body get localised at some places due to derangement of local channels leading to their interaction with the dushyas. This stage represent the prodromal state of the disease which is yet to be manifested properly. Cakrapani identifies sthanasamsraya as dosha dushya samsraya (interaction of dosha and dushyas) itself considering its pathological importance. It is interesting to note that acarya has given the description very judiciously based on Dhatus and specific organs and not according to the individual doshas unlike in the previous kriyakalas. Here the manifestations of doshas largely depend upon the the site or dhatus rather than the involved doshas. The sthanas given are Udara, Basti, Medhra, Vrishana etc. Among the dhatus, acarya has excluded Majja and sukra. Both the commentators Cakrapani and Dalhana unanimously support this, siting the less incidence / occurance of diseases in Majja and Sukra. No specific symptoms are mentioned for sthanasamsraya as it is very sukshma. Sthana samsraya stage can be identified clinically with prodromal symptoms. Prodromal symptoms being specific for each disease are enumerated under individual diseases. The treatment at this stage should aim at both dosha and dushya involved.

Vyakti

Full manifestation of the disease is found in Vyakti. The term pravyakta lakshanata in the descrption refers to the cardinal feature of that particular disease. Here the treatment should be vyadhi pratyanika.

Bheda

This is the final stage and it is explained siting the examples of Vrana and the systemic diseases like jwara, atisara etc. The persistent nature of the disease and Avadirnana of vrana are given as examples for bheda kriya kala. While dalhana support this view, cakrapani disagrees stating that the persistance of a disease cannot be judjed as bheda lakshana as many diseases lack such a manifestation. Siting the opinion of other scholars, he says bheda

is a change in the state of doshas which is associated with the dusyas in the disease process. At this stage if the physician fail to intervene, the disease becomes incurable.

Critical Notes

Shatkriya Kala constitute the whole process of Samprapti.Due to the precise causes, doshas get aggravated. This can be both qualitative and quantitative increase. Understanding this depend on our perception of the nature of doshas. It is concluded that the first three stages involve only doshas as dushyas get drawn just in sthana samsraya stage.But if the specificity of dushyas are concerned in sthana samsraya, we may support the role of nidanas in causing Dhatu shaithilya right from the beginning of the pathological process.However Srotas is inevitable componenent involved in all the six stages. Thorogh understanding of srotas is essential to interpret this clinically.

Ama and Agni vaishamya are the key factors in the pathology of most of the diseases even though they do not find a direct mentioning in the context of Kriyakala. Wherever the doshas get aggravated due to sanga or obstruction, Ama or Agnimandya are the major precipitating factors. But always it is not obligatory that aggravation of doshas occur due to obstruction.

As roga marga is considered, kriya kala is not restricted to a particular roga marga but can cover different roga margas depending upon the nature of the disease.

Eventhough, Shatkriyakala remain the fundamental sketch of any disease process in Ayurveda, it seems pretty difficult to explain the concepts like Avarana, Asayapakarsha gati etc on these lines.Also it fails to elucidate the diseases that result from dosha kshaya.

It is very difficult to distinguish between these six stages clinically as we lack a detailed description in individual diseases. In samhitas while describing the individual diseases sancaya stage is fairly neglected as the specific cause mentioned for it are seasonal or according to ritubheda. Description of prakopa also gets limited to siting various nidanas, yet not giving the specific symptoms.Prasara stage should be evaluated with certain aspects of samprapti, yet we lack the description of diagnostic symptoms pertaining to that stage. The reason for this may be ascribed to the fact that up to the stage of prasara the pathology is limited to the activities of doshas only. The disease as such gets manifested only after the stanasamsraya stage. Hence the clinical diagnosis or identification of the disease is possible only at this level. Therefore in samhitas clinical picture of each disease starts with purvarupa.Many diseases are described without prodromal symptoms in classics . Here it may be understood that the dosha dushya sammurchana occurs too fastly that prodromal symptoms fail to appear.

Also it may not be wise to conclude that sancaya, prakupita and prasara stages happen only at koshta as some of the later authors suggest considering the descriptions of the symptoms that are limited to Koshta. These should be elaborated considering the manifestation of the disease in other parts of the body also.

Linatva of doshas is an important aspect in the pathophysiology, especially in the chronic diseases wherein the activities of the involved doshas are not properly manifested or hidden. From this discussion, it is clearly visible that linatva of doshas starts to be observed in prasara stage and it advances deeper. Hence it is very important to identify this as early as the stage of prasara.

In the above discussion, it is also noted that treatment start to target the Dhatus only in the stanasamsraya stage or later. Consequently we may rightly interpret the application of Rasayanas and rasoushadhis which mainly aim at dhatubala in the later stages of treatment.

Even though it is difficult to identify the stages clinically, the advancement in molecular biology, modern pathology etc can be made use of in this regard.Biomarkers are of great use in this regard Biomarkers such as adinopectin, endothelial dysfunction like leptin, high sensitivity c reactive protein, homocysteine etc can be used to detect these clinically dormant stages.

In 2001, a consensus panel at the National Institutes of Health defined the term biomarker as - ‘a characteristic that is objectively measured and evaluated as an indicator of normal biological

processes, pathogenic processes, or pharmacologicresponses to a therapeutic intervention or other health care intervention'. The biomarker is either produced by the diseased organ (e.g., tumour) or by the body in response to disease. Biomarkers are potentially useful along the whole spectrum of the disease process. Before diagnosis, markers could be used for screening and risk assessment.

During diagnosis, markers can determine staging, grading, and selection of initial therapy. Later, they can be used to monitor therapy, select additional therapy, or monitor recurrent diseases.

The biomarkers can be discussed under the following headings.

1. Diagnostic,
2. Early detection (Ex:Gene test for monogenic diseases (likecystic fibrosis), PSA, Breast cancer screening
3. Monitoring
4. Prognostic (Ex: Mammaprint: 70 gene expression to split breast cancer patients into high vs. low risk of metastases)
5. Predictive/Safety/dose(Ex: Body weight P450 enzymes (normal or poormetabolizers, Herceptin(Her 2 Breast cancer)

CONCLUSION

Even though it is difficult to understand these stages in individual diseases, this sequence very clearly helps to understand the Agni somiya basis of health and the disease. Each stage shows the slow derangement of Snigdha seeta sarira by the nidanas.Based on this fundamental view, this concept can be explored further to understand the individual diseases better.

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Conceptual Study

A critical study on the structural aspect of *Sringataka*

*Dr Seema T.S., **Dr J. Manohar, ***Dr. Vikash Bhatnagar

Abstract

Anatomy which deals with the structural aspects of human body is regarded as the firm foundation of whole art of medicine and its essential preliminary. The regional anatomy in Ayurveda is described under the heading *Marma*.*Sringataka*, one among the *Urdwajatru Marmas* deserves special importance as it is related with the sense organs. The definition given is not enough to exactly locate its position.Hence the references of *Sringataka* explained in different contexts has to be taken for a critical analysis.In the context of *Nasya*,*Kshavadhu*,*Anjana* and *Sandhi*we come across the description of *Sringataka*.*NasyaKarma* is unique in itself as it has relevant indication in all conditions, irrespective of *Doshas*.*Kshavadhu* one among the *AdharaneeyaVegas*is not only a disease but also a symptom in other diseases.Thus the region *Sringataka* becomes a crucial point.The modern literature relevant to the topic shall be analysed for a better understanding and correlation. The specific location of the *Sringataka*marma will be beneficial for carrying out studies in *Nasya* and *Kshavadhu*.

Key words: *Marma*, *Sringataka*, *Nasya*, *Kshavadhu*.

सारांश–

देह परमाणु, अंग, प्रत्यंग, कोष्ठ आशय, सिरा, धमनी आदि शरीरावयवों का संख्या स्थिति स्वरूप अधिष्ठान आदि का का निरूपण रचना शारीर के अन्तर्गत किया जाता है। यह चिकित्सा का मूल आधार है। आयुर्वेद में शरीर की स्थानीय बनावट को मर्म के अन्तर्गत रखा गया है। मर्म के अन्तर्गत श्रृङ्गाटक मर्म का विशेष स्थान है क्योंकि ये ज्ञानेन्द्रियों से संबन्धित है। श्रृङ्गाटक मर्म की परिभाषा से इसके वास्तविक स्थान का ज्ञान पूर्ण रूप से नहीं हो पाता है। अतः श्रृङ्गाटक मर्म के शरीर में स्थान का विश्लेषण करने के लिए विभिन्न संदर्भ ग्रन्थों का सहारा लेना पड़ता है। श्रृङ्गाटक मर्म का वर्णन करने के लिए विभिन्न संदर्भ ग्रन्थों का सहारा लेना पडता है। श्रृङ्गाटक मर्म का वर्णन नस्य क्षवथु एवं अञ्जन केअन्तर्गत मिलता है। नस्य कर्म अपने आप में बहुत ही महत्वपूर्ण है क्योंकि यह हर अवस्था शरीर से दोषों का निर्हरण करता है। क्षवथुएक अधारणीय वेग होने के साथ साथ स्वयं एक व्याधि एवं अन्य व्याधियों का लक्षण भी है। अतः श्रृङ्गाटक मर्म बहुत महत्वपूर्ण है। इस विषय का पूर्ण ज्ञान होन के साथ स्वयं एक व्याधि एवं अन्य व्याधियों का लक्षण भी है। अतः श्रृङ्गाटक मर्म बहुत महत्वूपर्ण है। इस विषय का पूर्ण ज्ञान एवं विश्लेषण आधुनिक विज्ञान से करना होगा। श्रृङ्गाटक मर्म के स्थान का निश्चित् ज्ञान एवं विश्लेषण आधुनिक विज्ञान से करना होगा। श्रृङ्गाटक के स्थान का निश्चित ज्ञान नस्य एवं क्षवथु से संबधित शोध करने में अत्यन्त लाभ पूर्ण होगा।

*PG Scholar, Department of Sharir rachana, NIA, Jaipur **Assistant professor, Department of Sharir rachana, NIA, Jaipur ***Assistant professor, Department of Sharir rachana, NIA, Jaipur

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Dr Seema T.S., Dr J. Manohar, Dr. Vikash Bhatnagar

Introduction

The *Ayurvedic* anatomy is nurtured in such a way that it is able to cope up with the descriptions of modern science. Starting from the most basics of embryology it feats through myology, splanchnology, osteology, arthrology etc. The only setback is that the descriptions are not obtained in a systematic manner but in a scattered form.For a better understanding the descriptions of certain organs are explained along with its pathology.For e.g.the anatomical descriptions of eyes are explained in detail with its diseases.

A very unique portion dealt in the *Sharirasthana* is the concept of *Marma*, which are certain vital points of the body. Enumerated as 107,each of them fall under five different headings based on region, structure, number, measurement and prognosis. *Sringataka* is one among the 37 *Marmas* located in the *Urdwajatru*. The definition of *Sringataka* is not enough to exactly locate its position. So all other references of *Sringataka*should be analysed to locate its position from anatomical stand view.

