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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

The Way Forward & The Future Prospects for Ayurveda

Serious Efforts are required at various levels by all stake holders of Ayurveda in terms of investments in better and continuous education / research, more acceptance in terms of health care segment, more revenue generation through intervention and active role in acceptance of Ayurvedic products globally, spreading awareness in India as well as globally.

Although the advent of Western medical practices temporarily loosened the roots of Ayurvedic medicine in India, Ayurveda has since that time made a comeback in its country of origin and has spread around the world to Europe, Japan, and North and South America.

Ayurvedic conferences, sponsored by governments and/or medical associations, have taken place in Brazil, Poland, Czechoslovakia, and Hungary.

In the Soviet Union, the Soviet Research Center for Preventive Medicine oversees the Institute of Maharishi Ayurveda. Furthermore, in the United States, the National Institutes of Health is researching Ayurveda and its integration with other healing practices, such as naturopathic, and Allopathic medicine.

Groups outside of the Ayurvedic community have also taken steps to recognize this established healing tradition. The World Health Organization recognizes Ayurvedic medicine, and supports research and the integration of the Ayurvedic system of health care into modern medicine.

According to World Bank's predictions, the global wellness industry is going to be a trillion-dollar economy and the market size of the herbal medicines alone will be a whooping US$5 trillion by 2050. Ayurveda, India's contribution to the humanity's total wellbeing and longevity, will be at the forefront of the herbal renaissance. It is time we charted out plans to position India as a Global Ayurveda Hub.

India's potential in Ayurveda space is huge. It has 15 Agroclimatic zones and have about 45,000 plant species. Currently, the Indian herbal market size is estimated at Rs.7000 crore. The country is exporting Rs.3600 crore worth of herbal raw materials and medicines. There are authentic Ayurveda hospitals and resorts, some of them figuring in top 10 medical tourism destinations of the world. Indian wellness industry is forecast to grow at CAGR of 20-25%. Its spa industry, with over 2,300 spas, generates revenues around US$ 400 million annually.

Ayurvedic medicine has experienced a boom in Kerala, thanks to the timely initiatives of the government and the private sector to meet the growing global demands for herbal medicines and treatment. At present, the size of Kerala's Ayurvedic industry is estimated to be about Rs 600 crore.

Proposed Resolutions & Conclusions

- Ayurveda should be globalised
- Suitable law reforms to be considered actively and urgently at international and domestic levels.
- Adequate economic and R & D support to Ayurvedic medicine.
- To provide protection and support to our rich national heritage i.e. Ayurveda for its proper utilization for the suffering humanity globally.

- The interim strategy should be tilted more towards "Protection" than to "Patent".
- Priority strategy for Ayurveda should be "Patent or Publish". If one cannot patent his inventions, he should publish the same.

Following strategies may help in propagation of Ayurveda within the country and at global level:

- Urgent need to generate the sense of activism and work culture among Ayurvedic people.
- Most crucial to update and revalidate Ayurvedic system of medicine on various scientific parameters.
- To create awareness globally about the usefulness of Ayurveda as an important alternative system of medicine for healing and health care by organizing short courses, workshops and lectures on Ayurveda by experts for masses, practicing Doctors, medical students and Pharmacists.

Prof. Ajay Kumar Sharma
Director

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Demand draft to be made in favour of **"Director, NIA, JAIPUR**

Clinical Study

Clinical Evaluation of The Role of *Shwadanstradi Ghana Vati* In The Management of Urolithiasis (*Mutrashmari*)

*Dr. Smruti R. Nagvenkar, **Dr. Mahesh U. Verlekar, ***Prof. Ajay Kumar Sharma

Abstract:

Urolithiasis *(Mutrashmari)* is one of the most common and distressing maladies among the group of urinary disorders. It is the most common affliction of the urinary tract. It typically occurs in middle age during the most productive years. It causes pain, loss of working time, medical expenses, and sometimes need for hospitalization and an infrequent cause of renal failure. According to *Sushruta, Mutrashmari* is considered as one of the '*Mahagadas' (S.Su.33/5)*. According to modern science the exact cause and mechanism of stone formation in urinary system is still unknown.

Many successful formulations have been mentioned in *Ayurveda* for Urolithiasis *(Mutrashmari)* amongst which *Shwadanstradi Ghana Vati (C.D. 34/30)* was prepared for research work and the results were found to be significant.

Key Words – Urolithiasis, *Mutrashmari*, *Ayurveda*, *Shwadanstradi Ghana Vati*.

सारांश–

मूत्राश्मरी मूत्रमार्ग मे होनेवाली एक सामान्य और बहुत पीड़ादायक व्याधि है। यह व्याधि अधिकांशतया मध्यम आयु मे पायी जाती हे। इसमे दर्द होने के कारण इंसान की कार्य क्षमता कम हो जाती है और आत्ययिक अवस्था मे चिकित्सालय मे भर्ती भी करना पडता है। कभी कभी चिकित्सा ठीक से न होने पर मूत्र पिंड नाकाम भी हो सकते है। आचार्य सुश्रुत ने तो इस व्याधि को महागदो मे से एक माना है। आधुनिक शास्त्र के अनुसार इस व्याधि का समुचित कारण अभी तक ज्ञात नही है।

आयुर्वेद मे मूत्राश्मरी के लिए कई सफल योग बताये गये है। 'श्वदंष्ट्रादि' यह योग च.द. ३४/३० का हैं जिसकी घनवटी बनाकर इस संशोधन मे प्रयोग किया गया जिसके नतीजे महत्वपूर्ण पाये गये।

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Clinical Study

Clinical Evaluation of The Role of *Shwadanstradi Ghana Vati* In The Management of Urolithiasis (*Mutrashmari*)

Dr. Smruti R. Nagvenkar, Dr. Mahesh U. Verlekar, Prof. Ajay Kumar Sharma

Introduction

Ayurveda, the Indian system of medicine and meaning the science of life deals with the well being of mankind. The earliest description about the diseases affecting the urinary tract can be traced back as far as *"Atharvaveda"*. Mention about stones are found in *Rigveda*. *Acharya Vagbhatta* has classically divided the *Rogas* of *Mutravaha Srotas* into two categories

(i) *Mutra Atipravrittija* - condition in which there is an increase in frequency and quantity of urine e.g. *Prameha*.

(ii) *Mutra Apravrittija* - condition in which there is a decrease in frequency and quantity of urine or obstruction in the flow of urine e.g *Ashmari, Mutrakricchra* and *Mutraghata*.

Acharya Charaka has advised medical management and *Acharya Sushruta* advised both conservative and surgical removal of stone. According to *Acharya Sushruta, Mutrashmari* is considered as one of the *'Mahagadas'*, may be due to its major complications such as hydronephrosis, renal failure and other symptoms of urinary system. *Acharya Sushruta* has explained in details the etiological factors, classification, symptomatology, pathology, complications and its management of *Mutrashmari* (Renal Calculus) in a most scientific manner.

Need of study:

Urolithiasis *(Mutrashmari)* is a global problem. It leads to urinary tract infection and other complications like hydronephrosis, hydroureter, pyonephrosis, renal failure etc. and subsequent damage to the renal architecture which is often irreversible, even after surgery, the recurrence rate is as high.

The modern techniques have been practically effective but, they are not free from complication, drugs sensitivity, and toxicity of some of modern drugs. There is need for some alternative medical management. Surgery can only be a part of treatment, but not complete cure. To avoid the incidence of recurrence after surgical removal of stone and in search of an effective conservative treatment the present work has been undertaken.

Aims and Objectives

The current research work has been undertaken with following objectives -

1) Conceptual and clinical studies on a series of patient of Urolithiasis vis-à-vis *Mutrashmari*.
2) To assess the efficacy of *"Shwadanstradi Ghana Vati"* in the management of a series of patient of Urolithiasis (*Mutrashmari.)*
3) To compare the efficacy of *Shwadanstradi Ghana Vati* in the management of Urolithiasis (*Mutrashmari.)* with another Ayurvedic Patent drug i.e. Tab Cystone
4) To develop the drug that is fast acting and cost effective in the management of Urolithiasis (*Mutrashmari.)*

Materials and Methods

1. Selection of the Medicine

For the present study a compound medicine "***Shwadanstradi Kashaya"*** mentioned in the treatment of *Ashmari* in the *Ayurvedic* classic *Chakradatta Ashmari Roga Chikitsa* has been selected. But people are reluctant to take *Ayurvedic* formulations in a decoction form; therefore it was decided to convert *Shwadanstradi Kashaya* into *Ghana Vati.*

श्वदंश्ट्रैरण्डपत्राणि नागरं वरूणत्वचम्।
एतत् क्काथवरं प्रातः पिबेदष्मरीश्भेदनम्॥ (p. n. 34/30)

Table No : I

Contents of *Shwadanstradi Ghana Vati*

Sr. No	Plants	Latin Name	Part used	Quantity
1.	*Gokshura*	Tribulus terrestris	Bark	1 Part
2.	*Eranda*	Ricinus communis	Leaves	1 Part
3.	*Shunthi*	Zinziber officinalis	Rhizome	1 Part
4.	*Varuna*	Crataeva nurvala	Bark	1 Part

2. Clinical Study

The study was conducted on 30 clinically and pathologically diagnosed patients of Urolithiasis (*Mutrashmari*). The selection of patients was made from the OPD/IPD of P.G.Deptt. of Kayachikitsa, Arogyashala and Bombaywala Hospitals of National Institute of Ayurveda, Jaipur, Rajasthan.

Criteria for Inclusion

1. Age between 20 years to 50 years.
2. Clinically diagnosed patients of all types of Urolithiasis (*Mutrashmari*).
3. Site-Patients with Urinary Calculus any where in the Urinary tract i.e. in the Kidney, Ureter or Bladder.
4. Size of the stone less than 10 mm.

Criteria for Exclusion

1. Age below 20 years and more than 50 years.
2. Renal failure.
3. Staghorn calculus.
4. Benign Prostatic Hypertrophy.
5. Urinary Stones of more than 10mm size.
6. Multiple Urinary Stones.
7. Patients with Urolithiasis (*Mutrashmari*) with Complications

Drug Schedule and Grouping

30 registered patients of Urolithiasis (*Mutrashmari*) were randomly divided in the following two groups-

Group A - 15 registered patients of Urolithiasis (*Mutrashmari*) were administered *Shwadanstradi Ghana Vati* in the dose of 2 gms per day with simple water for 30 days.

Group B - 15 registered patients of Urolithiasis (*Mutrashmari*) were administered Tab Cystone in the dose of 2 gm per day with simple water for 30 days.

Out of 30 patients registered 28 completed the trial while 2 discontinued the treatment, one from each group.

Subjective Improvement:

All the patients under trial were seen for improvement in feeling of physical and mental well being.

Clinical Improvement:

Following signs and symptoms of *Mutrashmari* were looked into for any improvement after the course of therapy-

- Pain
- Pain during change of posture or jerks.
- Dysuria
- Burning micturition
- Tenderness at renal angle
- Pyuria
- Passing of crystals

Investigations

The following laboratory parameters were used before and after the course of the therapy for the assessment of any changes produced during and after the research.

- Urine analysis- R/M
- Hb gm%.
- Serum creatinine,
- Serum urea
- Ultrasonography

Observations and Results:

Majority of patients i.e 16 belonged to the age group of 21 - 30 years, predominantly Males 18 patients (60.00%), Married 20 patients (66.67%), Hindus 22 patients (73.33%), housewives and students 10 patients (33.33%), belonging to middle class 15 patients (50.00%), consuming vegetarian diet 20 patients (66.67%), with family history 26 patients (86.67%), *Madhyama Ahara Shakti* 22 patients (73.33%), with *Divaswapa* 17 patients (56.66%), having *Madhyama Koshtha* 21 patients (70.00%), with *Mandagni* and *Vishamagni* 10 patients each (33.33%) and *Kapha Vata Prakriti* 15 patients (50.00%).

Table No : II

Showing the pattern of 'Clinical Recovery' in Registered patients of Urolithiasis (*Mutrashmari*)

Symptoms	Group A					Group B				
	n	% of relief	*t* value	*p* Value	Results	n	% of relief	*t* value	*p* Value	Results
Pain	14	75.00	7.77	<0.001	HS	13	70.00	6.56	<0.001	HS
Pain on Changing Postures/ Jerk	04	70.00	2.19	<0.05	S	06	80.00	2.91	<0.02	S
Dysuria	06	62.50	2.68	<0.02	S	08	90.90	3.23	<0.01	S
Burning Micturition	08	100.00	3.66	<0.01	S	05	85.71	2.48	<0.05	S
Tenderness	05	77.78	2.46	<0.05	S	07	81.81	3.22	<0.01	S

Table No : III

Showing the pattern of 'Changes in Investigations' in Registered patients of Urolithiasis (*Mutrashmari*)

Symptoms	Group A					Group B				
	n	% of relief	*t* value	*p* Value	Results	n	% of relief	*t* value	*p* Value	Results
Hb%	14	5.95	1.88	> 0.10	NS	14	1.59	0.81	> 0.10	NS
Sr. Urea	14	9.74	1.28	> 0.10	NS	14	10.53	2.08	> 0.05	NS
Sr. Creatinine	14	2.67	0.43	> 0.10	NS	14	2.70	0.39	> 0.10	NS
Turbidity of Urine	02	100	1.74	> 0.10	NS	-	-	-	-	-
RBCs in urine	03	100	1.88	> 0.05	NS	03	100	1.88	0.05	NS
Pus Cells in Urine	02	100	1.38	> 0.10	NS	-	-	-	-	-
Crystals in Urine	01	100	1.00	> 0.10	NS	02	100	1.47	> 0.10	NS

Table No : IV

Showing the pattern of 'Changes in Size of Stone' in Registered patients of Urolithiasis (*Mutrashmari*) in Group - A & Group – B

Symptoms	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	P Value	Result
		BT	AT							
Group - A	14	2.64	0.71	1.93	72.97	1.43	0.38	5.01	<0.001	HS
Group - B	14	2.78	0.78	2.00	71.79	0.67	0.18	11.01	<0.001	HS

Table No : V

Effect of Therapy 'On Stones at Different Sites' in Group –A and Group - B

Groups	Site of Stone	*n*	Effect		
			Expelled	Decrease in size	Increase in size
Group - A	Kidney	09	07	01	01
	Ureter	04	03	01	-
	Bladder	-	-	-	-
	Urethra	01	01	-	-
Group - B	Kidney	12	06	06	-
	Ureter	02	02	-	-
	Bladder	-	-	-	-
	Urethra	-	-	-	-

Discussions

Subjective Improvements:

After the completion of clinical trial all the patients expressed a feeling of physical and mental well being.

Clinical Improvement:

Effect of therapy on symptoms: Effect of therapy in registered patients of Group A *(Shwadanstradi Ghana Vati)* showed statistically highly significant result in Pain from loin to groin ($p<0.001$), and significant improvement was found in Pain during change of Posture or Jerks ($p<0.05$), Dysuria ($p<0.02$), Burning Micturition ($p<0.01$) and Tenderness at Renal Angle ($p<0.05$) respectively. Where as in patients of Group B (Tab. Cystone) statistically highly significant results were observed in Pain from Loin to Groin ($p<0.001$), and significant improvement was found in Pain during change of Posture or Jerks ($p<0.02$), Dysuria ($p<0.01$), Burning Micturition ($p<0.05$) and Tenderness at Renal Angle ($p<0.01$) respectively.

Effect of Therapy on Investigations: In both the Groups no significant result was found in hemoglobin percentage, Serum urea and Serum Creatinine, in routine Urine Analysis 100 % decrease was observed RBC, Turbidity of Urine, Pus Cells and Crystals in urine but was found statistically insignificant. In Hematological and Biochemical Parameters all the variations were noted within the normal range. So nothing can be concluded from the above mentioned data of these investigations in both the groups.

Effect of Therapy on Stone at Different Site and Size: In patients of Group A, 09 stones

were found in the Kidney, out of them 07 expelled out, 01 decreased in size, 01 increased in size after the completion of the therapy. Amongst 04 Ureteric Stones, 03 expelled out and 01 stone decreased in size and in Group B (Tab Cystone), of the 12 stones in the Kidney, 06 were expelled out and 06 decreased in size. Amongst 02 Ureteric stones both were expelled out after the course of therapy.

On comparing the overall effect of *Shwadanstradi Ghana Vati* is comparable to the effect of tab Cystone.

Probable Mode of Action *Shwadanstradi Ghana Vati*

All medicines taken in the combination of *Shwadanstradi Ghana Vati* are *Kapha Vata Shamaka*, which are the main *Doshas* that play a vital role in the pathogenesis of *Ashmari.*

The relief in Pain from loin to groin and on changing postures or on jerks may be due to the *Vata Shamaka, Vedanasthapana* and *Shulahara* properties of drugs.

Relief in Burning Micturition may be due to *Madhura Rasa* and *Madhura Vipaka* of *Gokshura*, *Eranda* and *Varuna*, and also due to *Sheeta Veerya* of *Gokshura.*

Properties such as *Mutrala*, *Vatanulomana, Mutravishodhana*, and *Shothahara* may be responsible to reduce *Sthanika Shotha* thereby reducing tenderness.

Deepana property of drugs helps to increase the *Agni*, which further check the formation of *Ama* at *Jatharagni* level itself.

Pachana property of ingredients helps in assimilation of drugs in the body in case of *Jatharagnimandya.*

The decrease in the size of stone or dissolution of the stone may be due to the *Ashmari Bhedana, Ashmarihara* and *Anulomana* properties of the drugs.

Conclusion

Following conclusions can be drawn from the current research project -

- The *Shwadanstradi Ghana Vati* and tab Cystone has equal significant effect, but the trial drug contains less numbers of ingredients as compared to Tab Cystone which are cheap, easily available in market, non controversial and easy to prepare, making the medicine cost effective for the patients. On this basis it can said that *Shwadanstradi Ghana Vati* is more convenient to patients of Urolithiasis *(Mutrashmari).*
- *Shwadanstradi Ghana Vati* possesses ideal properties of disintegration and expulsion of stones and can help to reduce the sign and symptoms of Urolithiasis *(Mutrashmari),*
- Therefore it may be concluded that *Shwadanstradi Ghana Vati* may prove to be a potent drug in the management of patients of Urolithiasis (Mutrashmari).

References:-

1. Ambikadutta Shastri, Susruta Samhita of Maharsi-susruta, Vol – I/II, Published by Chaukhambha Sanskrit Sansthan Varanasi, Edition – 17th , 2003.
2. Bhavamishra, Bhavaprakasa Nighantu, Commentator- Chunekar K. C, Edited by Panday G.S, Chaukhambha Bharati Academy- Varanasi, Reprint 2006.
3. Das S., A text book of surgery Published by Dr S. Das Calcutta, 3rd edition 2001.
4. Database On Medicinal Plants Vol–2,3,4,5, Published by Central Council for Research in Ayurveda and sidhha, New Delhi, 2005.
5. Gupt Atrideva, Asthanga Hridayam of Shrimadavagbhata, Published by Chaukhambha Sanskrit Series Office Varanasi, Edition – 3rd , 1962.
6. Mahajan B.K. Methods in Biostatistics, Published by Jaypee Brothers, New Delhi, Edition-6th 1997.
7. Patric C. Wash, Alan B. Retik, E. Darracott Vaughan, Alan Wein- Cambell's, Urology, Vol–3, Published by W.B. Sounder Company.
8. Pt. Shastri Kashinatha & Chaturvedi Gorakhanatha, Charaka samhita of Agnivesha Vol I/II, Chaukhambha Bharati Academy, Varanasi, Reprinted 2002.
9. Sharma Prof. A. K. Kayachikitsa Part II, Published by Chaukhambha Orientalia, Varanasi, First Edition 2007.
10. Tripathi Indradev, Chakradutta (of Sri Chakrapanidatta), Published by Chaukhambha Sanskrit Sansthan Varanasi, Reprint 2005.

Clinical Study

A Study on Etiopathogenesis of Poly Cystic Ovarian Syndrome and Evaluate Efficacy of Herbomineral Compound and *Panchgavya Ghrit* (*Uttar Basti*)

*Dr. Nikki Bulani, **Dr. Sushila Sharma, ***Dr. Shrikrishna Khandal

Abstract

Polycystic ovarian syndrome is a most prevalent endocrinopathy. Incidence of this disease is enormously increasing now a days. It is pervasion is obviously observed in woman seeking medical advice for infertility as well as irregular menstrual bleeding. Majority of these cases could be treated either by hormonal therapy or surgical intervention. This study will emphasize on careful holistic approach in management of poly cystic ovarian syndrome where. PCOS anovulatory women (n = 30) were analysed for etiopathogenic study and 20 subjects were completed clinical trial. 10 subjects in group A, treated with Oral medication [herbomineral compound] and rest 10 subjects in group B treated with panchgavya ghrit uttar basti and oral medication with herbomineral compound for three months. The subjective and Objective parameters were measured before and after treatment in each group. Group B showed better improvement in compare to Group A.

Key words- Polycystic ovarian syndrome, herbomineral compound, *panchgavya ghrit uttar basti.*

सारांश–

आधुनिक परिवेश में पॉलीसिस्टीक ओवेरियन सिन्ड्रोम से ग्रस्त महिलाओं की संख्या में दिन प्रतिदिन बढोतरी होती जा रही है। महिलाऐं व्याधि के मुख्य लक्षणो जैसे कि बन्ध्यत्व, अनियमित आर्तव आदि विकारो से ग्रस्त रहती है। सामान्यतया चिकित्सा हेतु कृत्रिम हार्मोन व शस्त्रकर्म द्वारा बीजग्रन्थि में बनी सिस्ट को वेधित कर दिया जाता है परन्तु इन उपायों द्वारा भी संतोषप्रद परिणाम प्राप्त नहीं हो पा रहे है इसलिये प्रस्तुत शोध कार्य में 30 रोगियो पर निदानात्मक अध्ययन व इन्हीं रोगियो में से 20 रोगियो पर उपशयात्मक अध्ययन पूर्ण किया गया। इनमे से समूह 'अ' के 10 रोगियों को केवल संशमन औषधि प्रयोग व समूह 'ब' के 10 रोगियो को संशोधन कर्म और संशमन औषधि का प्रयोग तीन माह तक करवाया गया। संशोधन व संशमन चिकित्सा द्वारा रोगी अधिक लाभान्वित हुये।

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Clinical Study

A Study on Etiopathogenesis of Poly Cystic Ovarian Syndrome and Evaluate Efficacy of Herbomineral Compound and *Panchgavya Ghrit* (*Uttar Basti*)

Dr. Nikki Bulani, Dr. Sushila Sharma, Dr. Shrikrishna Khandal

Introduction

Poly cystic ovarian syndrome is a diagnosis of exclusion, with other androgen excess and ovulatory disorders of clearly defined etiologies excluded. It is not arena for simple linear thinking. A causes, B symptoms C and so on. PCOS is a complex web of interactions whose connections are still far from resolved. It is a field of in consistent symptomatology and histopathology. It has even been difficult to obtain consensus to define what we are talking about and how to name something we call for moment, PCOS [*fertile sterile 1995*]

The present work is the treatise which deals with the ayurvedic concept in the field of polycystic ovarian syndrome. We have got the textual references of those diseases which are closely related with PCOS associated disorders. It will help to make the ayurvedic samprapti and managment which is indirectly get from aptopdesha. these are Viphala ArtavaDushti, Shukra avrit vata, Kshina Artava Dushti, Nashtaartava or Anartava, Udavartini Yoni Vyapada, Apan Vayu Pitta sanyut, Revati jatharini (Pushpaghni), Matraja and pittraja avayav dushti, Vyan and apan Vayu dusti, Apan vata kapha sanyut (Adhakayaggurutvamm), Medoj Granthi, Stholya, etc.

The selected trial drug was decided according to dosha dushya dushti and hypothesized samprapti. Those drugs was selected which target upon avarana janya prakopa. and also on shaya janya prakopa. As Panchagavya ghrit is tikshna and usefull in Avrana janya dushti. Herbomineral compound was selected on the basis of its actions opposite to the dusht apan vayu and symptoms both. It is ingredients have Shothanashak, Dipana, Pachana, yakrduttejaka, and granthishothara etc. qualities .the compound contents Yashad bhasma, Trikatu, Ashwagandha, Kanchnnar. Gudmar, Bijak and Bhumyamalaki.

Aims & Objectives

The study was design with following aims and objectives-

- To study etiopathogenesis of polycystic ovarian syndrome and establish its Ayurvedic approach.
- To verify the efficacy of herbo mineral compound
- To study the effect of intra uterine intervention (Uttar basti) of panchgavya ghrit in PCOS.
- To provide safe, cheapest, non surgical, non HRT and side effect free management of PCOS.

Material Methods

Etiopathological study

Total 30 patients were registered from O.P.D., IPD of Roga and vikriti vigyan and Stri and prasuti vigyan department, NIA, JAIPUR

Clinical Study

For the clinical trial the patients were short listed and limited to 10 in each group A and B and 10 patients were omitted from the study because for clinical evaluation, we need obedient, positive, careful, cautious patients, to carry on the long duration clinical trial and also because some of those patients did not fulfill the clinical guidelines, requisitions etc. with some more another reasons. The 20 cases in the study have spontaneous onset of puberty and normal sexual development also reported.

- **Inclusion Criteria**

Inclusion criteria was established according to ESHRE/ASRM [Rotterdam] 2003 diagnosis criteria for p.c.o.s. It includes two of the following, in addition to exclusion of related disorders

- Menstrual abnormalities [oligo or anovulation]
- Clinical/Biochemical manifestation of hyperandrogenism such as excessive hair growth, raised incidence of acne.
- By U.S.G all P.C.O.S. patient showed > 10 subscapular follicles of 3-8 mm diameter in one ovary and increased ovarian volume.
- Informed written consent.

● Exclusion criteria

Other known etiologies of hyperandrogenism [adrenal] are to be excluded and PID, Systemic illness, Post menopausal stage, Ovarian cyst >15 mm, PCOS associated complication like endometrial carcinoma , Woman who has been taking and medication know to effect of carbohydrate metabolism also excluded.

● Discontinuous criteria

- ◆ An acute or severe illness
- ◆ Patient Left against medical advise

● Grouping of Patients -

The patients were divided into two groups Group A and Group B.

Group A - 10 patients of PCOS were given ***Oral Herbomineral Compound.***

Dosage - 4 tablet or 2 gms were given two times in a day

Duration – 3 months

Suggest for taking in morning empty stomach and in evening given two hours before taking meal

Group B -10 patients of PCOS were given combined therapy of **Oral *Herbomineral Compound.*** and ***Panchagavya ghrit Uttara basti***.

Dossage Basti – 5 cc and oral compound 4 tablets BD

Duration -Alternative 3 days after cessation of menstruation. It was repeated for 3 months.

Criteria For Assessment

Assessment was done every 30 days. Thus assessment was done once before the start, twice during trial and at the end of the trial however for statistical analysis only before treatment and after treatment data is being presented. To asses the overall effect of therapies a special scoring method was adopted as follows:-

● **Subjective parameters** – dysmenorrhea, oligomenorrhea, hypomenorrhea, menorrhagia, acne, Hirsutism [Ferriman-Gallwey score]

● **Objective parameter** – For each woman, the body mass index (BMI) was calculated using the following formula: BMI = weight (kg)/[height $(m)^2$], Waist : Hip ratio was calculated as waist (cm) / hip (cm), TLC,ESR, Serum F.B.S, Serum PPBS, Lipid profile, Serum L.H, Serum F.S.H, Serum Estrogen, Serum Progesteron, Serum Free testosterone, Serum Prolectine [for screening], Serum T.S.H. [for screening]

- ◆ USG for ovarian volume and follicular count was calculated during the follicular phase cycle.

All hormone test were done by ELISA method with help of different commercial kits like, EIAgen Estradiol, The UBI Magiwel™ for LH, FSH, Testosterone and progesterone and The Diametra for TSH

Statistical analysis

All the calculation was calculated through 'GraphPad Instat' Software. Paired't' test- Applied to independent observation for parametric assessment and used on objective parameter of both group 'A' and 'B'. Wilcoxon signed rank test- Applied to independent observation of Non parametric test for the subjective assessment of improvement in symptom of group 'A' and 'B. Mann-Whitney 'U' test- known as Mann-Whitney-Wilcoxon (MMW), Wilcoxon rank-sum test, Wilcoxon- Mann-Whitney. Useful on non-parametric test for assessing whether two independent samples of observation come from the same distribution. It will be used for comparison between results of symptoms of group 'A' and 'B'.and in same way unpaired't' test Applied to unpaired data of independent observation of parameteric data.

Observation and results

67% married women while unmarried were 43%.The numbers of students were 54%, the house wives were 3% and field workers were 33%.The middle class socio economic group was highest with

50%.Obese were 15%, overweight 26% and average patients were 30%, remains were aesthenic 27%. 97% of patients observed as poor and moderate temperament. While only 3% observed with sound temperament. 48% complaining for hypomenorrhea, 20% patients complaining for more than 6 days bleeding and 32% with normal bleeding. 73% have increased IMP [Oligomenorrhagic]. 27% patients with mild dysmenorrhea, 40% with moderate dysmenorrhea and 30% with severe dysmenorrheal. 40% patients with black color bleeding which usually associated with scanty bleeding, [due to vata prakopa], dark red color in 37% cases and 23% patients with frank bleeding. Abortion history found in only 12% married patients and 88% married patients had no any history of abortion. 77% patients had not any history of major disease, 7% patients had history of hypertension. Most of patients were in habit of having tea. 50% patients have disturbed sleeping tendency. 50% of patients were kroora koshti and 30% were mridu koshti. The apan vayu dushti was found in 80% patients either by atipravrit or by apravriti. 31%of patients with the family history of diabetes mellitus and obesity.13 % have pcos and 13% have obese relatives. 3% patients have relatives with baldness. 23% patient has not any family history of above any disorder. 26% patients found with B.M.I <19 kg/m^2. 30 % with normal range of B.M.I, 27% cases found with more than 23 kg/m^2. Remains 17% had more than 25 kg/m^2. 57% patients had more than 80 cm waist circumference and 43% patients with less than 80 cm waist circumference. Most of the patients were in category of dwandaj prakriti significantly. Vata pradhan kapha, kapha pradhana vata and kapha pradhan pittaja prakriti. Avara Satva patients were commonly found 40% and pravara satva found in 23%. Assessment of saar 43% percent were Madhyam saar and 37% were avara saar. Only 20% of the patients were pravara saar. It shows 44% were madhyam samhana and 33% were susmhana. Ekrasa satmya patients were found in significant number i.e. 43 %. And sarva rasa satmya were found in 30% patients. Vata pradhan kapha nadi with apan vaigunya is commoly find [50%], almost patient have normal tendency of mutra although they have tendency for suppression the urges. Mala was hard in 50% and it is also sama in prkriti, we found that most of patients in habbit of Vishamashan70%, Samashan 70%, Ajeernashan 70%.and almost all categories of Avidhi ahaar was found in the patients. Maximum numbers of the patients were practicing the Vatik ahara, but the Paittik and Shlaishmik ahara was also taken by the patients in much amount. This shows all tridoshas can produce the disease in leadership of Vata. Pragvata sevan, vega sandharana, ati adhyayan, ati shrama, atyadhwa gaman and abhyanga dwesha, were prominent. This is also a significant factor as many of the diseases aggravate in the condition of weak mental status.

Results of Clinical trial

- **Subjective improvement**

Effect on Group A

Relief in Dysmenorrrhea [73.68%], Relief in oligomenorrhea [25%], Relief in Hypomenorrhea [50%], Relief in Menorrhagea [66%], Relief in Acne [64.29%], Relief in Hirsutism [4%]

Effect on Group B

Relief in Dysmenorrrhea [47.37%], Relief in oligomenorrhea [90.48%], Relief in Hypomenorrhea [84%], Relief in Menorrhagea [66.67%], Relief in Acne [58.33%], Relief in Hirsutism [4%]

Intergroup comparison of group A with group B [Man whitney 'U' test] showed statistically very significant result in improving Oligomenorrhea P= .0024 and significante result in improving hypomenorrhea P=.0154 and all other profile were found insignificant.

- **Objective Improvement**

Effect on Group A - Total Leucocytes Count [P=.09], ESR [P=0.6], FBS [P=0.5], PPBS [P=0.3], Total cholesterol [P=0.1], Serum triglyceride [P=0.4], LDL [P= 0.4], Wt. [P= 0.07] BMI [P=0.0992], Waist circumference [P=0.077] Hip circumference [P=0.06], WAIST/HIP Ratio [P=0.69], Serum Oestrogen [P=0.9], Serum Progesterone [P= 0.9] Serum Testosterone [P= 0.1], Serum LH [P=0.6], Serum FSH [P= 0.3], Serum LH: FSH [P= 0.2], left Ovarian follicle count [P=0.9] was found insignificant, But significant results in Serum HDL [P=0.03], Serum VLDL [P=0.03] and very significant in Right Ovarian vol. [P= 0018]. left Ovarian vol [P= 0.0059] , Right Ovarian follicle count [P=0.003] .

Effect on Group B - Total Leucocytes Count [P=.3], ESR [P=0.83], PPBS [P=0.5], Total cholesterol [P=0.22], Serum triglyceride [P=0.9], Serum HDL [P=.3], Serum VLDL [P=.19], Wt. [P= 0.15] BMI [P=0.20], Waist circumference [P=0.083] Hip circumference [P=0.118], WAIST/HIP Ratio [P=0.57]. Serum Oestrogen [P=0.092]. Serum Progesterone [P= 0.52] Serum Testosterone [P= 0.33], Serum LH [P=0.06, was found insignificant, But significant results in Serum FBS [P=.027], Serum LH:FSH [P=.01], left Ovarian vol [P= 0.044], Right Ovarian follicle count [P=0.01] left Ovarian follicle count [P=0.02] and very significant in Right Ovarian follicle count [P=0.003], Serum FSH [P=0.007], Serum LDL [P= .0034].

Inter group comparision of Group A with Group B showed statistically significant only in Serum FSH [P=.01]. The other profiles showed statistically insignificante[P >.05]

Discussion

Etiopathogenic study

Indian women have tendency to ignore menstrual abnormalities but it becomes panic after marriage when she unable to conceive. Stress of responsibilities and lack of care increase the predominating features. Although the classical symptoms did not found in every patients but most of patients were in habit of having tikshna, Ruksha, Katu and guru Ahara, dusht ahara vidhi, and stress of infertility and suppression of urges. It undoubtedly affect the rasa and rakta agni. the Vaigunya of apan vayu found in most of cases because some patients complaint piles, Urinary tract infection, oligomenorrhea, Hypomenorrhea etc.dusht ahara and vihar responsible for different types of vata dushti and agni Vaishamya.

Clinical study

In oligomenorrhea and Hypomenorrhea insignificant result of herbomineral compound was found but the uttar basti result was highly significant. Menorrhagea were relieved in both groups. The drug improve blackhead and white head but no relief found in hirsutism in both groups . The result shows that oral drug and basti therapy were not affect on androgen dependent sexual hair growth.

We found that oral therapy increases the HDL [good cholesterol] and basti therapy effectively increase the FSH and reduce the follicle and ovarian volume significantly. The oral group also reduces the follicle count and ovarian volume but this result was not supported by hormone analysis.

Side effects

All 20 subjects completed the therapy but few group B patients felt pain after injecting oil . This pain was easily subside by hot water bag sudation. We don't find any gastric disturbance or any other complication in any patient

Probable mode of action of Panch gavya ghrit-

As stated earlier, Uttara basti is best vikalpa for yonivyapada. Gomutra is indicated in Kaphaja Yonivyapada, and panchagavya ghrit is indicated in Apasmara chikitsa. As we know, avrana on hridaya and manas. is responsible factor for apasmara The tikshna drugs are used to regulate the avrana of doshas.Same way of mechanism was used to treat the fat filled ovarian follicles Kapha or pitta avrit vata is associated with Andakosha, this avrina can be wipe out by tikshna dravya like panchagavya ghrit. We concluded that Uttara basti not only affect the uterus but it also works on fallopian tube and ovary. Because follicle numbers were significantly reduced after taking Uttara basti

Probable mode of action of Herbomineral compound

It contents *Yashada bhasma, Trikatu, Ashwagandha, Kanchnnar, Gudmar, Bijak, Bhumyamlaki. Trikatu* increases the bioavailablity of drug in body. The combination of drug virtue of its *kashaya rasa* and *laghu, ruksha guna* and *katu vipaka* affects *kapha dosha*. In most of PCOS cases kabha is associated as avrana on vata. The ushna guna of drug also regulate the vata. The drugs by mean of dipana pachana and shoshana of grathit kapha, fight against Agni dushti.The increased dhatwagni promote the formation of poshakansha of dhatu and updhatu [Artava] and it also suppress the increased formation of mala. The whole body channel are involved in PCOS. Hence it eradicate srotouplepa and srotorodha by virtue of its vilyana and pachana karma. Yashada bhasma is regulate vata by their rasayana karma

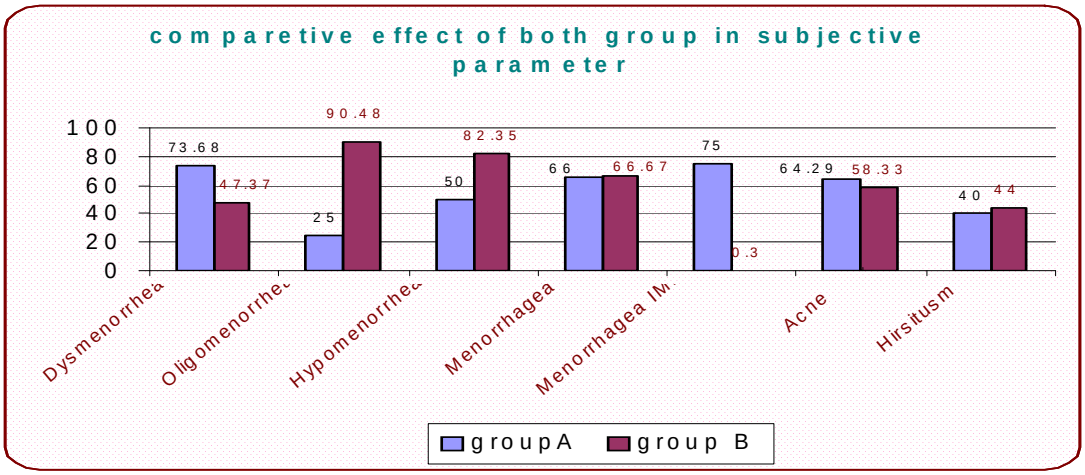
Conclusion

All the abnormalities associated with pcos can be seen in different pathological conditions of doshas, dushyas. Only the variation in combination of these constituents, results variants the disease in onset, symptoms and etiology. The vikriti is intiated by the vata, Vata dosha can affect the other doshas by different types of prakopa. two types of prakopa is observed in PCOS.