Materials and methods

- ✧ Reviewing the *Ayurvedic Samhitas* including commentaries related to *Sringatakamarma*.
- ✧ Reviewing the modern Anatomical literature which is relevant to the topic.
- ✧ Practical exercises like performing dissection of cadaver for exact location.
- ✧ Reviewing the *Ayurvedic* literature regarding *Nasyakarma* and *Kshavadhu* for theoretical analysis.

General description of *Marma*

The regional anatomy in Ayurveda is explained under the heading *Marma*. They are the vital points which should be protected from injury and during surgical procedures. Being the abode of *Prana*, they can be considered as physio-antomical entities where a complex group of structures function together. The descriptions incorporate applied aspects and surface anatomy. Not only for surgery but also for general diseases the knowledge of the points is of great importance.The reason is that even a mild constant irritation to these vital points can lead to pathological conditions. *Acharya* himself explains that the otherwise curable diseases when located in *Marma* become difficult to cure.

Sringataka Marma

Out of the 107 *Marmas*, *Sringataka* is one among the 37 located in the region of head.

Literal meaning is that which leads towards highest peak,or that which can be fatal on reaching a height

श्रृङ्गंअटतिइति श्रृङ्गाटकं। (*Amarakosa*)

The meaning of the term is important, thorn, meeting place of 4 roads.

श्रृङ्गाटकं भवेत् द्वारिकण्डके च चतुष्पथे। (*Amarakosa*)

Susrutha Samhitha

घ्राणश्रोत्राक्षि जिह्वा सन्तर्पणीनांसिरांमध्येसिरासन्निपातः।
श्रृङ्गाटकानितानिचत्वारिमर्माणितत्राणि सद्योमरणम्।
(*SuSh* 6 27)

The *MarmaSringataka* is explained as that which is present in the middle of confluence of *Siras* which provide nourishment to sense organs namely nose, ears, eyes and tongue. These fatal spots are 4 in number and cause immediate death.

Ashtanga Hridaya–

जिह्वाक्षिनासिकाश्रोत्रखचतुष्ट्य सङ्गमेतालन्यास्यानिचत्वारिस्त्रोतसां।
तेषुमर्मसुविद्धः श्रृङ्गाटकाख्येषुसद्यस्त्यजतिजीवितम्।
(A H *Sh* 4 34)

Sringataka is the meeting place of 4 *Srotas* which are related with the 4 sense organs –*Jihwa*, *Akshi*, *Nasika* and *Srotra*, and is located in the

Thalu.Injury to this will cause immediate death.

Other references of *Sringataka*

In the context of *Nasya*

तत्रअवसेचितमौषधंश्रोतः श्रृङ्गाटकंप्राप्य व्याप्य च मूर्धानांनेत्रश्रोत्रकण्ठादिसिरामुखानि च मुञ्जादीषिकामिव आसक्तामूर्ध्वजत्रुगतांवैकारिकीं अशेषं आशुदोषंसंहतिंउत्तमाङ्गात् अपकर्षति। (A S Su 29 2)

The drug which is administered through the nasal orifice after reaching *Sringataka*, spreads towards the *Murdha* region and the *Siras* related with the *Netra,Srotra* and *Kanda*and wipes out the vitiated *Doshas* from the *Uthamanga* as easy as a vein of a grass is removed from its blade.

In the context of *Sandhi*

श्रोत्रश्रङ्गाटकेषुशङ्खावर्तः। (*SuSh* 570)

The *Sankhavartha* type of *Sandhi* is said to be located in *Srotra* and *Sringataka*.*Haranachandra* explains that *Sringataka* should be considered as region close to *NasamoolaPradesha*.

Doshaja Kshavadhu

घ्राणाश्रितेमर्मणिसंप्रदुष्टे यस्यानिलो नासिकयानिरेति। कफानुयातो बहुशः सशब्दस्तंरोगमाहुः क्षवथुंविधिज्ञाः।। (Su.U.22/11)

The vitiated *VataDosha* vitiates the *Marma* associated with *Nasa* and then gets forcefully expelled from nose along with *Kapha* producing heavy noise and it is known as *Kshavadhu*.

AcharyaDalhana opines that the *Marma* which is related with nose is *Sringataka*. Some other opines that it is Sleshma lodging in *Nasa* and not *MarmaSringataka*.

Aganthuja Kshavadhu

तीक्ष्णोपयोगादतिजिघ्नतो वा भावान् कटूनर्कनिरीक्षणाद्वा। सूत्रादिभिर्वातरूणास्थिमर्मण्युद्धाटितेन्यः क्षवथु निरेति।। (Su U 22 12)

Inhalation and administration of*Theekshna* and *Katu* substances, exposure to sun's rays, inserting of threads, etc. causes dislodging of *TharunasthiMarma* of nose causing *Kshavathu*.

Here Dalhana considers *Tharunasthi Marma* as *Nasavamsa Asthi Marma* which is *Sringataka*.

In the commentary of ***Nasa Parisrava***

अत्ररोगेस्त्रावेः ऋङ्गाटकाख्यस्त्रोतसि स प्रविलायितान् कफात्। (Su U 22 16)

In this disease the exudate gets lodged in Srotas present in nose namely *Sringataka*.

In *Anjana*

Administration of *Lekhana Anjana* is explained for the *Doshas* located in *SringatakaMarma*.

नेत्रवर्त्मसिराकोशस्त्रोते श्रृङ्गाटकाश्रितं मुखनासाक्षिभिर्दोषमोजसास्त्रावयेत्तुतत् (Su U 18 54)

It is explained that the *Doshas* located in the *Netra Vartma*, *Siras*, *Kosa* and *Srotases* and that located in *Sringataka* are eliminated through *Mukha*, *Nasa* and *Akshi* by the effect of *Ojo Prabhava*.

Analysing all the *Ayurvedic* descriptions the regions of nasal concha, pterygopalatine fossa, cavernous sinus and middle cranial fossa can be considered for correlation.

Discussion

From the meaning and etymology it is clear that *Acharyas* has attributed the term *Sringataka* to denote its importance. It is important due to the fact that it is related with all the four sense organs which are the peripheral apparatuses through which the body communicates with the exterior.

A very detailed description of *Sandhi* is available in the classics. The movable joints are further explained based on their structure. The *Sankhavartha Sandhi* is said to be present in *Srotra* and *Sringataka* **श्रोत्रश्रङ्गाटकेषुशङ्खावर्तः।** Here there are two opinions related to the structure. Commentator *Haranachandra* explains that *Sankhavartha Sandhi* is present in regions of *Srotra* and *Sringataka*. *Indu*, commentator of *Ashtanga Sangraha* takes the term in collective singular as *Srotrasringatakam* and gives explanation as **भ्रुवोपरिकर्णनिकटे**. In the *Srotra* it can be correlated as cochlea considering it's shape. But forthe region *Sringataka*, some additional points have to be considered.

The term *Sankhavartha* means the whorls of a shell. Similar to cochlea in ear, we have to go for a structure resembling in shape to a shell related with nasal cavity. For a better clarification a dissective approach of nasal cavity was undertaken. The region was thoroughly examined and carefully cleaned for the underlying structures. The examination of lateral wall of nose on sagittal view showed the curved conchae-middle and inferior. The superior was very small when compared to other two and not appeared to be curved. A posterior approach of the nasal cavity i.e, through choanae showed only the 2 conchae, middle and inferior. It is very well resembled a whorl from posterior view and certainly were 4 in number considering both sides.No other structure was identified similar to a shell in the vicinity of nasal cavity. Also by considering the explanation of *Dalhanacharya*, that *Sringataka* is *Nasavamsasritha Asthi Marma*, the region of middle and inferior conchae of nasal cavity was considered. Hence itcan be inferred that the *Sringataka* explained in the context of *Sandhi* may most probably be the region of nasal conchae.

Kshavadhu is a reflex which is caused by the irritation to the nasal mucosa.The impulses are conveyed through the sensory nerve endings of ophthalmic and maxillary from the mucosa to centers in medulla. From there a series of actions are triggered which results in sneezing. All *Acharyas* have given importance to *Sringataka* MIarma in the pathogenesis of *Kshavadhu*. In this context, *Dalhanacharya* explains *Sringataka* as *Nasavamsasritha Asthimarma*. This also throws light to the fact that the region is located somewhere in the nasal cavity itself.

In the context of *Nasya*, the medicine administered is said to reach *Sringataka* first and then get spreads to *Murdha*, from where it spreads to *Siras* related with *Netra*, *Srotra*, and *Kandha*. Further the drug sets free or wipes out the vitiated *Doshas* from the region of head as easy as a vein of a grass is removed from its blade.Considering the anatomy of nose, a medicine administered at the anterior nares passes mainly through the floor of the nasal cavity underneath the inferior concha and partially through the middle meatus. When the position of the head is considered chances are very less for the medicine to reach upto the roof ie.,the cribriform plate. The medicine passing through the meatuses reach the posterior nares from where it traverse the nasopharynx and finally reaches the mouth. So the absorption of the medicine is mainly happening in the region of the concha itself.

Here the explanation of our *Acharyas* about the form of medicine deserves special mention. They have explained *Churna*, *Swarasa*, *Sneha* etc. The *Churna* or the powder form is to be blown into the cavity which can very well reach upto the cribriform plate, from where they get absorbed through the perineural sheaths of olfactory nerve fibres. The drugs used in *Swarasa* are mainly *Theekshna*, which by itself penetrates the mucosa and easily spreads to surrounding tissues.

Modern studies conducted in the nasal administration have proved that only a very small amount of medicine reaches the cribriform plate.The medicine administered spreads in the mucosa of the meatuses, from where its absorption occurs through the vessels and perineural sheaths of the sensory nerve endings.Another concept is that the medicine is not entering into the sinuses but it is acting only at the level of

Osteo-meatal complex. The osteo-meatal complex is the region of middle meatus with infundibulum, hiatus semilunar is, and bulla ethmoidalis.

All these findings prove that the region *Sringataka* is located in the nasal cavity around the region of conchae.

In the context of *Lekhana Anjana* ,it is explained that the *Anjana* applied in the eyes helps to eliminate the vitiated *Doshas* located in the tunics of eyeball, vessels, eyelids, *Sringataka Marma*, *Nasa* and *Mukha*. The medicine administered in eyes can reach the nasal cavity by passing through lacrima puncta, canaliculi, lacrimal sac and nasolacrimal duct.Thus it reaches the region of inferior meatus.For the function of Lekhana the medicines administered will be *Theekshna*. Due to the penetrating nature of *Theekshna* drugs it may reach upto oral cavity from the meatus. So *Sringataka* is located in the nasal cavity itself.

The descriptions of *Sandhi*, *Nasya*, *Kshavadhu* and *Anjana* point towards the fact that

nasal conchae i.e, middle and inferior should collectively be taken into account for correlating with *Sringataka*.

Numerically the *Marma* is explained as quadrupled. The middle and the inferior conchae taken together justify this description also. Metrically the explanation as *Panithalamana* can also be substantiated as the dimension of the posterior nares is almost *Panithala Mana*.

The cavernous sinuses are 2 in number and are located in the middle cranial fossa on either side of body of sphenoid. When its tributaries are considered, the venous drainage from all the sense organs except tongue are reaching the sinus, directly or indirectly.

The intracranial course of internal carotid artery is through the sinus.An injury to this region can certainly be fatal. The cortical centres of all the sensations are supplied by the branches of the internal carotid artery. So it can be said that the artery is indirectly helping the normal functions of the sense organs.

For explaining the action of *Nasya*,the drug administered reaches the mucosal surface of the cavity from where it is absorbed by the vessels and the perineural sheaths of the nerves.The venous return from the nasal cavity mainly drains into cavernous sinus and thus comes into the systemic circulation.

The pathogenesis of *Kshavadhu* is just the mucosal irritation of the nasal cavity which cannot be explained in relation to the cavernous sinus.The stimulus of irritation passes through the branches of the trigeminal nerve and reaches the centre, from where a series of reactions are triggered which results in sneezing.So if the trigeminal ganglion which lies postero-lateral to the cavernous sinus can also be taken into account along with the sinus, then the sneeze reflex can be explained.

The cavernous sinuses are two in number and are interconnected by anterior and posterior intercavernous sinuses .If all the four sinuses are taken into consideration then the number can be justified as four.

Considering *Sandhi*, a joint similar in shape of *Sankhavartha* is not located in the nearby region of cavernous sinus.

The *Pramana* of *Sringataka* is *Panithala* which is roughly 6-7 cm. The dimension of cavernous sinus is 2 cm x1cm. If both the cavernous sinuses along with the middle portion are taken into account,and then the measurement almost coincides with the *Panithalamana*.

Pterygopalatine fossa isthe pyramidal shaped fossa is located below the apex of the orbit

Communications of fossa

Superiorly	-	Orbit	-	Inferior orbital fissure
Inferiorly	-	Oral cavity	-	Greater palatine canal
Medially	-	Nasal cavity	-	Sphenopalatine foramen
Posteriorly	-	Tympanic cavity],		
Auditory tube]	-	Pterygoid canal		

The communications denote that the fossa is related with all the sense organs. Thus the opinion of *Vagbhatacharya*ie. '*Kha Chathushtaya Sangame*' is being clarified. Ifthe location of the region is being traced,it lies in the postero lateral aspect ofnasopharynx.Thus itslocation as*Thalu* can also be justified.

The contents of fossa are maxillary artery, maxillary nerve and pterygopalatine ganglion.

Considering the third part of maxillary artery and its branches, it can be seen that all the sense organs except tongue are supplied by one or the other branch of maxillary artery.

Maxillary nerve is the second division of trigeminal nerve which is purely sensory.It receives sensory fibers from eyes, nose and mouth. There is no supply to ear and tongue.

Pterygopalatine ganglion is the largest peripheral ganglion of parasympathetic system.Topographically it is related with maxillary and functionally connected with greater petrosal branch of facial nerve.This ganglion provides branches to eyes, nose and oral cavity .The ganglion is termed as the ganglion of hay fever because its stimulation produces running nose and eyes. On examining the branches of the ganglion,it mainly supplies the nasal cavity. A very few branches pass to eye and orbital cavity

While explaining the action of nasal administration, the modern studies have shown that the partial absorption occurs through the perineural sheaths and via retrograde axonal transport. The sensory nerve endings of maxillary and also branches from the ganglion help in this particular function. The sneeze reflex can also be explained as the irritation of the nasal mucosa passing through the sensory fibers of maxillary, stimulating the pterygopalatine ganglion. Due to the presence of artery and its branches an injury to this region can cause haemorrhage and be fatal.

After critically analyzing all the possible correlations,and anatomical and functional aspects,the portion of middle and inferior conchae taken together clearly explains the anatomical descriptions of *Sankhavartha Sandhi*, *Panithala Mana* and number as four.It also fulfills the location of *Thalu* as it is just above it.The region of pterygopalatine fossa which is located just lateral to nasal cavity and below the orbital cavity very well fits into almost all the explanations. *Susrutha's* explanation of '*Santharpaneenam Siranam'can* be well justified as maxillary artery provides branches to all sense organs. The '*Kha Chatushtaya Sangama*' of *Vagbhata* can be explained as the region has communication with all the senses. The location explained as '*Thalu'is* almost correct as it lies just lateral to the nasal cavity. The sensory fibre of the nasal mucosa mainly passes through the maxillary nerve and so *Kshavadhu* and *Nasya* can also be explained.The pterygopalatine ganglion itself is known as the ganglion of hay fever as on stimulation it causes running nose. The region can also be fatal as maxillary artery and its branches are present.Thus the region can be anatomically and functionally correlated with the descriptions.In the case of cavernous sinus, the nasal mucosa is mainly drained by its tributaries and thus the drug administered enters into systemic circulation.As carotid artery comes in its relation,the region can be fatal and if the intercavernous sinuses are also considered, the number becomes 4. Thus the region is functionally related.

To summarize the region *Sringataka* is a physio-anatomical entity as it is a *Marma*. Through the all-pervading *Prana Vayu* it can communicate with other regions to carry out its functions .Located within the nasal cavity in the region of turbinates, functionally it is related with pterygopalatine fossa and cavernous sinus. It can be considered as a master *Marma* as a complex group of structures are related with it.

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LITERARY REVIEW

Review on role of Herbal Drug in Prevention and Management of Kidney Stone

*Dr. Laxmi Maharana, **Dr. Om Prakash Dadhich

Abstract-

The body of evidence suggests that the incidence and prevalence of kidney stones is increasing globally. These increases are seen across sex, race, and age. Changes in dietary practices may be a key driving force. In addition, global warming may influence these trends. Renal disorders have always under concerned area since a long time. It is the leading cause of death in world today. The use of herbal drugs for the prevention and treatment of various diseases is constantly developing throughout the world. WHO has recently reported that traditional medicines have been existing in therapeutic practice even hundred years before the development of modern medicine. Herbal medicine might offer a natural safeguard against the development of conditions and act as a potent preventive drug and be a putative treatment for various diseases. Herbal drugs play a vital role in treatment of kidney stone disease. Number of medicinal plants shows antiurolithiatic activity such as Pashanabheda, Varun, Punarnava, Gokhuru, Corn silk. Punarnava & Varun reduces elevated blood urea & Serum Creatinine. Shigru & Sariva increase functional capacity like prevent renal injuries, helps improve haemopoiesis. Revand Chini detoxify the effect like significantly reduces the deposition of 2,8-dihydroxyadenine content. Shigru acting as anti oxidant. Shirish, Punarnava act as immunomodulator. Papaya, Coriandar reducing renal hypertention. Makoi, Purnarnava reduces oxidative stress. Such evidence provide scientific credence to the folklore use of traditional medicines and even be helpful in the development of future medicines, treatments and treatment guidelines.

Key words: Kidney stone, herbal drug, Ayurveda, prevention and management

सारांश–

साक्ष्य प्रमाणित करते हैं कि पथरी की व्यापकता व संभवता विश्वव्यापी रुप से बढती जा रही है। यह बढोतरी लिङ्ग, जाति एवं वय में देखी जा रही है। इसका प्रमुख कारण भोजन सम्बन्धी परिवर्तन है। इसके अलावा विश्वव्यापी तापक्रम की वृद्धि भी इसे प्रभावित करता है। गुर्दे के विकार विश्व में हमेशा से कम चिंतित करने वाला क्षेत्र रहा है किन्तु यह विश्व भर में मृत्यु का एक प्रमुख कारण है। प्राकृतिक जडीबूटियों का उपयोग अनेक रोगों के उपचार एवं चिकित्सा में बढ रहा है। विश्व स्वास्थ्य संगठन ने हाल ही में कहा है कि परम्परागत औषधियों का चिकित्सकीय उपयोग आधुनिक विज्ञान के कई सौ वर्षों पूर्व से रहा है। ये परम्परागत औषधियाँ अनेक रोगों के क्रमिक लक्षणों, बचाव एवं विख्यात चिकित्सा के रुप में एक प्राकृतिक रक्षात्मक उपाय हो सकता है। पथरी में भी ये जडीबूटियाँ मुख्य भूमिका अदा करती है। कई औषधियॉ जैसे पाषाणभेद, वरुण, पुनर्नवा, गोक्षुर, मकई के बाल पथरी के विरुद्ध काम कर्ते है। पुनर्नवा व वरुण रक्त युरिया व क्रिएटिनिन को घटाते है। शिग्रु व सारिवा कार्यात्मक शक्ति को बढाकर क्षति को होने से रोकते है व रक्त की वृद्धि करते है। रेवन्द चीनी विषहर कार्य जैसे 2–8 डाईहाइड्रोक्सी एडिनीन को घटाता है। शिग्रू एन्टीऑक्सीडेन्ट है, शिरीष, पुनर्नवा इम्यूनोमॉड्युलेटर है। पपीता व धान्यक गुर्दे के रक्तदाब को कम करता है। मकोय व पुनर्नवा ऑक्सीडेटिव स्ट्रेस को कम करता है। इसी प्रकार के प्रमाण लोकसाहित्य में उपयोग की जाने वाली परम्परागत औषधियों को भविष्य में औषध चिकित्सा, बचाव व चिकित्सा मार्गदर्शन के विकास मे सहायक हो सक्ती है।

*PhD Scholar, P.G. Dept. of Sharir Kriya, National Institute of Ayurveda, Jaipur. laxmimaharana01@gmail.com Mob- 9462842192 **Dean Academic & H.O.D. P.G. Dept. of Sharir Kriya, National Institute of Ayurveda, Jaipur.

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Dr. Laxmi Maharana, Dr. Om Prakash Dadhich

Introduction-

Data collected from various countries for the incidence and prevalence suggest that The body of evidence suggests that the incidence and prevalence of kidney stones is increasing globally. These increases are seen across sex, race, and age. Kidney stone (urolithiasis / nephrolithiasis) found as a common problem worldwide Kidney stones occur one in 20 people at some time in their lives. The average life time risk of stone formation has been reported in the range of 5-10 %. A predominance of men over women can be observed with an incidence peak between the fourth and fifth decade of life, most produvtive years of life. Globally urolithiasis is the primary diagnosis for almost 2 million office visits, more than 600,000 emergency room visits, and more than 177,000 hospitalisations, totalling more than 2 billion dollars in annual expenditures according to survey of year 2000. In India, approximately 5 -7 million patients suffer from stone disease and at least 1/1000 of Indian population needs hospitalization due to kidney stone disease and the prevalence is increasing throughout the industrialized world.

The lifetime risk is about 10–15% in the developed world, but can be as high as 20–25% in the middle east. Nephrolithiasis is largely a recurrent disease with a relapse rate of 50% in 5–10 years and 75% in 20 years. Once recurrent, the subsequent relapse risk is raised and the interval between recurrences is shortened.