- ***Kshaya janya prakopa***
- ***Avrinna janya prakopa***

These doshas mainly affect the rasa, rakta and their updhatu artava. The prakopa is associated with whole female body, but the symptoms chiefly associated with artava. It is a ***STRI SHARIR VYAPADA where yonivyapada also associated.***

Figure -1



REFERENCES

1. Azziz R, Carmina E, Dewailly D, et al. Positions statement: criteria for defining polycystic ovary syndrome as a predominantly hyperandrogenic syndrome: an Androgen Excess Society guideline. J Clin Endocrinol Metab 2006;91:4237–45.
2. Kashyapa samhita with Vidyoini Hindi commentary and Hindi translation of Sanskrita introduction by Ayurvedalankar shri Satyapal Bhisangacharya, Chaukhambh Sanskrit Sansthana Varanasi, shatpushpa, shatavari kalpa/10
3. Charak, Charaka Samhita, Vidhyotni Hindi Commentary, by K.N.Shastri and G.N. Chaturvedi, Chaukhambha Bharti Academy, Varanasi, [2003] Chikitsa sthana 28/68
4. Shastri, Ambikadutta Sushruta Samhita, Ayurveda tattva sandipika, Hindi commentary by Chaukhamba Sanskrit Sansthana Varanasi,2003, Sharir Sthana 2/4, Vagbhata Ashtanga Sangraha, Hindi Commentry by Kaviraj Atridev gupta, Krishna Academy, Varanasi[1993].Sharir stana 1/24, Vagbhata Ashtanga Hridaya, Hindi Commentry by Brhmananda Tripathi, Chaukhamba Sanskrit Sansthana Varanasi,2009 .Sharir Sthana 1/11
5. Sushruta Samhita Sharir Sthana, .2/21, Ashtanga Sangraha Sharir Sthana .1/13
6. Charaka Samhita.Chkitsa Sthanai 30/25-26;. Sushruta Samhita Uttara tantra 38/9-1 Ashtanga Sangraha Ashtanga Sangraha.Uttara shana.38/36); Ashtanga HridayaUttara sthana.33/33-34
7. Sushruta Samhita Nidana Sthana 1/37
8. Kashyapa samhita.Revati kalp/33
9. Charaka Samhita..Sharir sthana .4/16
10. Sushruta Samhita .Nidanasthana 1/20
11. Sushruta Samhita .Nidanasthana 1/20
12. Sushsuta Samhita. Nidana sthana 11/7
13. Charaka Samhita Sutra Sthana.21/4-6
14. गोमयस्वरस क्षीर दधिमूत्रै: श्रष्तं हवि:। अपस्मारज्वरोन्माद कामलान्तरं पिबेत्। [A.H.Utt7/18]
15. The Rotterdam ESHRE/ASRM [European society for human reproduction and embryology\American society of reproductive medicine] – Sponsored PCOS consensus workshop group. Revised 2003 consensus on diagnostic criteria and long-term health risks related to polycystic ovary syndrome. Fertil Steril 2004; 81:19–25.
16. Charaka Samhita. 10/17

Clinical Study

A Clinical Study to Evaluate the Efficacy of *Kanyalauhadi Vati* and *Manjistha Churna* in the Treatment of *Kashtartava* (Dysmenorrhoea)

*Dr. Kamini Dhiman, **Dr. Kusum Lata, ***Dr. K. S. Dhiman

Abstract:

Kashtartava is a disease where in a female during her reproductive age experiences difficult and painfull menstruation. In Ayurvedic classics it is not described as an individual entity yet as a symptom of various *yonivyapadas*. E.g. *Vatala, Sannipataja, Udavarta* etc. Pathologically it is *Tridoshaja* having vata predominance. A total of 60 patients were randomly divided in three groups and treated with A) *Kanyalohadivati* of 250 mg. twice daily with luke warm water B) *Manjishtha Churna* 3 gm. twice daily and C) Combination of both the drugs for 2 months. An assessment was done on the basis of subjective as well as objective parameters with the help of VAS. The study revealed that good and fair results were found in the trial drugs in equal ways.

Key Words: *Kashtartava, Dysmenorrhoea, Manjishtha, Kanyalohadivati.*

सारांश–

आयुर्वेद चिकित्सा ग्रन्थों में कष्टार्तव एक लक्षण रूप में कई योनि व्यापदों में वर्णित है। यह एक वातोल्वण त्रिदोषज विकृतिजन्य लक्षण है, जिस के उपचार में कन्यालौहादि वटी व मञ्जिष्ठा चूर्ण द्वारा उपचार का मूल्यांकन इस अध्ययन में किया गया। कुल 60 रूग्णाओं को तीन वर्गों में समान संख्या में बांट कर 'अ' में कन्यालौहादि वटी; वर्ग 'ब' में मंञ्जिष्ठा चूर्ण, वर्ग 'स' में दोनों औषधियाँ 2 माह तक दी गई। सभी वर्गों वर्गों की रूग्णाओं में लगभग समान प्रभाव पाया गया व किसी भी वर्ग में औषधियों का विपरीत/विषाक्त प्रभाव नहीं देखा गया।

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Clinical Study

A Clinical Study to Evaluate the Efficacy of *Kanyalauhadi Vati* and *Manjistha Churna* in the Treatment of *Kashtartava* (Dysmenorrhoea)

Dr. Kamini Dhiman, Dr. Kusum Lata, Dr. K. S. Dhiman

Introduction:

Health is the actual way of attaining longevity in all species including human beings. The health of a woman is especially important because body of a woman embodies the capacity to bare the foetus in the womb & to deliver it in a healthy status. Besides this she has to bring up the child properly and thus she contributes to the over all health of the society. In the modern era woman has to manage the dual role both as a housewife and as a professional. Hence health care of a woman is very important. Pandit J.L. Nehru has also quoted - "To awaken people, it is the woman who must be awakened, once she is on the move, the family moves, the village moves, the nation moves."

In *Ayurvedic* classics, it has been said that the reproductive period starts from the 12th year onwards i.e. *Rajo-pravriti* (Menarche) to the 50th year i.e. *Rajo-nivriti* (Menopause)[1]. The women face a lot of physical and psychological problems both at the time of menarche as well as menopause. During menarche, the maximum girls face painful menstruation called as *Kashtartava*. *Kashtartava* is a disease wherein a female during her reproductive age experiences difficult and painful menstruation. Similar disease entity has been termed as Dysmenorrhoea in the modern medical science. It is one of the commonest gynaecological complaints.

In *Ayurvedic* classics, all gynaecological problems are described under the broad caption of *Yonivyapada2*. Though the disease "*Kashtartava*" is not described in classics as an individual entity yet it is a symptom of various *yonivyapadas* specially *Udavarta*, *Vatala*, *Sannipatika* etc.[3] Acharya Chakrapani quoted that any symptom may manifest as an individual disease.[4] *Kashtartava* a symptom which is seen right from 15 to 50 years of age. Pathologically it is a *tridoshaja vyadhi* with *vata* predominance in the female genital tract.

In modern medical science, Dysmenorrhoea is treated by OCPs, NSAIDs, antispasmodics, analgesics etc. Long term use of these chemical agents give rise to side/toxic effects like hepatotoxicity, nephrotoxicity, headache, dizziness, vertigo, depression, skin rashes, etc[5]. So there is great scope of research to find out safe, potent, cost effective remedy from Ayurveda for the management *kashtartava*/dymenorhoea to bridge the aforesaid lacuna. With this background, the recent trial work on *Kashtartava* has been undertaken

Drugs:

Kanyalauhadi Vati and Manjistha Churna which are indicated for this problem were selected for a clinical trial.[6] The fundamental of ayurvedic treatment is *Dosha-Dushya Vimurchhhana* etc are deemed and respected in every sense. Apart from this aspect an endeavour has been made to coalesce proven drugs having potency against pathogenesis of *Kashtartava*. *Vata anulomaka*, *Shoola Prashmanan*, *Rakta Shodhaka* drugs are featuring in these formulations ***Kanyalauhadi Vati*** :-

Ingredients:-

i)	Aelua	ii)	Lauha Bhasma
iii)	Twak (Dalchini)	*iv)*	*Kasisa Bhasma*
v)	*Ela* (Laghu)	*vi)*	*Shunthi*
vii)	Ghritakumari Swarasa		

Sunthi - Inhibition of prostaglandin synthesis by the constituents of ginger is thought to play role in the anti inflamammatory activity. It is primarily used for motion sickness, nausea , vomiting , following chemotherapy and following surgery[7]. Aelua is good rejuvenative and contract uterine muscles (*Garbhashaya Sankochaka)* and Emmenagogue[8]. Cinnamon is an appetizer, digestive, carminative, liver stimulant. Hence, useful in

anorexia, *amadosha*, abdominal pain. It has oxytocic properties and it is useful in amenorrhoea[9]. Ela (Seeds and oil) is appetizer, digestive and laxative and also antiemetic. It is used in abdominal pain and useful in general weakness[10]. Stimulant, Carminative Stomachic and Diuretic. properties are due to essential oil contained in the seeds. The seeds are valuable in many stomach complaints[11]. ***Lauha bhasma is*** *Lekhana, Balya, Vrishya, Rasayana and used in Shotha, shoola, pandu roga, udara roga, grahani, jvara, krishnatva, vami, aruchi, vandhyatva.*[12] *Kasis is having Vranaropana, Rajahapravartaka,*properties and is indicated in *Agnimandhya, Arsha, Kashtartava, Gudabhransha, Pandu, Shotha* and *Yonivyapada*[13].

Manjishtha is bitter, sweet, acrid, antipyretic, analgesic. It is used in inflammations and menstrual disorders[14]. It is good appetizer *(deepana)* and has good digestive capacity *(pachan)*. It stimulates uterus. It increases menstrual flow and it purifies breast milk. Therefore used in dysmenorrhoea and secondary amenorrhoea. It is used to purify uterus and breast milk after delivery. It also reduces fever[15].

Aims and Objectives –

1. To stuudy the clinical efficacy of *Manjistha churna* (single drug) and *Kanyalauhadi vati* (compound drug)in the treatment of *Kashtartava*
2. To study any other associated benefits as well as untoward effects, if any of trial drugs.

Materials & Methods :-

Patients attending the out patient department of Prasootantra and Stree roga at Rajiv Gandhi Govt. Ayurvedic Hospital, attached with Rajiv Gandhi Govt. Post Graduate Ayurvedic College, Paprola Distt Kangra (H.P.) with characteristic features of *Kashtartava* (Dysmenorrhoea) were selected for the present study. 60 patients of *Kashtartava* who attended O.P.D. during this study period were selected for present study irrespective of caste, creed, race and religion. A detailed proforma was prepared to study the disease in accordance to the patients of *kashtartava* (Dysmenorrhoea).

Inclusion criteria:-

1. Patients willing to participate in this study who gave informed written consent before the trial.

2. Patients of the age 15-50 years All the patients presenting with sign and symptoms of *Kashtartava i.e.*Painful menstruation, Nausea, Vomiting, Breast tenderness, Fever, Headache, Vertigo, Diarrhoea, Anorexia Nervousness

Exclusion Criteia:-

1. Patients who were not willing for trial.
2. Irregular periods.
3. Heavy and excessive periods.
4. Any anatomical anomaly.
5. Other systemic or reproductive tract pathology.

Method of Study :-

Study accomplished in three phases:

- Diagnostic Phase
- Interventional Phase
- Assessment Phase

Diagnostic Phase:-The patients were diagnosed (selected) on the basis of signs and symptoms (Clinical presentation) of Kashtartava (Dysmenorrhoea) as given in the inclusion criteria. All the Patients selected for trial were explained the nature of the study and their informed consent was obtained.

Investigational Criteria:-For the purpose of assessing the general condition of the patient and to exclude their other pathologies routine haematological investigations were performed in all the selected patients before & after the trial of therapy.

USS examination was done to exclude any pathology before the interventional phase. After arriving at the diagnosis clinical performa was filled up, which incorporated all the signs and symptoms based on both ayurvedic as well as modern descriptions (Parameters). All the points in perspective of *dosha* and *dushya* etc. on ayurvedic line were also included in proforma. A detailed clinical history was taken initially and complete physical and gynaecological examination of each patient was carried out on the basis of proforma. In

addition to it *Sharirik* as well as *Manas Prakriti Parikshana* of the patients was also done.

Interventional Phase: -The study was intervened by the treatment with k*anyalauhadi Vati and Manjistha Churna as per* schedule of the group in which patient was randomised**.**

Sampling Technique:- Random sampling technique was adopted. Patients were divided into three groups. Group-I (Gr.-I), Group-II (Gr.-II) and Group-III (Gr.-III).

Trial Group I : *Kanyalauhadi vati* orally with luke warm water in a dose of 250 mg twice a day at fixed interval was given.

Trial Group II :*Manjistha Churna* orally with luke warm water in a dose of 3 gms. twice a day at fixed interval was given.

Trial Group III :

Kanyalauhadi vati and *Manjistha Churna* orally with Luke warm water in a dose mentioned above twice a day at fixed interval was given.

Duration of Trial: -

The total duration of treatment for the subjects of all the groups was 2 (two) months.

Follow Up: -

Follow up was conducted after one month during menstrual flow and then after one month of the completion of trial.

Assessment Phase: -The assessment has been done clinically on the basis of decrease in clinical parameters (signs and symptoms) and improvement in certain physical parameters (on the basis of VAS and grading/ scoring system).

Clinical Assessment:-

The criteria adopted for intensity of pain was VAS (Visual Analogue Scale).The sign and symptoms were assessed by adopting suitable scoring methods. The details are as follow:

Grading -

Symptoms	0	1	2	3
1. Duration of pain	No pain	Upto 24 hr.	Upto 48 hr.	Upto 72 hr.
2. Nausea	Absent	2-3 times/day	4-5 times/day	>5 times/day
3. Vomiting	Absent	Occasionally	1-2 times/day	>2 times/day
4. Breast tenderness	No Tenderness	Mild Tenderness	Moderate tenderness	Severe Tenderness
5. Fever	No fever	Mild fever at night	Moderate fever throughout the day	Severe fever
6. Headache	Absent	Mild	Moderate	Severe
7. Vertigo	Absent	Occasionally	2-3 times in	More than 4
			1-2 days	times in 3-4 days
8. Diarrhoea	Absent	Occasionally	2-3 times/day	>3 times/day
9. Anorexia	Absent	Mild	Moderate	Severe
10. Nervousness	Absent	Mild	Moderate	Severe

Over all Assesment of Therapy: - To assess the over all effect of therapy following criteria was laid down:-

Completely Cured: - More than 90% relief in symptoms and signs as well as one (1) score obtained on VAS.

Markedly Improved: - More than 75% and less than 90% relief in symptoms and sign as well as > 1 to 5 change of score on VAS.

Moderately Improved: - More than 50% and less than 75% relief in symptoms and sign as well as 5 to 9 change of score on VAS.

No improvement/ Unchanged: - Less than 25% relief in signs and symptoms and score greater than 9.

Observations & Results: -

In the present study, 63 patients were registered, 60 patients completed the trial, three patients left the study in between.

Demographic Profile: Maximum no. (64.974%) of patients were of age group of 18- 25 yrs. , 23.324% were of the age group of 31-40 yrs., 6.664% and 4.998% were of age group of 26-30 and above 40 respectively. Most of the patients (63.308%)were unmarried and 36.652% were married. 53.312 % patients were Matriculated, 31.654% patients were having education up to Higher secondary, 8.33% were Graduates and 6.664% were of Primary Standard. 83.3 % patients belonged to middle class and 16.66% were belonged to Lower class (poor). The students formed the maximum patients in this type of distribution i.e. 61.642 %, second largest group were house wife with 34.986% and 3.332% were of private job. 88.298 % patients had spicy food as their dietary habit and 11.662% were on non-spicy diet. 78.302 % patients had disturbed sleep due to pain and 21.658% of normal sleep. Maximum number of patients had constipated bowel habits i.e. 71.66%, and 26.66% has normal bowel habits and 1.66% were of loose stool. The 81.634% patients were having positive family history of Kashtartava and 18.326 % patients had no family history. Maximum no. of patients (80%) had spasmodic type of pain and 20% were having dull ache. The maximum no. of patients had radiation of pain to thighs (44.982 %), to abdomen (31.654%) and 23.324% in the back. 58.3% patients were having Nausea, 35% patients had Anorexia, 16.67% were having fever, 10% had Headache, 3.3% each had Diarrhoea, Nervousness & Breast tenderness & the remaining 1.6% each had vomiting and vertigo as Associated Symptoms. Majority had *Vata Pittaja* (66.6%), Pitta Kaphaja (20%) & Vata kaphaja prakriti (13.5%)

I- STATISTICAL ANALYSIS OF EFFECT OF THERAPY IN GROUP I

(*KANYALAUHADI VATI*)

Symptoms	***n***	**Mean**		**Relief**		**Paired-t test**		***"t"***	**P**
		BT	**AT**	**Diff.**	**% age**	**SD±**	**SE±**	**Value**	**Value**
Intensity of Pain	20	8.65	2.605	6.045	70	0.64	0.143	42.27	<0.001
Duration of Pain	20	1.95	0.3	1.65	84.62	0.5	0.11	15.08	<0.001
Associated Symptoms									
Nausea	20	0.65	0.1	0.55	84.76	0.51	0.1141	4.82	<0.001
Vomiting	20	-	-	-	-	-	-	-	-
B. Tenderness	20	-	-	-	-	-	-	-	-
Fever	20	0.15	0	0.15	100	0.3663	0.0819	1.832	>0.05
Headache	20	0.1	0	0.1	100	0.307	0.0688	1.4518	>0.05
Vertigo	20	-	-	-	-	-	-	-	-
Diarrheoa	20	0.05	0	0.05	100	0.2236	0.050	1	>0.05
Anorexia	20	0.5	0.05	0.45	90	0.6048	0.1352	3.328	<0.01
Nervousness	20	0.05	0	0.05	100	0.2236	0.05	1.002	>0.05

II- STATISTICAL ANALYSIS OF EFFECT OF THERAPY IN GROUP II (*MANJISTHA CHURNA*)

Symptoms	*n*	Mean		Relief		Paired-t test		"t"	P
		BT	AT	Diff.	% age	SD±	SE±	Value	Value
Intensity of pain	20	8.97	1.99	6.98	77.82	0.597	0.133	52.48	<0.001
Duration of pain	20	1.3	0.25	1.05	80.77	0.2236	0.499	21.00	<0.001
Associated Symptoms									
Nausea	20	0.7	0	0.7	100	0.6569	0.1468	4.768	<0.001
Vomiting	20	-	-	-	-	-	-	-	-
B. Tenderness	20	0.05	0	0.05	100	0.2236	0.05	1	>0.05
Fever	20	0.25	0	0.25	100	0.4442	0.0993	2.51	<0.05
Headache	20	0.1	0	0.1	100	0.3077	0.06882	1.4530	>0.05
Vertigo	20	0.05	0	0.05	100	0.2236	0.05	1	>0.05
Diarrhoea	20	0.05	0	0.05	100	0.2236	0.05	1	>0.05
Anorexia	20	0.3	0	0.3	100	0.4701	0.105	2.857	=0.01
Nervousness	20	-	-	-	-	-	-	-	-

III- STATISTICAL ANALYSIS OF EFFECT OF THERAPY IN GROUP III (*KANYALAUHADI* VATI & *MANJISTHA CHURNA*)

Symptoms	*n*	Mean		Relief		Paired-t test		"t"	P
		BT	AT	Diff.	% age	SD±	SE±	Value	Value
Intensity of pain	20	8.725	1.895	6.83	78.29	0.52	0.1156	59.08	<0.001
Duration of pain	20	1.8	0.2	1.6	88.69	0.50	0.11	14.54	<0.001
Associated Symptoms									
Nausea	20	0.7	0.1	0.6	85.72	0.5026	0.11239	5.3385	<0.001
Vomiting	20	0.05	0	0.05	100	0.2236	0.05	1	>0.05
B. Tenderness	20	0.1	0	0.1	100	0.4472	0.10	1	>0.05
Fever	20	0.1	0	0.1	100	0.3077	0.0688	1.453	>0.05
Headache	20	0.1	0	0.1	100	0.3077	0.0688	1.453	>0.05
Vertigo	20	-	-	-	-	-	-	-	-
Diarrhoea	20	0.05	0	0.05	100	0.2236	0.05	1	>0.05
Anorexia	20	0.5	0.05	0.45	90	0.6863	0.15346	2.93	<0.001
Nervousness	20	0.05	0	0.05	100	0.2236	0.05	1	>0.05

Overall effect of Three Groups in 60 Patients under Trial:-

Assessment	Group I		Group II		Group III		Total No. of Pts.	% age
	n	% age	*n*	% age	*n*	% age		
Completely Cured	11	55	14	70	13	65	38	63.33
Markedly improved	4	20	1	5	3	15	8	13.33
Moderately improved	5	25	5	25	4	20	14	23.33

Discussion :-

- Maximum patients were of age group of 18-25 yrs. (64.974%) This may be due to variation in life style and food pattern in girls. Primary dysmenorrhoea also persists in this age group generally.
- The maximum number of patients had constipated bowel habits i.e. 71.66% Constipation-*Vibandha* leads to *Vataprokopa* and *dusthi* of *apanvayu* as well as *pratilomgati* of *Apanvayu* which hampers the normal functions of *Apanvayau* so as to patients may have problem like *Kashtartava* (dysmenoorhoea.) which is also caused by *apana dushti* .
- 81.634% patients were having positive family history; *Anuradha et al.* (2006)[16] observed 40% patients who had the positive family history of dysmenorrhoea. *Pooja et al.* (2007) [17.] found the 50% patients and *Kiran et al.* (2008) [18] observed 52% patients who had positive family history.[19]
- 80% patients had spasmodic type of pain and 20% had dullache. *Anuradha et al.*(2006)[16] also found 83.64% patients who had cramps like pain. *Pooja et al.* (2007)[17] also reported 75% patients having spasmodic pain and *Kiran et al.* (2008)[18] found 94% patients with the same.
  Acharyas have described the nature of pain to be of *Todana* (piercing) and *shoolavat* (spasmodic) in general *vatika vedanas*. In primary dysmenorrhoea pain is of spasmodic type.
- The classification made in regard to the site and radiation of pain suggests that 79.96% were having pain in hypogastrium 9.99% had pain in the inguinal region, 44.98% had radiation of pain to thighs, 31.65% had radiation of pain to abdomen and 23.32% had radiation of pain to back which indicates dominance of *vata dosha* and pain in hypogatrium indicates dominance of *pitta dosha*. *Anuradha et al.* (2006)[16] observed 96.36% patients who had the pain in the hypogastric region. *Pooja et al.* (2007)[17] and *Kiran et al.* (2007)[18] observed 55% and 66% patients with pain in hypogastric region, respectively. According to *Ayurvedic* concepts these two *doshas* and the *Asrikdosha* caused by them produces abnormal flow of menstruation i.e. painful flow-*Kashtartava*. In the light of anatomical aspect also the site and the radiation of the pain is seen in the hypogastrium region in *Kastartava (*Dysmenorrhoea). Also in primary dysmenorrhoea the pain sensation arises due to incoordinate muscular contractions in the uterus and pain is felt mainly in the hypogastrium and is also referred to the inner and front aspects of the thighs and may be associated with some low backache as well. So, the pain described by all the patients was typical of primary dysmenorrhea,
- 58.3% patients were having Nausea, 35% patients had Anorexia, 16.67% were having fever, 10% had Headache, 3.3% each had Diarrhoea, Nervousness & Breast tenderness & the remaining 1.6% each had vomiting and vertigo as Associated Symptoms, All these symptoms appear due to the accumulation of *vata dosha* during the pathogenesis of the disease.
- *Kanyalauhadi vati' (Shunthi, Ghrita Kumari, Aelua, Twak, Lauh Bhasm, Kasisa Bhasm & Ela)* selected for present trial is a classical drug, which is mentioned in *Rasoddhar Tantra* in the treatment of *Kashtartava*. *Manjistha Churna* is also mentioned for *Kashtartava* (Dysmenorrhoea). As per ingredients of *Kanyalauhadi vati*, the formulation seems to be *Tridoshashamaka*, *Ushna veerya* and *Katu* vipaka.
- *Kashtartava* is *Vata* Predominant *Tridoshaaj* disease. The formulation under trial has *Tridoshshamak* and *Vatashamak* properties due

to *Madhura Vipaka*. These properties of formulation help to breakdown the pathogenesis of the disease. All the ingredients exert *vatanulomaka* and *shoolahara* properties along with *Garbhashaya shudhdhikara* properties by virtue of its *Raktashodhaka karma*. *Shunthi* by virtue of its *shoola prashamana* properties is having effect upon the main complaint of *shoola* (Pain) found in Dysmenorrhoea. It also has *Vatashamaka* property.

- The properties of *Twak-Dalchini* (Cinnamomum zeylanicum) have been found to be carminative, stomachic and digestive. In this way helps in *Samprapti Vighatana* by relieving *Agnimandhya*. *Ghritakumari* is best known for its *Artavajanana* and *Vednasthapana karma* from ancient time to the present era. It has *deepana*, *pachana* properties and because of its *Garbhashaya Shodhaka* and *Sankochaka* properties it scraps the remnants of *dushita artava* and thus helps in easy passage of *artava* (Menstruation). *Kasisa bhasma* is *Raktavardhaka* and *Artavajanaka*. *Lauh Bhasma* by virtue of its *yogavahi* property increases the action of all the above drugs and helps in *Samprapti Vighatana*. Along with this it is haemostatic (*Rakta vardhaka*). With reference to the relevant action of constituents of drugs, the compound exhibits carminative, Antipyretic, Anti inflammatory and analgesic properties.
- *Manjistha* stimulates uterus by virtue of its *Garbhshaya Shodhaka* and *Sankochaka* properties, hence improve the free flow of menstrual blood without any obstructions. By *Raktavardhaka* and *Raktashodhaka* properties it enhances the pain threshold and facilitates the better pain tolerance

Conclusion:-

On the basis of these observations, it may be deducted that dysmenorrhoea may be found in the female of any age during her entire reproductive period, incidence may vary. So dysmenorrhoea can be studied during the entire reproductive period of the life of female. From the results and observations of this study it can be concluded that according to VAS, all 60 patients were markedly improved, So it can be assumed that good and fair results found in the trial drugs in equal ways. At any corner of the study, No adverse effect was seen in three groups during trial. It proves that the drugs are safe from unwanted effect. Hence need is to conduct such a study on large number of patients for a longer duration to observe exact drug action.

Life style education as early as the menarch age towards the reproductive health.

Referrences:

1. Vaidya Lalachandra, Ashtanga Hridaya(with Sarvangasundari Commentry), Motilal Banarasidas Publications, Varanasi. Reprinted at Delhi 1999 Shareerasthana – 1/7, page-221.
2. Charaka Samhita, Chakrapanidutta, Sharma R. K., Bhagwandas, editors. Chikitsa Sthana, Varanasi: Chaukhambha Sanskrit Series:2009.Vol VChi.30/7
3. Charaka Samhita, Chakrapanidutta, Sharma R. K., Bhagwandas, editors. Chikitsa Sthana, Varanasi: Chaukhambha Sanskrit Series:2009. Vol V, p-131,132,135.
4. Charaka Samhita, Chakrapanidutta, Sharma R. K., Bhagwandas, editors. Chikitsa Sthana, Varanasi: Chaukhambha Sanskrit Series:2009. Nidanasthana 8/40.
5. Drug Facts and Comparisons Author: Facts and Comparisons (Firm) Publisher: St. Louis, MO 2000
6. Rasoddhara Tantra and Ayurvedic Pharmacology and Therapeutic uses of medicinal plants (Dravyaguna Vigyan) By Vaidya V.M. Gogte. Bharateeya Vidya Bhawan, Mumbai–7, 2000 Page–464
7. Tongta et al. J Med Association Thailand 2006;89 (Supp 4); S130-6
8. Bhavaprakasha Nighantu(Indian Materia Medica) of Bhavamishra, Commentry by Dr. K. C. Chunekar Edited by Dr. G. S. Pandey, Chaukhambha Bharati Academy, Varanasi 2006. Page 420,421.
9. Ayurvedic Pharmacology and Therapeutic uses of medicinal plants (Dravyaguna Vigyan) By Vaidya V.M. Gogte. Bharateeya Vidya Bhawan, Mumbai – 7, 2000 Page – 391
10. Ayurvedic Pharmacology and Therapeutic uses of medicinal plants (Dravyaguna Vigyan) By Vaidya V.M. Gogte. Bharateeya Vidya Bhawan, Mumbai – 7, 2000 Page – 323
11. Indian Materia Medica with Ayurvedic, Unani & Homeopathic remedies by Nadkarni A. K. 1996. Vol. I Popular Prakashan Mumbai
12. Rasatantrasara & Siddhaprayogasangraha, Krishna Gopal Ayurved Bhavan, Ajmer 1980, Page-108.
13. Rasatantrasara & Siddhaprayogasangraha, Krishna Gopal Ayurved Bhavan, Ajmer 1980, Page-162

14. Indian Materia Medica with Ayurvedic, Unani & Homeopathic remedies by Nadkarni A. K. 1996. Vol. I Popular Prakashan Mumbai, Page – 1076.

15. Ayurvedic Pharmacology and Therapeutic uses of medicinal plants (Dravyaguna Vigyan) By Vaidya V.M. Gogte. Bharateeya Vidya Bhawan, Mumbai – 7, 2000 Page –464

16. Anuradha Roy,A comparative study on the effect of Dashmoola Taila Uttara Basti and Vijayadi Vati in the management of Kashtartava (Dysmenorrhoea) I.P.G.T. & R.A. Jamnagar2006

17. Pooja Chaudhary, Ayurvedic Management of Udavarta Yoni Vyapada (Dysmenorrhoea) with KH (kashatartavahara) compound and Dashmoola-Trivrita Taila Uttara Basti – A clinical study." R. G. Govt. P. G. Ayu. College, Paprola,H.P. 2007

18. Kiran Chaudhary, Management of Udavarta Yonivyapada and Pre-menstrual syndrome with Chaturbeeja Churna and Yogic practices R. G. Govt. P. G. Ayu. College, Paprola,H.P. 2008

19. Jamieson DJ, Steege JF. The prevalence of dysmenorrhea, dyspareunia, pelvic pain, and irritable bowel syndrome in primary care practices. Obstet Gynecol. Jan 1996;87(1):55-8. [Medline]., Simpson JL, Elias S, Malinak LR, Buttram VC Jr. Heritable aspects of endometriosis. I. Genetic studies. Am J Obstet Gynecol. Jun 1 1980;137(3):327-31. [Medline].

Clinical Study

Clinical study to assess the role of *Akshitarpana, Shirodhara* and an *Ayurvedic* compound in childhood computer vision Syndrome

**Dr. Omendra Pal Singh, ** Prof. Abhimanyu Kumar*

Abstract

Computer vision syndrome is one of the common lifestyle disorders in children. About 88% of people who use computers everyday suffer from this problem, and children are no exception. Computer Vision Syndrome (CVS) is the complex of eye and vision problems related to near work which are experienced during or related to computer use. Therefore, considering these prospects a clinical trial was carried with 40 clinically diagnosed children (5-15 years age group) of computer Vision Syndrome in four groups. Group A with trial drug syrup, group B *Akshitarpana* with trial drug, group C *Shirosdhara* with trial drug and group D with placebo syrup. It was observed *Akshitarpana* procedure was highly effective in the complaints of CVS those are exclusively related to eyes viz. red eyes, burning eyes, dry eyes, teary eyes, itching eyes, eyestrain and also in headache. *Shirodhara* procedure has been also found highly effective in complaints of headache and fatigue. The trial drug (syrup) has not shown significant effect on any of the symptoms of computer vision syndrome.

सारांश–

''कम्प्यूटर विजन सिन्ड्रोम'' आधुनिक जीवनशैली के फलस्वरूप होने वाले विकारों में से एक है। कम्प्यूटर का प्रयोग करने वाले लोगो में से 88 प्रतिशत लोग इस समस्या से पीडित होते है। बच्चे भी अब इसका अपवाद नहीं रहे। ''कम्प्यूटर विजन सिन्ड्रोम'' नेत्र एवं दृष्टिगत लक्षणों का समूह है, जो टी.वी. एवं कम्प्यूटर के अधिक प्रयोग के फलस्वरूप होता है।

इस अध्ययन के लिए सम्यक् रूप से निदानकर ''कम्प्यूटर विजन सिन्ड्रोम'' के 40 रुग्ण बच्चे लिए गये और उन्हें 10–10 के चार समूहो में बाँटा गया। तुलनात्मक अध्ययन के लिए समूह ''ए'' में आयुर्वेदिक योग, समूह ''बी'' में ''अक्षितर्पण'' एवं आयुर्वेदिक योग समूह ''सी'' में ''शिरोधारा एवं आयुर्वेदिक योग तथा समूह ''डी'' में प्लेसिबो सिरप दिया गया। अध्ययनोपरान्त पाया गया कि ''कम्प्यूटर विजन सिन्ड्रोम'' के नेत्र एंव दृष्टि सम्बिधित लक्षणों में अक्षितर्पण एवं शिरोधारा द्वारा शिर: शूल में उल्लेखनीय सुधार हुआ।

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Clinical Study

Clinical study to assess the role of *Akshitarpana, Shirodhara* and an *Ayurvedic* compound in childhood computer vision Syndrome

Dr. Omendra Pal Singh, Prof. Abhimanyu Kumar

In this 21st century the use of computers, be at home or office has increased tremendously. The computer has a valuable role in increased efficacy and accuracy of several works. But along with it brought increase in health risks, especially the eyes. The children are not exception here as they take more interest in Video Display Terminals (TV and computers) than adult because of its interesting functions. In present scenario children are equally being affected with CVS because of excessive exposure to VDTs. Apart from these, children have limited degree of self-awareness and participate in long-drawn-out activity without taking time for a momentous break. Children are very compliant and may work in unfavorable conditions like less than optimum lighting. These are the reasons why computer vision syndrome is getting prevailed nowadays among children.

The American Optometric Association (AOA) has given definition of Computer Vision Syndrome as "The complex of eye and vision problems related to near work which are experienced during or related to computer use" CVS is a temporary condition resulting from focusing the eyes on a computer display for protracted, uninterrupted period of time.

According to the 2003 U.S. Census data (the most recent statistics available as of November, 2007), 64% of adults and 86% of children use computers at school, at work, or at home. Computer Vision Syndrome (CVS) affects the majority of computer users. About 88% of people who use computers everyday suffer from eyestrain, and children are no exception.

The signs & symptoms of CVS may vary according to age but in children these include red eyes, Burning Eyes, Dry Eyes ,Teary Eyes ,Itching eyes, Eyestrain Blurred Vision, Difficulty in focusing, Double vision ,Squinting for better vision, Headache, Pain Neck/ shoulder /back and Fatigue.

Though 'Computer Vision Syndrome' has no direct reference in classics, an Ayurvedic approach to its understanding and treatment protocol can be given on the basis of the fundamentals of Ayurveda.The *Nidana* and *samprapti* of Computer Vision Syndrome can be understood by *Trividha hetu* viz. *Asatmendriyartha samyoga, Prajnaparadha, Parinama* with respect to *Chakshurendriya*. *Asatmendriayrtha sanyoga*: (incompatible correlation of the senses with their objects) Among trividha hetu's it is the nearest or immmediate cause in the disease manifestation. It includes the *ati,mithya* and *heena yoga* of the *chakshunendriya*. *Atiyoga (Long* exposure to screen), *Heenayoga (*very small fonts, poorly illuminated room), *Mithyayoga (*Constantly staring, not blinking) *Pragyaparadha:* Wrong understanding by the intellect and wrong actions accordingly is known as intellectual error that is committed by mind.

*Dhi vibhrama (*Unable to differentiate between good and bad i.e. Continuous exposure to screen), *Dhrati vibhrama (*Inspite of knowing its harmful effects can't control), *Smriti Vibhrama (forgets* advice for evasion of unhealthy exposure)

Parinama: It is the unavoidable cause. In present era the excessive intervention of new equipment like television, computer etc is the causes of computer vision syndrome.

By the indulgence in above said Nidana child is excessively exposed to UV rays and glare, emitted from TV and computer monitors. *These are Vata-paittakara Nidana as* having speed and are the forms of energy leading to *Vata - Pitta pradhana Tridosha* vitiation at *chakshurendriya* then *sthanasamshraya* of vitiated *vata –pitta pradhana Tridosha occur* in *sukla mandala, vahya patala* etc producing the symptoms like dry eyes, eye strain, blurred vision (v*ataja*) burning eyes (*Pittaja*), etc. the cardinal feature of computer vision syndrome.

Clinical Study

Aim & Objects of the Study

- To get relief from the symptoms of Computer vision syndrome.

Selection of Cases and their grouping

A randomized double blind placebo control study was conducted in 40 children showing the signs and symptoms of Computer vision syndrome (CVS). The randomised double-blind placebo control study was conducted except in Group B and C because this study was not possible as these were with procedures.

For the study children of age group 5 – 15 years were selected from O.P.D. /I.P.D. of Balroga Department of N.I.A., Jaipur (Raj.) and from various schools by survey method. All the study cases were categorised in 4 groups. Ayurvedic counselling was done in all groups.

- Group A – Study drug.
- Group B – Akshitarpana(with Triphala Ghrita) + Study drug.
- Group C – Shirodhara(with cow milk) + Study drug.
- Group D – Placebo.

❒ **Study drug**: A Hypothetical compound (Syrup) containing 5 herbs viz. Amalaki, Haritaki, Bibhitaki, Ashwagandha and Yashtimadhu was prepared.

❒ **Dose and duration**: Doses were according to the body weight of the child (1 ml/ kg / day) in 3 divided doses for 21 days. Children were called for follow up weekly.

❒ ***Akshitarpana*** was performed with Triphala Ghrita**;** 20-25 min daily for 5 days.

❒ ***Shirodhara*** was carried out with cow milk**;** 30-40 minutes daily for 5 days.

Criteria Adopted

Inclusion criteria

a) Children who spend more than two hours/day in front of screen (T.V. or computer).

b) Children showing minimum three symptoms of Computer Vision Syndrome.

Exclusion Criteria

❒ Children below the age of 5 years and above 15 years.

❒ Children with any systemic disorders.

❒ Children with physical disability.

❒ Children with any psychotic disorder.

Discontinuation Criteria:

❒ Any adverse effect of the therapy, if seen.

❒ Any acute or severe illness.

❒ Patient not willing to continue the treatment.

Assessment Criteria:

❒ Symptoms of CVS were graded and assessment on the basis of pre and post observations found on this scale was done.

CVS Symptoms' Grading

Red eyes

◆ 0: Not Present

◆ 1: After more than 2 hours of continuous sitting in front of screen

◆ 2: In less than 2 hrs of continuous sitting in front of screen

◆ 3: All the time even without facing screen

Burning eyes

◆ 0: Not Present

◆ 1: After more than 2 hours of continuous sitting in front of screen

◆ 2: In less than 2 hrs of continuous sitting in front of screen

◆ 3: All the time even without facing screen

Itching (eyes)

◆ 0: Not Present

◆ 1: After more than 2 hours of continuous sitting in front of screen

- 2: In less than 2 hrs of continuous sitting in front of screen
- 3: All the time even without facing screen

Eyes Strain (Non- Specific ocular discomfort)

- 0: Not Present
- 1: After more than 2 hours of continuous sitting in front of screen
- 2: In less than 2 hrs of continuous sitting in front of screen
- 3: All the time even without facing screen

Blurred Near and Distant Vision

- 0: Not Present
- 1: After more than 2 hours of continuous sitting in front of screen
- 2: In less than 2 hrs of continuous sitting in front of screen
- 3: All the time even without facing screen

Difficulty in focusing

- 0: Not Present
- 1: After more than 2 hours of continuous sitting in front of screen
- 2: In less than 2 hrs of continuous sitting in front of screen
- 3: All the time even without facing screen

Double vision

- 0: Not Present
- 1: After more than 2 hours of continuous sitting in front of screen
- 2: In less than 2 hrs of continuous sitting in front of screen
- 3: All the time even without facing screen

Squinting (for better vision)

- 0: Not needed
- 1: Needed After more than 1/2 hour of continuous sitting in front of screen
- 2: Needed After every 15 min. of continuous sitting in front of screen
- 3: Needed very frequently(less than 15 min. of sitting)

Headache

- 0: Not present
- 1: Slight headache, doesn't hamper his/her daily routine
- 2: moderate- can perform household works but can't work on Computer/watch TV
- 3: Severe headache hampering his/her day today work

Neck/Shoulder pain /back pain

- 0: Not present
- 1: Slight headache, doesn't hamper his/her daily routine
- 2: moderate- can perform household works but can't work on Computer/watch TV
- 3: Severe headache hampering his/her day today work.