Plants provide a cheap source of drugs specially in developing and underdeveloped countries. Several studies were done on plants used in traditional antiurolithic therapy have revealed their therapeutic potential in the in vitro or in vivo models. Many plants have been used for the treatment of kidney stone in Ayurveda. Indeed along with the dietary measures, plant preparation formed the basis of the treatment of the disease until the introduction of allopathic medicine. Thus ayurveda can help to reduce the economic burden by prevention and management of disease or cut the cost of surgery by various antilithotropic action.

Mechanism of Various Drugs on Kidney Stone-

There are various herbal drugs are available having different mechanism to treat urolithiasis. Herbal medicines have several phytoconstituent and exert their beneficial effects urolithiasis by multiple mechanisms like:

1} Alteration of physiological pH: The parameter urine pH is the leading factor that predominantly identifies the type of urine calculus. Crystalluria is pH dependent.

2} Diuretic activity: Increasing urine volume decreases the saturation of salts & prevents precipitation of crystal at physiological pH. All herbal medicine used for treatment of urolithiasis has diuretic action and some known to alkalize the urine.

3} Antioxidant property : Antioxidant activity Improve renal tissue antioxidant status and cell membrane integrity and prevent reoccurrence. Renal cellular exposure to oxalate (Ox) and/or CaOx crystals leads to the production of Reactive Oxygen Species (ROS), development of oxidative stress followed by injury and inflammation. Renal injury and inflammation appear to play a significant role in stone formation. The interaction between injured renal tubular epithelium and CaOx crystals or oxalate ions is likely to play a critical role in the formation of urinary calculi.

4} Antiurolithiatic Activity by various activity:

- Trinapanchamool consisting of five herbal drugs namely Desmostachya bipinnata, Saccharum officinarum, Saccharum nunja,

Saccharum spontaneum and Imperata cylindrica was found to be effective both as prophylactic in preventing the formation and as curative in dissolving the pre-formed stones with diuretic activity in albino rats.

- Varuna, Ghokhru and Kulattha were found to be effective in preventing the deposition of the stones in experimental rates. kulatha had marked (87 %) dissolving activity and stones become friable
- Aerva lanata(Varuna) reduced oxalate synthesizing enzyme (Glycolic acid oxidase & lactate dehydrogenase), diminished marker of crystal deposition and inhibition of oxalate synthesizing enzyme. Tribulus terresteris (Gokshur) The antiurolithic activity is attributed to its GOX inhibition. Aquous extract of T. terrestris administration to sodium glycolate fed rats regulate Oxalate Metabolism and produced a significant decrease in urinary oxalate excretion, and a significant increase in urinary glyoxylate excretion, as compared to sodium glycolate fed animals and similar results were observed for Aerva lanata
- Rubia cordifolia, Aerva lanata, Moringa oleifera maintain crystalloid-colloid balance by decreasing excretion of urinary calcium, oxalate, uric acid, phosphorus and protein in urolithiasis Corn silk reduces irritation, increases urine secretion & in addition, it possesses excellent antioxidant capacity. It was found that the alcoholic extract antiurolithiatic activity in dissolution of regenerated calcium oxalate crystals.

5} Glomerular Filtration Rate (GFR) decreases due waste products, particularly nitrogenous substances such as urea, creatinine and uric acid get accumulated in blood. Herbal therapy improves the renal function by increasing the excretion of urea and creatinine. Moringa oleifera and Rubia cordifolia significantly lower serum levels of accumulated waste products BUN and creatinine is attributed to the enhanced GFR.

6} Antimicrobial Property: Damaged membrane due to kidney stone as a consequence of bacterial attack often accompanied by infection.

7} Analgesic and Anti-Inflammatory Activity activity shows marked improvement in symptoms of urinary calculi like pain, burning micturition and haematuria. Phyllanthus niruri have their beneficial action in urolithiasis due to anti-inflamatory effect.

Various studies have been done previously on many of drugs. Few studies are shown here.

Saunf (Trigonella foenum-graecum)- Fenugreek seeds have been used by traditional herbalists for problems of kidney. Trigonelline (N-methylnicotinic acid, N-methyl betaine) is the major alkaloid phytoconstituent of fenugreek seeds act by suppression of oxidative stress in kidney and reduction in renal cell apoptosis and fibrosis. Increased diuresis, antioxidant activity and lowering of urinary concentrations of stone forming constituents are suggested mechanism for anti-urolithiatic effects of fenugreek seeds.

Kulattha (Dolichous Biflorus)- Kulattha can be used to reduce the recurrence of calcium oxalate stone and it is shown to have a better result than the use of conventional potassium citrate.

Punarnava (Boerhaavia diffusa)- It has antioxidant activity significantly protects against hyperoxaluric oxidative stress and renal cell injury in urolithiasis. In an experimental study histopathological changes showed that acetaminophen caused significant structural damages to kidneys like tubular necrosis, degeneration of epithelial cells, glomerular damage and congestion which was reversed with B. diffusa proved to be nephroprotective agent.

Varuna (Crataeva nurvala)- C. nurvala stem bark against free radical toxicity has been investigated in experimental urolithiasis. Lupeol adminstration induced a remarkable decrease in kidney oxalate level and also was effective in counteracting the free radical toxicity by bringing about a significant decrease in peroxidative levels and an increase in antioxidant status. These observations highlight the antioxidant property of lupeol and its cytoprotection against free radical toxicity.

Bark decoction on calcium oxalate urolithiasis induced by 3% glycolic acid has been

studied in rats. The decoction showed significant activity in preventing the deposition of calcium and oxalate in the kidney by inhibiting the activity of the Liver enzyme glycolic acid oxidase. Treatment with C. nurvala bark decoction was reported to lower the levels of intestinal NaZ , KZ -ATPases.

Ashwagandha (Withania somnifera)- Root possess nephroprotective effect. In an experimental study it was observed that, the mean serum urea, creatinine levels were significantly ($p<0.001$) higher in gentamicin treated control group in comparison to those of baseline control. Again, these levels were significantly ($p<0.01$) lower in ashwagandha pretreated and gentamicin treated group (experimental group) when compared to those of gentamicin treated group (control).

Yavasa(Alhagi pseudalhagi)-It had a significant effect on the rate of stone expulsion and decreased the time for passage of urinary stones.

Shigru (Moringa Oleifera)- Shigru bark is found to be very effective in the management of UTI. study has shown that the water and methanolic extracts of leafs posses some degree of antimicrobial activity and these results provide valuable information that it holds great promise as highly effective antibacterial agents.

The aqueous and alcoholic extracts of the root wood significantly reduced the elevated urinary oxalate, showing a regulatory action on endogenous oxalate synthesis in hyperoxaluria induced with ethylene glycol.

Guduchi (Tinospora cordifolia)- In a study antibacterial activity of aqueous, ethanol and chloroform extracts of leaves and stem were tested on clinical isolates of urinary pathogens viz., Escherichia coli, Klebsiella pneumoniae, Proteus vulgaris and Pseudomonas aeruginosa by agar well diffusion method. Ethanol extract of leaf showed greater inhibitory action than other tested extracts. T. cordifolia has been claimed to possess antidepressant, antioxidant, antidiabetic, hypolipidaemic, antiinflammatory, antiischemic, immunomodulatory potential. It is also claimed to possess diuretic effect.

Haridra (Curcuma longa)- The nephroprotective and diuretic effects of three medicinal herbs Petroselinum sativum, Eruca sativa and Curcuma longa, alone and in combination were investigated against gentamicin induced nephrotoxicity in rats. The results showed that gentamicin induced nephrotoxicity was ameloriated by oral administration of aqueous infusion of these drugs.

Rutin and curcumin are the polyphenolic compounds present in turmeric, known to have antioxidant and anti-inflammatory activities. Supplementation of rutin and curcumin restored elevated levels of calcium and oxalate in the urine and kidney sample near to normal and showed minimum tissue damage and less number of calcium oxalate deposits in kidney of animal treated with rutin and curcumin as compared to calculi-induced animal. This effect is mediated possibly through a lowering of urinary concentration of stone forming constituents, anti-inflammatory and antioxidant effects.

Manjjistha (Rubia cordifolia)- In a study the hydro-alcoholic extract of Rubia cordifolia was investigated against Cisplatin induced nephrotoxicity in Swiss albino mice. Cisplatin at a dose of 12 mg/kg body wt was administered intraperitoneally while another set of animals were given hydro-alcoholic extract of Rubia cordifolia at different doses along with cisplatin treatment. The extract significantly decreased the cisplatin induced nephrotoxicity. The study concluded the nephroprotective role of Hydro-alcoholic extracts of Rubia cordifolia. R. cordifolia is found to exhibit anti-inflammatory activity as well as dose dependent increase in urine volume and electrolyte excretion.

Brihat Gokshura (Pedalium murex)- Nephrotoxicity was induced in Wistar rats by intraperitoneal administration of Cisplatin 5mg/kg. Effect of concurrent administration of ethanolic extract at a dose of 250 mg/kg given by oral route was determined using serum creatinine and blood urea and change in body weight as indicators of kidney damage. Cystone was used as standard drug. The study showed that the ethanolic extract of dried fruits has an excellent nephroprotective activity as compared to cystone.

Sahadevi (Vernonia cinerea)- The alcoholic extracts of aerial parts has been examined

for its effect on cisplatin induced nephrotoxicity at a dose of 6mg/kg, i.p. in albino rats. The alcoholic extract showed pronounced curative activity and the ethyl acetate extract has exhibited good prophylactic activity and petroleum ether extract showed moderate protection for both curative and prophylactic models against cisplatin-induced toxicity.

V. cineria is reported in the literature for its anti-inflammatory, analgesic and antibacterial properties.

Pashanbheda **(Aerva lanta)-** The ethanolic extract of the entire plant was studied for its nephroprotective activity in cisplatin and gentamicin induced acute renal injury in albino rats. The results suggest that the ethanolic extract possesses marked nephroprotective activity could offer a promising role in the treatment of acute renal failure caused by nephrotoxins.

Shunti **(Zingiber officinale)-** Nephrotoxicity was induced by i.p. administration of gentamicin 100 mg/kg/day for eight days in wistar rats. Effect of concurrent administration of ethyl acetate extract and fresh juice extract at a dose of 200 mg/kg/day given by oral route. Gentamicin-induced glomerular congestion, peritubular and blood vessel congestion, epithelial desquamation, accumulation of inflammatory cells and necrosis of the kidney cells were found to be reduced in the groups receiving the ethyl acetate and dried fresh juice extract along with gentamicin. The study concluded that both extracts possess significant nephroprotective activity.

It has been reported to possess a potent anti-oxidant activity in vitro which reduces the oxidative stress in the body. Administration of its ethanolic extract to ethylene glycol rats prevented super saturation of calcium oxalate and thus decreased their deposition in renal tubules due to active compound present in the extract.

Haritaki **(Teminalia chebula)-** The extract has been reported to possess uraemic toxin decreasing action in rats. It lowers the serum concentration of urea nitrogen, creatinine, methyl guanidine and guandiniosuccenic acid significantly.

Anant moola **(Hemidescus indicus linn)-** The treatment with H. indicus helped in the management of renal impairment, which was induced by gentamicin in rats. This is evident from the results obtained for various kidney function tests for gentamicin, along with the results from the plant treated group, and is in comparison with the results found for the gentamicin recovery group. A histological examination of kidneys also supports the findings from haematological evaluations. The plant shows promise as an adjunct therapy along side aminoglycosides as it reduces nephrotoxicity caused by aminoglycosides.

Makoy**(Solanum nigrum)-** The extract possesses significant nephroprotective activity. Nephrotoxicity was induced in Wistar rats by intraperitoneal administration of gentamicin 100 mg/kg/day for eight days. Effect of concurrent administration of fresh juice extract at a dose of 100 mg/kg/day given by oral route was determined using serum creatinine, AST, ALT, blood urea, ALP, ACP, reduced glutathione, catalase, glutathione peroxidase and protein as indicators of kidney damage. The fresh juice extract of Solanum nigrum significantly protected rat kidneys from gentamicin-induced nephrotoxicity by normalizing the alterations in biochemical parameters.

Gokshura**(Tribulus terrestris)-** It has diuretic, antiurolithic, and immunomodulatory activities. For the last few decades or so, extensive research work has been done to prove its biological activities and the pharmacology of its extracts. The diuretic properties are due to large quantities of nitrates and essential oil present in its fruits and seeds. The diuretic activity can also be attributed to the presence of potassium salts in high concentration. The aqueous extract in oral dose of 5mg/kg, elicited a positive diuresis, which was slightly more than that of furosemide. Sodium and chloride concentrations in the urine were increased. The increased tonicity of the smooth muscles, which was produced by Tribulus terrestris extract, together with its diuretic activity helped in the propulsion of stones along the urinary tract.

Saurabh et al. evaluated the different extracts of Tribulus terrestris fruits, viz. aqueous, methanolic, Kwatha-high strength, Kwatha-low strength, and Ghana powder, for diuretic activity in rats. Kwatha-high strength showed diuretic effect comparable to

that of the reference standard frusemide and also exhibited additional advantage of potassium-sparing effect. The diuretic action makes it useful as an anti-hypertensive agent.

In a study, ethanolic extract exhibited significant dose-dependent protection against deposition of calculogenic material around the glass bead, leukocytosis, and elevation in serum urea levels. Subsequent fractionation of the ethanol extract led to decrease in activity.

Barley (Hordeum vulgare)- It contain flavonoid saponarin which on hydrolysis gives equilibrium mixture of saponaretin & vitexin, which is responsible for its antioxidant effect. Ethanolic extract significantly reduced the urinary excretion of the calcium, phosphate, uric acid, magnesium, urea, and oxalate and increased the excretion of citrate compared to control. It was also observed that it significantly decreases lipid peroxidation and increase levels of superoxide dismutase and catalase and concluded that urolithiatic effect is due to antioxidant activity. Barley act as antioxidant and anti-inflammatory play an important role in the protection from incidence of chronic renal failure. On the other hand some beverages made from barley have been used in Egypt as Folk medicine to alleviate kidney dysfunction. Phytate, ß-glucan, tocopherols and tocotrienols were reported to present in barley seeds.

Corn silk (Stigma maydis) – Corn silk is made from stigmas, the yellowish thread like strands from the female flower of maize. The rational behind its use for the treatment of kidney stones is that it reduces irritation, increases urine secretion & in addition, it possesses excellent antioxidant capacity. It was found that the alcoholic extract antiurolithiatic activity in dissolution of regenerated calcium oxalate crystals.

Orange(Citrus sinensis)- Administration of the ethanol extract showed significant decreases in hematologic parameters and increases in animal body weight, liver, renal, lipid and glycemic parameters as well as vascular and inflammatory changes in liver and kidney, at high doses. The aqueous extract acted like an immune stimulator, with strong antioxidant activity while the ethanol extract presented the risk of artherosclerotic diseases and renal and liver malfunction.

Revand Chini(Rheum emodi)- the renal effects of water-soluble (W-S) and water-insoluble (W-INS) portions of the alcoholic extract of Revand Hindi (Rheum emodi) were investigated on cadmium chloride, mercuric chloride, potassium dichromate and gentamicin-induced nephrotoxicity in rats and normal rats by monitoring the levels of urea nitrogen and creatinine in serum. The present investigations provide evidences that W-S fraction has nephroprotective effect on all the proximal tubule segments (S1, S2 and S3) possibly through antioxidant action of the tannins present in the fraction. W-INS also improved the renal function by protecting S2 segment of proximal tubule nephrotoxicity induced by metals viz cadmium chloride and mercuric chloride in rat models, however, this fraction has been found to enhance gentamicin nephrotoxicity.

Papaya (Carica papaya Linn.)- nephroprotective effect on CCl_4 renal injured rats, an effect which could be mediated by any of the phytocomponents present in it via either antioxidant and/or free radical scavenging mechanism.

***Apamarga*(Achyranthus aspera)-** Effect of A. aspera on inhibition of mineralization of urinary stone forming minerals using four models that included simultaneous flow static model, simultaneous flow dynamic model, reservoir static model and reservoir dynamic model and the results revealed inhibition of mineralization.

***Gojivha* (O. bracteatum)-** is reported diuretic and spasmolytic action.

***Bhumyamalaki* (Phyllanthus niruri)-** has an inhibitory effect on crystal growth, in a rat model of urolithiasis induced by introduction of calcium oxalate seed in bladder of rats. The effect may be due to higher Levels of glycosoamino glycans incorpated into calculi.

In vitro studies in which calcium oxalate precipitation was induced by addition of 0.1 M sodium oxalate to unfiltered urine samples from Wistar rats and normal humans in absence and presence of P. niruri extract (0.25 mg/ml), suggested that extract may interfere with early stages of stone formation.

Nimba(Melia azedarach)-The aqueous extract of Melia azedarach Linn. studied against ethylene glycol induced nephrolithiasis in male albino wistar rats. The aqueous extract of M. azedarach reduced urinary calcium, oxalate, phosphate and elevated urinary magnesium levels and urine volume.

***Mulaka* (Raphanus sativus)-**The aqueous extract of Raphanus sativus showed antilithiatic activity on implants of calcium oxalate crystals or zinc discs in the urinary bladder of rats. The effect however is unrelated to increased diuresis or to a change of the muscarinic receptor affinity of the bladder smooth musculature to cholinergic ligands.

***Shatavari* (Asparagus racemosus)-**The ethanolic extract of Asparagus racemosus Wild had an inhibitory potential on lithiasis induced by oral administration of 0.75% ethylene glycolated water to adult male Albino Wistar rats for 28 days. The ethanolic extract, significantly reduced the elevated level of calculogenic ions in urine and it elevated the urinary concentration of magnesium, which is considered as one of the inhibitors of crystallization.

Table: Various drugs mechanism of action in kidney stone

S.No.	Mechanism Of Action	Herbal Drug
1.	Diuretic activity	Saunf(Trigonellafoenum-graecum[24] Mulak (Raphanussativus)[66] Guduchi(Tinospora cordifolia)[36] Haridra (Curcuma longa)[38] Gokshura(Tribulus terrestris)[52,53] Manjistha(Rubia cordifolia)[40,41] Gojivha(Onosma bracteatum)62
2.	Antioxidant activity	Saunf(Trigonellafoenum-graecum)[24] Punarnava (Boerhaavia diffusa)[26] Varuna(Crataeva nurvala)[28] Barley (Hordeum vulgare)[55,56] Orange(Citrus sinensis)[58] Haridra(Curcuma longa)[38] Shunti (Zingiber officinale)[48] Corn silk (Stigma maydis)[57] Papaya(Carica papaya Linn.)[60]
3.	nephroprotective against drug induced renal injury (Prophylactic/ Management)	Punarnava (Boerhaavia diffusa)[27] Varuna(Crataeva nurvala)[29] Pashanbheda (Aerva lanta)[46] Ashwagandha (Withania somnifera)[30] Haridra (Curcuma longa)[37] Shigru(Moringa Oleifera)[22] Manjjistha (Rubia cordifolia)[39] Brihat Gokshura (Pedalium murex)[42] Sahadevi (Vernonia cinerea)[43] Shunti (Zingiber officinale)[47]

		Makoy(Solanum nigrum) [51] Sariva(Hemidescus indicus)[44] Revand Chini(Rheum emodi)[59] Pashanbheda (Aerva lanta)[46] Anantmoola(Hemidescus indicus linn)[50]
4.	Inhibition of oxalate synthesizing enzyme	Varuna(Aerva lanata)[16 18] Gokhru(Tribulus terrestris)[17 18] Kulattha (Dolichous Biflorus)[25] Guduchi(Tinospora cordifolia)[36] Stigma maydis(Corn silk)57 Bhumyamalaki(Phyllanthus niruri)[63 64]
5.	antiurolithic effect	Saunf(Trigonellafoenum-graecum)[24] Yavasaka(Alhagi pseudalhagi)[31 32] Haridra (Curcuma longa)[38] Haritaki(Teminalia chebula)[49] Gokshura(Tribulus terrestris)[54] Apamarga(Achyranthus aspera)[61] Nimba(Melia Azedarach)[65] Mulaka(Raphanus sativus)[66] Shatavari(Asparagus racemosus)[67]
6.	UTI	Shigru(Moringa Oleifera)[33]
7.	Atiinflammatory & Antimicrobial	Haridra (Curcuma longa)[38] Shigru(Moringa Oleifera)[33] Guduchi(Tinospora cordifolia)[35] Sahadevi(Vernonia cinerea)[44 45]
8.	Immunomodulator	Ashwagandha (Withania somnifera)[30] Guduchi(Tinospora cordifolia)[36] All nephroprotective and antioxidant, antioxidant and anti-inflammatory drugs can be included in this group.
9.	Cytoprotective	Varuna(Crataeva nurvala)28
10.	reduces elevated blood urea & Serum Creatinine	Punarnava(Boeharavia diffusa)27 Haritaki(Terminalia chebula)49 Gokshura(Tribulus terrestris)54 Ashvagandha(Withania somnifera)30 Vrihat Gokshur(Pedalium murex)42
11.	reducing renal hypertention	Gokshura(Tribulus terrestris)54 Papaya(Carica papaya)60

Conclusion-

Considering all these evidences of previous studies it is suggested that ayurveda drugs has potential to act as antiurolithiatic by multiple actions such as Alteration of physiological pH, Diuretic activity, Antioxidant property, Regulate Oxalate Metabolism, Regulates the Crystalloid Colloid Imbalance and Improve Renal Function, Antimicrobial Property. Usually single drug acts via more than one mechanism.