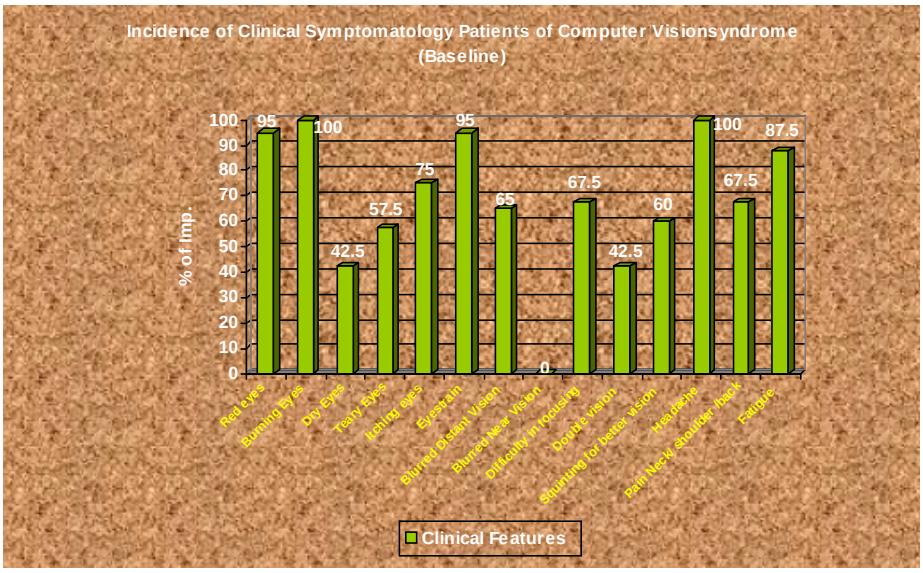
Fatigue

- 0: Not present
- 1: After more than 2 hours of continuous sitting in front of screen
- 2: In less than 2 hrs
- 3: tiredness without doing any work

Observation –

Table: showing incidence of demographic profile

S.No.	Findings	Predominance	*Percent*
1.	**Age**	13-15 yr age group	*50.00%*
2.	**Sex**	Male	*60.00%*
3.	**Religion**	Muslim individuals	*60.00%*
4.	**Socio-economic status**	Middle class	*37.50%*
5.	**dietary habit**	Mixed	*60.00%*
6.	**Dominant rasa in diet**	Amla	*42.50%*
7.	**Sharirik Prakriti**	*Vata-Pittaja Prakriti*	*62.50%*
8.	**Mansik Prakriti**	*Rajasika*	*60.00%*
9.	**Satva**	*Pravara*	*37.50%*
10.	**Satmya**	*Avar satmya*	*67.50%*
11.	**Sara**	*Madhyama*	*75.5%*
12.	**Samhanana**	*Madhyama*	*60.00%*
13.	**Agni**	*Vishama*	*53.50%*
14.	**Koshta**	*Krura*	*53.33%*
15.	**F/H/O Ophthalmic illness**	*No*	*72.50%*
16.	**Visual acuity**	*6/6 – 6/9*	*72.50%*
17.	**Workplace lighting**	*poor*	*47.50%*
18.	***Angle of gaze***	Above eye level	*67.50%*



Results of therapeutic trial

Comparative results of clinical recovery in 40 patients of all four groups of computer vision syndrome are summarized in following tables

Tabel 1. Showing the pattern of clinical recovery of symptom of RED EYE in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of	SD	SE	"t"	*P*	Result
	BT	AT		Relief	±	±	Value	Value	
A	1.7	1.1	0.6	35.29	0.69	0.22	2.71	<0.02	S
B	2.5	0.4	2.1	84.00	0.56	0.17	11.69	<0.001	HS
C	1.5	0.8	0.7	46.67	0.82	0.26	2.60	<0.02	S
D	1.4	1.2	0.2	14.28	0.42	0.13	1.5	<0.10	NS

Table 2. Showing the pattern of clinical recovery of symptom of BURNING EYES in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of	SD	SE	"t"	*P*	Result
	BT	AT		Relief	±	±	Value	Value	
A	2.4	1.6	0.8	33.33	0.78	0.24	3.20	<0.01	S
B	2.3	0.2	2.1	91.30	0.31	0.10	21.00	<0.001	HS
C	2.3	1.9	0.4	17.39	0.51	0.16	2.44	<0.02	S
D	2.4	2.1	0.3	12.50	0.48	0.15	1.96	<0.05	NS

Table 3. Showing the pattern of clinical recovery of symptom of DRY EYES in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of	SD	SE	"t"	*P*	Result
	BT	AT		Relief	±	±	Value	Value	
A	0.9	0.6	0.3	33.33	0.48	0.15	1.96	<0.05	NS
B	2.1	0.2	1.9	90.47	0.87	0.27	6.86	<0.001	HS
C	1.0	0.6	0.4	40.00	0.51	0.16	2.44	<0.02	S
D	1.3	1.1	0.2	15.38	0.42	0.13	1.5	<0.10	NS

Tabel 4. Showing the pattern of clinical recovery of symptom of TEARY EYES in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of	SD	SE	"t"	*P*	Result
	BT	AT		Relief	±	±	Value	Value	
A	1.5	1.0	0.5	33.33	0.70	0.22	2.23	<0.05	NS
B	2.0	0.1	1.9	95.00	0.99	0.31	6.04	<0.001	HS
C	1.1	0.6	0.5	45.45	0.70	0.22	2.23	<0.05	NS
D	2.0	1.8	0.2	10.00	0.42	0.13	1.5	<0.10	NS

Table 5. Showing the pattern of clinical recovery of symptom of ITCHING EYES in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	P Value	Result
	BT	AT							
A	0.6	0.2	0.4	26.31	0.69	0.22	1.80	<0.10	NS
B	1.7	0.2	1.5	88.23	0.84	0.26	5.58	<0.001	HS
C	1.4	1.1	0.3	21.42	0.48	0.15	1.96	<0.05	NS
D	1.9	1.5	0.4	21.05	0.69	0.22	1.80	<0.10	NS

Table 6. Showing the pattern of clinical recovery of symptom of EYE STRAIN in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	P Value	Result
	BT	AT							
A	1.9	1.3	0.6	31.57	0.84	0.26	2.25	<0.05	NS
B	1.8	0.3	1.5	83.33	0.70	0.22	6.70	<0.001	HS
C	1.8	1.4	0.4	22.22	0.51	0.16	2.44	<0.02	S
D	2.2	1.9	0.3	13.63	0.67	0.22	1.40	<0.10	NS

Table 7. Showing the pattern of clinical recovery of symptom of BLURRED VISION in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	P Value	Result
	BT	AT							
A	0.9	0.6	0.3	33.33	0.48	0.15	1.96	<0.05	NS
B	1.3	0.4	0.9	69.23	0.73	0.23	3.85	<0.001	HS
C	1.1	0.7	0.4	36.36	0.69	0.22	1.80	<0.10	NS
D	1.5	1.3	0.2	13.33	0.42	0.13	1.5	<0.10	NS

Table 8. Showing the pattern of clinical recovery of symptom of DIFFICULTY IN FOCUSING in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	P Value	Result
	BT	AT							
A	1.1	0.2	0.9	81.81	0.99	0.31	2.86	<0.01	S
B	1.4	0.5	0.9	64.28	0.73	0.23	3.85	<0.001	HS
C	1.3	1.0	0.3	23.07	0.48	0.15	1.96	<0.05	NS
D	1.3	1.2	0.1	7.69	0.31	0.10	1.00	<0.10	NS

Table 9. Showing the pattern of clinical recovery of symptom of DOUBLE VISION in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	P Value	Result
	BT	AT							
A	0.8	0.6	0.2	25.00	0.63	0.20	1.00	<0.10	NS
B	1.4	0.5	0.9	64.28	0.99	0.31	2.86	<0.01	S
C	1.2	1.0	0.2	16.66	0.42	0.13	1.50	<0.10	NS
D	0.8	0.6	0.2	25.00	0.42	0.13	1.50	<0.10	NS

Table 10. Showing the pattern of clinical recovery of symptom of SQUINTING FOR BETTER VISION in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	P Value	Result
	BT	AT							
A	0.8	0.5	0.3	37.50	0.67	0.21	1.40	<0.10	NS
B	1.4	0.1	1.3	92.85	0.94	0.30	4.33	<0.001	HS
C	0.6	0.5	0.1	16.66	0.31	0.10	1.00	<0.10	NS
D	1.2	1.1	0.1	8.33	0.31	0.10	1.00	<0.10	NS

Table 11. Showing the pattern of clinical recovery of symptom of HEADACHE in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	P Value	Result
	BT	AT							
A	2.1	1.4	0.7	33.33	0.82	0.26	2.68	<0.02	S
B	2.3	0.4	1.9	82.60	0.56	0.17	10.28	<0.001	HS
C	2.4	0.7	1.7	70.83	0.67	0.21	7.96	<0.001	HS
D	2.2	1.9	0.3	13.63	0.67	0.21	1.40	<0.10	NS

Table 12. Showing the pattern of clinical recovery of symptom of PAIN IN NECK/ SHOULDER /BACK in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	P Value	Result
	BT	AT							
A	1.2	0.6	0.6	50.00	0.69	0.22	2.71	<0.02	S
B	1.2	0.6	0.6	50.00	0.69	0.22	2.71	<0.02	S
C	1.1	0.7	0.4	36.36	0.51	0.16	2.44	<0.02	S
D	1.5	1.3	0.2	13.33	0.42	0.13	1.50	<0.10	NS

Table 13. Showing the pattern of clinical recovery of symptom of FATIGUE in 40 CVS patients (All 4 groups)

Group	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	*P* Value	Result
	BT	AT							
A	1.9	1.4	0.5	26.31	0.52	0.16	3.00	<0.01	S
B	1.0	0.4	0.6	60.00	0.69	0.22	2.71	<0.02	S
C	1.6	0.5	1.1	68.75	0.31	0.10	11.00	<0.001	HS
D	1.8	1.3	0.5	27.77	0.70	0.22	2.23	<0.05	NS

HS= Highly Significant, S= Significant, NS= Not Significant

Table No. 14: Showing Statistical status of inter-group differences of clinical improvement in patients of computer vision syndrome (Group A & B)

Clinical Features	N	SD	SE	t	p	Results
Red eyes	20	0.85	0.38	3.15	<0.001	HS
Burning Eyes	20	0.60	0.26	4.83	<0.001	HS
Dry Eyes	20	0.70	0.31	5.05	<0.001	HS
Teary Eyes	20	0.86	0.38	3.63	<0.001	HS
Itching eyes	20	0.77	0.35	3.16	<0.001	HS
Eyestrain	20	0.77	0.35	2.58	<0.01	S
Blurred Distant Vision	20	0.60	0.27	2.60	<0.01	S
Difficulty in focusing	20	0.62	0.27	2.15	<0.02	S
Double vision	20	0.83	0.37	1.87	<0.05	NS
Squinting for better vision	20	0.82	0.37	2.71	<0.01	S
Headache	20	0.82	0.37	2.71	<0.01	S
Pain Neck/ shoulder /back	20	0.70	0.31	0	<0.10	NS
Fatigue	20	0.61	0.27	0.36	<0.10	NS

Table No. 15: Showing Statistical status of inter-group differences of clinical improvement in patients of computer vision syndrome (Group C & D)

Clinical Features	N	SD	SE	t	p	Results
Red eyes	20	0.65	0.29	1.71	<0.10	NS
Burning Eyes	20	0.5	0.22	0.44	<0.10	NS
Dry Eyes	20	0.47	0.21	0.95	<0.10	NS
Teary Eyes	20	0.58	0.26	1.15	<0.10	NS
Itching eyes	20	0.60	0.27	0.37	<0.10	NS
Eyestrain	20	0.60	0.27	0.37	<0.10	NS
Blurred Distant Vision	20	0.57	0.26	0.77	<0.10	NS
Difficulty in focusing	20	0.40	0.18	1.09	<0.10	NS
Double vision	20	0.42	0.18	0.00	<0.10	NS
Squinting for better vision	20	0.32	0.14	0.00	<0.10	NS
Headache	20	0.67	0.30	4.63	<0.001	HS
Pain Neck/ shoulder /back	20	0.47	0.21	0.94	<0.10	NS
Fatigue	20	0.55	0.24	2.44	<0.02	S

Table No. 16: Showing Statistical status of inter-group differences of clinical improvement in patients of computer vision syndrome (Group A & D)

Clinical Features	N	SD	SE	t	p	Results
Red eyes	20	0.65	0.29	1.70	<0.10	NS
Burning Eyes	20	0.65	0.29	1.70	<0.10	NS
Dry Eyes	20	0.45	0.20	0.49	<0.10	NS
Teary Eyes	20	0.58	0.26	1.15	<0.10	NS
Itching eyes	20	0.69	0.31	0.00	<0.10	NS
Eyestrain	20	0.76	0.34	0.87	<0.10	NS
Blurred Distant Vision	20	0.42	0.19	0.00	<0.10	NS
Difficulty in focusing	20	0.41	0.18	1.09	<0.10	NS
Double vision	20	0.53	0.24	0.00	<0.10	NS
Squinting for better vision	20	0.52	0.23	0.84	<0.10	NS
Headache	20	0.69	0.31	0.65	<0.10	NS
Pain Neck/ shoulder /back	20	0.58	0.26	1.54	<0.10	NS
Fatigue	20	0.62	0.28	0.00	<0.10	NS

Table No. 17: Showing Statistical status of inter-group differences of clinical improvement in patients of computer vision syndrome (Group B & D)

Clinical Features	N	SD	SE	t	p	Results
Red eyes	20	0.68	0.30	5.53	<0.001	HS
Burning Eyes	20	0.40	0.18	9.85	<0.001	HS
Dry Eyes	20	0.68	0.30	5.53	<0.001	HS
Teary Eyes	20	0.76	0.34	4.97	<0.001	HS
Itching eyes	20	0.77	0.34	3.16	<0.001	HS
Eyestrain	20	0.70	0.30	3.88	<0.001	HS
Blurred Distant Vision	20	0.60	0.26	2.60	<0.01	S
Difficulty in focusing	20	0.56	0.25	3.15	<0.01	S
Double vision	20	0.76	0.34	2.04	<0.05	NS
Squinting for better vision	20	0.73	0.32	3.35	<0.01	S
Headache	20	0.75	0.33	4.15	<0.001	HS
Pain Neck/ shoulder /back	20	0.57	0.25	1.54	<0.10	NS
Fatigue	20	0.70	0.31	0.31	<0.10	NS

Table No. 18: Showing Statistical status of inter-group differences of clinical improvement in patients of computer vision syndrome (Group B & C)

Clinical Features	N	SD	SE	t	p	Results
Red eyes	20	0.84	0.38	3.15	<0.001	HS
Burning Eyes	20	0.42	0.19	8.87	<0.001	HS
Dry Eyes	20	0.71	0.32	4.66	<0.001	HS
Teary Eyes	20	0.86	0.38	3.62	<0.001	HS
Itching eyes	20	0.70	0.30	3.88	<0.001	HS
Eyestrain	20	0.61	0.27	3.97	<0.001	HS
Blurred Distant Vision	20	0.71	0.32	1.55	<0.10	NS
Difficulty in focusing	20	0.62	0.27	2.15	<0.02	S
Double vision	20	0.76	0.34	2.04	<0.05	NS
Squinting for better vision	20	0.70	0.31	3.79	<0.001	HS
Headache	20	0.75	0.33	0	<0.10	NS
Pain Neck/ shoulder /back	20	0.61	0.27	0.72	<0.10	NS
Fatigue	20	0.54	0.24	2.06	<0.05	NS

Table No. 19: Showing Statistical status of inter-group differences of clinical improvement in patients of computer vision syndrome (Group A & C)

Clinical Features	N	SD	SE	t	p	Results
Red eyes	20	0.76	0.34	0.29	<0.10	NS
Burning Eyes	20	0.66	0.30	1.34	<0.10	NS
Dry Eyes	20	0.5	0.22	0.44	<0.10	NS
Teary Eyes	20	0.70	0.31	0	<0.10	NS
Itching eyes	20	0.60	0.26	0.37	<0.10	NS
Eyestrain	20	0.70	0.31	0.63	<0.10	NS
Blurred Distant Vision	20	0.57	0.25	0.77	<0.10	NS
Difficulty in focusing	20	0.48	0.21	0	<0.10	NS
Double vision	20	0.53	0.24	0	<0.10	NS
Squinting for better vision	20	0.52	0.23	0.84	<0.10	NS
Headache	20	0.75	0.33	2.97	<0.01	S
Pain Neck/ shoulder /back	20	0.61	0.27	0.72	<0.10	NS
Fatigue	20	0.43	0.19	3.08	<0.01	S

HS= Highly Significant, S= Significant, NS= Not Significant

Discussion

Discussion regarding demographic data

Age: The highest incidence of CVS was seen in the age group of 13-15years(50%) that shows the fact that CVS is most common in this pediatric age group because of the more use of computer in school and indulgence in watching TV at home. The lower age group has relatively less understanding of the computer functioning thus show less interest in it.

Sex: Male children (60%) incidence was more in clinical trial showing that this gender is more prone to CVS in children. The probable reason may be that girls usually obey more to parents and hesitate to avoid the instructions, boys becoming more stubborn to watch more TV and computer. (Table no.20)

Religion: The incidence of CVS was more in patients of Muslim community (60%). This observation is due to the fact that our hospital where the study was carried out is situated In Muslim dominant area. (Table no.21)

Socio economic status: The majority of cases registered for the current trial belonged to middle class patients (37.5 %) Now a days computer is in the reach of middle class people also so the cases of CVS are also getting more prevalent in this status. Very few upper class people visit our hospital for the treatment; this may be the reason that upper class people were less in trial. (Table no.22)

Dietetic habit: The dietetic habits of the studied patients were grouped as vegetarian and mixed. It was observed that maximum 24 patients (60%) were non-vegetarians having the nature of mixed type of food. This may be because of geographical distributions of the people in the local area where dominance of non -Vegetarian Muslim is observed. (Table no.23)

Dominant *rasa* in diet : In clinical trial it was found that the patients of CVS like *amla rasa* the most i.e. 42.5 %(Table no.24). The observation is supported by the classical reference of *netraroga Nidana*. In our classics also it is given that the excessive intake of sour taste dominating food items is told to have bad effect on eyes (Su.u.1/27).

Family History of Ophthalmic illness: Majority of the children (72.5%) were not having family history of any ophthalmic illness. This indicates that in case of CVS the present lifestyle (exposure to screen) is responsible and family history doesn't play any role. (Table no.36)

Visual acuity : Maximum numbers of patients (29, 72.5%) were reported to have visual acuity 6/6 – 6/9.This shows CVS and refractive error were not significantly associated with each other in the patients of clinical trial. The refractive error may exaggerate CVS but later may exist independently. (Table no.37)

Room (workplace) lighting: The clinical trial observations show that maximum number of children (47.5%) use computer in poorly illuminated room. This result is supported by the study of *Bali J et.al. 2007; 55:289-93* that when person work on computer in dim light the glare and UV light emitted by VDTs produce more harmful effects on eye. (Table no.38)

Angel/ level of gaze: Out of 40 patients of CVS, maximum number of children (67.5%) use computer at above the eye level. In the recommended ergonomics by Taptagaporn S et.al. (1995) also suggest that the screen should be below the eye level; using TV or computers at above the eye level is one of the etiological factors of CVS. (Table no.39)

Prakriti: *(Sharirika and manasika prakriti*) On exploring the *Sharira Prakriti*, it was revealed that All the patients registered in present clinical trial belonged to only *Dwandaja* type of *Prakriti*, out of which maximum number of patients 25 (62.5%)were of *Vata Pittaja Prakriti.*

In *Manasika Prakriti* maximum 24 patients (60%) belonged to *Rajashika Prakriti* as *raja dosha* has a relation with *vata sharirika dosha,* later has important role in samprapti of CVS. (Table no.34 and 35)

When the *Samprapti Ghatakas* are analysed more involvement of *Vata & Pittaja Dosha* is seen. So by *dosha* and *prakriti* concept we can understand that *vata –pitta prakriti* children are more prone to CVS.

Sara: The majority of registered patients (72.5%) were having *Madhyama sara*. this signifies the general trend of the patients attending the O.P.D. (Table no.27)

Samhanana : The clinical study reveals that 24 patients (60%) were having *Madhyama Samhanana* and only 12.5 %patients were having *Susamhata* type of *Samhanana*. Again this also indicates the general trend of the patients attending the O.P.D. (Table no.28)

Satva : majority of patients registered (37.5%) were having *Pravara Satva*.The process of *shirodhara* and a*kshitarpana* produces fear in child so the children who have *pravara satva* got agreed for the procedure this may be the cause of this observation. (Table no.25)

Agni: the profile of CVS patient indicates that predominant patients (53.5%) were having *Vishamagni*, The *agni – veshamay*(irregularity of *agni)* due to vata dominancy. This is supported by the *prakriti* profile of CVS patients that shows dominancy of *vata prakriti*.(Table no.29)

Koshta: The status of *Kostha* in patients of CVS was *Kroora* type in maximum number of patients (53.33%).Vata prakriti children have *kruru kostha* (hard bowel) and the *vata prakriti* children were in majority in clinical trial. (Table no.30)

Discussion on overall effect of the therapy

Overall it has been observed that *Akshitarpana* procedure is highly effective in the complaint of CVS that are exclusively related to eyes viz. red eyes, burning eyes, dry eyes, teary eyes, itching eyes, eyestrain and also in headache. It has significant role in providing relief in complaints of blurred vision, difficulty in focusing and squinting for better vision.

The procedure of *Shirodhara* has been found highly effective in complaints of headache and fatigue.

The Trial drug (syrup) has not shown significant effect on any of the symptom of CVS in 21 days of trial. The reason behind may be the limited period of clinical trial in which the drug was not able to show significant effect on symptoms of CVS. (Table no.65)

Probable mode of action of therapies

❖ **Akshitarpana :** In the study *Akshitarpana* was performed with *triphala ghrita*. *Triphala* has proven effect in ocular diseases having *Tridoshagna* property so it also helps in reversing the disease by reversing the vitiated *Vata-Pitta Doshas* by virtue of their *Rasa, Guna Vipaka Virya* and *Dosha Karmata*, and by combination they act as *Chakshushya*. *Ghrita* is told one among the best *rasayanas* in our classics and for eye. *(A.S.su 6/ 73.)*. It is having *vata- pitta shamaka* properties *(sheeta veerya*, *snighdha guna*) that is the dominant *doshas* in *samprapti ghataka* of CVS.

❖ ***Shirodhara :***In the clinical trial shirodhara procedure has been found effective in complaints of headache and fatigue that are basically due to stress and workload on VDTs using children. In the procedure of *Shirodhara*, particular pressure and vibration is created over the forehead. The vibration is amplified by the hollow sinus present in the frontal bone. The vibration is then transmitted inwards through the fluid medium of cerebrospinal fluid (CSF). This vibration along with little temperature may activate the functions of thalamus and the basal fore brain which then brings the amount of serotonin and catecholamine to the normal stage inducing the sleep reducing the stressor hormones secretions (cortisols)and thus in this way probably reduces the tension complaints like headache and fatigue. The cortisols level in blood comes to the lowest level at 3–5 hours after the onset of sleep.

❖ **Study drug-** The study drug possesses five herbs (Amalaki, haritaki, vibhitaki, ashwagandha yashtimadhu) that are predominance of *Madhura (*yashtimadhu, amalaki, haritaki), *Kashaya rasa* (triphala, ashwagandha), *Guru Snigdha guna (*Yashtimadhu), *Sheeta virya* (Amalaki, yashtimadhu), *Madhura vipaka* (all). Therefore by virtue of above properties the trial drug acts as Vatapitta Shamaka and chakshushya action.

But The Trial drug has not shown significant effect in CVS symptoms. The reason behind may be the limited period of clinical trial. Drugs may show significant effect in longer duration of the treatment.

Clinical Study

A Clinical Study To Evaluate The Efficacy of Leech Therapy And *Panchatikta Ghrita* In The Management of Psoriasis

*Dr. Rekha Rani, **Dr. Siddaram S.A., ***Dr. M. K. Shringi

Abstract

Psoriasis is a common chronic dermatosis affecting as many as 1% to 2% percent of the world's population. It is most common in Europe and North America. India has an incidence approaching 1% which is less than European countries. Persons of all ages may develop the disease and about equally in men and women. It may start at any age but rare under 10 years and often seen between 15 and 40 years.

The aetiology of psoriasis is still poorly understood, but there is clearly a genetic component to the disease. There is no proper management in modern science while the great value of Ayurveda therapy in this particular disease, considering the high prevalence of this disease, a clinical trial with Leech therapy and oral medicine – Panchatikta Ghrita conducted at P.G. Dept. of Shalya Tantra, NIA Jaipur.

In this clinical trial 10 patients of group-A (Leech Therapy) have got 45% relief, 10 patients of group-B (Panchatikta Ghrita) have got 47% relief and 10 patients of group-C (Leech Therapy + Panchatikta Ghrita) have got 65% relief, showing the importance of combined therapy i.e. Leech Therapy + Oral medicine - Panchatikta Ghrita, on Psoriasis.

Key words- Psoriasis, Leech Therapy, Panchatikta Ghrita.

सारांश–

सोरियेसिस एक प्रकार का चिरकारी त्वचा रोग है जो विश्व मे 1–2 प्रतिशत तक होता है। यह यूरोप एवं उत्तरी अमेरिका में अधिकाशत: होता है। भारत मे यह 1 प्रतिशत लोगों मे पायी जाती है जो यूरोपीय देशों की तुलना मे कम हैं। यह किसी भी उम्र मे हो सकता है लेकिन 10 वर्ष से कम उम्र में नही के बराबर होता है और 15 से 40 वर्ष की अवस्था मे मुख्यत: होता है।

सोरियेसिस का कारण अभी तक ज्ञात नही है लेकिन यह वंशानुगत रोग है। आधुनिक चिकित्सा विज्ञान में इसका उचित इलाज न होने के कारण, आयुर्वेद चिकित्सा का इस व्याधि में विशिष्ट महत्व है। इस रोग के महत्व को ध्यान में रखते हुये, जलौका चिकित्सा एवं पचंतिक्त घृत का चिकित्सात्मक अध्ययन जयपुर के राष्ट्रीय आयुर्वेद सस्थान के शल्य तन्त्र विभाग में किया गया।

इस चिकित्सात्मक अध्ययन में समूह ए में 10 रोगियों में जलौका चिकित्सा द्वारा 45 प्रतिशत लाभ पाया गया, समूह बी के 10 रोगियों में पचंतिक्त घृत द्वारा 47 प्रतिशत लाभ पाया गया तथा समूह सी के 10 रोगियों में जलौका चिकित्सा एवं पचंतिक्त घृत द्वारा 65 प्रतिशत लाभ पाया गया जो सोरियेसिस में आयुर्वेद के शोधन एवं शमन चिकित्सा के महत्व को प्रदर्शित करता है।

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Clinical Study

A Clinical Study To Evaluate The Efficacy of Leech Therapy And *Panchatikta Ghrita* In The Management of Psoriasis

Dr. Rekha Rani, Dr. Siddaram S.A., Dr. M. K. Shringi

Introduction-

All type of the skin diseases in ancient Indian classics have been described under the broad heading of **'Kushtha'**, which are further divided into Maha Kushtha & Kshudra Kushtha[1]. Kushtha runs as a chronic disease which is generally considered as difficult to cure & even if it is cured relapses is common. In Ayurvedic classics, all types of Kushtha have been described as '***Rakta Pradoshaja***' Vikara[2]. It is difficult to say what psoriasis is in terms of Ayurveda. There is no disease in Ayurveda, which can exactly be correlated with Psoriasis. Acharyas having mentioned the Chikitsa as raktamokshana by Jalauka in Alpa doshayukta Kushtha[3]. (Ch.Chi. 7/52).

Psoriasis is one of the most common dermatologic diseases, affecting up to 2.5% of the world's population. In India an estimated 0.8% population is suffering from Psoriasis[4]. It is a papulo-squamous disorder of the skin. It is a chronic inflammatory skin disorder clinically characterized by erythematosquamous, sharply demarcated papules and rounded plaques, covered by silvery micaceous scale[5]. The exact etiology is still unknown. It tends to run in families and is precipitated by climate, Streptococcal infections, etc[6].

Psychological stress is emphasized as one of the major triggering factor in the exacerbation of the disease[7]. Modern medical science treats psoriasis with PUVA, corticosteroids and Anti mitotic drugs[8]. But the therapy gives serious side effects like liver & kidney failure, bone marrow depletion etc[9].

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

Aims and objectives:

The present study is conducted with following aims and objectives.

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

Materials and Methods:

30 Patients attending the O.P.D. and I.P.D. of N.I.A. Hospital, Jaipur, fulfilling the criteria of the disease were randomly selected and equally distributed in three groups, irrespective of their age, occupation, religion etc. for present study.

Group A - Only Leech therapy in 10 patients.

Group B - Only Panchtikta Ghrita in 10 patients.

Group C - Both leech therapy and Panchatikta Ghrita in 10 patients.

Inclusion Criteria:

1) Patient aged between 16 to 60 years.
2) Patient willing to sign the consent form
3) Patient not taking any other medicine for Psoriasis.

4) Patient with classical symptoms of Psoriasis.

5) Patient is not suffering with any systemic disorders.

Exclusion Criteria:

1) Patient below the age 16 years and above 60 years.

2) Patient with leprosy, Tuberculosis, and Paralysis.

3) Pregnant women and lactating mother.

4) Patient with uncontrolled Hypertension/ Cardiac problem/ Diabetes mellitus/ any systemic disorders.

Criteria for assessment:

1. Subjective criteria. –

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

- Itching,
- Induration

2. Objective Criteria -

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

Psoriasis Area Severity Index (PASI) is the most widely used tool for the measurement of severity of psoriasis. PASI combines the assessment of the severity of lesions and the area affected into a single score in the range 0 (no disease) to 72 (maximal disease)[10].

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

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

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

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

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

Table No. I. - Showing the Skin section & severity score

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

Finally, the PASI is Total-head+Total-arms+Total-Trunk+Total-legs. {*__E__-Erythema, (Redness), __I__-induration (thickness), __D__-desquamation (scaling)}.

The Severity of itching was assessed in the following manner:

1. Itching:

2. Table No. II. - Showing the grading of itching

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

Doses & Duration:

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

Drug Review : Panchatikta Ghrita has been selected for Shamana therapy in present study, because it is specially indicated in classics for Kushtha[11]. All the ingredients of it have Kushthaghna property. According to Acharya Sharangdhara[12] -

वृषनिम्बामृताव्याधीपटोलानां श्रृतेन च।
पाण्डुं कुष्ठं विसर्पं च कृमीनर्शांसि नाशयेत्॥
(Sha.Ma.Khand 9/91-92)

Table No. III. Ingredients of Panchatikta Ghrita are -

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

Over-all effect of therapies: Each group was assessed on the basis of objective and subjective parameters of the disease. On the basis of grading pattern as well as percentage relief, patients were classified as follows –

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

Observations And Results:

The clinical improvement was assessed on the basis of scoring pattern in the patients of Psoriasis in all three groups. Results of therapy in all the three groups were given below-

Table No. IV - Showing the clinical improvement on Group A

Features	**BT**	**AT**	**M. D.**	**% age change**	**SD**	**SE**	***t* Value**	***p* Value**	**Result**
Head Erythema	2.2	1.4	0.8	36.36	0.63	0.2	4	<0.01	S.
Head Scaling	1.7	1.1	0.6	35.29	0.69	0.22	2.71	<0.05	M.S.
Head Thickness	1.3	0.8	0.5	38.46	0.52	0.16	3	<0.02	Mo.S.
Head S. Area	1.9	1	0.9	47.36	0.31	0.1	9	<0.001	H.S.
Head Total PASI	1.06	0.39	0.67	63.2	0.37	0.12	5.66	<0.001	H.S.
Arm Erythema	1.9	1	0.9	47.36	0.74	0.23	3.85	<0.01	S.
Arm Scaling	2.1	1.2	0.9	42.85	0.74	0.23	3.85	<0.01	S.
Arm Thickness	1.8	1	0.8	44	0.42	0.13	6	<0.001	H.S.
Arm S. Area	2.2	1.4	0.8	36.36	0.79	0.25	3.21	<0.02	Mo.S.
Arm Total PASI	2.68	0.94	1.74	64.92	1.23	0.39	4.48	<0.01	S.
Trunk Erythema	2.2	1.2	1	45.45	0.67	0.21	4.74	<0.01	S.
Trunk Scaling	2.1	1.1	1	47.61	0.67	0.21	4.74	<0.01	S.
Trunk Thickness	1.4	0.9	0.5	35.71	0.53	0.17	3	<0.02	Mo.S.
Trunk S. Area	2.2	1.3	0.9	40.9	0.57	0.18	5.01	<0.001	H.S.
Trunk Total PASI	3.72	1.26	2.46	66	1.22	0.39	6.36	<0.001	H.S.
Leg Erythema	2.1	1.3	0.8	38	0.63	0.2	4	<0.01	S.
Leg Scaling	2	1.2	0.8	40	0.63	0.2	4	<0.01	S.
Leg Thickness	1.6	1	0.6	37.5	0.52	0.16	3.67	<0.02	Mo.S.
Leg S. Area	1.9	1.2	0.7	36.84	0.48	0.15	4.58	<0.01	S.
Leg Total PASI	4.6	1.92	2.68	58.26	1.63	0.52	5.18	<0.001	H.S.
Total PASI	12.0	4.51	7.55	62.6	2.74	0.87	8.69	<0.001	H.S.
Itching	2.1	1.4	0.7	33.33	0.48	0.15	4.58	<0.01	S.

Table No. V - Showing the clinical improvement on Group B:

Features	BT	AT	M. D.	% age change	SD	SE	*t* Value	*p* Value	Result
Head Erythema	2.1	1.1	1	47.61	0.47	0.15	6.70	<0.001	H.S.
Head Scaling	1.8	1	0.8	44.44	0.42	0.13	6	<0.001	H.S.
Head Thickness	1.3	0.6	0.7	53.84	0.48	0.15	4.58	<0.01	S.
Head S. Area	2	1.3	0.7	35	0.67	0.21	3.27	<0.02	Mo.S.
Head Total PASI	1.06	0.35	0.71	66.98	0.45	0.14	4.92	<0.001	H.S.
Arm Erythema	1.9	1	0.9	47.37	0.57	0.18	5.01	<0.001	H.S.
Arm Scaling	2	1	1	50	0.67	0.21	4.74	<0.01	S.
Arm Thickness	1.7	1.1	0.6	35	3.16	0.16	3.67	<0.02	Mo.S.
Arm S. Area	2.3	1.6	0.7	30.43	0.67	0.21	3.27	<0.02	Mo.S.
Arm Total PASI	2.4	0.86	1.54	64	0.88	0.28	5.53	<0.001	H.S.
Trunk Erythema	2	1.3	0.7	35	0.48	0.15	4.58	<0.01	S.
Trunk Scaling	2.3	1.4	0.9	39.13	0.74	0.23	3.85	<0.01	S.
Trunk Thickness	1.7	1	0.7	41	0.48	0.15	4.58	<0.01	S.
Trunk S. Area	2.5	1.5	1	40	0.47	0.15	6.70	<0.001	H.S.
Trunk Total PASI	4.35	1.62	2.73	62.75	1.33	0.42	6.49	<0.001	H.S.
Leg Erythema	1.9	1.1	0.8	42	0.63	0.2	4	<0.01	S.
Leg Scaling	2.8	1.6	1.2	42.85	0.63	0.2	6	<0.001	H.S.
Leg Thickness	2.1	1.2	0.9	42.85	0.74	0.23	3.85	<0.01	S.
Leg S. Area	2.6	1.6	1	38.46	0.67	0.21	4.74	<0.01	S.
Leg Total PASI	7.16	2.68	4.48	62.56	2.06	0.65	6.86	<0.001	H.S.
Total PASI	14.97	5.51	9.46	63.2	3.25	1.03	9.18	<0.001	H.S.
Itching	2	0.9	1.1	55	0.57	0.18	6.12	<0.01	S.

Table No. VI - Showing the clinical improvement on Group C:

Features	BT	AT	M. D.	% age change	SD	SE	*t* Value	*p* Value	Result
Head Erythema	2.7	0.8	1.9	70.37	0.87	0.27	6.86	<0.001	H.S.
Head Scaling	2.3	1	1.3	56.52	0.48	0.15	8.51	<0.001	H.S.
Head Thickness	1.8	0.6	1.2	66.66	0.63	0.2	6	<0.001	H.S.
Head S. Area	2.3	0.9	1.4	60.86	0.69	0.22	6.33	<0.001	H.S.
Head Total PASI	1.6	0.22	1.38	86.25	0.68	0.22	6.37	<0.001	H.S.
Arm Erythema	2	0.7	1.3	65	0.67	0.21	6.09	<0.001	H.S.
Arm Scaling	2.4	0.9	1.5	62.5	0.71	0.22	6.71	<0.001	H.S.
Arm Thickness	1.8	0.6	1.2	66	0.63	0.2	6	<0.001	H.S.
Arm S. Area	2	1	1	50	0.47	0.15	6.71	<0.001	H.S.
Arm Total PASI	2.42	0.48	1.94	80	0.82	0.26	7.51	<0.001	H.S.
Trunk Erythema	2.2	0.9	1.3	59	0.67	0.21	6.09	<0.001	H.S.
Trunk Scaling	2.5	1	1.5	60	0.53	0.17	9	<0.001	H.S.
Trunk Thickness	1.8	0.7	1.1	61	0.74	0.23	4.71	<0.01	S.
Trunk S. Area	2.5	1.2	1.3	52	0.48	0.15	8.51	<0.001	H.S.
Trunk Total PASI	4.98	0.96	4.02	80.72	1.66	0.53	7.62	<0.001	H.S.
Leg Erythema	2.5	1	1.5	60	0.71	0.22	6.71	<0.001	H.S.
Leg Scaling	2.7	1	1.7	62.96	0.82	0.26	6.53	<0.001	H.S.
Leg Thickness	2.3	0.9	1.4	60.86	0.52	0.16	8.57	<0.001	H.S.
Leg S. Area	2.4	1	1.4	58.33	0.52	0.16	8.57	<0.001	H.S.
Leg Total PASI	7.36	1.36	6	81.52	2.11	0.67	8.96	<0.001	H.S.
Total PASI	16.36	3.02	13.34	81.54	3.40	1.08	12.39	<0.001	H.S.
Itching	2.5	0.9	1.6	64	0.69	0.22	7.2	<0.001	H.S.