Contemporary science has developed far more than ayurveda in previous few centuries. It can't be said that ayurvedic drugs can replace the present standard treatment and surgical procedures but it has shown the potential for prevention and management of kidney stones with few limits which can cut the cost of economic burden for this disease. It is suggested that these drugs should be revalidated as per present guidelines of safety and efficacy of herbal drugs. So these can be established as safe and effective antiurolithiatic drugs world wide.

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Instructions for authors

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It is published quarterly i.e. January-March, April-June, July-September and October-December.

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Identifying details should be omitted if they are not essential. Complete anonymity is difficult to achieve, however, and informed consent should be obtained if there is any doubt. For example, masking the eye region in photographs of patients is inadequate protection of anonymity.

Informed consent is a must in prospective trials involving human beings. When informed consent has been obtained it should be indicated in the manuscript.

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Manuscripts will be reviewed with due respect for authors' confidentiality. Confidentiality may have to be breached if dishonesty or fraud is alleged but otherwise will be honored.

Information about manuscripts (including their receipt, content, status in the reviewing process, criticism by reviewers, or ultimate fate) will not be disclosed to anyone other than the authors and reviewers. This includes requests to use the materials for legal proceedings.

Reviewer comments should not be published or otherwise made public without permission of the reviewer, author, and editor.

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When reporting experiments on human subjects, authors should indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. If doubt exists whether the research was conducted in accordance with the Helsinki Declaration, the authors must explain the rationale for their approach, and demonstrate that the institutional review body explicitly approved the doubtful aspects of the study. When reporting experiments on animals, authors should be asked to indicate whether the institutional and national guide for the care and use of laboratory animals was followed.

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Editors will consider seriously for publication any carefully done study of an important question, relevant to readers, whether the results are negative (that is, convincingly allow the null hypothesis to be accepted) or positive (that is, allow the null hypothesis to be rejected).

III.B. Corrections, Retractions and "Expressions of Concern"

Editors assume initially that authors are reporting work based on honest observations. Nevertheless, two types of difficulty may arise.

First, errors may be noted in published articles that require the publication of a correction or erratum of part of the work. The corrections will appear on a numbered page, be listed in the contents page, include the complete original citation, and link to the original article and vice versa online. It is conceivable that an error could be so serious as to vitiate the entire body of the work, but this is unlikely and will be handled by editors and authors

on an individual basis. Such an error should not be confused with inadequacies exposed by the emergence of new scientific information in the normal course of research. The latter requires no corrections or withdrawals.

The second type of difficulty is scientific fraud. If substantial doubts arise about the honesty or integrity of work, either submitted or published, it is the editor's responsibility to ensure that the question is appropriately pursued, usually by the authors' sponsoring institution. However, it is not ordinarily the task of editors to conduct a full investigation or to make a determination; that responsibility lies with the institution where the work was done or with the funding agency. The editor should be promptly informed of the final decision, and if a fraudulent paper has been published, the journal will print a retraction. If this method of investigation does not result in a satisfactory conclusion, the editor may choose to conduct own investigation. As an alternative to retraction, the editor may choose to publish an expression of concern about aspects of the conduct or integrity of the work.

The retraction or expression of concern, so labeled, will appear on a numbered page in a prominent section of the print journal as well as in the online version, be listed in the contents page, and included in its heading the title of the original article. It will not simply be a letter to the editor. Ideally, the first author will be the same in the retraction as in the article, although under certain circumstances the editor may accept retractions by other responsible persons. The text of the retraction should explain why the article is being retracted and include a full original citation reference to it.

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Redundant (or duplicate) publication is publication of a paper that overlaps substantially with one already published in print or electronic media.

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3. The paper for secondary publication is intended for a different group of readers; an abbreviated version could be sufficient.
4. The secondary version faithfully reflects the data and interpretations of the primary version.
5. The footnote on the title page of the secondary version informs readers, peers, and documenting agencies that the paper has been published in whole or in part and states the primary reference. A suitable footnote might read: "This article is based on a study first reported in the [title of journal, with full reference]."

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III.D.4. Competing Manuscripts Based on the Same Study

Two kinds of competing submissions will be considered: submissions by coworkers who disagree on the analysis and interpretation of their study, and submissions by coworkers who disagree on what the facts are and which data should be reported.

Setting aside the unresolved question of ownership of the data, the following general observations may help editors and others dealing with these problems.

III. D.4.a. Differences in Analysis or Interpretation

If the dispute centers on the analysis or interpretation of data, the authors should submit a manuscript that clearly presents both versions. The difference of opinion should be explained in a cover letter. The normal process of peer and editorial review of the manuscript may help the authors to resolve their disagreement regarding analysis or interpretation.

If the dispute cannot be resolved and the study merits publication, both versions will be published. Options include publishing two papers on the same study, or a single paper with two analyses or interpretations. In such cases it would be appropriate for the editor to publish a statement outlining the disagreement and the journal's involvement in attempts to resolve it.

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If the dispute centers on differing opinions of what was actually done or observed during the study, the journal editor will refuse publication until the disagreement is resolved. Peer review cannot be expected to resolve such problems. If there are allegations of dishonesty or fraud, editors will inform the appropriate authorities; authors will be notified of editor's intention to report a suspicion of research misconduct.

III.D.5. Competing Manuscripts Based on the Same Database

Editors may sometimes receive manuscripts from separate research groups that have analyzed the same data set, e.g., from a public database. The manuscripts may differ in their analytic methods, conclusions, or both. Each manuscript will be considered separately. Where interpretations of the same data are very similar, it is reasonable but not necessary for editors to give preference to the manuscript that was received earlier. However, editorial consideration of multiple submissions may be justified in this circumstance, and there may even be a good reason for publishing more than one manuscript because different analytical approaches may be complementary and equally valid.

III.E. Correspondence

As a mechanism for submitting comments, questions, or criticisms about published articles, as well as brief reports and commentary unrelated to previously published articles. This will likely, but not necessarily, take the form of a correspondence section or column. The authors of articles discussed in correspondence should be given an opportunity to respond, preferably in the same issue in which the original correspondence appears. Authors of correspondence will be asked to declare any competing or conflicting interests.

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Although editors have the prerogative to sift out correspondence material that is irrelevant, uninteresting, or lacking in cogency, they have a responsibility to allow a range of opinion to be expressed. The correspondence column will not be used merely to promote the journal's, or the editors', point of view. In all instances, editors will make an effort to screen out discourteous, inaccurate, or libelous statements.

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IV. Manuscript Preparation and Submission

IV.A. Preparing a Manuscript for Submission

Editors and reviewers spend many hours reading manuscripts, and therefore appreciate receiving with manuscripts that are easy to read and edit. Much of the information in journals' instructions to authors is designed to accomplish that goal in ways that meet each journal's particular editorial needs. The guidance that follows provides a general background and rationale for preparing manuscripts for any journal.

IV.A.1.a. General Principles

The text of observational and experimental articles is usually (but not necessarily) divided into sections with the headings Introduction, Methods, Results, and Discussion. This so-called "IMRAD" structure is not simply an arbitrary publication format, but rather a direct reflection of the process of scientific discovery. Long articles may need subheadings within some sections (especially the Results and Discussion sections) to clarify their content. Other types of articles, such as case reports, reviews, and editorials, are likely to need other formats.

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During the editorial process reviewers and editors frequently need to refer to specific portions of the manuscript, which is difficult unless the pages are numbered. Authors should therefore number all of the pages of the manuscript consecutively, beginning with the title page.

IV.A.1.b. Reporting Guidelines for Specific Study Designs

Research reports frequently omit important information. The general requirements listed in the next section relate to reporting essential elements for all study designs. Authors are encouraged in addition to consult reporting guidelines relevant to their specific research design. For reports of randomized controlled trials authors should refer to the CONSORT statement. This guideline provides a set of recommendations comprising a list of items to report and a patient flow diagram.

IV.A.2. Title Page

The title page should carry the following information:

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To prevent the information on potential conflict of interest for authors from being overlooked or misplaced, it is necessary for that information to be part of the manuscript. It should therefore also be included on a separate page or pages immediately following the title page.

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An abstract should follow the title page. The abstract should provide the context or background for the study and should state the study's purposes, basic procedures (selection of study subjects or laboratory animals, observational and analytical methods), main findings (giving specific effect sizes and their statistical significance, if possible), and principal conclusions. It should emphasize new and important aspects of the study or observations.

Because abstracts are the only substantive portion of the article indexed in electronic database and the only portion many readers read, authors need to be careful that abstracts reflect the content of the article accurately.

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Provide a context or background for the study (i.e., the nature of the problem and its significance). State the specific purpose or research objective of, or hypothesis tested by, the study or observation; the research objective is often more sharply focused when stated as a question. Both the main and secondary objectives should be made clear, and any pre-specified subgroup analyses should be described. Give only strictly pertinent references and do not include data or conclusions from the work being reported.

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The Methods section should include only information that was available at the time the plan or protocol for the study was written; all information obtained during the conduct of the study belongs in the Results section.

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Describe your selection of the observational or experimental participants (patients or laboratory animals, including controls) clearly, including eligibility and exclusion criteria and a description of the source population. Because the relevance of such variables as age and sex to the object of research is not always clear, authors should explain their use when they are included in a study report; for example, authors should explain why only subjects of certain ages were included or why women were excluded. The guiding principle should be clarity about how and why a study was done in a particular way. When authors use variables such as race or ethnicity, they should define how they measured the variables and justify their relevance.

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Identify the methods, apparatus (give the manufacturer's name and address in parentheses), and procedures in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods see below; provide references and brief descriptions for methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate

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IV.A.7. Results

Present your results in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations. Extra or supplementary materials and technical detail can be placed in an appendix where it will be accessible but will not interrupt the flow of the text; alternatively, it can be published only in the electronic version of the journal.

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

Where scientifically appropriate, analyses of the data by variables such as age and sex should be included.

IV.A.8. Discussion

Emphasize the new and important aspects of the study and the conclusions that follow from them. Do not repeat in detail data or other material given in the Introduction or the Results section. For experimental studies it is useful to begin the discussion by summarizing briefly the main findings, then explore possible mechanisms or explanations for these findings, compare and contrast the results with other relevant studies, state the limitations of the study, and explore the implications of the findings for future research and for clinical practice.

Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not adequately supported by the data. In particular, authors should avoid making statements on economic benefits and costs unless their manuscript includes the appropriate economic data and analyses. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such.

IV.A.9. References

IV.A.9.a. General Considerations Related to References

Although references to review articles can be an efficient way of guiding readers to a body of literature, review articles do not always reflect original work accurately. Readers should therefore be provided with direct references to original research sources whenever possible. On the other hand, extensive lists of references to original work on a topic can use excessive space on the printed page. Small numbers of references to key original papers will often serve as well as more exhaustive lists, particularly since references can now be added to the electronic version of published papers, and since electronic literature searching allows readers to retrieve published literature efficiently.