Discussion:

Discussion of Demographic Data:

Age: In this clinical trial, maximum no. of patients was in the age group of 16-30 yrs. i.e. 40% followed by 26.7% of the age group 31-40 yrs. It holds well the explanation given in contemporary science that Psoriasis can occur at any age but is most common in people in their 20s, 30s, and 40s[13].

Sex: In this Study, Majority of the patients i.e. 70% were male and 30% patients were female. This reveals the fact that prevalence rate is more in males than in females.

The probable reason may be that the males are more exposed to different types of contact and environments. However, Psoriasis affects both men and women[14].

Discussion on Head Affected Patients of Psoriasis:

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

Effect of therapy on head Scaling: Head Scale was reduced by 35.29%, 44.44%, 56.52% respectively in Group A, B & C which was statistically mild significant (<0.05) in group A while highly significant (<0.001) in group B & C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

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

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

Effect of therapy on Head Total PASI: Head Total PASI was reduced by 63.2%, 66.98%, 86.25% respectively in Group A, B, and C which was statistically highly significant (P<0.001) in all the three group. Maximum reduction was noted in the patients of Group C. Thus, Leech application and Panchatikta Ghrita i.e. group-C proved more effective to reduce total PSAI in Head.

Discussion on Arm Affected Patients of Psoriasis:

Effect of therapy on Arm Erythema: Arm Erythema was reduced by 47.36%, 47.37% and 65% respectively in Group A, B & C which was statistically significant (P<0.01) in group A and highly significant (P<0.001) in group B & C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

Effect of therapy on Arm Scaling: Arm Scaling was reduced by 42.85%, 50%, 62.5% respectively in Group A, B & C which was statistically significant (P<0.01) in group A and group B while it was highly significant (P<0.001) in group C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

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

Effect of therapy on Arm Surface Area: Arm surface Area was reduced by 36.36%, 30.43%, 50% respectively in Group A, B & C which was statistically moderate significant (<0.02) in group A and B while highly significant (P<0.001) in group C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

Effect of therapy on Arm Total PASI: Arm Total PASI was reduced by 65%, 64% and 80% respectively in Group A, B, & C which was statistically significant (P<0.01) in group A while it was highly significant (P<0.001) in group B & C. Maximum reduction was noted in the patients of Group C. Thus, Thus, Leech application along with Panchatikta Ghrita proved more effective to reduce total PSAI in Arms.

Discussion on Trunk Affected Patients of Psoriasis:

Effect of therapy on Trunk Erythema: Trunk erythema was reduced by 45.45%, 35%, 59% respectively in Group A, B and C, which was statistically significant (P<0.01) in group A and group B while also highly significant (P<0.001) in group C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

Effect of therapy on Trunk Scaling: Trunk Scaling was reduced by 47.61%, 39.13%, 60% respectively in Group A, B & C which was statistically

significant (P<0.01) in group A and group B while it was also highly significant (P<0.001) in group C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

Effect of therapy on Trunk Thickness: In group A Trunk thickness was reduced by 35.71% which was statistically significant (P<0.02). In group B it was reduced by 41% which was statistically highly significant (P<0.01) and it was reduced by 61% in Group-C which was also statistically highly significant (P<0.01). Thus, group C (Leech application and Panchatikta Ghrita) was more effective in comparison to group-A and group-B.

Effect of therapy on Trunk Surface Area: Trunk surface Area was reduced by 40.9%, 40% and 52% respectively in Group A, B & C which was statistically highly significant (P<0.001) in group A, B and C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

Effect of therapy on Trunk Total PASI: Trunk Total PASI was reduced by 66%, 62.75% and 80.72% respectively in Group A, B, & C which was statistically highly significant (P<0.001) in group A, B & C. Maximum reduction was noted in the patients of Group C. Thus, Thus, Leech application along with Panchatikta Ghrita proved more effective to reduce total PSAI in body.

Discussion on Leg Affected Patients of Psoriasis:

Effect of therapy on Leg Erythema: Leg erythema was reduced by 38%, 42% and 60% respectively in Group A, B and C, which was statistically significant (P<0.01) in group A and group B while highly significant (P<0.001) in group C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

Effect of therapy on Leg Scaling: Leg scaling was reduced by 40%, 42.85% and 62.96% respectively in Group A, B & C which was statistically significant (P<0.01) in group A while it was highly significant (P<0.001) in group B and C. Thus Maximum percentage relief was noted in the patients of Group C. therefore, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

Effect of therapy on Leg Thickness: In group A leg thickness was reduced by 37.5% which was statistically moderate significant (P<0.02). In group B it was reduced by 42.85% which was statistically significant (P<0.01) and it was reduced by 60.86% in Group-C which was statistically highly significant (P<0.001). Thus, group C (Leech application and Panchatikta Ghrita) was more effective in comparison to group-A and group-B.

Effect of therapy on Leg Surface Area: Leg surface Area was reduced by 36.84%, 38.46% and 58.33% respectively in Group A, B & C which was statistically significant (P<0.01) in group A and group-B. It was statistically highly significant (P<0.001) in group-C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the symptom.

Effect of therapy on Leg Total PASI: Leg Total PASI was reduced by 58.26%, 62.56 % and 81.52% respectively in Group A, B, & C which was statistically highly significant (P<0.001) in group A, B & C. Maximum reduction was noted in the patients of Group C. Thus, Thus, Leech application along with Panchatikta Ghrita proved more effective to reduce total PSAI in leg.

Discussion on Total PSAI of Psoriasis:

Effect of therapy on Total PASI: Total PASI was reduced by 63.6%, 63.2% and 81.54% respectively in Group A, B and C which was statistically highly significant in group A, B & C. Maximum reduction was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to reduce total PSAI of Psoriasis.

Effect of therapy on Itching: Itching was reduced by 33.33%, 55% and 64% respectively in Group A, B and C which was statistically significant (P<0.01) in group A and group B while highly significant (P<0.001) in group C. Maximum percentage relief was noted in the patients of Group C. Thus, Leech application along with Panchatikta Ghrita proved more effective to control the itching.

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

Overall Effect Of Therapy:

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

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

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

Comparison of the effects of therapy:

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

Conclusion:

After completion of whole research work, the present study had been taken up to establish the benefits of Leech application as Shodhana Chikitsa and Panchatikta Ghrita as Shamana Chikitsa in the management of Psoriasis. From the observations made and thorough discussion, following conclusion can be drawn:

- This clinical study shows that Psoriasis is more predominant in ***sedentary occupational nature*** (66.67%), ***Urban habitate*** peoples (66.67%) and ***Emotional stress as triggering factor*** (40%).
- Study shows that modern medicine is also lacking in the management of psoriasis because in study some patients found with Allopathic treatment history (36.67%).
- On the basis of above results it can be concluded that all group of treatment provided significant improvement in the sign and symptom of the patient of Psoriasis and significant improvement on the PASI SCORE.
- Patients of Psoriasis when treated with combined therapy i.e. Panchatikta Ghrita and Leech application have shown best results (65%) than the patients treated with individual groups i.e. Group A (45%)and Group B (47%) on both subjective and objective parameters.
- Patients of Psoriasis when treated with Panchatikta Ghrita independently have shown better results (47%) than the patients treated with Leech Application (45%).
- Drugs used in Shamana & Shodhana posses Keratolytic, Anti-proliferative, Anti-inflammatory, anti-pruritic, emollient and Immunomodutatory effects.
- No side effects have been reported by the patients during the course of treatment.

Therefore, it can be concluded that *Shodhana* (Leech application) along with *Shamana* therapy (*Panchatikta Ghrita*) is effective in the management of Psoriasis as it is safe, cost effective and free from any side effects.

References:

1. Ashtanga Hridaya of vagbhatta with the Nirmala Hindi commentaries edited by Dr. Brahmanand Tripathi, Chaukhambha Sanskrit prakashana Delhi, Nidan sthan 14/20, reprint edition 2007.
2. Sushruta Samhita comm. By Ambika Dutta Shastri, Nidan sthan 5/15, Chaukhambha, Varanasi, 2004.
3. Charaka Samhita with Ayurveda Deepika commentary,Chikisa sthan 7/52, edited by Vd. J.T. Acharya, Chaukhambha Surabharati prakashana Varanasi, reprint edition 2004.
4. Principles of Internal Medicine Harrison M.C. grew hill Book Co. 16th edition.
5. Robin's pathological basis of disease – edited by Cotran, 7th edition 2004.
6. Medicine for Student, A.F.Golwalla & S.A.Golwalla
7. Psoriasis And Psoriatic Arthritis, Gordon Ruderman, Springer international edition
8. Roxburgh's Commaon Skin Disease, Ronald Marks,16th edi,ELBS
9. Essentials of Medical Pharmacology: K.D. Tripathi, 4th edition, 1999.
10. *www.skinandaging.com/article/5394*

11. Charaka Samhita commentary by Chakrapani, by Acharya Yadavji Trikamji, Chaukhambha Sanskrita series, Varanasi, 4th edition.

12. Shrangdhara Samhita - Commentaries of adhamall's Dipika and Kashiram's gudhartha Dipika. Chaukhambha prakashana - 4th edition, 2000.

13. (*Reference*-www.ehealthmd.com/library/psoriasis).

14. {*Reference*- www.ehealthmd.com/library/psoriasis}.

15. Charaka Samhita with Ayurveda Deepika commentary,Sutrasthan 20/15 & 20/18, edited by Vd. J.T. Acharya, Chaukhambha Surabharati prakashanaVaranasi, reprint edition 2004.

16. Eldor A, Orevi M, Rigbi M. *The role of the leech in medicinal therapeutics.* Blood Reviews. 1996; 10:201-209.

17. Uses of leeches and leech saliva in clinical practice, Godfrey K;Nurs Times. 1997; 93:62-63.

18. www. medscape.com

19. www.emedicine.com

20. www.ehealthmd.com

Clinical Study

Role of *Garbhini Paricharya* In Minimizing *Garbhini Upadravas* In 3rd Trimester of Pregnancy

*Dr. Sasmita Tripathy, **Dr. Manas Ranjan Hota, ***Dr. Kamalesh Kumar Sharma

Abstarct :

Ayurveda places an enormous emphasis on the importance of caring for the mother before, during and after pregnancy. A clinical trial was undertaken with 30 pregnant women after their 6th month of pregnancy to evaluate the comparative efficacy of *Garbhini Paricharya* (*Caraka Samhita*) and *Yoga* therapy in 3rd trimester of pregnancy in minimizing the *Garbhini Upadravas*. Highly significant improvement is observed in burning micturation, pain in lower abdomen and Hb% by following *Garbhini Paricharya*. All other symptoms under study also improved significantly.

Key words:- *Garbhini Paricharya*, Pregnancy, 3rd trimester of pregnancy, *yoga* therapy.

सारांश–

गर्भधारण काल में तथा उसके पूर्व और पश्चात् महिलाओं के स्वास्थ्य की सही देखभाल की आवश्यकता पर आयुर्वेद में विशेष महत्व दिया गया है। इस अध्ययन में तीस गर्भिणी महिलाओं पर उनके तृतीय ट्राइमस्टर में होने वाले उपद्रवों पर चरकोक्त गर्भिणी परिचर्या एवं योग चिकित्सा का एक चिकित्सकीय अध्ययन किया गया। चरकोक्त गर्भिणी परिचर्या का प्रभाव मूत्रदाह तथा अर्ध–उदरवेदना पर सांख्यिकी दृष्ट्या अत्यन्त महत्वपूर्ण एवं उल्लेखनीय रहा।

अन्य लक्षणों पर भी प्रभाव उल्लेखनीय रहा।

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Clinical Study

Role of *Garbhini Paricharya* In Minimizing *Garbhini Upadravas* In 3rd Trimester of Pregnancy

Dr. Sasmita Tripathy, Dr. Manas Ranjan Hota, Dr. Kamalesh Kumar Sharma, Dr. Sushila Sharma

Introduction

Ayurveda places an enormous emphasis on the importance of caring for the mother before, during and after pregnancy. "It is the woman who procreates children and propagates the human species. *Dharma* (righteousness), *Artha* (wealth), *Lakshmi* (auspiciousness), and *Loka* (the entire universe) are represented in every woman"[1]. *Ayurveda* regards the woman and her ability to produce and care for children as the basis of family life which in turn, is the very foundation of society.

For a woman reproductive period bears a lot of importance, because woman gives birth to a new generation and she also gets new life. During this period common women's health problems are Anaemia, Backache, Constipation,Fatigue, Lower abdominal pain, Sleep disturbance etc. Every woman should be ensured with a gestation period of minimal complications, a safe delivery and she should get a healthy offspring. But to the contrary we have the following data. [,2,3]

As per Census 2001, at all India level

- The total female count (all ages) is 49.6 Cr. which constitutes 48.26 % of the total population.
- In 2001-03, Maternal Mortality Rate was observed as 301.
- The percentage of pregnant women aged 15-49 who are anaemic is 57.9 %
- As per Registrar General of India, the causes of maternal deaths due to Anaemia, are 19%, in 1998.

So it is necessary to evaluate further and explore the problem according to Ayurvedic principles. In order to prevent the future generation from dying in the mother womb, to get healthy offspring and to provide the mother a complication free pregnancy or a pregnancy with minimum complications. Acharyas have provided specific Ahara for the care of pregnant women from the first day of conception till labour. This is called *Masanumasika Garbhini Paricharya*.[4]

Aim and Objective

To evaluate the comparative efficacy of *Garbhini Paricharya* (*Caraka Samhita*) and *Yoga* therapy in 3rd trimester of pregnancy in minimizing the *Garbhini Upadravas.*

Materials and Methods

For the present study 32 pregnant women who had completed their 6th month of pregnancy are registered from the O.P.D. and I.P.D., Arogyashala, National Institute of Ayurveda, Jaipur. 2 patients left the treatment before completion of the therapy.

Grouping of patients-

Selected patients were randomly divided into three groups.

Group 'A':10 pregnant patients were given the following therapies.

At 7th month of pregnancy –

- Madhura Aushadha Sadhita Ksheera (MASK) 200 ml twice daily for one month.
- Madhush Aushadha Sadhita Sharpi (MASS) 10 gm twice daily for 1 month.

At 8th month of pregnancy –

- (Ksheera Yavagu) KY as per appetite for 1 month.

At 9th month of pregnancy –

- Anuvasan Basti of Madhura Aushadha Sadhita Taila (MAST) 50 ml for 7 days.
- Pichu Dharana with MAST up to the delivery.

Group 'B':– 10 pregnant patients were given the following therapies.

At 7th month of pregnancy –

- MASK 200 ml twice daily for 1 month.
- MASS 10 gm twice daily for 1 month.
- Yoga therapy [5](Titaliasana, Katicakrasana, Chakkichalanasana, Nadisodhana, Bhramari Pranayama, Ujjayi, Pranayama, Aswini Mudra, Vajroli Mudra, Moola Bandha, Dhyana and Yoga Nidra)

At 8th month of pregnancy –

- KY as per appetite for one month and Yoga therapy.

At 9th month of pregnancy –

- Anuvasan Basti of MAST 50 ml for 7 days.
- Pichu Dharana with MAST up to the delivery.
- Yoga therapy

Group 'C': -10 pregnant patients were given only the Yoga therapy at the 3rd trimester of pregnancy.

Duration of the treatment is – 3 months

Inclusion criteria

1. Pregnant females, in the age group of 18-30 years.
2. Pregnant females, between 28-32 weeks of gestation.
3. Normal fetal position at the term.
4. Normal pelvic measurement.
5. B.M.I. in between 19.8-26.
6. Height of female more than 4 ft.10 inches.

Exclusion criteria

1. Pregnant females, in the age group of below 18 and above 30 years.
2. Grand multipara females.
3. Any systemic diseases.
4. Abnormal fetal position.
5. History of more than one C.S.

Criteria of Assessment:

Clinical improvement for the assessment of symptoms grading was done as under:

(1) Assessment of constipation -

0- Stool passes as per normal schedule

1- Stool passes with strain

2- Stool passes after more than 24 hr.

3- Stool passes after gap of 1 day

(2) Assessment of backache –

0- No backache

1- Morning only increases on exertion but relieved by rest.

2- Day and night and relieved by painkiller and rest

3- Relieved only by painkillers but no effect of rest.

(3) Assessment of pain in lower abdomen

0- No pain

1- Mild pain, no response on palpation

2- Wincing on palpation

3- Resists examination

(4) Assessment of burning micturation –

0- No burning

1- Occasional mild burning

2- Often mild burning

3- Moderate troublesome burning

(5) Assessment of fatigability –

0- Absent

1- Fatigue occasionally

2- Fatigue in doing some extra work

3- Fatigue even in carrying out routine work.

(6) Assessment of Anidra

0- Sound sleep

1- Undisturbed late sleep

2- Sleep disturbed in late night and early morning

3- No sleep

(7) Assessment of vomiting –

0- No vomiting

1- Nausea but no vomiting

2- Nausea with vomiting

3- Severe vomiting

(8) Assessment of heart burn

0- No burning

1- Occasionally

2- Regular but mild

3- Regular and severe

Laboratory Investigations

Haematological investigation –

1. Haemoglobin (Hb%)
2. Total Leucocytes Count (TLC)
3. Erythrocyte Sedimentation Rate (E.S.R)

Follow up study -

The IPD patients who were taking this treatment in the hospital were followed up daily, but the OPD patients who did the procedure at home were checked up monthly once. Before 10 days of expected delivery date the patients were again examined generally as well as locally and again findings were noted against the reports of examination and investigations carried out before the treatment and the changes were noted.

Selection of Drugs [6]

For Madhura Aushadha, reference from Carak Samhita Viman Sthana was taken and 12 drugs from the Madhura Skandha were selected in this trial .Along with the drugs of Madhura Skandha for the preparation of MASK, MASS and MAST respectively Cow Milk, Cow Ghrita and Tila taila were used. For the preparation of KY, cow milk and Sashtika Dhanya were utilised.

These drugs were selected due to their easy availability and expected high degree of clinical effects. In place of Asthavarga, described in the Madhura Skandha their respective Pratinidhi Dravya have been incorporated in this clinical trial.

The 12 drugs selected for this clinical trial are as follows:

1. *Asvagandha*
2. *Satavari*
3. *Vidarigandha*
4. *Varahikanda*
5. *Mudgaparni*
6. *Masaparni*
7. *Chinnaruha*
8. *Karkatasringi*
9. *Prapaundarika*
10. *Mruddhvika*
11. *Jeevanti*
12. *Madhuka*

MASS & MAST were prepared at the pharmacy of National Institute of Ayurveda according to Sashtrokta method.

For the preparation of KY, 100gm of coarse powdered Shastika rice was mixed with 600ml of cow milk. It was cooked in mild flame till gruel is prepared which is slightly fluid and extremely predominant with grains. The patients were advised to take this preparation according to their appetite in a single dose or repeated doses throughout the day as per their convenience.

For the preparation of MASK, 25gm of the Yavakuta of Madhura Aushadha was mixed with 200ml of cow milk and 800ml of water. This mixture was boiled till 200ml of liquid remained. It was filtered and consumed by the patient.

Observations

Table No. 1 Showing the pattern of Clinical Recovery of symptoms in 10 patients of Group A in 3rd Trimestar of Pregnancy.

Complications	*n*	Mean		Diff.	% of	SD	SE	*"t"*	*P*	Result
		BT	AT		Relief	±	±	Value	Value	
Anidra	10	1.10	0.60	0.50	45.45	0.53	0.17	3.00	<0.01	S.
Vomiting	10	0.60	0.20	0.40	66.67	0.52	0.16	2.45	<0.05	S.
Heart burn	10	0.90	0.40	0.50	55.56	0.53	0.17	3.00	<0.01	S.
Constipation	10	1.50	0.30	1.20	80.00	0.92	0.29	4.13	<0.01	S.
Backache	10	1.40	0.70	0.70	50.00	0.48	0.15	4.58	<0.01	S.
Pain in L. abdomen	10	1.60	0.50	1.10	68.75	0.74	0.23	4.71	<0.001	H.S.
Burning Micturation	10	1.30	0.60	0.70	53.85	0.48	0.15	4.58	<0.001	H.S.
Fatigue	10	1.20	0.60	0.60	50./00	0.52	0.16	3.67	<0.01	S.

Table No. 2 Showing the pattern of clinical recovery of symptoms in 10 patients of Group B in 3rd trimester of pregnancy.

Symptoms	*n*	Mean		Diff.	% of	SD	SE	*"t"*	*P*	Result
		BT	AT		Relief	±	±	Value	Value	
Anidra	10	1.00	0.20	0.80	80.00	0.63	0.20	4.00	<0.01	S.
Vomiting	10	0.70	0.20	0.50	71.43	0.53	0.17	3.00	<0.01	S.
Heart burn	10	1.00	0.30	0.70	70.00	0.67	0.21	3.28	<0.01	S.
Constipation	10	1.00	0.30	0.70	70.00	0.67	0.21	3.28	<0.01	S.
Backache	10	1.60	0.70	0.90	56.25	0.57	0.18	5.01	<0.001	H.S.
Pain in L. abdomen	10	1.20	0.30	0.90	75.00	0.88	0.28	3.25	<0.01	S.
Burning Micturation	10	1.20	0.60	0.60	50.00	0.52	0.16	3.67	<0.01	S.
Fatigue	10	1.50	0.50	1.00	66.67	0.47	0.15	6.71	<0.001	H.S.

Table No. 3 Showing the pattern of clinical recovery of symptoms in 10 patients of Group C in 3rd trimester of pregnancy.

Symptoms	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	*"t"* Value	*P* Value	Result
		BT	AT							
Anidra	10	1.00	0.30	0.70	70.00	0.67	0.21	3.28	<0.01	S.
Vomiting	10	0.60	0.20	0.40	66.67	0.52	0.16	2.45	<0.05	S.
Heart burn	10	0.90	0.40	0.50	55.56	0.53	0.17	3.00	<0.01	S.
Constipation	10	1.40	0.80	0.60	42.86	0.52	0.16	3.67	<0.01	S.
Backache	10	1.90	0.40	1.50	78.95	0.53	0.17	9.00	<0.001	H.S.
Pain in L. abdomen	10	1.40	0.60	0.80	57.14	0.63	0.20	4.00	<0.01	S.
Burning Micturation	10	1.20	0.90	0.30	25.00	0.48	0.15	1.96	<0.10	I.S.
Fatigue	10	1.30	0.50	0.80	61.54	0.42	0.13	6.00	<0.001	H.S.

Table No. 4 Showing the pattern of changes in hematological investigation in 10 patients of Group A in 3rd trimester of pregnancy.

Test	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	*"t"* Value	*P* Value	Result
		BT	AT							
Haemoglobin	10	8.11	9.88	1.77	21.82	0.71	0.23	7.85	<0.001	H.S.
TLC	10	5200	4950	250.00	4.81	427.53	135.20	1.85	<0.01	S.
ESR	10	46.50	38.80	7.70	16.56	7.65	2.42	3.18	<0.01	S.

Table No. 5 Showing the pattern of changes in hematological investigation in 10 patients of Group B in 3rd trimester of pregnancy.

Test	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	*"t"* Value	*P* Value	Result
		BT	AT							
Haemoglobin	10	8.36	10.11	1.75	20.93	0.79	0.25	7.00	<0.001	H.S.
TLC	10	5970	5630	340.00	5.70	334.00	105.62	3.22	<0.01	S.
ESR	10	41.80	33.80	8.00	19.14	7.10	2.25	3.56	<0.01	S.

Table No. 6 Showing the pattern of changes in hematological investigation in 10 patients of Group C in 3rd trimester of pregnancy.

Symptoms	*n*	Mean		Diff.	% of Relief	SD ±	SE ±	"t" Value	*P* Value	Result
		BT	AT							
Haemoglobin	10	9.08	9.42	0.34	3.74	0.47	0.15	2.28	<0.01	S.
TLC	10	5180	5000	180.00	3.47	187.38	59.25	3.04	<0.01	S.
ESR	10	43.20	41.00	2.20	5.09	4.87	1.54	1.43	<0.01	S.

Discussion

Discussion regarding mechanism of action of the drugs and therapies

On analysis of the components of selected 12 Madhura Aushadhi it is observed that most of them are Vata-Pitta Shamaka followed by Tridosha-Shamaka drugs. Most of them are Madhura Rasa Pradhan followed by having Tikta and Kashaya Rasa Pradhanata. Except 3 drugs all of them are having Sheeta Virya. The Vipaka of most of the drugs are Madhura. Snigdhata and Laghuta are the dominating Guna. The principal Karma present in these drugs are Rasayana, Balya, Jeevaniya, Brimhaniya, Garbhaposhaka and Stanya Janana. As we have already discussed in the literary review that during pregnancy the requirement of all kind of nutrition is increased by many fold, these drugs potentiated with Ksheera and Sharpi fulfill these requirement. Stanya Janana property of Satavari, Vidari and Madhuka prepare the mother from the very beginning for lactation. Shoolhara and Vedana Sthapana Karma of Satavari and Guduchi played important role in relieving backache and lower abdominal pain Chardinigrahana property of Mudgaparin, Guduchi and Prapaundarika, resulted in significant improvement in the respective groups. Benefit in burning micturation & heart burn may is contributed by the drugs like Madhuka, Jeevanti and Prapaundarika because of their *Dahaprasamana Karma*.

Yavagu prepared with *Shasatika Dhanya* and Ksheer is a complete food. We have already discussed in the literary review that net protein utilization and digestible energy in rice are highest amongst all the common cereal grains. At present, rice is being seen under a different light – beyond its stereotype of staple food and primary source of carbohydrate or starch. Its mineral content, starch quality, glycemic index, and antioxidant activity has made rice unique among cereals. It has been found that, in comparison with other sources (wheat, potato, and maize), rice starch is nearly completely absorbed by the human body. Positive qualities of high digestibility of starch, high biological value of amino acids, high content of essential fatty acids and selenium, and anti-hypertension effect have been confirmed scientifically. Rice can therefore be described now as a functional food.

Oja and Ksheera possess similar qualities [7]. So Ksheera Yavagu is the best selection to fulfill the increased demand of protein and energy. Expected weight gain of the mother during the third trimester of pregnancy and babies delivered with expected birth weight in respective groups suggest the effectiveness of Ksheera Yavagu.

The *Anuvasana Basti* with *Madhura Ausadha Siddha Taila* is given to pregnant women to evacuate the old Pureesha and to make the Vayu to pass in its right direction. Snehana property of the Anuvasana Basti makes Snigdha to abdomen, flanks, sacrum and all genital organs. Exaggerated Vata is pacified due to this Snigdha Guna. For proper expulsion of fetus, stretching of ligaments is very much essential. Vata Dosha in its natural best and in its natural direction along with soft and flexible muscles and ligaments help in the expulsion of fetus from the birth canal.

Anuvasana Basti is *Taila Pradhan*. Taila is the best drugs to pacify Vata Dosha. So due to Anuvasana Basti, Vata-anuloman occurs and Vata Dosha performs its normal function properly. Here its normal function is expulsion of fetus through

natural passage without any complication.

Proper lubrication of the vaginal orifice is a prime pre-requisite for normal delivery. Pichu with MAST performs this function. Til oil controls vaginal yeast. It is naturally anti bacterial against staphylococcus and streptococcus. It has also antifungal properties[8]. So *Pichu* with MAST acts as a lubricating and antiseptic measure before delivery. Beside these, it helps in proper functioning of *Apana Vayu*.

Discussion regarding mechanism of Action of Yoga Therapy

In this clinical study we included a combination of Asana, Pranayama, Mudra, Bandha, Dhyana and Yoga Nidra keeping in mind the benefits of these in minimizing the complications of pregnancy in 3rd trimester, supporting normal delivery and getting a healthy offspring. The probable mode of action is discussed here.

The Asanas are selected giving preference to their safety ness in 3rd trimester and their effectiveness in preparing the patients body for a normal delivery by strengthening the muscles and nerves which are involved during the process of delivery.

Titilasana relaxes the inner thigh muscles which hold a lot of tension and remove tiredness from leg hence helping in reducing physical discomfort and promoting good sleep.

Chakkichalanasana tones the nerves and organs of the pelvic & abdomen. Kati chakrasana tones the waist, back & hips. These two Asanas helps in backache. The pressure due to additional weight and poor posture are well taken care. Katichakrasana by inducing a feeling of rightness reduces stress and mental tension and support for a normal delivery.

Nadisodhana Pranayama reduces mental and physical tension and stimulates the brain center to work nearer to their optimum capacity. So backache due to stress, and fatigue due to progesterone and neurosteroids are relieved. Extra supply of oxygen and expulsion of carbon-dioxide purify the blood from toxin and ensure a healthy fetus. Oxygen consumption increases by 20% during pregnancy.

Bhramri Pranayama which is excellent in reliving anxiety, insomnia, stress, anger, helps in sleeplessness, backache and provides a very calm mental environment for the fetus inside the mother's womb. It reduces elevated blood pressure.

Ujjayi Pranayama soothes the nerve, calms the mind, improves the gastric fire and correct dyspepsia. Anidra, due to gastroesophegal reflux, heart burn due to indigestion, and backache due to stress are managed. It alleviates fluid retention and helps in odema.

Aswini Mudra strengthens the anal muscles and does not allow pregnancy piles and constipation. Vajroli Mudra tones the entire uro-genital system and helps in recurrent urine infection. Its effect in toning the endocrinal system and local energy structures help in managing fatigue. It also induces tranquility; clarify of thought and concentration, which gives mental strength to bear the pain during delivery.

Digestive system is toned, massaged and revitalised by Moolabandha. It also tones the nerves in the pelvic, urogenital and excretory system. It harmonises the efficient function of the endocrine system. Alpha brainwave production is increased by practice of this. So it helps in constipation, backache, stress, fatigue, insomnia and promotes normal delivery. Perinial contraction stimulates both the sensory motor and autonomic nervous system in the pelvic region. Parasympathetic nerves which also immerge from pelvic stimulated and results in decreased heart rate, respiration and blood pressure, and general sense of rest and relaxation.

Improvement in anxiety level, positive influence in brain regions associated with attention, interception, sensory processing and intelligence, reduction in fatigue, reduction in sympathetic activation and improvement in brains response to acute pain, by practicing meditation helps in reducing complication of pregnancy, promotes normal delivery and ensures a healthy offspring with excellent mental faculty. Metabolism, heart rate respiration, blood pressure and brain chemistry are modified positively by practicing meditation.

Yoganidra takes care of the well-being of the

entire system. It rejuvenates the nervous system in weak & sick people. It is very useful in overcoming the psychosomatic stress which occurs during pregnancy and delivery.

Discussion regarding results of symptoms and investigations

Group A professed 45.45% relief in Anidra, 66.67% relief in vomiting, 55.56% relief heartburn, 80% relief in constipation, 50% relief in backache, 68.78% relief in pain in lower abdomen, 53.85% relief in burning micturation and 50% relief in fatigue. In this group improvements in pain lower abdomen and burning micturation were highly significant. Remaining symptoms showed significant result. Overall study shows 58.78% improvement in symptoms in Group A. (Table No.1)

Group B showed 80.00% relief in Anidra, 74.43% relief in vomiting. 70.00% relief in Heartburn, 70.00% relief in constipation, 56.25% relief in backache, 75.00% relief in pain in lower abdomen, 50% relief in burning micturation and 66.67% relief in fatigue. Fatigue and backache showed highly significant results. Whereas others symptoms improved significantly. Overall study shows symptomatic improvement is Group B was 67.41%. (Table No.2)

Group 'C' had 70% relief in Anidra, 66.67% relief in vomiting, 55.56% relief in heartburn, 42.86% relief in constipation and 57.14% relief in pain in lower abdomen. All these results were significant. Group C professed 78.95% relief in backache and 61.54% relief in fatigue these result were highly significant. Group C had 25.00% relief in burning micturation which was insignificant. Overall improvement in the symptoms of Group C was 57.21%. (Table No.3)

Statistically highly significant result is observed in Hb gm% in both Group B & A where as the result in Group C insignificant. (Table No. 4)

Total leucocytes count (TLC) is on the higher side in case of pregnancy. After administration of these therapies patients of all the three groups showed significant reduction in TLC. (Table No. 5)

ESR also remains on a higher side in case of pregnancy. But after administration of therapies in Group B 19.14% improvement and in Group A, 16.56% improvement are observed. Improvement in all the three groups are significant ($p<0.01$). (Table No. 6)

Conclusion

- Garbhini Paricharya as described in Caraka Samhita alone and along with Yoga therapy is very effective in the management of clinical symptoms of 3rd trimester of pregnancy.
- Highly significant improvement ($P<0.001$) in symptoms like burning micturation and pain lower abdomen and significant improvement in all other symptoms is observed with Gabhini Paricharya in 3rd trimester of pregnancy.
- Highly significant improvement ($P<0.001$) in symptoms like back ache and fatigue and insignificant improvement in burning micturation is observed with Yoga therapy in 3rd trimester of pregnancy.
- Highly significant improvement ($P<0.001$) in symptoms like back ache and fatigue and significant improvement in all other symptoms is observed with both Gabhini Paricharya and Yoga herapy combined in 3rd trimester of pregnancy.
- Hemoglobin gm% improves significantly by administering Gabhini Paricharya in 3rd trimester of pregnancy
- Garbhini Parichrya did not produced any side effect during the trial.

References

1. Ca.Ci 2/6
2. Ca.su 2/1
3. G.S. 1/12
4. Ca.Sa. 8/32
5. APMB Pg. 539
6. Ca.Vi. 8/139
7. Caraka, sutra 1/108-113
8. Prakash A. D. et al, effect of oral administration of 42 indigenous plant extract on early and late pregnancy in albino rats probe 27 (4) 315-323)

Pharmacological Study

A Study of Antihypertensive Action of *Dadhimanth* Hook (Cordia macleodii.f. and Thomson.)

*Dr. Mukul Dikshit, **Dr. Mohan Lal Jaiswal

Abstract

Hypertension is a disease which caused by changing in lifestyle, irregular dietary habits, mental stress and other factors. Dadhimanth (Cordia macledoii) or Dahiman is a folklore medicine used by native of Madhya Pradesh and Jharkhand forest. It has been found very useful in hypertension and associated diseases. Dadhimanth powder is very much useful in lowering down the blood urea level and found effective in Pittaja prakriti of patients.

Key Words- Hypertension, Dadhimanth, Folklore medicine, Pittaj prakriti, blood urea.

सारांश –

परिवर्तित जीवनशैली, अनियमित आहार–विहार, मानसिक तनाव आदि कारणों का परिणाम है उक्तरक्तचाप। दधिमन्थ एक फोकलोर औषधि है, जो मध्यप्रदेश, झारखण्ड के वनों में प्राप्य है, तथा वहाँ के लोगों में परम्परागत रूप से उपयोगी है। यह औषधि उच्चरक्तचाप एवं इससे सम्बन्धित लक्षणों में अत्योपयोगी है। दधिमन्थ चूर्ण रक्त यूरिया को कम करने तथा पित्तज प्रकृति के रोगियों में उपयेागी पाया गया।

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Pharmacological Study

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Introduction

In the modem era changing in life style, dietary habits, and environment have made person the victim of various disease. Now-a-days 25 -30 % patients of population is recognized suffering from hypertension. Lack of physical exercise, attitude of fast competition mental stress, troubled marriage, care of parents or partner are the most common causes of hypertension.

Deffinition-

The lateral pressure of blood exerted on arterial wall of the circulatory pathway is called hypertension. As per WHO (6^{th} JNC) norms more than 140 mmHg of systolic and 90 mmHg of dystolic pressure is hypertension.

There is no any description found in Ayurvedic texts regarding hypertension but sign and symptoms are common and can be correlated with hypertension are Raktagat vata, siragat vata, Pittavrit vyan bala, Rakta nipid etc.

The word hypertension is evolved after the invention of sphygmomanometer. The instrument gives the measurement of the systolic and dystolic pressure. Then it will be considered as hypertension and hypotension. Hypertension is the origin of various cordiovascular disease and associated with other symptoms such as nervous system. Urogenital symptom and it is most common cause of fatal disease. It has been named silent killer also.

Hypertension is interesting topic for scientist and medical fratormity. To curb the Hypertension and its treatment it has been found that in Vindhya, Chhotanagpur forest region the native are using Dadhimanth (Local name-Dahiman, Dahipalash) since long long ago.

Description of Dadhimanth (Cordia macleodii) is found in modern books named Wealth of India CSIR, N. Delhi, Indian Medicinal Plants, Indigenous drag of India etc.

Research work done on Dadhimanth its ethnobotany aspects, medicinal uses at Deendyal Research Institute, Chitrakoot Satna (MP) and regional forest Dept. Rewa (MP) as per Folklore use of this medicinal plants.

A scientific study of antihypertensive action of Dadhimanth has been carried out for the establishment of this medicinal plant for the benefit failing humanity.

Dadhimanth (Cordia macleodii Hook. f. and Thomson)

Botanical Classification

Division	-	Magnoliophyta
Class	-	Rosopsida
Sub class	-	Asteridae
Family	-	Boraginaceae
Genus	-	Cordia
Species	-	Macleodii

Vernacular's name

Sanskrit	-	Dadhimanth
Hindi	-	Dahipalash, Dahiman
Marathi	-	Bhoti, Dhaiwan
Tamil	-	Plandeku
Telgu	-	Botuku
Oriya	-	Bhoto, Bohurolo

Batanical Description

Dadhimanth (Cordia macleodii) plant is a medium sized evergreen tree. Generally these plant are 12 m tall.

Leave- Leaves are alternate and generally 5-20 cm long, oval, obtuse, 3-5 nerved at the base, upper surface pubescent usually with white disc and the

lower surface densely clothed with grey or tawny woolly tomentum. Petioles 2.5 to 5cm long densely woolly tomentose.

Bark- Smooth, whitish or gravish

Flower-Polygamous, subsessile indense paniculate terminal and axillary tomentose cymes.

Fruit- Drup, 1.3-2 cm long, ovoid, not edible.

Flowering seasons- March to April

Fruiting seasons- May to June

Distribution– Chhotanagpur (Jharkhand) M.P. Kokam, Deccon, Karnataka region.

Ras Panchak-

Rasa	-	*Kashaya – Tikta*
Guna	-	*Laghu, Snigdha*
Virya	-	*Sheet*
Vipaka	-	*Madhura*
Dosh karma	-	*Kapha-Pitta samak*

Samanya karma- Visaghna, Vranropan, Twachya, Grahi, Raktasodak, Mutral, Balya, Santaphar.

Rogaghna Karma- Krimighna, kustaghna, deepan, kamlahar, raktapitthar, mutrakrichahar, mutural, sukral, kshayanasak, jwarhar, santaphar.

Part used - Root-Virechak, Leaf, Bark-Balya

Dose - Churna (Powder) 3-6 gm

Chemical constituents – (Phytochemical analysis)

Organic **–** Carbohydtrate, Starch, Protein, Tanin, Phenol, Saponin etc.

Inorganic – Iron, Calcium, Phosphorus, Magnese etc.