Avoid using abstracts as references. References to papers accepted but not yet published should be designated as "in press" or "forthcoming"; authors should obtain written permission to cite such papers as well as verification that they have

been accepted for publication. Information from manuscripts submitted but not accepted should be cited in the text as "unpublished observations" with written permission from the source.

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

Some journals check the accuracy of all reference citations, but not all journals do so, and citation errors sometimes appear in the published version of articles. To minimize such errors, authors should therefore verify references against the original documents. Authors are responsible for checking that none of the references cite retracted articles except in the context of referring to the retraction. For articles published in journals indexed in MEDLINE, the ICMJE considers PubMed the authoritative source for information about retractions.

IV.A.9.b. Reference Style and Format

The Uniform Requirements style is based largely on an ANSI standard style adapted by the National Library of Medicine (NLM) for its databases. For samples of reference citation formats, authors should consult National Library of Medicine web site.

References should be numbered consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by Arabic numerals in parentheses. References cited only in tables or figure legends should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure. The titles of journals should be abbreviated according to the style used in Index Medicus.

This Journal requires that the references from the Ayurvedic classics should be cited within parentheses in the text, i.e. (Cha. Soo. 25/40).

IV.A.10. Tables

Tables capture information concisely, and display it efficiently; they also provide information at any desired level of detail and precision. Including data in tables rather than text frequently makes it possible to reduce the length of the text.

Type or print each table with double spacing on a separate sheet of paper. Number tables consecutively in the order of their first citation in the text and supply a brief title for each. Do not use internal horizontal or vertical lines. Give each column a short or abbreviated heading. Authors should place explanatory matter in footnotes, not in the heading. Explain in footnotes all nonstandard abbreviations. For footnotes use the following symbols, in sequence:

***,†,‡,§,||,¶,**,††,‡‡**

Identify statistical measures of variations, such as standard deviation and standard error of the mean.

Be sure that each table is cited in the text.

If you use data from another published or unpublished source, obtain permission and acknowledge them fully.

Additional tables containing backup data too extensive to publish in print may be appropriate for publication in the electronic version of the journal. In that event an appropriate statement will be added to the text. Submit such tables for consideration with the paper so that they will be available to the peer reviewers.

IV.A.11. Illustrations (Figures)

Figures should be either professionally drawn and photographed, or submitted as photographic quality digital prints. In addition to requiring a version of the figures suitable for printing, this Journal asks authors for electronic files of figures in a format (e.g., JPEG or GIF) that will produce high quality images in the web version of the journal; authors should review the images of such files on a computer screen before submitting them, to be sure they meet their own quality standard.

For x-ray films, scans, and other diagnostic images, as well as pictures of pathology specimens

or photomicrographs, send sharp, glossy, black-and-white or color photographic prints, usually 127 x 173 mm (5 x 7 inches). Letters, numbers, and symbols on Figures should be clear and even throughout, and of sufficient size that when reduced for publication each item will still be legible. Figures should be made as self-explanatory as possible. Titles and detailed explanations belong in the legends, however, not on the illustrations themselves.

Photomicrographs should have internal scale markers. Symbols, arrows, or letters used in photomicrographs should contrast with the background.

If photographs of people are used, either the subjects must not be identifiable or their pictures must be accompanied by written permission to use the photograph. Whenever possible permission for publication should be obtained.

Figures should be numbered consecutively according to the order in which they have been first cited in the text. If a figure has been published, acknowledge the original source and submit written permission from the copyright holder to reproduce the material. Permission is required irrespective of authorship or publisher except for documents in the public domain.

IV.A.12. Legends for Illustrations (Figures)

Type or print out legends for illustrations using double spacing, starting on a separate page, with Arabic numerals corresponding to the illustrations. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain the internal scale and identify the method of staining in photomicrographs.

IV.A.13. Units of Measurement

Use only standard Units of Measurements. If some new measurements or scoring patterns are used they should be explained in detail in the text.

IV.A.14. Abbreviations and Symbols

Use only standard abbreviations; the use of non-standard abbreviations can be extremely confusing to readers. Avoid abbreviations in the title. The full term for which an abbreviation stands should precede its first use in the text unless it is a standard unit of measurement.

IV.B Sending the Manuscript to the Journal

This Journal accepts electronic submission of manuscripts, whether on disk or attachments to electronic mail. Electronic submission saves time as well as postage costs, and allows the manuscript to be handled in electronic form throughout the editorial process (for example, when it is sent out for review). When submitting a manuscript electronically, authors should consult with the instructions for authors of the journal they have chosen for their manuscript.

If a paper version of the manuscript is submitted, send the required number of 6 copies of the manuscript and figures; they are all needed for peer review and editing, and editorial office staff cannot be expected to make the required copies.

Manuscripts must be accompanied by a cover letter, which should include the following information.

- A full statement to the editor about all submissions and previous reports that might be regarded as redundant publication of the same or very similar work. Any such work should be referred to specifically, and referenced in the new paper. Copies of such material should be included with the submitted paper, to help the editor decide how to handle the matter.
- A statement of financial or other relationships that might lead to a conflict of interest, if that information is not included in the manuscript itself or in an authors' form
- A statement that the manuscript has been read and approved by all the authors, that the requirements for authorship as stated earlier in this document have been met, and that each author believes that the manuscript represents honest work, if that information is not provided in another form; and
- The name, address, and telephone number of the corresponding author, who is responsible for communicating with the other authors about revisions and final approval of the proofs, if that

information is not included on the manuscript itself.

The letter should give any additional information that may be helpful to the editor, such as the type or format of article in the particular journal that the manuscript represents. If the manuscript has been submitted previously to another journal, it is helpful to include the previous editor's and reviewers' comments with the submitted manuscript, along with the authors' responses to those comments. Editors encourage authors to submit these previous communications and doing so may expedite the review process.

Copies of any permission to reproduce published material, to use illustrations or report information about identifiable people, or to name people for their contributions must accompany the manuscript.

V. References

A. References Cited in this Document

1. Davidoff F for the CSE Task Force on Authorship. Who's the Author? Problems with Biomedical Authorship, and Some Possible Solutions. Science Editor. July-August 2000: Volume 23 - Number 4: 111-119.
2. Yank V, Rennie D. Disclosure of researcher contributions: a study of original research articles in The Lancet. Ann Intern Med. 1999 Apr 20;130(8):661-70.
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B. Other Sources of Information Related to Biomedical Journals

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

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

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

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

Annexure I

Manuscript no. JOA/NIA/20 /

Authorship Criteria and Responsibility
Financial Disclosure, Acknowledgment and Copyright Transfer Form

Manuscript Title :

I/We certify that the manuscript represents valid work and that neither this manuscript nor one with substantially similar content under my/our authorship has been published or is being considered for publication elsewhere. For papers with more than 1 author, We agree to allow the corresponding author to serve as the primary correspondent with the editorial office, to review the edited typescript and proof.

I/We have seen and approved the submitted manuscript. All of us have participated sufficiently in the work to take public responsibility for the contents. All the authors have made substantial contributions to the intellectual content of the paper and fulfil at least 1 condition for each of the 3 categories of contributions: i.e., Category 1 (conception and design, acquisition of data, analysis and interpretation of data), Category 2 (drafting of the manuscript, critical revision of the manuscript for important intellectual content) and Category 3 (final approval of the version to be published).

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

1. Name	Signatures	(date)
2. Name	Signatures	(date)
3. Name	Signatures	(date)
4. Name	Signatures	(date)
5. Name	Signatures	(date)
6. Name	Signatures	(date)

Annexure II

Manuscript Submission Checklist

Submitted by: E-mail ☐ Post ☐ Both ☐

Covering letter and submission :

1. Covering letter (in original) ☐
2. Copyright transfer form (in original) ☐
3. Illustrations (in original) ☐
4. Manuscript (E-mail/original) ☐
5. Category for which submitted ☐

Presentation and Format :

1. Printed on A4 paper with 1" margins on all sides in double space. ☐
2. Abstract, text, acknowledgement, references, legends, tables starting on a new page. ☐
3. Title page contains the following:
   - Full title of the paper ☐
   - Initials, surname and highest degree of authors, affiliation ☐
   - Name of Departments/Institution ☐
   - Details of Corresponding Authors including e-mail ☐
   - Numbers in Arabic numerals. ☐
4. Abstract (Hindi and English) and Key words provided. ☐
5. “What this study adds” Box (only for research papers and short communications). ☐
6. References. ☐
7. Pages numbered consecutively. ☐

Language and Grammar :

1. Uniform American English. ☐
2. Abbreviations spelt out in full for first time. ☐
3. Text arranged as per IMRAD format. ☐
4. Follows style of writing in Journal of Ayurveda. ☐
5. Conventional units used throughout manuscript. ☐

Tables and Figures :

1. No repetition of data in Table/graphs and in text. ☐
2. Figures are black and white (except Images), good quality; with labels on back. ☐
3. Table numbers in roman numerals and Figure numbers in Arabic numerals. ☐
4. Correct symbols used for footnotes to tables. ☐
5. Figure legends provided. ☐
6. Patient privacy maintained ☐

Short Communication

AYURVEDA NEWS AND VIEWS

*Dr. Rizwana Parveen

National & International Seminars & Fairs

1. National Seminar on Spinal Disorders, organized by Government Ayurved College, Nanded.

   Date : 4th April, 2015.

2. National Workshop on "Strides in Edition of Ayurveda Manuscripts", organized by S D M College of Ayurveda & Hospital, Karnataka.

   Date : 7th to 10th April, 2015.

3. "JIGNASA 2015" National Seminar On "Convergence on Keraleeya Ayurveda", organized by Vidyarthi Seva Trust.

   Date : 8th to 12th April, 2015.

4. National Workshop on "Recent Advances in Museum Development Techniques", organized by S D M College of Ayurveda & Hospital, Karnataka.

   Date : 17th and 18th April, 2015.

5. National workshop on Therapeutic Procedures in Kaumarabhritya Practice with Hands-on Training, organized by S D M College of Ayurveda & Hospital, Karnataka.

   Date : 21st to 25th April, 2015.

6. 2nd Mediterranean Symposium on Medicinal and Aromatic Plants (MESMAP-2), Turkey.

   Date : 22nd to 25th April, 2015

7. Conference on "Good Clinical Practice", organized by Maharashtra University of Health Sciences, Nashik.

   Date : 28th April, 2015.

8. National Workshop on "Skill Development for AYUSH Professionals- Issues and Challenges", organized by Vishwa Ayurved Parishad.

   Date : 25nd and 26th April, 2015.

9. 2nd Mediterranean Symposium on Medicinal and Aromatic Plants (MESMAP-2), Turkey.

   Date : 22nd to 25th April, 2015.

10. International Conference on Consciousness in Ayurveda & Yoga, organized by Global Ayurveda Conferences, LLC.
    Date : 2nd and 3rd May, 2015.

11. Agnikarma Ayurveda Pain Management Seminar & Workshop, organized by Global Agnikarma Centre.
    Date : 3rd May, 2015.