Table I

S.N.	***Investigation***	***Result***
1.	Loss on drying of Dadhimanth	10.598%
2.	Total ash	15.456%
3.	Acid Insoluble ash	31.677%
4.	Water soluble ash	10.23%
5.	Extractive value in n-Haxan	2.491%
6.	Extractive value in Dichloro methane	1.436%
7.	Extractive value in Methanole	5.129%
8.	Extractive value in Ethyl acetate	0.816%
9.	Extractive value in D. water	10.70%

Material and Methods

The main objective of the current research work is to undertake a study of antihypertensive action of Dadhimanth (Cordia macleodii Hook. f. & Thorns)

Selection of cases - 20 patients registered for the present trial from OPD of National Institute of Ayurveda Jaipur, India. All patients were mild to moderate grade of hypertension accordingly WHO (6th JNC) norms.. The patients have been asked to report all regular interval weekly for blood pressure measurement and follow up. There signatures have been taken on consent form. All the result have been studied on scientific and satistical parameter.

Drug- Dadhimanth leaf powder has been made at pharmacy of NIA, Jaipur and packed in 100 gm packet for distribution between the patients.

Dose - 3-6 gm twice daily.

Anupan - Plain water

Period - 1 month

Inclusive criteria- Mild and moderate hypertension patients has been selected for trial study.

Exclusive criteria -

1. Hypertension due to fatal diseases
2. Aldosteron
3. Kushing syndrom
4. Coarctation of aorta
5. Severe complication of hypertension

Examination of the Patients -

Before giving medicine to the patients all patients has been estimated on Ayurvedic method of examination such as Nadi pariksha, Astavidha Pariksha, Dasvidha Pariksha and other important examinations.

Laboratory Examination

All patients of hypertension have undergone thoroughly before and after Lab investigation such as blood sugar, Cholesterol, Blood urea, Serum creatinine and lipid profile etc.

Diet-

The patients had been adviced-

a) To take low salt diet.

b) Stop smoking and liquour.

c) To avoid high fat diet.

d) To do exercise, yogasan, Pranayam as per capacity.

e) Avoid stress.

Patients Group –

Patients one divided in two groups of 10 Patients.

Group A – Group to who trial medicine has been prescribed and 3-6 gm. Dadhimanth powder has been given twice daily with water.

Group B (Control group) –this group contain of person those are taking Surpagandha powder 3 gm twice daily with water.

Observation-

Total 20 Patients were studied for demographic profile including incidence of age, Sex, occupation, education etc.

Demographic Profile-

Table - II

S.N.	Findings	Predominance	Percentage
1.	Age	50-60 year	30%
2.	Sex	Male	80%
3.	Occupation	Govt. Job	20%
4.	Education	Graduate	35%
5.	Diet	Veg	60%
6.	Prakriti	Kapha Pittaja	45%
7.	Aakriti	Sthula	45%
8.	Agni	Vishama	70%
9.	Koshtha	Madhyama	70%
10.	Satva	Madhyama	85%
11.	Grade	Mild	60%

Symptoms of Hypertension observed

Tabel - III

S.N.	Investigation	Result
1.	Sirahshula	100%
2.	Bhrama	75%
3.	Klama	35%
4.	Tamodarshana	70%
5.	Krodha prachurya	70%
6.	Netrarakta	25%
7.	Swedadhikya	25%
8.	Mansika daurbalya	75%
9.	Hrid Karnpa	75%
10.	Swaskadhikya	75%

Result

Statistical Study of Effect of Dadhimantha **Table - IV**

Symptoms	Group	Mean %	*t*	*p*
Systolic B.P.	Group A (Treated)	3.65%	3.48	< 0.010
	Group B (Control)	12.21%	8.75	< 0.001
Diastolic B.P.	Group A (Treated)	4.28%	3.40	< 0.010
	Group B (Control)	16.10%	6.38	< 0.001
Sirahshool	Group A (Treated)	100.00%	15.00	< 0.001
	Group B (Control)	50.00%	3.67	< 0.010
Bhrama	Group A (Treated)	100.00%	14.72	< 0.001
	Group B (Control)	100.00%	13.23	< 0.001
Tamodarshana	Group A (Treated)	80.00%	4.47	< 0.010
	Group B (Control)	75.00%	3.55	< 0.010
Kroodhpachurya	Group A (Treated)	100.00%	23.00	< 0.001
	Group B (Control)	100.00%	12.65	< 0.001
Swedadhikya	Group A (Treated)	75.00%	3.00	>0.1
	Group B (Control)	83.33%	5.00	< 0.050
Netraraktata	Group A (Treated)	83.33%	5.00	< 0.050
	Group B (Control)	75.00%	3.00	>0.1
Manasika Daurbalya	Group A (Treated)	100.00%	12.73	< 0.001
	Group B (Control)	73.68%	3.86	< 0.010

Hridkamp	Group A (Treated)	80.00%	4.47	< 0.010
	Group B (Control)	100.00%	16.00	< 0.001
Swasadhikya	Group A (Treated)	100.00%	12.02	< 0.001
	Group B (Control)	73.68%	3.86	< 0.010
Klama	Group A (Treated)	100.00%	12.65	< 0.001
	Group B (Control)	100.00%	12.73	< 0.001
Blood Sugar	Group A (Treated)	-6.25%	-0.52	>0.1
	Group B (Control)	1.91%	1.31	>0.1
Cholesterol	Group A (Treated)	5.03%	3.24	< 0.010
	Group B (Control)	14.43%	2.87	< 0.025
Urea	Group A (Treated)	20.42%	3.52	< 0.010
	Group B (Control)	21.44%	3.46	< 0.010
S. Creatinine	Group A (Treated)	1.35%	0.43	> 0.1
	Group B (Control)	1.33%	0.36	> 0.1

Discussion

It has been observed by the scholar -

1) Maximum number of Patients are Visamagni.
2) Number of male Patients were high between 31-40 years old.
3) The Patients suffering from hypertension were intellectual class.
4) Maximum number of patients were Vegetarian.
5) Obese patients were more than lean and thin.
6) As per prakriti maximum number of patients were Kaphapittaja.
7) According to Kostha, high number of Madhyama koshtha were seen.
8) Stress was the higher risk factor found in maximum number of patients.

Most common sign and symptoms were found in Sirahshool, Bhrama, Klama, Tamodarshana, Krodjaprachurya, Swedadhikya, Netrarakta, Hridkamp a, Manasika Daurbalya, Swaskathinya.

The result of anti hypertension action of Dadhimantha powder found in above said symptoms of patients beneficial in Sirahshula 80%, Bhrama 66%, Klama 84%, Tamodarshana 71%, Krodhaprachurya 78%, Netrarakta 60%, Swedadhikya 40%, Hridkamp 60%, Manasika Daurbalya 80% , Swasakathinya 73%.

Statistically Dadhimantha is significant in systolic and diastolic hypertension.

In its symptoms like Sirahashula, Bhrama, Klama, Tamodarsana, Krodhaprachurya, Swedadhikya, Netrarakta, Manasika daurbalya, swaskathinya, highly significant.

In a case of B. Urea Dadhimantha found also very useful

Conclusion

Hypertension is tridoshaja, pittapradhana ras-raktashrit kastasadhya disease. When pitta is aggravated with rakta and covered shleshma in blood vessels vitiated by Vyana vayu it increases the blood pressure.Which is very Severe in nature and affecting the other organs, Dadhimantha powder application has been found beneficial on scientific base and statistical measurements on diastolic and systolic hypertension.

Scholar has concluded that Dadhimantha (Cordia macliodii) powder is more effective and beneficial in pittaja prakriti patients suffering from

Sirahashoola, Bhrama, Klama, Tamodarshana, Krodhaprachurya, Netraraktata, Hridkampa, Manasika Daurbalya.

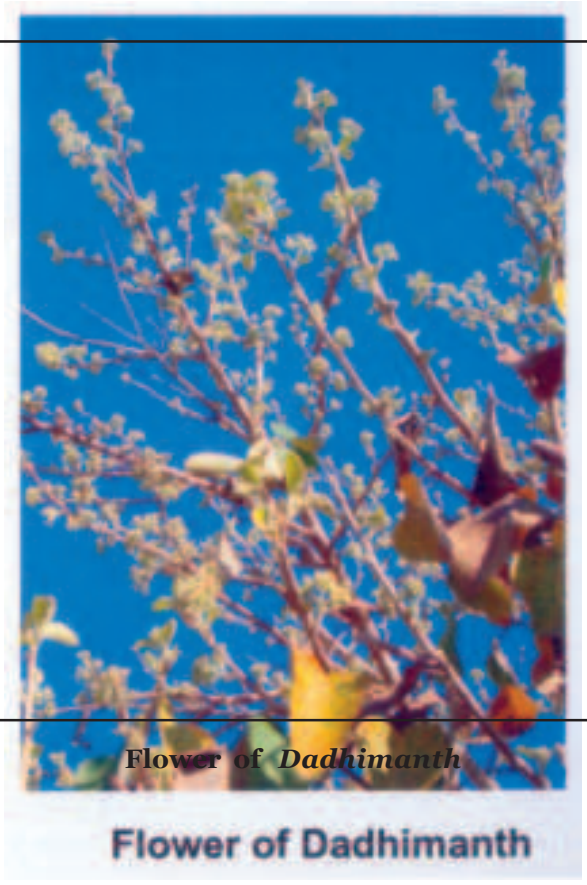
The more unic finding is noteable that patients taking Dadhimantha (Cordia macliodii) powder shows decreases in blood urea post medication. It may be due to visaghna prahbhav of Dadhimantha. During this trial non of any other complication and toxic effects has been found.

More research should be done to establish in this field to explore Dadhimantha (Codia macleoddi).

References-

- RN Chopra- Glossary of Indian Medicinal plant.
- Theodore Cooke- Flora of presidency of Bombay Vol II.
- Sir J.D. Hooker- Flora of British India Vol- VII.
- J.K. Maheshwari- Ethno botany and Medicinal plants of Indian subcontinent.
- PC Dubey, Sikarwar and Tiwari- Ethno botany of Cordia macleodii.
- Welth of India, CSIR, New Delhi.
- K.R. Kirtikar and BD Basu-Indian Medicinal plants.
- Nakarni KM- The Indian Material Medica.
- Chopra R.N. - Indigenous Drug of India.
- Orissa Sen SK, Panda HS- Coordia macleodii a wonderful wound healer from Bargarh.
- Parrota J.A Healing plants of peninsular India.
- www.India hypertension.com
- Dr. I.J.S. Kushwaha, NIA Jaipur – Pharmaco-Clinical & phytochemical study of Yastimadhu as a male fertility enhancing effect.
- B.K. Mahajan- Methods of Biostatics.
- CC Chatarjee- human Physiology
- Dr. Trilok Chand, NIA , Jaipur- Rakta chap me 'B.P. Yoga' ka Nirmanatmaka avum prabhawatmak adhyayan.
- Dr. B. Yadav, Paprola, H.P. –Role of an Ayurvedic formulation in the patients of Raktagata vata with special reference to mild to moderate essential hypertension.
- Dr. A. S. Charan, NIA Jaipur- A Chemical study of Chandra kala Ras in the management of hypertension.
- Dr. A kumar, NIA Jaipur- A pharmacological study of shankh pushpi, punarnava & Amalki with special reference to hypertension.
- Dr. V.D Sharma, NIA Jaipur- Aetio-Pathological study of Raktgat vata with special reference of prasadini vati.
- Dr. P. Dwivedi- Thesis on study of sarpagandhadi Yoga and shavasan on hypertension and comparison with Uyan Prakopa(1982), Lucknow.
- Dr. R.K. Sharma- Thesis on studies on hypertension in reference to hypertension effect of certain indigenous drugs, 1966,IMS,BHU.
- Harsh Mohan- Test book of pathology.
- John Macleod- Davidson's Principle and practice of Medicine.
- Sir Ronald Bodley Seott- Price's Text Book of medicine.
- Harrision's principles of Internal Medicine.
- C. Dwarikanath- Kaya Chikitsa.
- Chakrapani- Charaka Sanghita(Ayurveda Dipika).
- Vd. Ranjeet Rai Desai- Ayurvediya Kriya Sharira.

Leaf of *Dadhimanth*



Flower of *Dadhimanth*

Plant of *Dadhimanth*

Pharmaceutical Study

Standardization and Quality Control of Herbal Cosmetics

*Dr. Monika, **Dr. Parimi Suresh, ***Prof Lakshmikant Dwivedi

Abstract-

In order to produce quality products, it is essential that standardization and validation of herbal materials and process is done and documented . It is an exceedingly complicated job to standardize thousands of plant extracts with respect to their medicinal value and constituents. The quality in yester year was based on physical aspects of the plant materials such as identification, color, odour, size, type, age, etc. Today, there is an additional requirement, of knowing the exact chemical composition of the botanical raw material, along with the different physical tests. Standardization of natural products is a complex task due to their heterogeneous composition which is in the form of *whole plant, parts* or *extracts* obtained there of. To ensure reproducible quality of herbal products proper control of starting material is utmost essential.

सारांश –

गुणवत्तापूर्ण उत्पादों का उत्पादन करने के लिए वानस्पतिक सामग्री तथा प्रक्रियाओं का मानकीकरण एवं सत्यापन और उसे प्रतिलिखित करना आवश्यक है। विभिन्न वानस्पतिक सारों का औषधिय मूल्य और घटको का मानकीकरण नितांत जटिल है। विगत वर्षों में वानस्पतिक द्रव्यों के गुणवत्ता का आधार भौतिक पहलुओं जैसे कि पहचान, रंग, गंध, आकार, प्रकार और उम्र आदि से किया जाता था। परन्तु आज वानस्पतिक कच्ची औषधियों की विभिन्न भौतिक परिक्षणों के साथ सटीक रासायनिक संरचना जानना एक अतिरिक्त आवश्यकता प्रतीत होती है। प्राकृतिक उत्पादों का मानकीकरण उनकी विषम रचना के कारण अत्यंत जटिल कार्य है। औषधिय निर्माण में पुनरुत्पादनीय गुणवत्ता के लिए प्रारंभ में ही द्रव्यों का उचित नियंत्रण एवं गुणवत्ता सुनिश्चित करना अत्यन्त आवश्यक है।

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Pharmaceutical Study

Standardization And Quality Control Of Herbal Cosmetics

Dr. Monika, Dr. Parimi Suresh, Prof Lakshmikant Dwivedi

Standardization

Definition – The process of making any drug or preparation confirm to a type or standard. A standard is numerical value which quantify the parameters and thus quality and purity of a material. The numerical value expressed in various metric units of measurement actually gives the quantitative value of parameter that is used for making the standard. The criteria parameter that is considered for making the standards is intimately related to factor that is responsible for expected quality and purity of material. So generally the acceptability of a material is always established by prescribed standard.

Quality Control

Factors influencing Quality of herbal materials

- Authentication of Name and Source of the herb.
- Adulteration
- Phytochemical variation due to environment factors.
- Inadequate knowledge of Active principles.
- Lack of Reference Standards.
- Inadequate Number of Official Monograph.

These Factors are discussed below.

Authentication of Name and Source of the herb :

Majority of the herbs in India come from wild sources and are collected by poor, illiterate tribals and local people, without any attention to botanical identification and authentication. Thus the material supplied is mostly adulterated, either intentionally or unintentionally. Each crude drug has different names in vernacular languages and local trade occurs in these vernacular names only. Botanical/Latin names are rarely used for these purposes.

Adulteration :

The likelihood of adulteration of raw botanical material is very high. It could be unintentional as there are many crude drugs which when fully dried look morphologically very similar to each other. On the other hand, it could be deliberate, for example, unwanted foreign organic and inorganic material may be added to increase weight. In such circumstances it becomes mandatory to resort to complete manual cleaning of raw material prior to processing.

Phytochemical variation due to environment factors :

There are many intrinsic factors which govern the growth and medicinal quality of herbs. This is largely due to the change in their chemical constitution which often leads to change in their bioactivity. Due to these inherent variations, standardization will help control the quality. The major environmental factors are :

- Seasonal Changes
- Geographical variations
- Age of the plant at the time of the harvest
- Genetic factors (Ploidy and variety)
- Edaphic factors (soil pH, soil composition, macro and micro nutrients).

Inadequate knowledge of active Principles :

Each herb is a complex mixture of hundreds of organic compounds containing different types of secondary metabolites and mostly the active principle is not identified.

Lack of Reference Standards :

Reference standards are required at two stages

1. Crude drug reference standard
2. Active Principle/marker compound

Authentic reference standards both for crude drug as well as for active principles are not easy to obtain for all the drugs, but still many Ayush deparment, Herbal Research Companies and

Laboratories are making efforts to develop a library of standards of the phytochemicals.

Inadequate Number of Official Monograph :

There are hardly any pharmacopoeias available to the natural product scientist for guidance. Indian herbal pharmacopoeia, 4th edition 1996 Vol.(Volume) I and II, addendum 2003, has analytical monograph on very few medicinal plants. Though Ayurvedic Pharmacopoeia of India (Vol. 1-3) covers about 240 medicinal plants, but the parameters are not adequate for export purposes.

Even though the problems encountered in the standardization of crude drugs are numerous, efforts are on for obtaining quality products by different methods of standardization. Some them are described below.

1. Development of in-house crude drug references Standard : For the purpose of identification of the crude drugs, it is best to possess the authentic reference standard of that particular crude drug. This can be done by generating in-house reference standard for crude drugs. Fresh plants can be collected from right geographical locations, in the right season, at the right age. It's taxonomic identity may be verified, followed by preparation of herbarium sheet and documenting the relevant collection details. Then they should be carefully collected, dried under controlled conditions and stored appropriately so as the serve as reference standards.

2. TLC (Thin layer Chromatography) finger Printing : Many of the crude drugs have look-alikes and it becomes difficult to differentiate the genuine ones from the fake drugs after they are powdered. This then necessitates the application of thin layer Chromatography (TLC). TLC is one of easiest and cheapest tools available for phytochemical analysis and is the method of choice for crude drug authentication. The TLC fingerprint of the sample under test is compared with the TLC finger print of the crude drug reference standard. Thus, availability of the crude drug reference standard becomes very crucial for quality control.

3. Quantification of Markers/Actives : Markers are compounds unique to the plant in 'detectable amounts' and can be easily isolate. A marker compound can be quantified and the quantification can be carried out by High Performance Thin Layer Cromatography (HPTLC) or with High Pressure Liquid Chromatography (HPLC). HPTLC is well suited to obtain a detailed fingerprint of herbal extract or product. Such a fingerprint comprises of scanning in UltraViolet light fluorescence and photographic images in ultraviolet light (254 nm an 366nm) and occasionally in visible light after derivatization. For plants where actives/ markers are not known, phytochemical profiling of the category compounds can be carried out. Plants contain different categories of molecules, viz., alkaloids, terpenoids, glycosides, saponins, flavonoids, tannins etc. for the quantification of these categories of compounds the gravimetric method can be adopted for crude drugs.

4. Residual Analysis : One of the very important aspects of standardization ensure the absence of objectionable amounts of pesticide residues, heavy metal residues, organic solvent residues, mycotoxin residues and bioburden.

5. Biological standardization Methods : a bioassay called Brine Shrimp Lethality Bioassay is being used as a routine biological quality control tool along with finger printing.

WHO Guidelines for Quality Standardized Herbal Formulations

a. Quality control of crude drugs material, plant preparations and finished products.

b. Stability assessment and shelf life.

c. Safety assessment; documentation of safety based on experience or toxicological studies.

d. Assessment of efficacy by ethnomedical informations and biological activity evaluations.

The bioactive extract should be standardized on the basis of active principles or major compounds along with the chromatographic fingerprints (TLC, HPTLC, HPLC). In the case of herbal drugs, however the scene is different especially for polyherbal formulation, as there is no chemical or analytical methods available. Therefore biological-screening methods can be adopted for routine checkup of herbal drugs and formulations. In the case of herbal drugs, the quality of raw materials and products can

be furnished by regular pharmacognostic identifications and phytochemical analysis. The herbal formulations in general can be standardized schematically as to formulate the medicament using raw materials collected from different localities and a comparative chemical efficacy of different batches of formulation are to be observed. The preparation with better clinical efficacy are to be selected. After all the routine physical, chemical and pharmacological parameters are to be checked for all the batches to select the final finished product and to validate the whole manufacturing process.

The stability parameters for the herbal formulations which includes physical parameters, chemical parameters, and microbiological parameters.

Physical parameters include color, appearance, odor, clarity, viscosity, moisture content, pH, disintegration time, friability, hardness, flowability, flocculation, sedimentation, settling rate and ash values.

Chemical parameters includes limit tests, extractive values, chemical assays, etc. Chromatographic analysis of herbals can be done using TLC, HPLC, HPTLC etc.

Microbiological parameters include total viable content, total mold count, total enterobacterial and their count. Limiters can be utilized as a quantitative or semiquantitative tool to ascertain and control the amount of impurities like the reagents used during abstraction of various herbs, impurities coming directly from the manufacturing vessels, impurities from the solvents, etc.Chemical decomposition of substances present in the formulation also produces several toxic or impure compounds during storage in undesirable conditions. Contaminants may come directly from the atmosphere also. This include mainly dust, sulfur dioxide, Hydrogen sulfide, Carbondioxide, Arsenic, moisture, etc.

MATERIAL & METHODS

In the present study we standardized following samples:

(1) Varnya cream 1 (Cold Cream) - 1 sample

(2) Varnya cream 2 (Vanishing Cream) - 1 sample

(3) Varnya cream 3(All Purpose Cream) - 1 sample

Method of prepration

Varnya cream 1- Tailam is taken in a vessel. Wax and petroleum Jelly is added to it. They are heated by water bath until temperature of 70°C is reached. Water is heated on other heating device and borax and is added to it. They are also heated until 70°C is reached. Then both the vessel are taken off the heat. Water is agitated with blender while adding tailam to it slowly. Methyl paraben is added while agitating and when the temprature reduced to 40°C perfume is added while agitating. When cooled content is filled in the jars.

Varnya cream 2- Kwatha is taken in a vessel. Glycerin, borax, KOH, and triethanolamine are added to it. They are heated until temperature become 70°C. In another vessel stearic acid is heated through water bath upto 70°C. Then both the vessels are taken off the heat. Stearic acid is then agitated while adding kwath contents little by little in it. While agitating methyl paraben is added. Agitation is continuous and in clockwise direction. perfume is added when temperature reached 40°C. When cooled cream is filled in the jars.

Varnya cream 3- Kwatha is taken in a vessel. It is subjected to heating until temperature becomes 70°C. In another vessel stearic acid is taken. Liquid paraffin,wax, and triethanolamine are added to it is heated through water bath upto 70°C. Then both the vessels are taken off the heat. Kwath is then agitated while adding stearic acid and other contents slowly in it. While adding methyl paraben is added. Agitation is continuous and in clockwise direction. Perfume is added when temperature reached 40°C. When cooled cream is filled in the jars.

Parameters Studied :

Parameters are studied according to "Protocol Of Testing Of Ayurvedic , Siddha, And Unani Medicines", written by Dr. D.R. Lohar, published by Government Of India , Deparment Of Ayush, Ministry Of Health And Family Welfare, Pharmacopoeial Laboratory For Indian Medicines , Ghaziabad .

Analytical specification for Lepa (cream)

Organoleptic Characters:

1. Color 3. Taste

2. Odour 4. Consistency

Physicochemical parameters

1. Rancidity test 3. pH
2. Total fatty matter 4. Loss on drying at 110°C

"INDIAN PHARMACOPOEIA" of GOVT. OF INDIA was also reffered. The Indian standard specification for skin creams is under **IS6608-1978**

Which specify following requirements:-

i) pH- 5.0- 9.0
ii) Total fatty matter - Min. must be 15
iii) Water content (%) - Max . must be 85
iv) Thermal Stability – To pass the test.

Observation And Results

Table No.I

Showing the Comparative Organoleptic parameters of three samples

S.No.	Parameters	Varnya cream 1	Varnya cream 2	Varnya cream 3
1	Colour	Light pink	Light brown	Dark brown
2	Odour	Jasmine	Jasmine	Jasmine
3	Taste	Bitter	Bitter	Bitter
4	Consistency	semisolid	semisolid	semisolid

Table No.II

Showing the comparative values of Physicochemical parameters of all three samples

S.No.	Parameters	Varnya cream 1	Varnya cream 2	Varnya cream 3
1	pH	7.5	7.7	7.7
2	Total fatty matter	75.26%	24.81%	50.78%
3	Loss on drying	4.12%	48.65%	22.50%
4	Rancidity test	Negative	Negative	Negative

Conclusion

The subject of herbal drug standardization is massively wide and deep. There is so much to know and so much seemingly contradictory theories on the subject of herbal medicines and its relationship with human physiology and mental function.For the purpose of research work on standardization of herbal formulations and neutraceuticals a profound knowledge of the important herbs found in India and widely used in Ayurvedic formulation is of utmost importance. India can emerge as the major country and play the lead role in production of standardized, therapeutically effective ayurvedic formulation. India needs to explore the medicinally important plants. This can be achieved only if the herbal products are evaluated and analyzed using sophisticated modern techniques of standardization such as UV-visible, TLC, HPLC, HPTLC, spectrofluorimetric and other methods.

Acknowledgements:

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References

1. Protocol of testing of ayurvedic , siddha and unani medicines.
2. Indian pharmacopeia.
3. Quality standards of Indian medicine, CCRAS.

Conceptual Study

Pathophysiological Study of *Pachakagni* W.S.R. To *Amadosha*

*Dr Mahesh Chand Purvya, **Prof M S Meena

Abstract:

Ayurveda is eternal science since time immemorial. Aim of ayurveda is maintenance of health and treatment of diseases. It is very essential to know the physiology before going to treat a patient because there is only recovery of physiology by treatment. If we do not have knowledge of physiology, how can we able to know pathology? According to ayurvedic physiology dosha, dhatu and mala are basis of body. Homeostasis of these humors is essential for health esp. in the terms of dosha. Imbalace of these is cause of various diseases. Among these dosha pitta is form of agni by which various metabolic activities are taken place and pathological state of pitta is responsible for various disorders. A detailed description is found regarding digestion and metabolism in ayurvedic texts. Food components are converted into micro form by the action of pachakagni, consequently the action of rest of agni become easier. Food does not digest and assimilated properly due to pathology in agni and consequently ama is generated. Ama is responsible for the various disorders because all the diseases are originated due to mandagni. Abnormality of agni is more common in today's fast and busy life-style which includes such type of diet pattern which is non-suitable in Indian race and environment. This type of life-style and diet pattern is especially responsible for the production of ama dosha. Ama dosha is causative factor for the various disorders of future. It is the first step in this field to study about the pathophysiological changes during production of ama dosha in the body due to its great causation in various disorders.

Key words: *Agni, ama, pachakagni, tridosha, upstambha.*

सारांशः

आयुर्वेद अनादि काल से चला आ रहा एक शाश्वत विज्ञान है। आयुर्वेद का उद्देश्य है स्वस्थ के स्वास्थ्य की रक्षा करना तथा आतुर के रोग का प्रशमन करना। आतुर की चिकित्सा से पूर्व शरीर की प्राकृत क्रियाओं का ज्ञान करना अत्यन्त आवश्यक है, क्योंकि रोगाक्रान्त शरीर में चिकित्सोपरान्त स्वाभाविक क्रियाएं ही स्थापित की जाती है। जब तक हमें शरीर की प्राकृतावस्था का ज्ञान नहीं होगा तब तक विकृतावस्था में होने वाली वैकृत क्रियाओं का ज्ञान कैसे होगा ? आयुर्वेदीय क्रिया शारीर की दृष्टि से दोष धातु मलों को शरीर का मूल माना गया है। शरीर में स्थित दोषों की साम्यावस्था शरीर आरोग्य के लिए आवश्यक है। इनकी विषमावस्था से ही शरीर में विभिन्न रोगों की उत्पत्ति होती है। इन तीनों दोषों में ही अग्नि रूपी पित्त से ही मनुष्यों की धातुओं का पाक होता है तथा यह पित्त विकृत होने पर अनेक विकारों को उत्पन्न करता है। आयुर्वेदीय शास्त्रों में पाचन एवं चयापचय के लिए पाचकाग्नि का विस्तार से वर्णन किया गया है। पाचकाग्नि अन्न का पाचन कर उसके अवयवों को सूक्ष्म बना देती है। जिससे अन्य अग्नियां उसका पाचन सुगमता से कर देती है। पाचकाग्नि की विकृति होने पर आहार का सम्यक् रूप से पाचन नहीं हो पाता है जिसके कारण आम की उत्पत्ति होती है। यह आम शरीर में विभिन्न व्याधियों की उत्पत्ति के लिये उत्तरदायी है क्योंकि सभी व्याधियाँ मन्दाग्नि से उत्पन्न होती है। वर्तमान व्यस्ततम युग में व्यक्ति के आहार विहार में आधुनिकता का समावेश होने से इसमें व्यतिक्रम देखने को मिलता है। आहार विहार की समता न होने से व्यक्ति में विशेष रूप में आम दोष की उत्पत्ति होती है। यह आम दोष भविष्य में विभिन्न प्रकार की व्याधियों का कारक सिद्ध होता है। आमदोष जन्य रोगों की विकरालता को देखते हुए इसकी उत्पत्ति में होने वाली शरीर क्रियात्मक प्रक्रियाओं के अध्ययन का अध्येता ने प्रयास किया है।

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Conceptual Study

Pathophysiological Study of *Pachakagni* W.S.R. To *Amadosha*

Dr Mahesh Chand Purvya, Prof M S Meena

Introduction:

Ayurveda is science of life and designed for the achievement and maintenance of sound health. It has some basic principles for the achievement of its goal as described in various classics. Among those principle and concept of agni have a prime importance in the fulfillment of this goal of ayurveda. Imbalance of dosha directly affects the state of agni. Concept of agni is come under the head of pitta and essential for the digestion, metabolism and biotransformation of food. According to Acharya Charak ayu, varna, bala, swasthya, utsaha, upchaya, prabha, oja, teja, agni and prana all are depend on dehagni. It itself shows importance of agni in human body. Therefore, it is necessary to study about physiology of agni. It will help in study of various pathological conditions of agni. Pathological state of agni may lead to various disorders or in other words it is root cause of all disorders. It has been stated that concept of agni is discussed under the head of pitta but it is not actually pitta. It is one of the normal functions of pitta. Agni is one of the health determining factor and directly affected by state of dosha in the body. Besides this several factors are there, by which agni is affected like age, season, sharirik prakriti, feelings of mana, type of food, diet pattern, dincharya, etc. Agni must be maintained according to these factors for which detailed regimen has been described. Major attention should be paid on diet pattern and life-style because it directly affects jatharagni which is root of all the agni. If it is not properly followed, pathological changes are taken placed and outcome will be in the form of ayoga or atiyoga or mithyayoga. Among those ayoga and mithyayoga form of pathology is more common and atiyoga is the severe form of agni pathology. Ayoga of agni or mandagni is root cause of all diseases of the body not only at local level but at systemic level also. Tool of this pathological state of agni is ama which is end product of the action by insufficient or weak agni and has the meaning of immature or intermediate state in any metabolic or biotransformation reaction. Pathology related with ama can be discussed at two levels, i.e. local and systemic. When ayoga is occurred at jatharagni level, it is not capable to digest the food within time even taken in less quantity. Final product may be undigested or semi-digested and causes various local GIT disorders as like visuchika, alsaka, etc. When ayoga is occurred at dhatvagni or bhutagni level, systemic ama is produced and causes various systemic disorders like amavata, etc.

In this way, agni and its various pathological states are very important in determination of health especially in context of current era. As it is already stated that diet pattern and life-style have important role in determination of the status of agni. It is well known that today everybody is living a very fast life and very busy to achieve highest goal in his life in the terms of money, power, society status, job status, etc. In this rush he has forgotten about his health and become careless towards this. He is eating anything without thinking that it may be harmful or beneficial or in other words he is not follow regimen of eating. This is only one example, such type of several examples are seen in our so called modern society. This type of altered life-style and diet pattern directly affects agni and causes various disorders related with life-style. We are living with various pathological conditions and going far away from our classical or natural life-style and nearer to various disorders.

Aims:

1. The applied aspect of this study is to reevaluate the concept of agni and its physiology as well as various states of its pathology also.
2. By this study we will able to establish a complete and properly arranged conceptual basis regarding its pathophysiology.
3. Agni is badly disturbed by today's life-style and diet pattern. This conceptual study may be implemented for the correction of various cases having problem related with agni.

Materials:

Only textual materials are used for this study from which various references have been collected. Main Ayurvedic texts used in this study are Charak Samhita, Susruta Samhita, Astang Sangrah, Astang Hridya and available commentaries on it. Non-Ayurvedic texts are also used in this study like Veda, Purana, Darshana, Upnishad, etc.

Why this topic?

1. Agni is one of the health determination as well as health maintenance factor as described by Acharya Shusruta in the definition of health.
2. Its importance is also great in the context of pathology because all the diseases are originated due to mandagni.
3. Status of agni depends on various factors. Among those life-style and diet pattern are very important which are badly affected in present era. Therefore people are suffering with various problems related with agni and this study will be more useful.
4. Ama state not only causes acute and local disorders but also causes chronic and systemic disorders. These diseases are increasing day by day.

Conceptual study:

Concept of agni and pachakagni: Agni has the meaning of rising above and extensiveness everywhere. It has the property of heat and fire. Agni is the basic constituent of body and has been considered under the head of pitta. Agni is one of the major function of pitta. According to the theory **'पुरूषोऽयं लोक सम्मितं'** *agni* is the representation of agni mahabhut in the body but it is not identical to laukik agni but it has the basic property of agni i.e. transformation of one factor into another. It is responsible factor for the digestion, metabolism and biotransformation of food according to dhatu at various levels. Thus it is one of the major sign of life and found in whole body. But root of all the functions related with agni is situated in grahni and this is known as jatharagni or pachakagni. It is responsible for the nutrition of sharir, dhatu, oja, bala, varna, etc. Jatharagni performs its function with association of *kledaka kapha, pachaka pitta, samana vaayu, vyana vaayu* and *kala*. As it is stated previously that it is situated in naabhi and provide strength to various forms of agni which are situated in whole body. So, all the functions related with agni of whole body is totally depend on homeostasis of jatharagni while, homeostasis of agni depends on various factors, e.g. homeostasis of dosha, vaya or stage of life, time, season, feelings of mana, diet pattern, life-style, etc. Among those diet and diet pattern is most important and potent factor and disturbs agni at each and every level of tissue nourishment. Because status of agni is totally depend on diet and diet-pattern as it is most potent component for the maintenance of homoeostasis of dosha in the body and this diet is badly affected by current life-style.

Types of agni-

A. On the basis of bala agni is of four types, i.e.

(i) Tikshnagni due to predominance of pitta dosha as in pittaj prakriti person.

(ii) Mandagni due to predominance of kapha dosha as in kaphaj prakriti person.

(iii) Vishamagni due to predominance of vata dosha as in vataj prakriti person.

(iv) Samagni due to homeostasis of tri-dosha as in sama prakriti person.

B. On the basis of position and function agni can be classified in three groups, i.e.

(i) **Jatharagni-** situated in jathar and digests the food at gross level as well as root of all the agni of body.

(ii) **Bhutagni-** situated in whole body and act on concerning bhautik portion of food and transform those according to shariric bhuta.

(iii) **Dhatavagni-** situated in whole body and assimilates the anna-rasa according to dhatu and nourishes dhatu, updhatu and mala.

In this way, jatharagni digest and transform the food at gross level. Bhutagni transforms the laukik panchamahabhuta into shariric panchamahabhuta in the terms of their guna. Dhatvagni transforms digested and assimilated food according to various dhatu as well updhatu at their levels. These various agni are also responsible for the proper formation

and nourishment of all mala in the body. All the forms of agni which are situated at various levels in the body, are governed and strengthen by pachakagni or jatharagni.

Physiological consideration of pachakagni: Like other physiological factors samayoga of agni is normal condition and can be considered as physiology of agni. Jatharagni is situated in pittadhara kala and digest four types of food at gross level and nourishes the body. This action can be discussed at two levels, i.e. prapaka and awasthapaka.

Prapaka- First of all, ingested food is crushed by prana vaayu and carried in stomach where it is moistened as well as softened by kledaka kapha. Now, agni digest that food by inclination of samana vaayu as like rice is cooked by flame. Digested food is separated into essence and waste portions. It is gross digestion of food.

Awasthapaka- Further digestion is taken place in the term of awastha according to tridosa e.g., madhur, amla & katu. In other words it can be said that in the process of digestion food is passed through various stages according to tri-dosha at their respective places in GIT, i.e. amashaya, pachayamanashaya and pakwashaya. In the first step, food is reached in amashaya and after digestion it is converted into madhur awastha. In this stage food is become madhur rasa predominant and fenabhut by which kapha is produced. After that food is reached in pachyamanashya and converted into amla awastha. In this stage food is become vidhagdha which has the meaning of semi-digested by which pitta is produced. In both the stages mentioned above food is in semi-solid state. Finally, food is reached in pakwashaya and converted into katu awastha. In this stage, food is completely digested and its essence portion has been absorbed. Only waste portion of food is reached in pakwashaya and become solid as well as converted into katu bhav by which vaayu is produced. In this way food is passed through various stages according to madhur, amla and katu factor predominance. These stages nourish tridosha at their respective places and their normalcy is maintained.

The essence portion of food is known as anna-rasa and responsible for the nourishment of dhatu, updhatu and mala at every level. Anna-rasa is carried by vyan vaayu to whole body through srotus and nourishes it at various levels with the action of bhutagni and dhatvagni. Physiology of bhutagni and dhatvagni is totally depend on physiology of pachakagni as it is root of all the agni and provide strength to the functions of rest of the agni of the body. So, physiology of pachakagni must be maintained by correct diet and diet-pattern.

Pathological consideration of pachakagni: Like other causative factors of diseases pathology of agni can be discussed in three forms-

1. Ayoga of agni known as mandagni.
2. Atiyoga of agni known as tikshnagni or atyagni or bhasmaka roga.
3. Mithyayoga of agni known as vishmagni.

Vishmagni- It is due to aggravation of vata dosha which vitiates agni and produces this pathological state. In this pathological state of agni; digestive, metabolic and biotransformation activities are hampered or disturbed due to aggravation of vata dosa. In other words, physiology of agni become visham i.e., sometime it digest the food properly and sometime not. It causes visham condition in dhatu also and produces vataj disorders like udar-shool, anaha, adhyamana, atisara, vibandha, antra-kujana, etc.

Tikshnagni or atyagni or bhasmaka roga- It is due to vitiation of agni by aggravated pitta and vata dosha. Above mentioned three terms are not same, as these are various stages of pathology of pitta dosa at the level of agni. First stage in this pathology is tikshanagni which digest the food in very short period. If this stage is avoided, tikshanagni is converted into atyagni. Some scholars considered atyagni as synonym of bhasmaka. It is responsible for the shoshan of dhatu and produces pittaj diseases like talu-shosa, daha, osta-sushkata, santapa, etc.

Mandagni- It is very important pathological state and caused by vitiation of agni due to aggravated kapha dosha. In this condition, agni is not capable to digest the food within time even taken in less quantity. Final product may be undigested, semidigested or immature and termed as ama. As it is stated previously that it is very important

pathological state because all the diseases produced by mandagni and causative factor is ama. It will be discussed in detail in proposed research paper because ama is produced at every level of the agni physiology by today's life-style and diet pattern.

Among three types of pathology of agni mentioned above, basically two types mandagni and atyagni are major one and described in detail and play important role in causation of diseases because vata dosha creates the both types of pathological conditions which can be included in mandagni and atyagni. Atyagni causes only diseases related with kshaya while mandagni causes systemic disorders at each and every level that is why described in detail by Ayurvedic seers.

Concept of ama: The word 'ama' has the literal meaning of undigested, semi-digested or immature and responsible for the direct causation of disease that is why one synonym of disease is 'amaya'. Ama is produced by vitiation of agni by any dosha, i.e. vata, pitta or kapha which results in lower power of agni or durbala agni. Although all the dosha involved in vitiation of agni but type of pathology created is mandagni which is unable to digest and assimilate the food even taken in less quantity. Consequently, intermediate products begin to be formed at various levels. Ama has the property of visha and able to intermingle with any factor of body which may be anatomical or physiological. So, ama is intermediate product in the course of mandagni at any level i.e. jatharagni, bhutagni or dhatvagni. Concept of ama can be discussed at two levels, i.e. local and systemic.

Local ama- It is produced by the weak jaharagni and by food taken in excess quantity according to digestive power. Food is semi-digested or indigested and fermented. It is termed as anna-visha because it creates pathology like visha. It creates symptoms and disorders related with GIT like visuchika, atisar, pravahana, trisna, etc. Some symptoms are general due to anna-visha and some are due to association with other body factors like tri-dosha, purisha, mutra, dhatu, etc. If this situation persists longer grahini is vitiated and grahini-roga is produced.

Systemic ama- It is produced at the level of anna-rasa. This ama-anna-rasa is mixed with rasa-dhatu and carried to whole body by vyaan vaayu. Ama has the properties of visha and atipichhila. So, it has the tendency to intermingle with dosha, dhatu, updhatu, mala, etc. Due to atipichhila guna it causes sroto-avarodha by which dosha are aggravated of that particular region and further agni is vitiated and ama is produced which causes pathology in anatomy and physiology of that region. This cycle is continuous going on and various systemic diseases are produced.

Discussion:

Ayurveda is an absolute science and tells absolute principles for health maintenance as well as treatment also. Among those principles agni is one and placed at second position in health maintenance principles after dosha. Agni has been discussed under the head of pitta which is placed at the prime place from the pathological point of view because all the diseases are caused by mandagni. Homeostasis of agni is only maintained by prescribed diet and diet pattern at gross level. That is why hitkar ahara is only one factor which is considered absolute necessary for the proper development and maintenance of purusha and included in upstambha at prime place. As well as ahitakar ahara is considered as causative factor for the development of various diseases. Because hitkar ahara maintains the homeostasis of agni by which whole body is nourished and there is no chance for the production of ama.

Generally ama is produced due to mandagni but in current era it is also produced due to altered diet-pattern in the terms of asta-ahara-vidhivishesh-ayatana, ahara-vidhi-vidhana, trividha-kukshiya principle, agni-bala principle, etc. In the rush life-style we do not take pain to think that whatever we are taking in food is beneficial or harmful for body. Untimely food, unplanned fasting, imbalanced diet, lack of fruits, green vegetables, milk and ghee in daily routine, increased use of tea, coffee, alcoholic drinks, smoking, etc in daily life, lack of exercise in daily routine, late-night awakenings and sleeping up to late morning, these are some examples which are commonly found in the life-style of the people of current society. This type of disturbed life-style vitiates agni by vitiating tridosha. The result is production of ama at various levels. It is the first

pathological state by which various types of local and systemic diseases are produced. This state can be completely avoided by certain corrections in today's life-style especially in context of diet and diet pattern.

Study on agni is very important from pathological point of view because all the diseases are originated due to mandagni and kaya-chikitsa is also known as agni-chikitsa. For the study of pathology, physiological study is essential. By this study it has been tried to reevaluate the concept of agni and its physiology which is absolutely essential for the study of its pathology with special reference to ama. Concept of ama is also reevaluated by this research work. Study of ama and its pathogenesis is also equally important especially in current era due to such type of life-style especially diet and diet pattern which vitiates agni and produces ama. This ama further vitiates agni and further ama is produced. This cycle is continuously going on and different types of disorders are increasing day by day. This research work will be helpful in the prevention of such type of conditions and if diseases are manifested already, helps in the treatment also.

Conclusion:

- Homeostasis of agni is very important for the maintenance of health as it is included in the definition of health by Acharya Susruta.
- Its pathology is also very important because all the diseases originated by mandagni, therefore Acharya Charaka have mentioned pitta as prime place in context of pathology of dosas.
- In the pathology of diseases produced by mandagni, the first stage is ama which works as tool for diseases causation.
- Due to important role of agni in physiology, pathology & treatment of diseases, it can also be stated that definition of kaya-chikitsa has also been given in the terms of agni-chikitsa.
- This condition can be completely prevented by the implementation of certain principles like diet and its regimen, sleep and its regimen, exercise, etc in current life-style because all these factors are badly disturbed by current life-style.

References:

- Rigaveda, Dayananda bhasya, Dayananda sansthan, New Delhi.
- Yajurveda, Dayananda bhasya, Dayananda sansthan, New Delhi.
- Samaveda, Dayananda bhasya, Dayananda sansthan, New Delhi.
- Atharavaveda, Dayananda bhasya, Dayananda sansthan, New Delhi.
- Vrahataranyakaopanishada, Shankar bhasya, Geeta press, Gorakhapur.
- Agni purana, Pt. Srirama Sharma Acharya.
- Amarakosha, Amara Singh, Chowkhamba Sanskrit Sansthana, Varanasi.
- Shabdakalpadruma, Sri Raja Radha Kanta Dev.
- Vachaspatyama, Sri Taranath Tarka Vachaspati.
- Vaidyakashabdasindhu, Sri Vamana Shivaraja.
- Charaka Samhita of Maharshi Agnivesha with Ayurvedadipika commentry of Chakrapani.
- Susruta Samhita of Maharshi Susruta with Nibandhasamgraha commentry of Dalhana.
- Astang Samgraha of Maharshi Vagbhat.
- Astang Hridya of Maharshi Vagbhat.
- Kashyapa Samhita of Maharshi Kashyapa.
- Sarandhar Samhita, Acharya Sri Radhakrishna Parashara.
- Madhav Nidana of Acharya Vijayrakshita.
- Bhavaprakasha of Acharya Bhava Misra.
- Bhela Samhita of Maharshi Bhela.
- Harita Samhita, Vaidya Ravidutta Shastri.
- Ayurveda Kriya Sarira by Vaidya Ranjitarai Desai.
- Ayurveda ka vaiganika itihasa by Acharya P.V.Sharma.
- Ayurveda Kriya Sarira by Vaidya Shiva Kumar Gaud.
- Padartha vigyana by Dr. Ravidutta Tripathi.
- Tridosha tatva vimarsha by Kaviraja Ramraksha Pathak.
- Dristartha sariram by Pt. Athavale.
- Dosha dhatu mala vigyana by Dr. V.V.Athavale.
- Itroduction to Kayachikitsa by Dr. C. Dwarkanath.
- Concept of jatharagni by Dr. C.M. Sharma.
- Textbook of Medical Physiology of Guyton.
- Concise Medical Physiology of Choudhary.
- Human physiology of C.C. Chatterjee.
- Textbook of Pathology by Harsha Mohan.
- Practical pathology and microbiology by Ram Sood.

Conceptual Study

Beauty Aids And Cosmetics In Ancient Indian Literature

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Abstract

In India, beauty aids and cosmetics were in use from pre Vedic and Vedic periods. Earlier these beauty aids and cosmetics were used in social customs and domestic rituals and later gradually became part and parcel of human life. Moreover it is the human tendency to try for individual unique entity to attract his/ her fiancée. There were many references in ancient Indian literature regarding the usage of beauty aids and cosmetics. AtharvaVeda Samhita, Yajurveda Samhita, Mahabharata, Ramayana, Samkhayana Grihyasutra, Satapatha Brahmana, Vatsayana Kamasutra, Bhavishya Purana, Khuddaka patha, Koutilaya Artha Sastra, Kuchimara tantra, Haramekhala; Charaka, Susruta etc. Ayurvedic texts are some of the examples of those ancient Indian literatures.

This article highlights those ancient Indian literatures to aware the scientific fraternity regarding the glory of ancient Indian beauty aids and cosmetics.

Key words: Anjana, beauty aids, Indralupta, Khalitya, Kesajanana, Darunaka

Abbreviations: Cha. Su – Charaka sutra sthana; Su. Su- Susruta sutra sthana; Su.Chi- Susruta cikitsasthana.

सारांश–

मानव जाति का क्रमिक विकास एवं सभ्यता के दिन से ही सौंदर्य एवं अङ्गराग सामग्री का विकास होना आरम्भ हुआ। सभी मनुष्य उनके अस्तित्व को समाज में बचाये रखने के साथ–साथ उनके प्रति उनके प्रेमियों को आकृष्ट करने के लिए प्रयत्न करते आ रहे हैं। भारतवर्ष में यह प्रक्रिया वैदिक काल से आज तक चली आ रही है। भारत वर्ष में अथर्ववेद, यजुर्वेद, महाभारत, रामायण, कौटिल्य–अर्थशास्त्र, कुचिमारतंत्र, हरमेखला इत्यादि ऐतिहासिक ग्रन्थों के साथ साथ चरक, सुश्रुत इत्यादि आयुर्वेद ग्रन्थों में इन सौंदर्य एवं प्रसाधन (अङ्गराग) सामग्री के बारे में भारत वर्ष में जो जानकारी थी उसे संदर्भ सहित आधुनिक वैज्ञानिक समाज के सामने लाना इस प्रबन्ध का उद्देश्य है।

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Introduction

Development of beauty aids and cosmetics is as old as evolution and civilization of human beings. Every human being tries for his entity physically and socially in various facets of life including the attraction of his/ her fiancée. Hence it has become customary with human beings in all ages and climes to use cosmetics. A savage person whose worldly possessions are few, and whose daily means of sustenance is furnished by hunting and fishing also sticks feathers into his hair, paints his body with various designs and arranges his coiffure in various fantastic forms as it gives him pleasure, raises him in the estimation of his fellow beings and has a magical significance to him. This attitude has been continuing in India from those ancient days and there were many literary evidences for advancement of those beauty aids and cosmetics. These literatures are having significance in comparison to contemporary traditional wisdom.

Vedic and Contemporary Ancient Indian literature

In Indus valley civilization, about 2500 years before the Christian era, "Kohl" was applied to the lashes, eyelids and the part immediately below the eyebrows. Gold, Silver & copper ornaments like earrings, nose studs and bracelets were used as beauty aids. Hairpins, combs and mirrors served as important articles for the make-up and arrangements of coiffures[1]

Collyrium was applied to the eyes, the hands and feet were anointed at the time of sacrifices and the articles of cosmetics, such as body and eye paint, comb and flowers were offered to the Celestial Serpent (Samkhayana Grihyasutra, IV.15, 6-11)[1]. Different types of razors were used at Mohenjodaro for depilatory purposes[2]. Rivers, tanks and wells served as bathing places, though on special occasions such as marriage, the bride was washed with water that had been made fragrant by all sorts of herbs and choicest fruits together with scents (Sankhayana Grihyasutra I, II, 2.). In Satapatha Brahman it was mentioned that after the bath eyes and feet were anointed to keep off death from themselves[3].

In Aswalayana Grihyasutra Brahmacharin, after finishing his studies, was equipped with a jeweled necklace, a wreath, two earrings, a pair of garments, a turban, a parasol, a pair of shoes and a staff as beauty aids. For cosmetic purpose Karanja (Pongamia pinnata Pierre) seed is used as powder, ointment and eye salve. Eye- salve (Anjana) is frequently mentioned in the AtharvaVeda. In Yajurveda Samhita Anjanakari name was mentioned for a female collyrium maker who probably earned her bread by manufacturing Anjana[4]. In Aithreya Brahmana (1.3) Anjana was considered to impart luster to both eyes. In Satapada Brahman and Atharvaved (Yathanjanam Traikakudam Jatam himavatspari - A.V.4-9.9), the origin of Anjana was mentioned. Indra killed Vritra and slew away, which was transformed to mountain Trikakud (which is modern Trikota in the north of Punjab and south of Kashmir). This Trikakud is considered as the origin of Anjana[5].

In Rigveda the Vedic women wore their hair in different shapes called as Stukla, Kurira, Kumba, Opasa and Kuparda. The young women wore their hair in four Kupardas[6].

Kushtha (Saussurea lappa GB Clarke) was used as a scented drug with multiple indications and also as a cosmetic. In Atharvaved different qualities and importance of Kushtha was mentioned. Pastes of Kushtha (Saussurea lappa GB Clarke), Yashthimadhu (Glycyrrhiza glabra Linn), Nalada (Vetiveria zizanioides(Linn) Nash) and Anjana (collyrium) were used externally as a cosmetic for cooling effect[7].

Vatsayana in his Kamasutra gives us detailed information about the toilet and its accessories

(beauty aids and cosmetics). The requisites of toilets mentioned were Anulepan (ointment), Siktha-Karandaka (a basket of garlands), Saugandhika Putika (scent box), Matulunga Twacha (skin of the Citrus medica fruit) and betel leaf [8]. It was mentioned that a person after attending the call of nature, cleaning of the teeth, bath etc. should apply sandal or other fragrant pastes; wore fragrant smoke fumigated cloths; put on garlands and applied collyrium to his eyes and lac-dye to his lips, and after looking into the mirror and being satisfied with his beatification he was advised to chew few betel leaves and to proceed for day to day work[9].

In this text it was also advised to take bath every day; massage and shampoo (Utsadana) every alternate day; cleaning body with soap like substance which yields lather (Phenaka) on every third day; shaving of chin at every fourth day and detailed depilatory operations on every fifth and tenth day. Turmeric (Haridra), Saffron (Kunkuma), red lead (Sindhura) and collyrium (Kajjala) were used for decoration by both male and female[10]. Vatsayana advises a housewife not to present herself before her husband without ornaments on her person[11].

Vatsayana described Subhagamkarana yogas for the protection and enrichment of beauty of the body parts. Ointment prepared from Tagara (Valeriana wallichii DC), Kushtha (Saussurea lappa GB Clarke), Talisa Patra (Abies webbiana Lindi.) is used externally as Subhagamkarana preparations. Powder of Padma (Nelumbo nucifera geartn), Utpala (Nymphaea stellata Willd.), Nagakesara (Mesua ferrea Linn,) along with honey or ghee is indicated internally as Subhagamkarana. In Vatsayan Kamasutra 64 arts (Kalas) were mentioned[12]. They are

1). "Viseshaka Chedyam" means decorating face, breast, hair and other body parts with Tilaka (a type of paint)

2). "Dashana-vasanangaraga" means decorating teeth, cloths beautifully.

3). "Gandha –Yukthi" means perfume-preparing techniques

4). " Karna-patra-Bhanga" is a technique to decorate earlobes with ivory and conch shell made ornaments[12].

Angaraga descriptions in Ramayana

There were many descriptions related to beauty aids and cosmetics in various Kandas of Valmiki Ramayana, in general and Sundarakanda in particular. Important description regarding Angaragas (Anga means body, Raga means beauty) are produced and presented by Anasuya Devi (wife of sage Atri) to Sita Devi during her visit to their Asram[13].

Anasuya Devi blessed Sita Devi with everlasting flowers, clothes, ornaments and external applications that increase the glamour and beauty of the body.

"Idam Divyam Varam Malyam Vastramabarananicha
Angaragamcha Vaidehi Maharhyam canulepanam
Mayadatta Midam Site tasa gatrani Shobhayet
- Ayo. Kh. Ram. 118 Sarga. Sl. 18

In Sundara kanda Sita Devi tells Hanuman that, Sri Rama puts Tilaka (a mark or beauty spot, made on the fore head) with Manahshila (Red orpiment)[13].

Puranas

While describing Lord Krishna, Kasturi Tilaka (Beauty spot on fore head drawn by Kasturi a fragrant material obtained from musk deer; Kousthubha (ornament) on chest, pearl over nose, Kankanam (bracelet) around wrist, necklace made up of pearls and total body applied with Hari Chandan (the yellow and fragrant sort of sandal wood) etc. indicates the tradition of ancient Indians using beauty aids in their day to day life

"Kasturi tilakam lalata phalake vaksha sthale koustubham

Nasagre navamauktikam karatale venum kare kankanam

Sarvange harichandanam chalakalayan kanthe muktavalin"[14]

In various Hindu Puranas, Dharma Shastras while describing Homa, Japa of various Devata (deity or god) different ancient beauty aids were mentioned Viz. "Nilanjana Sambhasham" – in Shani Deity prayer, Sugandhi Pushti Vardhanam and Gudakesha in Shiva deity prayer. In Bhavishya Purana Madhyama Parva

2nd part and 2nd chapter painting over ladies nails, breast and different hairstyles were also described [15].

Kautilaya Artha Shastra

Though the text mainly deals with political science and Economics, it also has the descriptions of many Ayurvedic herbs, metals, herbo-mineral preparations and poisonous substances. It has the descriptions of many fragrant drugs, which were used as cosmetics like Sandalwood, Agaru (Aquilaria agallocha Roxb.) and TailaParnika (Eucalyptus?). Candana (Sandalwood) was used as Anulepan (external application) as beauty aid and fragrant material. Characters of Sandalwood were mentioned as light, soft, moist (Asyana, not dry) as greasy as ghee, of pleasant smell, adhesive to the skin of mild smell retentive of colour and smell tolerant of heat, absorptive of heat, and comfortable to the skin. Various types of Sandal woods were mentioned. Those were Shatana is red and smells like the earth, Goshirshaka is dark red and smells like fish; Haricandana is of the colour of the feathers of the parrot and smells like tamarind or mango fruit. Likewise Tarnasa, Grameruka is red or dark red and smells like the urine of a goat, Daivasabyeya is red and smells like a lotus flower; likewise Aupaka (Japaka) Jongaka and Taurupa are red or dark red and soft; Maleyaka is reddish white; Kuchandana is as black as Agaru (Aquilaria agallocha Roxb.) or red or dark red and very rough; Kalaparvataka is of pleasant appearance; Kosakaraparvataka (that which is the bud shaped product of that mountain) is black or variegated black; Sitodakiya is black and soft, and smells like a louts flower; Nagaparvataka (that which is the product of Naga mountain) is rough and is possessed of the colour of Saivala (Vallisneria) and Sakala is brown[16].

Agaru (Aquilaria agallocha Roxb.) was said as heavy, soft, greasy, smells far and long, burns slowly, gives out continuous smoke while burning, is of uniform smell, absorbs heat, and is so adhesive to the skin as not to be removable by rubbing; Its types were mentioned as Jongaka which is black or variegated black and is possessed of variegated spots, Dongaka is black and Parasamudraka is of variegated colour and smells like cuscus or like Navamallika (jasminum)[16].

TailaParnika types and characteristic features were described in detail. Among those types Asokagramika, the product of Asokagrama, is of the color of meat and smells like a louts flower; Jongaka is reddish yellow and smells like a blue lotus flower or like the urine of a cow; Grameruka is greasy and smells like a cow's urine. Sauvarnakudyaka, product of the country of Suvarnakudya is reddish yellow and smells like Matulunga (Citrus medica Linn.); Purnadvipaka, the product of the island, Purnadvipa, smells like a lotus flower or like butter; Bhadrasriya and Paralauhityaka are of the colour of nutmeg; Antaravatya is of the color of cuscus- the last two smell like Kushtha (Saussurea lappa GB Clarke); Kaleyaka, which is a product of Svarna Bhumi, gold-producing land, is yellow and greasy; and Auttara-parvataka (a product of the north mountain) is reddish yellow [16].

Some more details of cosmetics as found in Kautilya Artha Shastra Book-XV, Chapter-II[17]

1) The oil prepared from mustard seeds previously kept for seven nights in the urine of a white goat will, when used (externally) after keeping the oil inside a large Bitter gourd for a month and a half, alter the colour of both biped and quadruped animals.

2) The oil extracted from white mustard seeds mixed with the barley-corns contained in the dung of a white donkey, which has been living for more than seven nights on a diet of butter, milk and barley, causes alteration in colour.

3) The oil prepared form mustard seeds which have been previously kept in the urine and fluid dung of any of the two animals, a white goat and a white donkey, causes (when applied) such white colour as that of the fiber of Arka (Calotropis) plant or the down of a (white) bird.

4) Whoever eats the mixture of the powders of the roots of Kukkuta (Celosia argentea Linn?), Kosataki (Luffa acutangula Roxb.), and Satavari (Asparagus recemosus Willd) for a month will become white.

5) Whoever bathes in the decoction of Vata (Banyan tree) and rubs his body with the paste prepared form Sahacara (yellow barleria) becomes black.

6) A bitter gourd, a stinking insect (Putikita), and a white house lizard, when a paste prepared from these is applied to the hair, the latter becomes as white as a conch shell.

In Buddhist Literature:

Usage of beauty aids and cosmetics were restricted for Buddhist monks. All these literature highlight the usage of cosmetics in those ancient days. In Khuddaka patha there are ten Sikkhapadas are admonitions. The 8th Sikkha restricts for wearing of flower garlands, use of perfumes, anointing the body, decorating with brilliant dresses, ornaments etc [18,19].

In another important Buddhist text in Pali, namely, Brahmajala Sutta, an exhaustive list of dressing and bedecking was mentioned as Uchhadana (anointing with perfumes), Parimardhana (rubbing, massaging or shampooing), Adasa (looking one's face in the mirror), Anjana (applying collyrium to eyes), Malavilepana (applying pomade and anointing and wearing flower garland), Mukhacunnaka (applying talcum powder to one's face), Mukhalepana (painting or anointing one's face), Hattabhandha (tying bracelets on arms), Sikhabhandha (plaiting of hair or arranging and hair dressing or coiffure, Citrupanaha (wearing fashionable foot wear), Unhisa (wearing turban), Mani (wearing jewels), Bala Vijam (carrying a smell chowry) and Odaram Vattham Digha – Dasani (wearing embellished and embroidered brilliant garments [19].

Kuchimara Tantram[8]:

Kuchimara tantram is an ancient text dealing mainly the protection and beautification of male and female body parts including genitalia. This is probably the first ancient text meant for better sexual life and enjoyment. Many cosmetic preparations were described for anatomical beautification and physiological well functioning. In the first chapter many oils made from herbs were given for external use to get the desired size, shape and firmness of penis and breasts (Pina sthanibhavet). A special cosmetic technique was mentioned in the 6th chapter named as Kanyakaran. Advocating medicines both externally and internally to attain virginity is called as Kanyakaran. Medicated pastes are advised for application to make vaginal canal to contract and make it similar to that of a virgin. The author says by this procedure the old too can become like Rambha (a Devine Apsara)[20]. Various temporary and permanent depilatories to remove unwanted hair were also explained in 8th chapter[21].

Haramekhala:

Mahika a teacher in medicine and erotic wrote this ancient text in Prakrita Bhasha (an ancient language which was in use before Sanskrit). Many cosmetics and beauty aids like, drugs used in Khalitya (bald head), Indralupta (alopecia) and Dharunaka (Dandruff); mouth fresheners; facial complexion enhancers were also described. Drugs for depilatory purpose and breast beautification were also explained. Some examples are given below.

In Khalitya (Bald head or hair falling):

Hasti Danta (Ivory) and Amalaki (Emblica officinalis Gaertn) fruit are made to black ash by Putapaka (a special process to burn or heat substances), this ash is added with the juice of Bhringaraja (Eclipta alba Hassk) and Tilataila (sesame oil) and boiled till the oil remains. This oil is used externally for Kesajanana (hair production purpose) – (4/2)[22].

Ivory black ash is mixed with Rasanjana and Goat's milk and used externally for Kesajanana (hair production purpose) – (4/3)[22].

In Indralupta (Alopecia):

Bhallataka (Semecarpus anacardium Linn), Brihati (Solanum torvum Swartz) are ground with root or seeds of Gunja (Abrus precatorius Linn) and honey, used externally to relieve Indralupta (alopecia) – (4/7)[22].

Japa (Hibiscus rosa–sinensis Linn) flowers are ground in black cow's urine and applied externally to relieve Indralupta (alopacia). (4/6)[22]

In Darunaka (dandruff):

Nilotpalam (Nymphaea stellata Willd) flowers, Kesara (Mesua ferrea Linn), Yashtimadhu (Glycyrrhiza glabra Linn) should be taken equally and added with total quantity of Dhatri Phala (fruit of Emblica officinalis Gaertn) all these ingredients are made paste and applied externally to relieve Dharunaka (dandruff). – (4/11)[22]

Dhatri Phala (fruit of Emblica officinalis Gaertn), Aragvada Pallava (tender shoots or early leaves of Cassia fistula Linn), seeds of Prapunnata (Cassia tora Linn) are ground to prepare paste and applied externally to relieve Dharunaka (Dandruff) – (4/13-14)[22].

In Phalitya (gray hair or white hair):

Freshly made Sankha Bhasma (ash of Counch shell prepared by Putapaka) ash of Lead are mixed and applied externally to turn white hair to black – (4/20)[22].

Mango seed kernel, Triphala (three myrobalans), Nili (Indigofera tinctoria Linn) and Bhringaraja (Eclipta alba Hassk) leaf juice, loose mud collected from Lotus flowers stalks and iron filings are mixed and applied externally to turn white hair to black (4/22)[22].

Kesa sukli Karma (to turn black hair into white or gray colour):

External application of sesame oil prepared from the sesame seeds which were soaked and dried (Bhavana) in the latex of Nihunga (Snuhi – Euphorbia nerifolia Linn?) turns black hair into white. (2/66)[23]

Kesa Satanam (depilatory)

Pippali (Piper longum Linn) fruits are soaked and dried (Bhavana) in the latex of Nihunga (Snuhi – Euphorbia nerifolia Linn?) and powdered. This powder is mixed with equal quantity of Dhatri Phala (fruits of Emblica officinalis Gaertn) and applied externally as depilatory(2/70)[23].

To relieve Vyanga (hyper pigmentation on face):

External application of the paste prepared from seed powder of Badara (Zizyphus jujube Lam), honey, butter and jaggery relieves Vyanga (hyper pigmentation) – (4/90)[24].

To get good complexion:

Paste prepared from de husked Yava (Hordeum vulgare Linn); white mustard, Yashti (Glycyrrhiza glabra Linn) and Lodhra (Symplocos racemosa Roxb) gives good complexion (4/91)[24].

For beautifying the breast:

Mahisha (Buffalo), Suukara (Pig) and Kari's (Elephant) fat, serpent's flesh is ground and made as a paste and applied externally on breasts to get firmness in the breasts – (4/111)[24].

For beautification of eyes:

Candana (Sandal wood), Karpuram (Camphor), Ela (Elettaria cardamomum Maton), Patra (Cinnamomum tamala Nees & Eberm), Kushtha (Saussurea lappa GB Clarke), Yashti (Glycyrrhiza glabra Linn), Nagakesara (Mesua ferrea Linn) are powdered and mixed equally. The total mixture is added with equal quantity Sauviranjanam (a type of Collyrium) and applied externally to the eyes (5/15)[25].

Mouth fresheners:

Tablets prepared from Kakkola (Piper cubeba Linn?), Puga (betel nut), Khadira (Black catechu, Jatiphala (Nutmeg), sweet Mango fruit kernel, Kasturi (Musk), Camphor, Saffron, Sandal wood, Mace (Japatri) etc can be used as mouth fresheners – (5/17)[25].

Beauty aids and cosmetics in Ayurvedic literature:

Ayurveda, the science of life has given equal importance for health and beauty of the body. The cosmetics, beauty aids and beautification procedures mentioned in Ayurveda not only gives beauty but also increases physical, mental and spiritual health. Special procedures like Abhyanga (body massage by medicated oil), Udvartana (massage of dry powder in the opposite direction of hair follicle), Anjana (Collyrium), Nasya (snuff), Gandusha (medicated gargling), Netravasti (application of medicated oil/ghee over eye orbit for certain period with tolerable temperature), Svedana (diaphoretic), Anulepana (application of medicated ointments or anointing over body surface), Pariseka (sprinkling of medicated liquid over body surface), etc. procedures were developed and advocated to protect and enhance beauty and health. In many Ayurvedic classics massage (Abhyanga) of different body parts and their uses, various collyriums, snuffs, ointments and internal medications are described for cosmetic purpose. Yavanapitika (pimples), Darunaka (dandruff), Khalitya (hair fall), Palitya (white or gray hair), Indralupta (alopecia), Vyanga (hyper pigmentation on face), Nyaccha (hyper pigmentation

over skin), Nilika (Telangiectasia), Padadari (cracks on foot), Tilakalaka (black pigmentation) etc. diseases, which damage the beauty of the body, were grouped under Kshudra Rogas. Various treatments and procedures for these ailments were described in detail to restore the beauty and the health. Chandana (Santalum album Linn), Usira (Vetiveria zizanioides(Linn) Nash), Manjishtha (Rubia cordifolia Linn), Sariva (Hemidesmes indicus R. Br) etc. drugs were mentioned in Charaka Varnya Dasaimani (drugs which provide good colour and complexion); Kushthaghna (drugs indicated to relieve various skin diseases) and Kandughna (anti itching drugs) are other groups of drugs can be used as cosmetics(Cha. Su. 4/10, 11)[26].

In Susruta Samhita importance was given to perfumes as beauty aids to beget pleasantness "Sukhanubandi Soshmascha Sugandorochanomriduh" – Su. Su. 46/521[28].

Agaru (Aquilaria agallocha Roxb.), Karpura (Camphor), Kasturi (Musk) etc are the some of ancient perfumes. Collyriums like Sauviranjana, Rasanjana, Pushpanjana were used for beautification of eyes and to relieve eye diseases. Various Siro Abhyanga Tailas (oils for head massage) like Jivanti Taila, Bhringaraja Taila, Bhringamalaka Taila, Mahanila Taila, Madhuyasti Taila etc were used to increase the beauty of hair and to relieve the diseases like Khalitya (bald head), and Palitya (early gray hair).

Various Anulepas (external applications) were indicated for good colour, strength and to get rid off foul smell.

"Saubhagyadam Varnakaram Prityojo Balavardhanam Sweda Daurgandya Vaivarnya Sramaghna Lepanam". Su. Chi 24/63[29].

Paste of Patra (Cinnamomum tamala Nees & Eberm), Ambu (Valeriana hardwickii Wall.), Lodhra (Symplocos racemosa Roxb), Abhaya (Vetiveria zizanioides(Linn) Nash), Chandana (Santalum album Linn.) is used to get rid of body odor (Cha. Su. 3/29)[27]. Other important cosmetic procedures mentioned in ancient Ayurvedic classics were "Krishnakarma" - to turn white skin patches to black – Su.Chi.1/90[30]; Pandu Karma [Krishnanam (Vrananam)] Pandu Karmana Savarnikararanam – to turn black skin patches to white- (Dalhana Commentary on Su.Chi.1/94)[30]; "Romasanjanana"-(hair genesis) Su.Chi.1/103[30]; Romashatanam (depilatory) – Su. Chi. 1/106 etc[30].; All these cosmetic procedures and medicines were described in Susruta Samhita, Charaka Samhita, Saramgadhara Samhita etc classical literatures.

Conclusion

Cosmetics and beauty aids mentioned in this article are examples of ancient Indian culture and heritage. It is not an exaggeration if one says number of beauty aids and cosmetics in ancient India are too high than present era. Moreover ancient cosmetics and beauty aids are better in comparison to their usage. Majority of present cosmetics are unhealthy and the techniques adopted for beautification are hazardous. Many cosmetics and aromatics like sandal wood, camphor, Agaru (Aquilaria agallocha), Saffron, Kasturi (Musk), etc. were abundantly used in olden days for beautification and health protection. Instead of using synthetic cosmetics, hazardous to health, these ancient traditional, natural cosmetics mentioned in this article can be used for enhancing the beauty and health. Coiffures and other beauty aids like collyriums, Tilaka (Sacred painting on fore head), ornaments related to various body parts, beautification techniques like massage, rubbing, anointing etc. should be highlighted at global level. Research should also be done on those ancient literatures and steps should be taken to obtain patents on Beauty aids and cosmetics, which are specific to Indian culture and heritage.

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References

1. Motichandra 1940 "Cosmetics and coiffure in ancient India", Journal of the Indian Society of Oriental art, Volume VIII. Pp63
2. Ibid Pp67
3. Ibid Pp 68
4. Ibid Pp 69
5. Ibid Pp 70-71

6. Ibid Pp 72

7. Gopala Rao Mudigonda 1988 "Vedamulu–Ayurvedamu", first edition1988 published by Ayurvignana Granthamala, Pedapadu. Pp349-351

8. Vatsayana 1930 "Vatsayan Kamasutra" Telugu translation and publication by Panchangnula Adinarayans shastri, Parasu Vakam, Veperi post, Madras. Pp 111-112

9. Ibid Pp 115-116

10. Ibid Pp 117

11. Ibid Pp 113

12. Ibid Pp 152-153

13. Prakashchandrasatapathi "Amdacandalato patu anandannicche Ayurveda soundarya sadhanalu", Indian medicine special edition (oct & nov1986) pp 5 5

14. Ibid Pp 56

15. Ibid Pp 59

16. Kautilya 1967 "Kautilya Arthasastra", translated by Maha Mahopadyaya R. Shama Sastry, eighth edition, published by Mysore printing and publishing house. Pp 80-81

17. Ibid Pp 456-457

18. Bhikkhu, J Kashyap 1959 "Khuddhakanikaya" Vol. I, Gen. Ed., Pali publication Board, Bihar Government.Pp4

19. Gangadhara 1989 "Gandhasara and Gandavada", edited by Ramakrishna Tulzaram Vyas, published by Oriental Institute, Vadodara.Pp28-29

20. Muni Kuchimara 2007 "Kucimara tantram", text with English translation by Dr. Goli Penchala Prasad, edited by Uttama Vaidya Pammi Satyanarayana Sastry, 1st edition, published by Chowkhambha Krishna Das Academy, Varanasi. Pp 35-38

21. Ibid. Pp43-44

22. Mahuka Kavi 1986 "Haramekhala", translated to Telugu by Tirumala Ramachandra and Veturi Shankara Shastry, 1st print, published by Gopalacharyulu and Laxmipathi Memorial Ayurveda Sashtra Parishodana Mandali, Gandhi Nagar, Hyderabad Pp70-72;74,75,78,79.

23. Ibid Pp27-29

24. Ibid Pp 107,116,

25. Ibid Pp 258-259

26. Agnivesa 2007 "Charaka samhita, chikitsa sthana" edited by Vaidya Jadavji Trikamji acharya, published by Chowkhambha Surabharathi prakashan Varanasi.32- 33 ;

27. Ibid Pp 29

28. Susruta 2009 "Susrutasamhita" edited by Vaidya Jadavji Trikamji acharya, sixth edition, published by Chowkhambha orientalia, Varanasi. Pp252

29. Ibid. Pp 479.

30. Ibid Pp 404-405

31. Sharma P.V. 1969 "Dravyaguna Vignan" 2nd volume 2nd edition published by Chowkhamba Sanskrit series, Varanasi.

32. Bhavamisra 2002 "Bhavaprakasa Nighantu", commentary by K.C. Chunekar, edited by G.S. Pandey, published by Chowkambha Bharati Academy, Varanasi.

33. Sharma P.V.1997 "Dravyaguna Kosa", 1st edition published by Chaukhambha orientalia, Delhi- 110 007.

34. Phillip Brown Charles 2004 "Telugu- English Nighantu" first revised reprint, Victory publishers, Vijayawada.

Conceptual Study

Menopausal Syndrome (A Conceptual View)

***Prof. C. M. Jain, *Dr. Mamta Rani*

Abstract :

In most of the women menstruation permanently ceases between 45-50 yrs. In some women this natural phenomenon poses no problems but in some, body responds to these hormonal changes with a group of symptoms termed as Menopausal Syndrome. In today's world this problem is emerging as a burning issue as population of post menopausal women is increasing day by day. There is a need to collaborate Modern medicine as well as Ayurveda to solve this new emerging problem .This article is a step to understand this problem in the present scenario.

Key Words -: Menopause, Menopausal Syndrome, Climacteric, Rajah, Artava, Rajonivritti, Nidanparivarjana, Rasayana, Phytoestrogens.

सारांश–

अधिकांश स्त्रियों में 45–50 वर्ष की आयु में मासिक धर्म स्थायी रूप से समाप्त हो जाता है कुछ स्त्रियों में यह प्राकृतिक क्रिया कोई कष्ट उत्पन्न नहीं करती। पर कुछ स्त्रियों में शरीर इन स्वाभाविक परिवर्तनों के प्रति विभिन्न प्रकार के लक्षण समूह से प्रतिक्रिया करता है। जिन्हें मीनोपॉसल सिन्ड्रोम कहा जाता है। रजोनिवृत्ति पश्चात् आयु की स्त्रियों की जनसंख्या के लगातार बढने से आज के समाज में यह एक ज्वलन्त समस्या बन गयी है। इस नयी उभरती समस्या के समाधान के लिये आधुनिक चिकित्सा शास्त्र तथा आयुर्वेद में सामञ्जस्य स्थापित करने की आवश्यकता है। प्रस्तुत लेख इस समस्या को आज के परिपेक्ष्य में समझने का एक प्रयास है।

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Introduction

A woman is the most important pillar of any family and society and menstruation is the part and parcel of woman's life. Menstruation realizes a woman her reproductive capacity and womanhood. So when menstruation stops a woman undergoes many physical,mental as well as psychological changes. Thought of its cessation brings a feeling of insecurity in them.Loss of feminity, inability to reproduce, fear of symptoms associated with menopause, misbelieves and side-effects about HRT are some of the reasons which disturb a woman during this period.

In most of the woman menstruation usually ends by the age of 45-50 yrs. Cessation of menstruation is termed as Menopause and symptoms associated with it as Menopausal Syndrome. Few decades ago Menopause was considered as a normal aging process and symptoms associated with it were either not treated or treated only symptomatically. At that time average life expectancy was low and Post menopausal population was small ,so this problem was not considered significant. But with changing time average life expectancy for females has increased from 31.7 yrs in 1940 to 65 yrs in 2000,therefore population of postmenopausal age women is increasing and they have 1/3rd of their life ahead. This fact emphasizes the need of specialized health care system and proper attention to problems of women of this age group. That's why few yrs back Menopausal Syndrome was identified and became a matter of concern to health professionals. All these facts emphasize the fact to combine Modern system of medicine and Ayurveda to find out solution to this type of new coming diseases.

Definition-

Menopause is defined as permanent cessation of ovarian function resulting in permanent amenorrhoea. It takes 12 months of amenorrhoea to confirm that Menopause has set in.[1]

There are very few references regarding Menopause in Ayurvedic texts. Regarding the age of Menopause i.e.Rajonivritti Aacharya Susruta said that Menarche occurs at the age of 12 yrs and due to the effect of aging Menopause occurs at the age of 50 yrs-

''तद्वर्षाद् द्वादशात् काले वर्तमानमसृक् पुनः।
जरापक्वशरीराणाम् याति पञ्चाशतः क्षयम्॥[2]
(Su. S. Sa.3/9)

Vagbhata and Bhavamishra mentioned the same age for Menarche and Menopause.[3]

Kashyapa mentioned the age for Menarche as 16 yrs depending upon ahara vihar but has not mentioned any age for Menopause.