12. National Arogya Expo 2015 Thiruvananthapuram, organized by World Ayurveda Foundation.

    Date : 21st to 24th May, 2015.

13. National Seminar on Quality,Safety and Efficacy of Ayurvedic Drugs, organized by Arogyadham, Deendayal Research Institute, Chitrakoot, Satna, M.P.
    Date : 23rd and 24th May, 2015.

14. Shraddha '15 - National Student Conclave on Aama and Srotas, organized by Government Ayurveda College, Tripunithura.
    Date : 4th and 5th June, 2015.

15. National Seminar on Raw drugs in Ayurveda with special reference to Substitutes and Adulterants, organized by CARe Keralam Ltd.
    Date : 12th and 13th June, 2015.

16. SANDHANA-2015 - National Seminar on Skeletal Injuries, organized by KVG Ayurveda Medical College, Sullia, Karnataka.
    Date : 19th and 20th June, 2015.

17. CME and Workshop on "Evidence Based Ayurveda", organized by Charaka Ayurveda Hospital.
    Date : 20th and 21st June, 2015.

*Sr.Research Fellow-Journal of Ayurveda, NIA, Jaipur

Manjistha – Ayurveda's rejuvenation herb

Manjistha, scientifically known as Rubia cordifolia, also known as Red Madder Root, grows in hilly districts. The dried root of the plant has excellent medicinal properties, and is cooling, astringent and has affinity for blood.

Manjistha is a valuable herb in Ayurveda. Ancient physician and sage, Charaka, categorized the herb as 'varnya' or the one that improves complexion, reduces fever, and as a detoxifier. In other words, it is also a popular 'rasayana', or a 'rejuvenative'.

Another great sage of Ayurveda and ancient Indian surgeon, Sushruta, referred Manjistha for pacifying pitta dosha. In Ayurveda, it is believed that the three life energies or doshas (vata, pitta and kapha), should remain in perfectly balanced condition always, for a person to enjoy good health. Hence, Manjistha helps in maintaining the balance of pitta dosha effectively.

Kerala, in India, has been practising Ayurveda for thousands of years now, and the physicians here have always recommended Manjistha as part of their treatments from times immemorial, due to its blood purifying and anti-oxidant properties. The bright colour of Manjistha is evident in oils like 'Mahanarayan oil' and 'Pinda thailam', with the bright red colour depicting healthy blood. Manjistha is thought to have affinity with capillary system, and its slow action helps to detoxify and repair the fine structures that interface with lymph system.

Ayurveda believes that Manjistha is a popular herb for lymphatic support, as it facilitates cell nutrition and removal of toxins from the body.

External use of Manjistha

Manjistha is often used with equal quantities of Haridra for balanced thermal effect during skin disturbances like boils, rashes, eruptions, and stagnations. When wounds are washed with decoction of Manjistha, and are dressed with its solid extract, it quickens healing. Chronic, non-healing and oozing wounds particularly heal effectively with Manjistha. It also helps in treating varicose veins, eczema, bruising, psoriasis and bleeding disorders. During fractures too, an external splint of Manjistha is beneficial.

Apart from these, it keeps the skin glowing, removes pimples, freckles and discoloration. When externally used as a paste either alone or with honey, Manjistha helps heal inflammation and renders a smooth and an even tone to the skin. As a beauty aid, 100gms of dried and crushed orange peels, and 50gms each of sandal powder, turmeric and manjistha are combined to make a face pack.

The plant is widely used as a rejuvenative herb, in treating pigment disorders of the skin, and is used in general debility.

Manjistha as internal medicine

Manjistha is used as medicine to treat hepatitis, diabetes and urinary calculi. Manjistha works well during diarrhea and when combined with lodhra skin powder. The herb is beneficial in gastrointestinal ailments like dyspepsia, loss of appetite, worm infestations, an appetizer, aids digestion, and kills toxins and is also a vermicide.

Manjistha acts a blood purifier, and acts mainly on rasa and rakta srotasas, it controls irritation of nerves, pacifies mind, is salutary in epilepsy cases, particularly of pitta type. The decoction of manjistha is also beneficial in treating gout, when combined with other herbs.

Manjistha has a vital role in supporting heart health. Studies have shown that it regulates blood pressure, blood vessel constriction and reduces tendency of blood to form clots.

Manjistha also has a visible effect on female reproductive organs, and hence is used to treat gynaecological problems like irregular menstruation, white discharge. The col infusion of Manjistha improves menstrual bleeding disorders and relieves pain in dysmenorrhea. It also stimulates and cleanses uterus, is useful in postnatal ailments, oligomenorrhea and amenorrhea. Manjistha is also an excellent anti-diabetic and is useful in treatment of urinary calculi. Hence, on the whole, this wonder-herb heals, cures, and beautifies, and therefore is considered as the 'herb of choice' in Ayurveda.

Indian Gooseberry – The Ayurvedic medicine to longevity

The Indian Gooseberry (Phyllanthus emblica fruit) also known as Amla in Sanskrit, is commonly found in the forests of India and hence, the name. The amla tree is small to medium in size and reaches

maximum 18m in height and is usually deciduous. The leaves are simple, and closely set along the branches resembling pinnate leaves. The Indian gooseberries are of two types – the ones grown in forests and the ones that grow in villages inIndia. The fruits in forests are generally smaller and thicker, while those grown in villages are bigger and softer. It is said that the gooseberry found in villages in India, have more medicinal value than those found in forests.

According to Acharya Charaka, the Father of Medicine, the Indian gooseberry or Amla lends longevity and promotes youthfulness, and hence, is considered the best of all fruits. In Ayurveda, the Indian gooseberry or Amla is considered to be equivalent to 'Amrit' (a liquid portion which on consumption will lead to immortality). Let us take a look at why Amla is truly referred to as Amrit.

Medicine for the Eye

Amla is an excellent eye-coolant, helps in removing dark circles under the eyes and also prevents boils in the eye. Mix 20g to 50g powdered amla in half-a-litre water, filter, and the resulting solution can be used as eye drops.

Hair tonic

Amla is an excellent tonic for the hair. Amla can be used in the form of paste or shampoo for strong hair growth and for preventing grey hair.

For sore throat

Mix equal proportions of powdered amla, carom seeds and turmeric and consume 1 to 2gms of this paste by mixing it with honey...it helps clear any sore throat or hoarse voice.

Breathing difficulties

Extract juice of 10 to 20gms of amla, and mix with 2 to 3 gms of honey. Consuming this will help in removing any breathing difficulties.

Nausea

Consuming 10 to 20gms of amla juice will help in calming nausea. Continuing this twice or thrice a day will put a complete stop to nausea or vomiting sensations.

Pitta dosha

Mix amla and honey and consume regularly for long-term relief from pitta dosha.

Urine retention

As a simple remedy to clear urine retention, soak dried Indian gooseberry in water and boil well. Drinking this solution twice a day, clears urine retention.

Jaundice

Mix together Indian gooseberry and honey and consume in a semi-liquid form twice a day for a healthy liver and when treating for Jaundice.

Urine infection

Mix together 10 to 20gms of amla juice with 2gms of turmeric and 10gms of honey. Consuming this twice a day (morning and evening) can offer effective relief from urinary tract infections.

Constipation

About 3 to 6gms of powdered amla can be mixed with water and consumed for effective relief from headache, constipation, and piles.

Indigestion

Boil amla and make it into a semi-liquid form. Dry roast pepper, dry ginger, black salt, cumin seeds and powder them. This can be mixed into the amla extract and consumed by adding a pinch of asafoetida powder.

Diarrhoea

Mix 5 to 6gms of amla with a teaspoon of ginger juice and add this to a glass of water and consume for relief from diarrhoea.

Wounds

In case of any wound, massage the place with amla juice, and this gives immediate relief.

Longevity

Dissolve 3 to 6gm of powdered amla into amla juice, and add a teaspoon of ghee, two teaspoons of honey and mix well. This mixture can be consumed on daily basis, followed by a glass of milk.

Chamomile tea associated with decreased mortality in women

After Green tea, it is the turn of **Chamomile Tea** to make headlines. Chamomile tea has made it to the popularity charts with the latest study claiming that drinking chamomile tea can help in boosting longevity.

Drinking chamomile tea can be particularly beneficial for women, over 65 years of age, as it can considerably reduce the risk of death from many causes, the study confirmed.

Chamomile is one of the oldest and most widely used medicinal plants in the world, recommended for various healing applications. Consuming chamomile tea helps in 29 percent decrease in risk of death due to various causes among women, in comparison to non-users.

However, the study did not specify the reason for particular emphasis on women in the report. But it is generally believed that women consume chamomile tea more than men.

The study was conducted over a seven year period, during which, researchers tracked the effects of chamomile tea and cause of death in 1677 women and men over age 65 years.

The researchers however said, it is still unclear how the use of chamomile was associated with decreased mortality. Further, recent studies have also shown potential benefits of chamomile in treating hyperglycemia, diabetic complications, upset stomach, cholesterol lowering, antimicrobial, anti-inflammatory, anti-platelet and anxiety disorders.

Further, did you know that chamomile tea can work wonders as a beauty aid too? Chamomile tea bags help reduce under-eye dark circles and soothes tired eyes, when blended with powdered milk chamomile tea works as a great facila scrub, when consumed on regular basis chamomile tea provides moisturization and nourishment to the skin, it brightens up the blonde hair instantly, is a wonderful hair lightener, and prevents and eliminates dandruff.

Chamomile Oil

Ayurveda has always believed in the immense health benefits of chamomile. Ayurveda believes that chamomile oil helps in reducing excess kapha and pitta doshas.

Chamomile oil is considered to be safe enough to be used on babies, and it is believed to pacify and calm irritable babies. About 2 drops of chamomile oil can be added on bed linens or on the baby's pillow. Else, mix a drop of chamomile oil with 10 drops of virgin olive oil and massage on your baby's tummy to get rid of pain or colic.

Among adults too, it has been recently found that chamomile extract therapy helps treat mild to moderate Generalized Anxiety Disorder, wherein the calm and relaxing effects of the oil help in sedating the system and stimulating good sleep. Just add 2 to 3 drops of the oil to a tissue placed near your pillows. The oil (5-6 drops) can also be added to warm bathing water in the night before going to bed. It helps in tranquilizing the nervous system.

Chamomile essential oil has wonderful anti-inflammatory properties too and helps reduce pimples, blackheads, itchiness and heat rashes during summer. It is also said to reduce discomforts associated with psoriasis, eczema, diaper rashes, skin ulcers, bruises, sunburns and other skin conditions.

Mixing three drops of Chamomile oil with 1.5ml of almond oil and massaging on affected parts of the skin helps in healing of wounds, cuts, blisters, and other skin problems.

Chamomile essential oil has carminative, stomachic, digestive properties, thereby supporting the digestive system and stimulating the metabolic functions.

It is used in Ayurvedic healing in the treatment of flatulence, dysmennorhea, headache, nervous disorders inchildren, amenorrhea, colic, insomnia, depression and negative feelings.