But in view of Arundutta these ages are near by ages and not fixed.There can be slight variations in these ages-

'द्वादशादिति प्रायिकमेतत् एकादशवार्षिकाणामपि स्त्रीणां रक्तप्रवृत्ति दर्शनात्। पञ्चाशतः क्षयमित्यत्राप्येवमेव चिन्त्यम्॥[4]'
(Arunduta commentary on A.Hri.Sa.1/7)

To understand kshaya of artava we have to first understand how the formation of rajah or artava occurs-

''रसादेव स्त्रिया रक्तम् रजः संज्ञं प्रवर्तते''[5]
(Su.S.Su.14/6)

Aacharya Susruta explained that from rasa dhatu the rakta named Rajah is formed.According to Vagbhata rakta which reaches to uterus and comes out for 3 days every month is called as Aartava.

''तथा रक्तमेव च स्त्रीणाम् मासे मासे गर्भकोष्ठमनुप्राप्य त्र्यहं प्रवर्तमानमार्तवमित्याहु॥[6]'' (A.S.Sa.1/10)

Chakrapani assumes that rakta called as Rajah is formed by prasad part of Rasa-

'रक्तमपि रजः संज्ञं रसादेव प्रसादभागजन्यम्''[7]
(Chakrapani commentary on C.S.Ci.15/17)

Sarangdhara and Bhavmishra has considered rajah as updhatu of rakta. Arundutta has opinion that rajah is formed by ahara rasa and not from rasa dhatu.[8]

Rajah means menstruation, Nivritti is cessation.i.e. Rajonivritti is permanent cessation of artava pravritti.

Factors Influencing Rajonivritti :-

Rajonivritti's nidana are not mentioned clearly in Ayurveda but important factors influencing this physiological phenomenon are -

1) Kala – Kala is the most important reason for rajonivritti. As kala passes process of aging starts in every individual giving rise to many changes in body including Rajonivritti in females.As a result dhatu kshaya as well as Artava kshaya occurs in women.

2) Swabhava – According to theory of swabhavoparamvada –every thing in this world is liable to destruction. [9]Therefore menstruation as well as reproductive capacity of a woman is to end one day or other naturally,which is termed as Rajonivritti.

3) Dhatukshaya – Due to dhatukshaya all the updhatu including Artava lead to destruction resulting in Rajonivritti.

4) Abhighata – Susruta says that due to Artavavaha srotoviddhata-Vaindhyatva, Mathuna-sahishnuta and artavanasha occurs.[10] This can be considered as Akalaj Rajonivritti.

5) Other factors –Some other factors like Ahara(diet)-vihara,Desh, Kala,Vatavaran,Mansik bhavas are some of the factors which determine early or late aging and hence Rajonivritti.

Samprapti/ Pathogenesis :-

Although there is no specific pathogenesis for Rajonivritti but it described in the following way-

- During Prodhavastha i.e. 45-50 yrs there is swabhavika dominance of pitta with madhayam vata and decline in kapha and during Vridhavastha there is vata dominance with madhayama pitta and kapha kshya.

  During Menopausal period woman is heading from Prodhavastha to Vridhavastha i.e.Vata is getting aggravated in dominance of pitta. Therefore there are symptoms of Vatapitta dominance (specially vata dominance) and kaphakshaya.

- Due to effect of aging or Jaravastha there is dhatukshaya mainly of Rasa and Rakta dhatukshaya along with dominanace of Vata. Due to increased vata agnivaishamya occurs which leads to Jatharagni as well as Dhatvagni – vaishmya. Therefore formation of dhatu specially Rasa dhatu doesn't occur properly. Due to decline in Rasa and Rakta dhatu, Artava is also not formed properly and then Artavakshaya and finally Rajonivritti occurs.

Modern view :-

Menopause generally occurs between 40-45 yrs and average is 47 yrs. Climacteric is the phase of weaning ovarian activity and may begin 2-3 yrs before Menopause and continues for 2-5 yrs after it. During this phase there occurs decline in ovarian activity. In starting ovulation fails, therefore no corpus luteum and hence no progesterone is secreted by the ovary. That's why Menopause is often preceded by anovulatory and irregular menstrual cycles. After some time graffian follicle formation also stops, estrogen activity and finally atrophy of endometrium leads to amenorrhoea .As a result of fall in estrogen level, there is rebound increase of FSH and LH by anterior pituitary gland. Ovaries, fallopian tubes, uterus and cervix get atrophied. The vagina becomes narrow and its epithelium becomes pale, thin, dry and gets easily infected causing senile vaginitis. Vaginal orifice narrows that's the reason for dyspareunia after Menopause.[11]

In starting

Ovulation failure
↓
No corpus luteum
↓
No progesterone
↓
Anovulatory and irregular cycles

After some time

↓
Failure of graffian follicle formation
↓
Estrogen activity is reduced
↓
Atrophy of endometrium
↓
Amenorrhoea (Menopause)
↓
Rebound increase in FSH and LH

Lakshana/ Clinical Features:-

There is no specific description regarding clinical features of Rajonivritti as Ayurveda considers Rajonivritti as a natural change in body and assumes that it is not associated with any symptoms. It is possible that at that time this problem was not so much prevalent. But we can consider symptoms of Menopausal Syndrome under jaravyadhi. Therefore lakshana of Dhatukshaya and Vatapitta dominance are mainly seen along with some Mansik (psychological) lakshanas.

Modern view :-[12]

1) Menstrual Symptoms :-

There can be sudden cessation of menstruation which is permanent. There can be gradual diminution in amount of blood loss with each regular period until menstruation stops. In some cases there is gradual increase in spacing of periods until they cease for 1yr. But if patient comes with continuous bleeding, menorrhagia, irregular heavy bleeding-these are abnormal conditions and should be investigated for malignancies.

2) Other Symptoms :-

Symptoms affecting most of the women are–

(a) General Symptoms

- Hot flushes
- Irritability
- Palpitations
- Lack of concentration
- Mental depression

(b) Neurological :-

- Vasomotor symptoms
- Paraesthesia

(c) Sexual /Genital :-

- Decreased libido
- Dyspareunia
- Dry vagina
- Prolapse

(d) Urinary :-

- Dysuria
- Stress incontinence
- Recurrent UTI
- Urge incontinence

3) Late Sequel :-

Chronic estrogen deficiency during menopausal years can lead to –

- Arthritis
- IHD (Ischaemic heart disease)
- Skin changes
- Osteoporosis
- MI (Myocardial infarction)
- Tooth- decay
- Fractures
- Artherosclerosis
- Ano-colonic cancer
- Stroke
- Alzhiemer's Disease

Relation of Thyriod gland with Menopause

When estrogen is not properly counterbalanced with progesterone it can block the action of thyroid hormone, so even when thyroid is producing normal hormone levels, the hormone is rendered ineffective and the symptoms of hypothyroidism appear.[13]

Hypothyroidism is related to coronary artery disease (CAD) due to hyper-cholesterolemia and hypertension, which increases the risk of artherogenesis. Hypertriglyceridemia and impairement of fatty acids mobilization are also associated with hypothyroidism along with increase in diastolic pressure.[14]

Changes that occur in lipid profile as well as thyroid function after Menopause are not friendly for cardiovascular health of woman. So estimation of thyroid hormone should be done routinely in post menopausal females as precaution for good cardiac health.

Management Of Menopausal Syndrome :-

1) Counselling :-To convince woman about changes in her body and solve her phobia about cancer and other menopausal problems. Advice on contraception is also necessary until permanent cessation of menstruation occurs. Woman should be educated about proper diet.Diet should include at least 1.2 gm of Ca, Vit.A, C,E, Vit.D 400 mg and wt. bearing exercises are also necessary.

2) Mild tranquilizers to relieve anxiety, depression.

3) HRT (Hormone Replacement Therapy):-

Needed in women who are –

- Symptomatic – for 3 to 6 months
- High risk for CVD (Cardiovascular disease), osteoporosis, Alzheimer's disease.
- After Surgical oopherectomy, premature menopause.
- Who demand prophylactic HRT.
- Oestrogens should be given in smallest effective dose for a short possible period of 3-6 months.
- Long term estrogen therapy is beneficial in delaying osteoporosis and reducing the risk of cardiovascular diseases in post menopausal woman.

Risks of HRT :-

- Thromboembolism
- Endometrial cancer if E2 is taken alone.
- Breast cancer is due to progestogens if HRT is taken over 5 yrs.
- Possibility of coronary heart disease if there is history of CVD.

4) Other drugs :-

Tibolone, Raloxifene, Biphosphonates, Clonidine for hot flushes. Androgens to enhance libido.[15]

Line of treatment according to Ayurveda will be –

1) Nidanaparivarjana :-

By taking proper Aahara-vihara, by following Dincharya, Ratricharya, Ritucharya, along with taking measures to relieve stress-strain aging process can be delayed and symptoms associated with Menopause can be minimized.

2) Rasayana :-

According to Jara roga chikitsa sutra Rasayana is the only way to combat symptoms associated with Jara. By definition Rasayana is –

''लाभोपायो हि शस्तानां रसादीनां रसायनम्''[16]
(C.S.Ci.1/1/7-8)

means it is a method of obtaining excellence of Rasa and other dhatus. Rasayana therapy improves tissue nourishment, helps in formation of good quality dhatus and hence increases health and longevity. Moreover it improves mental functions, increases immunity and preserves youth, age,voice, smiriti, medha,prabha, varna etc. Hence Rasayana therapy can be successfully used in Postmenopausal years to minimize dhatukshya and for proper formation of dhatus.

3) Drugs :-

In the management of Menopausal Syndrome drugs which are Vatapittashamak, Rasayana, Hridya, Ojovardhaka, Vatanulomaka, Deepaniya, Balya and Brimhana are the drugs of choice. Some of the drugs which are useful in the management of Menopausal Syndrome are –

- Shatavari
- Chandrashura
- Madhuyasti
- Shatapushpa
- Guduchi
- Aamalaki
- Haritaki
- Bala
- Ashwagandha
- Gokshura
- Bramhi
- Ashoka

- Jatamansi
- Madukaparni
- Vidarikanda
- Soyabean etc.

All these drugs have Rasayana properties which rejuvinate the whole system of the body and subside the symptoms related to menopause.

Phytoestrogens

Phytoestrogens sometimes called dietary estrogens are a diverse group of naturally occurring nonsteroidal plant compounds that because of there structural similarity with estradiol have the ability to cause estrogenic effects.

Properties:- Estrogenic, Antiestrogenic, Antioxidants, Anticarcinogenic, Bactericidal, Antifungal, Antimutogenic, Antihypertensive, Antiinflammatory and Antiproliferative.

Herbal drugs like Shatavari, Vidarikanda, Yastimadhu, Haritaki, Eranda, Chorak, Lashuna, Karkataka etc. are found to contain phytoestrogens.

Advantages over HRT :-

- No side effects .
- If estrogen levels are low as in menopause they exert weak estrogenic effect on empty receptors.
- If estrogen levels are high as in fibroadenosis, then phytoestrogens compete with estrogen receptors as they have weak estrogenic activity, thus producing beneficial antiestrogenic effect on body.
- They increase level of sex hormone binding globin (SHBG) in the body which is recorded as a favorable protection against breast cancer and coronary heart disease.

4)Yoga and pranayama can be proved very beneficial by relieving stress. They also improve musle tone and hence improves urinary troubles.

Conclusion :-

Management of Menopausal Syndrome with Ayurveda is more natural, cheap, free from side effects and in right direction which finally improves the whole life of a woman after Menopause. Ayurvedic management should be encouraged so that Ayurveda can serve the grieving Narishakti and finally humanity.

References :-

1 Howkins and Bourne Shaw's Text Book of Gynaecology 14th Edition Page no-52.

2 Sushruta Samhita with AyurvedaTatvasandipika commentary,edited by Kaviraj Dr Ambikadutta Shashtri,Purvardha,Sharira Sthana 3/9,Page no.23,Published by Chaukhamba Sanskrit Samsthana,Varanasi.

3 Astanga Hridaya with Sarvang Sundara Commentary A.H.Sa.1/21.

4 Ayurvediya Prasuti-Tantra Evam Stri Roga Part 1 by Prof. Premvati Tewari,Page no62, Published by Chaukhamba Prakashana, Varanasi.

5 Sushruta Samhita with AyurvedaTatvasandipika commentary,edited by Kaviraj Dr.Ambikadutta Shashtri,Purvardha,Sutra Sthana 14/6,Page no.48, Published by Chaukhamba Sanskrit Samsthana, Varanasi.

6 Astang Sangraha Sharir Sthana 1/10.

7 Ayurvediya Prasuti-Tantra Evam Stri Roga Part 1 by Prof. Premvati Tewari Page no. 58, Published by Chaukhamba Prakashana, Varanasi.

8 Ayurvediya Prasuti-Tantra Evam Stri Roga Part 1 by Prof. Premvati Tewari, Page no.58-59, Published by Chaukhamba Prakashana, Varanasi.

9 Charaka Samhita with elaborated Vidyotini Hindi Commentary by Pt. Kashinath Shashtri and Dr. Gorakhanath Chaturvedi, SutraSthana 16/28, Page no.-325,Published by Chaukhamba Bharti Academy.

10 Sushruta Samhita with Nibandha Samgraha commentary,Edited by Vaidya Yadavji Trikamji, Sharira Sthana 9/12,Published by Chaukhamba Prakashana, Varanasi.

11 Howkins and Bourne Shaw's Text Book of Gynaecology 14th Edition Page no-54.

12 Howkins and Bourne Shaw's Text Book of Gynaecology 14th Edition Page no-53-54.

13 Women's Menopause Health Center August 1,2005 Newsletter.www.women-menopause-healhcare.com.

14 Sachin Patharkar ,Bavikar J.S., Badarpurkar J.S.Thyroid function is associated with coronary artery disease in postmenopausal women.The Antiseptic 1904;Vol 107 no.4,170-174.

15 Howkins and Bourne Shaw's Text Book of Gynaecology 14th Edition Page no-55-56.

16 Charaka Samhita with elaborated Vidyotini Hindi Commentary by Pt. Kashinath Shashtri and Dr.Gorakhanath Chaturvedi,Part-2,Chikitsa Sthana 1/1/7-8,Pageno.-5, Published by Chaukhamba Bharti Academy.

Conceptual Study

Diseases of *Nidana Sthana* (*Charaka Samhita*) Mythological rising and reasoning

Vaidya Nisha Gupta

Abstract :

Myths are the sacred stories concerning the distant past, particularly the creation of world generally focused on the gods and Ayurveda is an ancient science of life comprising of innumerable mythological incidents regarding its origin, transcendence on earth, manifestation of lord Dhanwantari the god of ayurveda and many more Among which I found the most interesting and generally unrevealed story of genesis of eight disorders mentioned in the Nidana sthana of Charaka Samhita. Although science and mythology seems to be quite apart and different, yet in case of Ayurveda being the Sacred science, they are complementary to each other. These mythological events are not a subject of disposal dictating them orthodox even in this progressing so called scientific century, but all is the matter of faith turning tales into truths by deeply understanding the underlying phenomenon and explaining that with the wisdom of scientifically justified fundamental facts. Present paper is the original work of the author in the respective context with the holy purpose of resuming back to the glorious past when this divine science of Ayurveda was worshipped all over the country as a main health system and influenced almost every other health system of world.

Keywords: Brihattrayi,Charaka Samhita, nidana sthana, Shiva, Daksha, Veerbhadra, Shadkriyakala.

सारांश–

पुराण कथाएं गुजरे हुए सुदूर अतीत की, विशेष रूप से सृष्टि उत्पत्ति से सम्बन्धित एवं देवताओं पर केन्द्रित पावन कथाएं हैं तथा आयुर्वेद एक प्राचीनतम आयुर्विज्ञान है जो अपने गर्भ में असंख्येय पौराणिक गाथाओं को समेटे हुये है जो कि आयुर्वेद के धरती पर अवतरण, भगवान् धन्वन्तरि की समुद्र मन्थन के समय प्राकट्य इत्यादि से सम्बन्धित हैं। इन सब कथाओं में सर्वाधिक रुचिकर एवं प्रायिक रूप से अचर्चित कथा चरक संहिता के निदान स्थान में उल्लिखित आठ व्याधियों की उत्पत्ति के सन्दर्भ में लगती है। यद्यपि विज्ञान एवं पौराणिकी काफी दूर एवं भिन्न प्रतीत होते हैं तथापि आयुर्वेद के परिप्रेक्ष्य में यह एक दूसरे के पूरक हैं। इस अनवरत रूप से गतिशील वैज्ञानिक युग में ये पौराणिक घटनायें मात्र रूढ़िवादिता मानते हुये व्यक्त नही कही जा सकतीं, अपितु सारा विश्वास का विषय है जिससे इस घटनाक्रम का गहन अध्ययन करते हुये पुनः वैज्ञानिकतया संसिद्ध मौलिक सिद्वान्तों के द्वारा सम्पुष्ट करते हुये, कहानियों को वास्तविकता में बदल देता है। वर्तमान पेपर कर्त्री की मौलिक कृति है जो कि आयुर्वेद को पुनः उसी शानदार अतीत में ले जाने का पावन प्रयास मात्र है, जब यह देव विज्ञान भारतवर्ष में प्रधान चिकित्सा पद्धति के रूप में स्वीकृत था एवं सम्पूर्ण विश्व की समस्त चिकित्सा धाराओं को प्रभावित करता था।

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Conceptual Study

Diseases of *Nidana Sthana* (*Charaka Samhita*) Mythological rising and reasoning

Vaidya Nisha Gupta

Myth is the hidden part of every story, the buried part, the region that is still unexplored because there are as yet no words to enable us to get there. Myth is nourished by silence as well as by words. - Italo Calvino

Introduction

Every science is nurtured by the factual roots of history. Actually the height attained by a science during its progressive flight depends upon the balance of two wings naming history and logic. Progress gets restricted in the lack of either one and Ayurveda is no more exception to this. Ayurveda is the most ancient (almost 5000-10000years old) and conventional but completely holistic system of health which encompasses to the prosperous heritage of medical science in the commanding lights of Vedic facts and divine wisdom of great sages. This immortal science also desires to race with time but not getting the appropriate pace because of certain reasons. Where the pride & golden pages of history push forward one step, on the other hand lack of logical justifications shatter the dreams of flying high in the sky and mark the imprints of immortality of this integrated science with implications of all fundamental principles with perfect evaluation. Unlike other medical sciences, history is embedded in the soul of this conventional system. Here history is not vanished with time but still taking breaths in one or the other mythological tales, May it be the case of descent of Ayurveda on this earth, appearance of Lord Dhanwantari along with Amrit kalash, generation of yakshma in moon and many more. These myths relate the events, conditions, and deeds of gods or superhuman beings that are outside ordinary human life and yet very much basic to it. Probably these events seem to be set in a time altogether different from historical time, often at the beginning of creation or at an early stage of prehistory. History with mythological incidents of course remind us of the glorious past and are not supposed to be considered as mere speculative stories particularly in case of Ayurveda known as fifth Veda in India.

The Great trio or Brihattrayi:

Ayurveda flourished from around the period dated from 800 B.C. to A.D. 1000 that can be called as the golden period of Ayurveda as the three most important treatises in Ayurveda were created and broadly accepted during this period and are referred to collectively as the The Great trio or Brihattrayi including the Charaka Samhita, the Sushruta Samhita, and the Ashtanga Hridaya Samhita. The Small trio or Laghutrayi comprises of next three important scriptures i.e.Madhav Nidana, the Saranghadhar Samhita and Bhava Prakasha. Charaka Samhita is the most important fragment of brihattrayi . This is chiefly related with the Kaya Chikitsa (Medicinal cure of the body) and its popularity and regard has not reduced even in the dark and crucial times of proving its worth and struggling for survival of this one time prestigious system. Charaka Samhita is considered to be the most authoritative in as much as it represents an authentic thesaurus of the various aspects of this science, w.s.r. to fundamental principles of medicine. Even today each verse of Acharya Charaka sounds like a milestone in

Ayurveda, the great cultural bond ties the strings of this health care system to the ancestral heritage of Hindu religion. Religion and philosophy has been interwoven within the fundamentals of this integrated system. Lord Brahma, lord Vishnu and lord Shiva termed asTrideva together bear the responsibility of creation, sustenance and destruction of life on this planet respectively.

Destruction, devastation, death are the cruel terms used to define the end of life. In hindu mythology Lord Shiva has been held responsible for this endeavor to maintain the equilibrium between origin and end of existence so that saturation could be avoided. Disease is one of the major causes of death of living beings.The term Yama, the god of death, is used as a synonym to disease in Ayurveda. Hence origin of disease in Treta yuga if could be possible that is only by lord Shiva directly or indirectly.Untreated or ignored disease leads to death and death is punished by shiva only. Here is the hidden fact about first time generation of Jwara in Treta yuga by anguished Shiva and then successively other six disorders came into existence.

Where the pacification of Jwara is concerned the remedy is provided by Lord Vishnu, the sustaining force of this universe, as chanting of Vishnu sahasranama paatha. Similarly origin of Ayurveda as health care system to healthy and diseased persons is related with lord Brahma, the creator of universe. All the three Lords are like vital force to Ayurveda making this system more spiritual and near to God and are not mere myths or characters of mythological tales. Religion can never by mythic even. If this happens, whole existence will be asphyxiated and lifeless. All these facts and corresponding theories and tales can not be ignored just assuming it an orthodox system of medicine or orthodox concept of this ancient science which is supposed to be a mother science to all the medical sciences.

Conventional systems of medicine are not illogical. But they have to be reframed and reshaped according to the demand of time as quoted by Vaghbhatta, ***Yuganuroop sandarbho vibhagen karishyate*** in 1st chapter of Astanga sangraha. Fault does not prevail in a system or its theories, but of course answerable are those who have not been able to make understand and therefore convince their students by logical justifications, however the mythic are the doctrines or applications of this holistic system. Deputation of each lord to particular duties, Lord Shiva producing Jwara and other disorders in sinful population that is also not vigilant to health is completely justified.

Again incorporation of expressive sixfold processes of disease manifestation as Shadakriya kaala in the sequential events of this so called mythological tale is another effort to review the phenomenon in the light of basic principles of this historical science. Ayurveda believes in the principle of universality to all beings of existence by establishing the law of ***Lokoayam purushsamita***. It means the whole universe is governed by the similar forces those govern the human body and vice versa. So hypothesis of etio-pathogenesis of disease is laid on the basis of identical laws and implementation.

Conclusion

Usually myths are shared stories that arise and live for generations, initially in oral tradition, but eventually taking on new life in literary versions created by poets, journalists, and historians (or textbook authors). But to my opinion mythology is also a great science . Truly said is by Einstein that science without philosophy is blind and philosophy without science is lame. **Since the time when science stepped into the arena of humanity, although we've seen that science & philosophy have had different approaches to life & our cosmos yet from time to time science & spirituality have finally come to a point where both are becoming an inseparable part of the same whole we call "Truth".** Ayurveda is a science of life with philosophically enriched heritage of fundamental principles. Every verse mentioned in Ayurveda is greatly meaningful and true even after losing its past time glory. Need of the time is to standardize the basic theories and scientific exposition of mythological stories with Ayurvedic point of view so that Ayurveda could regain its reputation and prestige at the national and international level. Present review of classic mythology and its scientific interpretation is the original work done by author in the same direction to fulfil the mentioned objectives.

References:

1. Caraka (1941): Charaka Samhita.Ci Sth. 3/25. Chakrapani's Ayurveda Dipika *teeka* Ed. By Yadavji Trikumji Acharya (1941). Nirnaya Sagar Press, Mumbai.
2. Caraka (1941): Charaka Samhita.Ni Sth. 8/11. Chakrapani's Ayurveda Dipika *teeka* Ed. By Yadavji Trikumji Acharya (1941). Nirnaya Sagar Press, Mumbai.
3. Bhagwan Dash and R.K.Sharma, Caraka Samhita: Text with English translation & critical exposition Vol.2 and Vol.3,based on Chakrapani Dattas Ayurveda Dipika.
4. Ashtang Samgraha:Ashtang Samgraha Su Sth 1/ 8. Induvyakhya samhita, Sutrashariranidan-asthanam, Vol.1 by C.C.R.A.S., New Delhi.
5. *Aetiology*, 2nd ed., Oxford University Press.
6. George Sarton, *Introduction to the History of Science*. (Dr. A. Zahoor and Dr. Z. Haq (1997)
7. Quotations from famous Historians of science, Cyberistan.
8. *Oxford English Dictionary*. June 2003. Oxford UP. 12 March 2008.
9. Shiva Purana. Online by Maharishi Ayurveda.

LITERARY REVIEW

Insomnia & its Management in *Ayurveda* w.s.r. to Sleep

**Dr. Sachin Sharma*

Abstract -

Sleep is a complex mental condition when body and mind become energy less and sense organs are not functioning properly.

करणानां तु वैकल्ये तमसाऽभिप्रवर्धिते।
अस्वपन्नपि भूतात्मा प्रसुप्त इव चोच्यते॥ सु.शा. - 4/36

It is the normal manifestation of one stage in the rhythmical activity of nerve cells. Sleep when indulged into judiciously results in immense happiness & longetivity, whereas improper sleep either less or in excess destroys life & happiness. It is the second most essential thing after food in Ayurved (*triya upasthamba*). According to ayurveda there are mainly four causes of sleep *Tamas guna*, *Kapha dosha*, Both *Tamas* and *Kapha* and *Uparate* (Restlessness) and when they effect on heart (place of mana) direct or indirect then sleep occurs but most important factor for sleep is nature.

हृदयं चेतनास्थानमुक्तं सुश्रुत देहिनाम्। तमोभिभूते तस्मिंस्तु निद्राऽविशति देहिनम्॥
निद्राहेतुस्तमः सत्त्वं, बोधने हेतुरुच्यते। स्वभाव एव वा हेतुर्गरीयान् परिकीर्त्यते॥ सु.शा.-4/33,34

According to Mr. Howal when brain have less blood supply in it then person feel sleep ex. A person feels sleep just after taking food because blood more supplied towards the digestive organs. A rashean scientist Mr. Pawlov told that sleep is inborn reflexes like when a person smell or see the delicious food his mouth filled with saliva. Sleeps are of two types Rapid Eye Movement (REM) sleep and Non Rapid Eye Movement (NREM) sleep. In the first type of sleep we may feel dreams. This sleep occupies 20 to 30% of total sleeping period. Other type of sleep is non Rapid Eye Movement where a person feels sound sleep. This type of sleep occupies 70 to 80% part of total sleep. Ayurveda claim that when heart is covered by *Tamas guna* only then a person feels sound sleep but if heart affected by *Tamas* and *Rajas guna* then we feel dreams. These dreams are related to our previous experiences.

पूर्वदेहानुभूताँस्तु भूतात्मा स्वपतः प्रभुः।
रजोयुक्तेन मनसा गृह्णात्यर्थान् शुभाशुभान्॥ सु.शा.- 4/35

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The amount of sleep each person needs depends on many factors, including age, health, recent physical exertion and mental activity. There is a quite big variation in sleep in different age group of people like, Infants need 16 hours of sleep in a day, teenagers need 9 hours, and adults need 7 to 8 hours of sleep and older people need 5 hours sleep in a day.

Early to bad and early to rise is the basic principle of leading healthy life but many of us are unaware and even if aware we never tend to follow because of the hectic life or modern trend of life. So the effect of this hectic life is that we are facing insomnia or Asleep in Indian younger population. It leads to stress, depression, indigestion, also reduces the memory power, and even leads to obesity. It cause daytime drowsiness and also, the risk of motor vehicle crashes is increased in this group because of fatigue.

सारांश-

जब शरीर थकान महसूस करता है तथा सभी ज्ञानेन्द्रियॉ अपना कार्य ठीक प्रकार से नहीं कर पाती है तब हम निद्रा का अनुभव करने लगते हैं।

करणानां तु वैकल्ये तमसाऽभिप्रवर्धिते।
अस्वपन्नपि भूतात्मा प्रसुप्त इव चोच्यते॥ सु.शा. - ४/३६

निद्रा तंत्रिका कोशिकाओं की एक निरन्तर चलने वाली प्रक्रिया के कारण महसूस होती है। जहॉ पर एक अच्छी निद्रा मन को प्रसन्न करती है, निर्णय क्षमता को बढाती है साथ ही दीर्घायुष्य को प्रदान करती है वहीं पर निद्रा विकार जीवन को नष्ट कर देते है। आयुर्वेद में इसके महत्व को समझतें हुए इसे त्रयउपस्तम्भ में आहार के पश्चात् रखा गया है। तामस गुण, कफ दोष, दोनो साथ में व उपरति या प्रतिकूल वातावरण आदि को आयुर्वेद मतानुसार निद्रा उत्पत्ति में मुख्य कारणा माना गया है। जब इनमें से कोई एक कारण मन के स्थान हृदय को प्रभावित करते हैं तब हमें निद्रा महसूस होती है। इन कारणों में से भी स्वभाव को निद्रा में प्रधान कारण माना गया है।

हृदयं चेतनास्थानमुक्तं सुश्रुत देहिनाम्। तमोभिभूते तस्मिंस्तु निद्राऽविशति देहिनम्॥
निद्राहेतुस्तमः सत्त्वं, बोधने हेतुरुच्यते। स्वभाव एव वा हेतुर्गरीयान् परिकीर्त्यते॥ सु.शा.-4/33,34

एक पाश्चात्य विद्वान मिस्टर हावेल के अनुसार जब मस्तिष्क में रक्त की कमी हो जाती है तब हमें निद्रा महसूस होती है जैसे - भोजन के तुरन्त बाद जब शरीर का अधिकांश रक्त पाचक संस्थान मे चला जाता है तब मस्तिष्क में इसकी कर्मी हो जाती है इससे निद्रा आने लगती है। इसी प्रकार रशियन विद्वान मिस.पावले के अनुसार यह एक प्रत्यावर्तित क्रिया है। आधुनिक मतानुसार निद्रा दो प्रकार कि बताई गयी है एक वह जिसमें सोते समय सपने दिखाई देते है तथा दूसरी वह जिसमें गहरी निद्रा आती है तथा सपनें नहीं आते है। निद्रा के कुल समय का २० से ३० प्रतिशत् समय प्रथम प्रकार की निद्रा का तथा शेष समय द्वितीय प्रकार की निद्रा का बताया गया है। आयुर्वेद में भी बतलाया गया है कि जब केवल तामस गुण मन को प्रभावित करता है तब गहरी निद्रा आती है लेकिन जब तम के साथ रज दोष भी मिल जाता है तब हमें स्वप्न की अनुभूती होनें लगती है तथा ये स्वप्न हमारे पूर्व अनुभव पर आधारीत होते है।

पूर्वदेहानुभूताँस्तु भूतात्मा स्वपतः प्रभुः।
रजोयुक्तेन मनसा गृह्णात्यर्थान् शुभाशुभान्॥ सु.शा.- 4/35

निद्रा की आवश्यकता भी प्रत्येक प्राणी के लिए अलग - अलग बताई गई है जो आयु, शारिरिक व मानसिक स्वास्थ्य पर भी निर्भर करता है जैसे - एक नवजात शिशु 16 घण्टे सोता है, युवा 9 घण्टे, व्यस्क 7 से 8 घण्टे तथा वृद्ध केवल 5 घण्टे ही सोता है। जल्दी सोना व जल्दी जागने की प्राचीन परम्परा आज के व्यस्तता भरे जीवन में लुप्त प्राय हो गयी है। हम इसके महत्व को समझते हुए भी इसे जीवन मे उतारने में असमर्थ है जिसके कारण निद्रानाश जैसी घातक बिमारीयॉ जन्म ले रहीं है जो सभी आयु वर्ग कें प्राणीयों को प्रभावित कर रहीं है। युवाओं का आक्रामक व्यवहार तथा हर रोज होने वाली दुर्घटनाए ये संकेत दे रही है कि हमें निद्रा के महत्तव को भी समझना होगा। जिससे हम सुखी व खुशहाल जीवन फिर से बिता सके।

Key words: *Nidra*, Insomnia, *Upasthamba* etc.

LITERARY REVIEW

Insomnia & its Management in *Ayurveda* w.s.r. to Sleep

Dr. Sachin Sharma

Introduction

The mental and physical relaxation either superficially or deeply with closed eyes is known as sleep. At this time body is fatigued by exertion and sense organs are not functioning properly. Ayurveda has mentioned its utmost importance in ancient classical texts. Sleep is one of triya *upsthambas* and very important for healthy and happy life. Sleep is related to *Tamas Guna* and *Kaph Dosha*. When they become prominent a person gets sound sleep. Six types of sleep are described in ayurveda and two types of sleep (REM & non REM sleep) are given by the modern science. The amount of sleep each person needs depends on many factors, including age, health, recent physical exertion and mental activity.

Infants sleep about 16 hours a day, while teenagers need about 9 hours on average. For most adults, 7 to 8 hours a night appears to be the best amount of sleep, although some people may need as few as 5 hours or as many as 10 hours of sleep each day. There is quite a bit of variation. For leading a healthy life one should go to bed early and get up early. This is the basic principle to lead a healthy life. But many of us are unaware and even if aware we never tend to follow because of the hectic life or modern trend of life. In younger age it may not appear disastrous but later it gives rise to various complications resulting in various diseases. Now it has become common in the younger age also. Insomnia leads to stress, depression, indigestion, also reduces the memory power, and even leads to obesity. It cause daytime drowsiness, it may impair quality of life in other ways; poor sleepers have been found to receive fewer promotions, to have increased rates of absenteeism and to demonstrate poor productivity. Also, the risk of motor vehicle crashes is increased in this group because of fatigue.

Material & methods

What is sleep?

Sleep is a state of mind. It has a property of Tamas which means it manifests generally during nights when Tamas is predominant. When the tissue pores & channels of the body get covered with Kapha dosha, when the body is fatigued by exertion & when the sense organs are not functioning, sleep manifests in the body. Children should have at least 8 hours of sleep. The adults and old age persons should have at least 6 hours of sleep. According to ayurveda Nature (swabhav) is the main cause of falling sleep means night is naturally induced sleep.

यदा तु मनसि क्लान्ते कर्मात्मानः क्लमान्विताः।
विश्येभ्यो निवर्तन्ते तदा स्वपिति मानवः ॥

च. सू. – 21/35

हृदयं चेतनास्थानमुक्तं सुश्रुत देहिनाम्।
तमोभिभूते तस्मिंस्तु निद्राऽविशति देहिनम्॥
निद्राहेतुस्तमः सत्त्वं, बोधने हेतुरुच्यते।
स्वभाव एव वा हेतुर्गरीयान् परिकीर्त्यते॥

सु. शा. – 4/33,34

Types of Sleep

According to modern science sleep is of two types namely

1. Non Rapid Eye Movements (NREM) sleep
2. Rapid Eye Movements (REM) sleep

1. Non Rapid Eye Movements Sleep: In this the eye balls do not move. This is also called slow wave sleep. The dreams do not occur in this type of sleep. This sleep occupies about 70 to 80 % of total sleeping period. The NREM sleep is followed by REM.

2. Rapid Eye Movements sleep: During this the eyeballs move frequently. Dreams occur during this period. Through the eyeballs move, the sleep is deep. So this is also called paradoxical sleep. This occupies about 20 to 30% of sleeping period. REM sleep is very much important since, it is thought to be playing an important role in consolidation of memory.

During the awake state, a neuron more or less goes about its own individual business. During non-REM sleep, in contrast, adjacent cortical neurons fire synchronously, with a relatively low frequency rhythm. Breathing and heart rate tend to be quite regular during non-REM sleep, and reports of vivid dreams during this state are rare. A very small group of brain cells (perhaps totaling just 100,000 in humans) at the base of the forebrain is maximally active only during non-REM sleep. These cells have been called sleep-on neurons and appear to be responsible for inducing sleep. The precise signals that activate the sleep-on neurons are not yet completely understood, but increased body heat whilean individual is awake clearly activates some of these cells, which may explain the drowsiness that so often accompanies a hot bath or a summer day at the beach. On the other hand, brain activity during REM sleep resembles that during waking. Brain waves remain at low voltage because neurons are behaving individually. And most brain cells in both the forebrain and brain stem regions are quite active, signaling other nerve cells at rates as high as—or higher than—rates seen in the waking state. The brain's overall consumption of energy during REM sleep is also as high as while awake. The greatest neuronal activity accompanies the familiar twitches and eye motion that give REM sleep its name. Specialized cells located in the brain stem, called REM sleep-on cells, become especially active during REM sleep and, in fact, appear to be responsible for generating this state. Our most vivid dreams occur during REM sleep, and dreaming is accompanied by frequent activation of the brain's motor systems, which otherwise operate only during waking movement. Fortunately, most movement during REM sleep is inhibited by two complementary biochemical actions involving neurotransmitters, the chemicals that physically carry signals from one neuron to another at the synapse (the contact point between two neurons). The brain stops releasing neurotransmitters that would otherwise activate motoneurons (the brain cells that control muscles), and it dispatches other neurotransmitters that actively shut down those motoneurons. These mechanisms, however, do not affect the motoneurons that control the muscles that move the eyes, allowing the rapid eye movements that give the REM sleep stage its name. REM sleep also profoundly affects brain systems that control the body's internal organs. For example, heart rate and breathing become irregular during REM sleep, just as they are during active waking.

NRAM sleep is divvied into 4 stages depending upon the EEG pattern. During the stage of wakefulness the person is awake with closed eyes and relaxed mind. Now the alpha waves of EEG appear. When the person proceeds to drowsy state the alpha waves diminish.

Stage 1- Stage of Drowsiness

Stage 2- Stage of Light Sleep

Stage 3- Stage of Medium Sleep

Stage 4- Stage of Deep Sleep

On the other hand ayurveda described six or seven types of sleep (*Nidra*).

1. Sleep due to Tamas Guna: These sleeps appear at the time of death.
2. Sleep due to Kapha Guna: When Kapha dosha become dominant this type of sleep appears.
3. Sleep due to tiredness (Mentally or physically): Sleep due to physical and mental tiredness.
4. Sleep due to other cause: Sleep related unknown causes.
5. Sleep due to disease: When the person diseased this sleep appears.
6. Natural sleep at night: Normal sleep at night.

मोभवा श्लेष्मसमुद्भवा च मनःशरीरश्रमसंभवाः।
आगन्तुकी व्याध्यानुवर्तिनी च रात्रीस्वभावप्रभवा च निद्रा॥

च. सू. – 21/58

Importance of sleep for well-being

In Ayurveda Acharya Charka mentioned *Nidra* in *Triya upastambha*. They said that *Nidra* (Sleep) is important factor for healthy life after food and if we take sleep properly we might become healthy and strong.

त्रय उपस्तम्भा इति - आहारः स्वप्नों ब्रह्मचर्यमिति–।

च. सू. – 11/35

त्रय उपस्तम्भा इत्याहार स्वपनो ब्रह्मचर्यमिति।

देहवृत्तौ यथाऽहारस्तथा स्वप्नः सुखो मतः।
स्वप्नाहारसमुत्थे च स्थौल्यकार्श्ये विषेशतः॥
च. सू. – 21/51

निद्रायत्तं सुखं दुखं पुष्टि कार्श्यं बलाबलम्।
वृषता क्लीबता ज्ञानमज्ञानं जीवितं न च।
च. सू. – 21/35

निद्रायत्तं सुखं दुखं पुष्टि कार्श्यं बलाबलम्।
अ.ह. सू. – 7

Happiness & misery, nourishment & emaciation, strength & debility, virility & impotence, knowledge & ignorance, life & death are all dependant on sleep. Sleep when indulged into judiciously results in immense happiness & longetivity, whereas improper sleep either less or in excess destroys life & happiness.

What is Insomnia

Insomnia is made from in = a, Soma = Sleep. It is an uncommonly common disorder in the modern world, caused primarily by an increase of *vata* dosha in the mind or nervous system. Insomnia is a cause or a complicating factor in many other problems. It may be related to constipation. It may be a result of stress or being overtired, or it may create fatigue and lead to greater stress. It may be a symptom of depression, or it may intensify depression. So we have to deal with it effectively. **Insomnia** is not a side effect of aging. It is likely to be a symptom for physical or emotional problems.

In present era it has become a common problem not only in old age but also in the younger generation.

Reasons

Loss of sleep occurs due to the following reasons:

- Excessive thirst, pain, grief, happiness, fear, anger, worry & other such emotions
- Uncomfortable bed
- Increase of *Satva guna*
- Intake of dry foods
- Intense engagement in work
- Lapse of usual sleeping time & habit
- Effect of diseases
- Increase of *Vata* &*Pitta* in the body
- Decrease of Tamas guna
- Vomiting
- Fear ness
- Stress

Environmental factors like noise, light or extreme temperatures may also interfere with sleep. Acharya Charka said that a person can not sleep properly

- If time is not suitable
- If that person is unhealthy
- If that person has Vatic or Pattic in nature

एत एव च विज्ञेया निद्रानाशस्य हेतवः।
कार्यकालो विकारश्च प्रकृतिर्वायुरेव च॥
च. सू. – 21/57

निद्रानाशोऽनिलात् पित्तान्मनस्तापात् क्षयादपि।
संभवत्यभिघाताच्च प्रत्यनीकैः प्रशाम्यति॥
सु. शा. – 4/41

Symptoms

A person suffering from insomnia may have one or all of the following symptoms:

- Frequent headaches
- Irritability or lack of concentration
- Feeling tired
- Unrefreshing sleep
- Turning and tossing in the bed for 30-40 minutes before you fall asleep
- Waking up repeatedly during the night
- Awakens far too early and is unable to get back to sleep
- Only falls asleep with the aid of medication

Types of Insomnia

Although, there are many kinds and different degrees of insomnia, three types of insomnia are clearly identified and classified as transient, acute and chronic.

Transient insomnia is short-term insomnia and can last from few days to weeks. It can be caused by other disorders including severe depression, stress or changes in sleep environment.

The symptoms of transient insomnia include drowsiness and impaired psychomotor performance, which are similar to that of sleep deprivation.

Acute insomnia is the incapability to sleep well consistently for a period of three weeks to as long as six months.

Chronic insomnia has the longest span and can last for years at a time. It is generally caused by other disorder, but can be a primary disorder as well. Its symptoms may vary according to its cause and may include sleepiness, hallucinations and muscular or mental fatigue. The patients of chronic insomnia show increased alertness and some of them see things as if they are happening at a slow motion and moving objects seem to blend. It can also cause double vision.

Simple method to have good sleep

- One can get massaged over the soles mildly which improves sleep.
- It's definitely true that drinking a cup of warm milk before going to bed helps bring on a peaceful sleep. Warm milk will make us active and cold may cause indigestion.
- Buffalo's milk is an excellent inducer of sleep.
- Listen to melodious music that is pleasant to hear before retiring to bed. Fast music aggravates the mood and disables sound sleep.
- Don't watch movies or hear songs that are violent before retiring to bed.
- Create a pleasant atmosphere where we sleep.
- Doing meditation before retiring to bed induces good sleep and is also good for mental health.
- Cherries are good for mental fatigue and stress, both of which can contribute to **insomnia**. Eating 10 to 20 cherries daily may help relieve these conditions and help us sleep.
- Drink 1 cup with 2 teaspoons natural sugar and 2 pinches of nutmeg. Drink the juice between four and five in the afternoon; have dinner between six and seven. That evening we should get a sound sleep.
- A cup of chamomile tea at bedtime is truly beneficial for inducing sleep.
- One of the simplest and most effective ways to induce sleep is to rub some oil on the scalp and the soles of the feet before going to bed. Use sesame oil, *brahmi* oil, or *jatamamsi* oil, and massage gently for a few minutes. Slightly warming the oil before applying is helpful.
- A fine paste made of nutmeg powder mixed with an equal amount of ghee can be applied around our eyes and on our forehead before bed to help us fall asleep.
- A hot bath or shower at bedtime helps to soothe *vata* and promote sound sleep.
- Sleep disturbances are often due to worries and anxieties that keep the mind agitated at night. To help dissolve those anxieties, meditate for a while before going to sleep. Sit comfortably on the bed and put attention on the "third eye" (the area on our forehead between our eyebrows). Follow the breath in and out then lie on the back. Watch the breath and concentrate on third eye so that we will sleep like a child.
- An effective herbal formula to help you sleep is: *Tagar* 1. Part, Valerian root powder 1. Part, Chamomile 1. Part. Take 1/4 teaspoon of this powdered mixture with a little warm water just before going to bed.

निद्रानाशेऽभ्यंगयोगो मूर्ध्नि तैलनिषेवणम्।
गात्रस्योद्वर्तनं चैव हितं संवाहनानि च –
निद्रानाशे तु कुर्वीत तथाऽन्यान्यपि बुद्धिमान्॥

सु. सू. – 42–45

Discussion

Sleep is very important for happy and healthy life. Man can exist without sleep for about the same time that he can do without food but he cannot live without it. In the past the wise person knew that we have spent half of our life in sleep and we can use it if we never sleep but it is not possible because they knew that food and sleep are the natural energy source of body.

Ayurvedic literature mentioned that life is supported by three sub pillars these are food, sleep and limited sex. If any one pillar is disturbed then life becomes suspected and sleep is the second supportive pillar of life after food. So it is as essential for the body as food. Ayurvedic theory on sleep is that sleep has a property of *Tamas guna,* which means it manifests generally during nights when *Tamas guna* is predominant. When the tissue pores

& channels of the body get covered with *Kapha dosha*, when the body is fatigued by exertion & when the sense organs are not functioning, sleep manifests in the body.

Here *Tamas guna* and *Kapha dosha* are used as a phage of inactiveness which is generally appear at night so naturally we sleep at night. *Rajas guna* is responsible for activeness and when *Rajas guna* also predominant with *Tamas guna* then our body become inactiveness but mind functioning properly. At this stage we feel dreams and these dreams are related to our previous experiences. Modern scientists say that when we feel dreams our eyes moves rapidly so this type of sleep called Rapid Eye Movement sleep. Another type of sleep is Non Rapid Eye Movement sleep and that is the natural sound sleep which has mentioned in ayurvedic literatures as *Rattreswabhav prabhava* or *Vishnavi*. Other types of sleep appear in the pathological condition. At the time of death when body become completely inactive ayurvedic scientists told it *Tamas* sleep.

As *tamas* guna and its accompany Kapha dosha are responsible for perfect sleep, Rajas guna and *Vata* dosha are responsible for asleep or insomnia. Early to bed and early to rise was our previous life schedule when facilities are secondary thought in life but now these become primary thought so life became more hectic. Not in adult but younger also suffers in their life because of competitive environment. They lost their happy and healthiness of life. They try to become more active and knowledgeable and working heard day and night, which increases *vatic* and *pattic* nature in their body leading improper sleeping risk or insomnia. It also leads to stress, depression, indigestion, reduces the memory power and obesity. Youngsters feel daytime drowsiness, it may impair quality of life in other ways; poor sleepers have been found to receive fewer promotions, to have increased rates of absenteeism and to demonstrate poor productivity. Also, the risk of motor vehicle crashes is increased in this group because of fatigue.

In the past time *Acharya charka* claimed that if a person busy in their work, diseased, lost their sleeping time and if *vata* or *pitta doshas* become predominant in the body then he can't sleep properly. This statement is true now a day when people works day and night, watching movies all time, works on computer, reduce their sleeping time. They eat dry and cold, more spicy unhealthy foods. These conditions increase *vata* and *pitta doshas* in the body leading insomnia and related side effects. There working capacity become reduces and negative thoughts increases results suicide or over reacted to kill other persons which become normal behavior in developed countries. We must stop them so we have to follow our previous schedule and also follow ayurvedic rules like

- Get up early
- Exercise regularly
- Fixed our sleeping time
- Avoid dry and spicy food
- Avoid hurry and worry

Sleeping is the best medicine for diseased person and it is also important for happy and healthy life. We have to understand its importance.

Conclusion

Ayurveda and modern scientists know that a perfect sleep play an important role in our life. A good sleep makes us happy and healthy where as an imperfect sleep creates many complications. Improper or absence of sleep (insomnia) reduces our working capacity, productivity, happiness and health of life. These are the side effects of hectic modern life style. To counteract we use sedative medicine but they use creates other types of side effects and making our life measurable & painful so If we change our hectic life schedule and believe in principle of ayurveda in day to day life we can gain our health along with wealth and reduce all side effects so that again our lives become happy.

References

1. Anatomy & Physiology – Rod R. Seeley, Trent D. Stephens & Philip Tate – Fourth Edi. – Chapter 16
2. Ashtang Hridaya – Vidyotini Bhashya teeka, Kaviraj Atridev gupta, 3rd Ed., Chaukhambha Sanskrit Sansthan, Varanasi, 1963
3. Ayurvediya Sharir Rachana Vigyana – Dr. Sharma, Tarachand, Nath Pustak Bhandar, Rohatak
4. Abhinava Sharir Kriya vigyana – Dr. Shiva Kumar Gau, Nath Pustak Bhandar, Rohatak

5. Agnivesha, Charka Samhita with English translation of P. V. Sharma, Chaukhambha Orientalia, Varanasi, Edi. – 3rd, 1996

6. Charka Samhita – Commentary by Chakrapani, Edited by Yadav ji Acharya, Published by Satyabhma Bai Panduranga, Nirnaya Sagar Press, Bombay, 1941

7. Charka Samhita (Agnivesh) – Vidyotini Hindi Commentary by Kashi Nath Shastri, Gorakh Nath Chaturvedi, Published by Chaukhambha Bharti Academy, Gokul Bhawan, Gopal Mandi Lane, Varanasi (Vikrimi Samvat – 2041)

8. Dalhana, Nibandha Sangraha Commentary of Sushrut, edited by Vaidya Vadavji Trikram ji and Narayana ram Acharya, Chaukhambha Orientalia Varanasi

9. Gray H., Anatomy, Williams P. L. Warwick R., Dyson M., Bannister L. H. (Eds.), 37th edition, 1989, ELBS with Churchil Livingstone

10. Principle of anatomy & Physiology - G. J. Toratora, Harpers Collins College Publishers, 8th ed., 1996

11. Pranayama – A conscious way of breathing – By - Ranjit san gupta – New Age Books – 2005

12. Sushrut Samhita – Arun Dutt, Quoted in Ayurveda Rahasyadipika Commentary by Ghanekar B.G. Meharchand Lacchman Dass Publication, New Delhi, 1989

13. Text book of human neuroanatomy – Inderbir singh– 5th edi. – Jaypee Brothers Medical Publishers (P) Ltd. 1999

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The order of authorship on the byline should be a joint decision of the co-authors. Authors should be prepared to explain the order in which authors are listed.

II.B. Contributors Listed in Acknowledgments

All contributors who do not meet the criteria for authorship should be listed in an acknowledgments section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support. Editors should ask authors to disclose whether they had writing assistance and to identify the entity that paid for this assistance. Financial and material support should also be acknowledged.

Groups of persons who have contributed materially to the paper but whose contributions do not justify authorship may be listed under a heading such as "clinical investigators" or "participating investigators," and their function or contribution should be described-for example, "served as scientific advisors," "critically reviewed the study proposal," "collected data," or "provided and cared for study patients."

Because readers may infer their endorsement of the data and conclusions, all persons must give written permission to be acknowledged.

II.C. Conflicts of Interest

Conflict of interest exists when an author (or the author's institution) or reviewer has financial or personal relationships that inappropriately influence (bias) his or her actions (also known as dual commitments, competing interests, or competing loyalties). These relationships vary from those with negligible potential to those with great potential to influence judgment, and not all relationships represent true conflict of interest. The potential for conflict of interest can exist whether or not an individual believes that the relationship affects his or her scientific judgment. Financial relationships (such as employment, consultancies, stock ownership, honoraria, paid expert testimony) are the most easily identifiable conflicts of interest and the most likely to undermine the credibility of the journal, the authors, and of science itself. However, conflicts can occur for other reasons, such as personal relationships, academic competition, and intellectual passion.

All participants in the peer review and publication process must disclose all relationships that could be viewed as presenting a potential conflict of interest.

II.D.1. Potential Conflicts of Interest Related to Individual Authors' Commitments

When authors submit a manuscript, whether an article or a letter, they are responsible for disclosing all financial and personal relationships that might bias their work. To prevent ambiguity, authors must state explicitly whether potential conflicts do or do not exist. Authors should do so in the manuscript on a conflict of interest notification page that follows the title page, providing additional detail, if necessary, in a cover letter that accompanies the manuscript.

Authors should identify Individuals who provide writing assistance and disclose the funding

source for this assistance.

Investigators must disclose potential conflicts to study participants and should state in the manuscript whether they have done so.

II.D.2. Potential Conflicts of Interest Related to Project Support

Increasingly, individual studies receive funding from commercial firms, private foundations, and government. The conditions of this funding have the potential to bias and otherwise discredit the research.

Scientists have an ethical obligation to submit creditable research results for publication. Moreover, as the persons directly responsible for their work, researchers should not enter into agreements that interfere with their access to the data and their ability to analyze it independently, to prepare manuscripts, and to publish them. Authors should describe the role of the study sponsor(s), if any, in study design; in the collection, analysis, and interpretation of data; in the writing of the report; and in the decision to submit the report for publication. If the supporting source had no such involvement, the authors should so state. Biases potentially introduced when sponsors are directly involved in research are analogous to methodological biases of other sorts. Include Information about the sponsor's involvement in the methods section.

Sign a statement such as, "I had full access to all of the data in this study and I take complete responsibility for the integrity of the data and the accuracy of the data analysis."

II.E. Privacy and Confidentiality

II. E.1. Patients and Study Participants

Patients have a right to privacy that should not be infringed without informed consent. Identifying information, including patients' names, initials, or hospital numbers, should not be published in written descriptions, photographs, and pedigrees unless the information is essential for scientific purposes and the patient (or parent or guardian) gives written informed consent for publication. Informed consent for this purpose requires that a patient who is identifiable be shown the manuscript to be published.

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.

II.E.2. Authors and Reviewers

Manuscripts will be reviewed with due respect for authors' confidentiality. Confidentiality may have to be breached if dishonesty or fraud is alleged but otherwise will be honored.

Information about manuscripts (including their receipt, content, status in the reviewing process, criticism by reviewers, or ultimate fate) will not be disclosed to anyone other than the authors and reviewers. This includes requests to use the materials for legal proceedings.

Reviewer comments should not be published or otherwise made public without permission of the reviewer, author, and editor.

The reviewers' identity will not be revealed to the author or anyone else without the reviewer's permission.

Reviewers' comments will be sent to other reviewers of the same manuscript, which helps reviewers learn from the review process, and reviewers may be notified of the editor's decision.

II.F. Protection of Human Subjects and Animals in Research

When reporting experiments on human subjects, authors should indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. If doubt exists whether the research was conducted in accordance with the Helsinki Declaration, the authors must explain the rationale for their approach, and demonstrate that the institutional review body explicitly approved the doubtful aspects of the study. When reporting experiments on animals, authors should be asked to indicate whether the institutional and national guide

for the care and use of laboratory animals was followed.

III. Publishing and Editorial Issues Related to Publication in Biomedical Journals

III.A. Obligation to Publish Negative Studies

Editors will consider seriously for publication any carefully done study of an important question, relevant to readers, whether the results are negative (that is, convincingly allow the null hypothesis to be accepted) or positive (that is, allow the null hypothesis to be rejected).

III.B. Corrections, Retractions and "Expressions of Concern"

Editors assume initially that authors are reporting work based on honest observations. Nevertheless, two types of difficulty may arise.

First, errors may be noted in published articles that require the publication of a correction or erratum of part of the work. The corrections will appear on a numbered page, be listed in the contents page, include the complete original citation, and link to the original article and vice versa online. It is conceivable that an error could be so serious as to vitiate the entire body of the work, but this is unlikely and will be handled by editors and authors on an individual basis. Such an error should not be confused with inadequacies exposed by the emergence of new scientific information in the normal course of research. The latter requires no corrections or withdrawals.

The second type of difficulty is scientific fraud. If substantial doubts arise about the honesty or integrity of work, either submitted or published, it is the editor's responsibility to ensure that the question is appropriately pursued, usually by the authors' sponsoring institution. However, it is not ordinarily the task of editors to conduct a full investigation or to make a determination; that responsibility lies with the institution where the work was done or with the funding agency. The editor should be promptly informed of the final decision, and if a fraudulent paper has been published, the journal will print a retraction. If this method of investigation does not result in a satisfactory conclusion, the editor may choose to conduct own investigation. As an alternative to retraction, the editor may choose to publish an expression of concern about aspects of the conduct or integrity of the work.

The retraction or expression of concern, so labeled, will appear on a numbered page in a prominent section of the print journal as well as in the online version, be listed in the contents page, and included in its heading the title of the original article. It will not simply be a letter to the editor. Ideally, the first author will be the same in the retraction as in the article, although under certain circumstances the editor may accept retractions by other responsible persons. The text of the retraction should explain why the article is being retracted and include a full original citation reference to it.

The validity of previous work by the author of a fraudulent paper cannot be assumed. Editors may ask the author's institution to assure them of the validity of earlier work published in their journals or to retract it. If this is not done editors may choose to publish an announcement expressing concern that the validity of previously published work is uncertain.

III.C. Copyright

The copyright status of articles in a given journal can vary: some content cannot be copyrighted (articles written by employees of the governments in the course of their work, for example).

III.D. Overlapping Publications

III.D.1. Duplicate Submission

The Journal will not consider manuscripts that are simultaneously being considered by other journals.

III.D.2. Redundant Publication

Redundant (or duplicate) publication is publication of a paper that overlaps substantially with one already published in print or electronic media.

Readers of primary source periodicals, whether print or electronic, deserve to be able to trust that what they are reading is original unless there is a clear statement that the article is being republished by the choice of the author and editor. The bases of this position are international copyright laws, ethical conduct, and cost-effective use of

resources. Duplicate publication of original research is particularly problematic, since it can result in inadvertent double counting or inappropriate weighting of the results of a single study, which distorts the available evidence.

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

When submitting a paper, the author must always make a full statement to the editor about all submissions and previous reports that might be regarded as redundant or duplicate publication of the same or very similar work. The author must alert the editor if the manuscript includes subjects about which the authors have published a previous report or have submitted a related report to another publication. Any such report must be referred to and referenced in the new paper. Copies of such material should be included with the submitted paper.

III.D.3. Acceptable Secondary Publication

Certain types of articles, such as guidelines produced by governmental agencies and professional organizations, may need to reach the widest possible audience. In such instances, editors will choose to publish material that is also being published in other journals. Secondary publication for various other reasons, in the same or another language, especially in other countries and/or states, is justifiable, and can be beneficial, provided all of the following conditions are met.

1. The authors have received approval from the editors of both journals; the editor concerned with secondary publication must have a photocopy, reprint, or manuscript of the primary version.
2. The priority of the primary publication is respected by a publication interval of at least one week.
3. The paper for secondary publication is intended for a different group of readers; an abbreviated version could be sufficient.
4. The secondary version faithfully reflects the data and interpretations of the primary version.
5. The footnote on the title page of the secondary version informs readers, peers, and documenting agencies that the paper has been published in whole or in part and states the primary reference. A suitable footnote might read: "This article is based on a study first reported in the [title of journal, with full reference]."

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

III.D.4. Competing Manuscripts Based on the Same Study

Two kinds of competing submissions will be considered: submissions by coworkers who disagree on the analysis and interpretation of their study, and submissions by coworkers who disagree on what the facts are and which data should be reported.

Setting aside the unresolved question of ownership of the data, the following general observations may help editors and others dealing with these problems.

III. D.4.a. Differences in Analysis or Interpretation

If the dispute centers on the analysis or interpretation of data, the authors should submit a manuscript that clearly presents both versions. The difference of opinion should be explained in a cover letter. The normal process of peer and editorial review of the manuscript may help the authors to

resolve their disagreement regarding analysis or interpretation.

If the dispute cannot be resolved and the study merits publication, both versions will be published. Options include publishing two papers on the same study, or a single paper with two analyses or interpretations. In such cases it would be appropriate for the editor to publish a statement outlining the disagreement and the journal's involvement in attempts to resolve it.

III.D.4. b. Differences in Reported Methods or Results

If the dispute centers on differing opinions of what was actually done or observed during the study, the journal editor will refuse publication until the disagreement is resolved. Peer review cannot be expected to resolve such problems. If there are allegations of dishonesty or fraud, editors will inform the appropriate authorities; authors will be notified of editor's intention to report a suspicion of research misconduct.

III.D.5. Competing Manuscripts Based on the Same Database

Editors may sometimes receive manuscripts from separate research groups that have analyzed the same data set, e.g., from a public database. The manuscripts may differ in their analytic methods, conclusions, or both. Each manuscript will be considered separately. Where interpretations of the same data are very similar, it is reasonable but not necessary for editors to give preference to the manuscript that was received earlier. However, editorial consideration of multiple submissions may be justified in this circumstance, and there may even be a good reason for publishing more than one manuscript because different analytical approaches may be complementary and equally valid.

III.E. Correspondence

As a mechanism for submitting comments, questions, or criticisms about published articles, as well as brief reports and commentary unrelated to previously published articles. This will likely, but not necessarily, take the form of a correspondence section or column. The authors of articles discussed in correspondence should be given an opportunity to respond, preferably in the same issue in which the original correspondence appears. Authors of correspondence will be asked to declare any competing or conflicting interests.

Published correspondence may be edited for length, grammatical correctness, and journal style.

Although editors have the prerogative to sift out correspondence material that is irrelevant, uninteresting, or lacking in cogency, they have a responsibility to allow a range of opinion to be expressed. The correspondence column will not be used merely to promote the journal's, or the editors', point of view. In all instances, editors will make an effort to screen out discourteous, inaccurate, or libelous statements.

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

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

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

1. The journal editors take full responsibility for the policies, practices, and content of supplements, including complete control of the decision to publish all portions of the supplement. Editing by the funding organization will not be permitted.
2. The journal editors will retain the authority to send supplement manuscripts for external peer review and to reject manuscripts submitted for the supplement.

3. The journal editors will approve the appointment of any external editor of the supplement and take responsibility for the work of the external editor.

4. The sources of funding for the research, publication, and the products the funding source make that are considered in the supplement should be clearly stated and prominently located in the supplement, preferably on each page. Whenever possible, funding should come from more than one sponsor.

5. Secondary publication in supplements (republication of papers previously published elsewhere) will be clearly identified by the citation of the original paper. Supplements will avoid redundant or duplicate publication. Supplements will not republish research results, but the republication of guidelines or other material in the public interest might be appropriate.

IV. Manuscript Preparation and Submission

IV.A. Preparing a Manuscript for Submission

Editors and reviewers spend many hours reading manuscripts, and therefore appreciate receiving with manuscripts that are easy to read and edit. Much of the information in journals' instructions to authors is designed to accomplish that goal in ways that meet each journal's particular editorial needs. The guidance that follows provides a general background and rationale for preparing manuscripts for any journal.

IV.A.1.a. General Principles

The text of observational and experimental articles is usually (but not necessarily) divided into sections with the headings Introduction, Methods, Results, and Discussion. This so-called "IMRAD" structure is not simply an arbitrary publication format, but rather a direct reflection of the process of scientific discovery. Long articles may need subheadings within some sections (especially the Results and Discussion sections) to clarify their content. Other types of articles, such as case reports, reviews, and editorials, are likely to need other formats.

Publication in electronic formats has created opportunities for adding details or whole sections in the electronic version only, layering information, cross-linking or extracting portions of articles, and the like. Authors need to work closely with editors in developing or using such new publication formats and should submit material for potential supplementary electronic formats for peer review.

Double spacing of all portions of the manuscript including the title page, abstract, text, acknowledgments, references, individual tables, and legends-and generous margins make it possible for editors and reviewers to edit the text line by line, and add comments and queries, directly on the paper copy. If manuscripts are submitted electronically, the files should be double spaced, because the manuscript may need to be printed out for reviewing and editing.

During the editorial process reviewers and editors frequently need to refer to specific portions of the manuscript, which is difficult unless the pages are numbered. Authors should therefore number all of the pages of the manuscript consecutively, beginning with the title page.

IV.A.1.b. Reporting Guidelines for Specific Study Designs

Research reports frequently omit important information. The general requirements listed in the next section relate to reporting essential elements for all study designs. Authors are encouraged in addition to consult reporting guidelines relevant to their specific research design. For reports of randomized controlled trials authors should refer to the CONSORT statement. This guideline provides a set of recommendations comprising a list of items to report and a patient flow diagram.

IV.A.2. Title Page

The title page should carry the following information:

1. The title of the article. Concise titles are easier to read than long, convoluted ones. Titles that are too short may, however, lack important information, such as study design (which is particularly important in identifying randomized controlled trials). Authors should include all information in the title that will make electronic retrieval of the article both sensitive and

specific.

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

IV.A.3. Conflict of Interest Notification Page

To prevent the information on potential conflict of interest for authors from being overlooked or misplaced, it is necessary for that information to be part of the manuscript. It should therefore also be included on a separate page or pages immediately following the title page.

IV.A.4. Abstract and Key Words

An abstract should follow the title page. The abstract should provide the context or background for the study and should state the study's purposes, basic procedures (selection of study subjects or laboratory animals, observational and analytical methods), main findings (giving specific effect sizes and their statistical significance, if possible), and principal conclusions. It should emphasize new and important aspects of the study or observations.

Because abstracts are the only substantive portion of the article indexed in electronic database and the only portion many readers read, authors need to be careful that abstracts reflect the content of the article accurately.

3 to 10 key words or short phrases that capture the main topics of the article. These will assist indexers in cross-indexing the article and may be published with the abstract. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used; if suitable MeSH terms are not yet available for present terms may be used.

IV.A.5. Introduction

Provide a context or background for the study (i.e., the nature of the problem and its significance). State the specific purpose or research objective of, or hypothesis tested by, the study or observation; the research objective is often more sharply focused when stated as a question. Both the main and secondary objectives should be made clear, and any pre-specified subgroup analyses should be described. Give only strictly pertinent references and do not include data or conclusions from the work being reported.

IV.A.6. Methods

The Methods section should include only information that was available at the time the plan or protocol for the study was written; all information obtained during the conduct of the study belongs in the Results section.

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

Describe your selection of the observational or experimental participants (patients or laboratory animals, including controls) clearly, including eligibility and exclusion criteria and a description of the source population. Because the relevance of such variables as age and sex to the object of research is

not always clear, authors should explain their use when they are included in a study report; for example, authors should explain why only subjects of certain ages were included or why women were excluded. The guiding principle should be clarity about how and why a study was done in a particular way. When authors use variables such as race or ethnicity, they should define how they measured the variables and justify their relevance.

IV.A.6.b. Technical information

Identify the methods, apparatus (give the manufacturer's name and address in parentheses), and procedures in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods see below; provide references and brief descriptions for methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate their limitations. Identify precisely all drugs and chemicals used, including generic name(s), dose(s), and route(s) of administration.

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

IV.A.6.c. Statistics

Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to verify the reported results. When possible, quantify findings and present them with appropriate indicators of measurement error or uncertainty (such as confidence intervals). References for the design of the study and statistical methods should be to standard works when possible (with pages stated). Define statistical terms, abbreviations, and most symbols. Specify the computer software used.

IV.A.7. Results

Present your results in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations. Extra or supplementary materials and technical detail can be placed in an appendix where it will be accessible but will not interrupt the flow of the text; alternatively, it can be published only in the electronic version of the journal.

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

Where scientifically appropriate, analyses of the data by variables such as age and sex should be included.

IV.A.8. Discussion

Emphasize the new and important aspects of the study and the conclusions that follow from them. Do not repeat in detail data or other material given in the Introduction or the Results section. For experimental studies it is useful to begin the discussion by summarizing briefly the main findings, then explore possible mechanisms or explanations for these findings, compare and contrast the results with other relevant studies, state the limitations of the study, and explore the implications of the findings for future research and for clinical practice.

Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not adequately supported by the data. In particular, authors should avoid making statements on economic benefits and costs unless their manuscript includes the appropriate economic data and analyses. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such.

IV.A.9. References

IV.A.9.a. General Considerations Related to References

Although references to review articles can be an efficient way of guiding readers to a body of literature, review articles do not always reflect original work accurately. Readers should therefore be provided with direct references to original research sources whenever possible. On the other hand, extensive lists of references to original work on a topic can use excessive space on the printed page. Small numbers of references to key original papers will often serve as well as more exhaustive lists, particularly since references can now be added to the electronic version of published papers, and since electronic literature searching allows readers to retrieve published literature efficiently.

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

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

Some journals check the accuracy of all reference citations, but not all journals do so, and citation errors sometimes appear in the published version of articles. To minimize such errors, authors should therefore verify references against the original documents. Authors are responsible for checking that none of the references cite retracted articles except in the context of referring to the retraction. For articles published in journals indexed in MEDLINE, the ICMJE considers PubMed the authoritative source for information about retractions.

IV.A.9.b. Reference Style and Format

The Uniform Requirements style is based largely on an ANSI standard style adapted by the National Library of Medicine (NLM) for its databases. For samples of reference citation formats, authors should consult National Library of Medicine web site.

References should be numbered consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by Arabic numerals in parentheses. References cited only in tables or figure legends should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure. The titles of journals should be abbreviated according to the style used in Index Medicus.

This Journal requires that the references from the Ayurvedic classics should be cited within parentheses in the text, i.e. (Cha. Soo. 25/40).

IV.A.10. Tables

Tables capture information concisely, and display it efficiently; they also provide information at any desired level of detail and precision. Including data in tables rather than text frequently makes it possible to reduce the length of the text.

Type or print each table with double spacing on a separate sheet of paper. Number tables consecutively in the order of their first citation in the text and supply a brief title for each. Do not use internal horizontal or vertical lines. Give each column a short or abbreviated heading. Authors should place explanatory matter in footnotes, not in the heading. Explain in footnotes all nonstandard abbreviations. For footnotes use the following symbols, in sequence:

***,†,‡,§,||,¶,**,††,‡‡**

Identify statistical measures of variations, such as standard deviation and standard error of the mean.

Be sure that each table is cited in the text.

If you use data from another published or unpublished source, obtain permission and acknowledge them fully.

Additional tables containing backup data too extensive to publish in print may be appropriate for

publication in the electronic version of the journal. In that event an appropriate statement will be added to the text. Submit such tables for consideration with the paper so that they will be available to the peer reviewers.

IV.A.11. Illustrations (Figures)

Figures should be either professionally drawn and photographed, or submitted as photographic quality digital prints. In addition to requiring a version of the figures suitable for printing, this Journal asks authors for electronic files of figures in a format (e.g., JPEG or GIF) that will produce high quality images in the web version of the journal; authors should review the images of such files on a computer screen before submitting them, to be sure they meet their own quality standard.

For x-ray films, scans, and other diagnostic images, as well as pictures of pathology specimens or photomicrographs, send sharp, glossy, black-and-white or color photographic prints, usually 127 x 173 mm (5 x 7 inches). Letters, numbers, and symbols on Figures should be clear and even throughout, and of sufficient size that when reduced for publication each item will still be legible. Figures should be made as self-explanatory as possible. Titles and detailed explanations belong in the legends, however, not on the illustrations themselves.

Photomicrographs should have internal scale markers. Symbols, arrows, or letters used in photomicrographs should contrast with the background.

If photographs of people are used, either the subjects must not be identifiable or their pictures must be accompanied by written permission to use the photograph. Whenever possible permission for publication should be obtained.

Figures should be numbered consecutively according to the order in which they have been first cited in the text. If a figure has been published, acknowledge the original source and submit written permission from the copyright holder to reproduce the material. Permission is required irrespective of authorship or publisher except for documents in the public domain.

IV.A.12. Legends for Illustrations (Figures)

Type or print out legends for illustrations using double spacing, starting on a separate page, with Arabic numerals corresponding to the illustrations. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain the internal scale and identify the method of staining in photomicrographs.

IV.A.13. Units of Measurement

Use only standard Units of Measurements. If some new measurements or scoring patterns are used they should be explained in detail in the text.

IV.A.14. Abbreviations and Symbols

Use only standard abbreviations; the use of non-standard abbreviations can be extremely confusing to readers. Avoid abbreviations in the title. The full term for which an abbreviation stands should precede its first use in the text unless it is a standard unit of measurement.

IV.B Sending the Manuscript to the Journal

This Journal accepts electronic submission of manuscripts, whether on disk or attachments to electronic mail. Electronic submission saves time as well as postage costs, and allows the manuscript to be handled in electronic form throughout the editorial process (for example, when it is sent out for review). When submitting a manuscript electronically, authors should consult with the instructions for authors of the journal they have chosen for their manuscript.

If a paper version of the manuscript is submitted, send the required number of 6 copies of the manuscript and figures; they are all needed for peer review and editing, and editorial office staff cannot be expected to make the required copies.

Manuscripts must be accompanied by a cover letter, which should include the following information.

- A full statement to the editor about all submissions and previous reports that might be regarded as redundant publication of the same or very similar work. Any such work should be referred to specifically, and referenced in the new paper. Copies of such material should be included with the submitted paper, to help the editor decide how to handle the matter.

- A statement of financial or other relationships that might lead to a conflict of interest, if that information is not included in the manuscript itself or in an authors' form
- A statement that the manuscript has been read and approved by all the authors, that the requirements for authorship as stated earlier in this document have been met, and that each author believes that the manuscript represents honest work, if that information is not provided in another form; and
- The name, address, and telephone number of the corresponding author, who is responsible for communicating with the other authors about revisions and final approval of the proofs, if that information is not included on the manuscript itself.

The letter should give any additional information that may be helpful to the editor, such as the type or format of article in the particular journal that the manuscript represents. If the manuscript has been submitted previously to another journal, it is helpful to include the previous editor's and reviewers' comments with the submitted manuscript, along with the authors' responses to those comments. Editors encourage authors to submit these previous communications and doing so may expedite the review process.

Copies of any permission to reproduce published material, to use illustrations or report information about identifiable people, or to name people for their contributions must accompany the manuscript.

V. References

A. References Cited in this Document

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.
3. Flanagin A, Fontanarosa PB, DeAngelis CD. Authorship for research groups. JAMA. 2002;288:3166-68.
4. Peer Review in Health Sciences. F Godlee, T Jefferson. London: BMJ Books, 1999.
5. World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. JAMA. 2000 Dec 20;284(23):3043-5.
6. Pitkin RM, Branagan MA, Burmeister LF. Accuracy of data in abstracts of published research articles. JAMA. 1999 Mar 24-31;281(12):1110-1.
7. Patrias K. National Library of Medicine recommended formats for bibliographic citation. Bethesda (MD): The Library; 1991.

B. Other Sources of Information Related to Biomedical Journals

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

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

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

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

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

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

Annexure I

Manuscript no. JOA/NIA/20 /

Authorship Criteria and Responsibility
Financial Disclosure, Acknowledgment and Copyright Transfer Form

Manuscript Title :

I/We certify that the manuscript represents valid work and that neither this manuscript nor one with substantially similar content under my/our authorship has been published or is being considered for publication elsewhere. For papers with more than 1 author, We agree to allow the corresponding author to serve as the primary correspondent with the editorial office, to review the edited typescript and proof.

I/We have seen and approved the submitted manuscript. All of us have participated sufficiently in the work to take public responsibility for the contents. All the authors have made substantial contributions to the intellectual content of the paper and fulfil at least 1 condition for each of the 3 categories of contributions: i.e., Category 1 (conception and design, acquisition of data, analysis and interpretation of data), Category 2 (drafting of the manuscript, critical revision of the manuscript for important intellectual content) and Category 3 (final approval of the version to be published).

I/We also certify that all my/our affiliations with or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript are completely disclosed on the title page of the manuscript. My/our right to examine, analyze, and publish the data is not infringed upon by any contractual agreement. I/We certify that all persons who have made substantial contributions to the work reported in this manuscript (e.g., data collection, writing or editing assistance) but who do not fulfil the authorship criteria are named along with their specific contributions in an acknowledgment section in the manuscript. If an acknowledgment section is not included, no other persons have made substantial contributions to this manuscript. I/We also certify that all persons named in the acknowledgment section have provided written permission to be named.

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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

Relieve yourselves of the painful menstural cramps

April 30th, 2011, Menstrual cramps affect every woman at some point in time. For some, it's minimal while for some, it disrupts their normal routine since the pain becomes unbearable.

Here are some simple remedies to ease the cramps.

Water: You can start with drinking water frequently since dehydration only worsens the condition. The already existing cramps can be minimized by keeping a water bottle or a hot towel on your stomach area. Warmth lets the blood rush to the surface and relieves pain.

Exercise and Yoga: It is also very important to have physical activity during the menses which is not what is usually in belief. People talk of taking rest and keeping physical activity to a minimum but exercise and yoga can actually help reduce the cramps.

Keep away from caffeine: The caffeine contained in coffee, tea, colas and chocolate can add to the cramps since it increases your nervous energy. Drink hot liquids: A hot herbal tea and warmed up lemonade works wonders in relieving the pain.

Basil: This spice contains pain killing components and can be used either in the food that you are cooking or can be added into tea. You could also make a tonic of sorts with basil by boiling two tablespoons of basil to one pint of water. This is allowed to come down to room temperature while it is kept covered and one cup of it is consumed every hour to ease cramps.

Cinnamon: The anti-inflammatory and antispasmodic properties associated with cinnamon can ease the symptoms of menstrual cramping. Sprinkle cinnamon on your breakfast foods or add to a tea.

Ginger: A piece of ginger is pounded and added to water and boiled for a couple of minutes. The concoction is sweetened and consumed three times a day after meals.

Mint: Mint leaves can be added to tea and consumed. Sucking on mint candy through the day also relieved pain.

You can also indulge in a pampering mineral bath in which you fill the tub with one cup of sea salt and one cup of baking soda to warm water. This will relax your muscles. This should be done for at least 20 minutes.

Ayurveda Skin Care Products For All Skin Types Introduced

April 29th, 2011, Market Press Release – Ayurveda, the ancient Indian system of healing, has been providing treatments for various maladies successfully for thousands of years. Ayurveda works very well for skin care too.

Modern-day treatments just treat the skin as another organ of the human body. But according to Ayurveda, the skin is a "Panchendriya," or one of the five essential sensory organs, and therefore, treats it as extremely important. Apsaraskincare.com has delved deep into the ancient Ayurvedic principles, done thorough research, and developed some very good Ayurveda skin care products that are providing fantastic results.

Though the practices and knowledge of Ayurveda was lost for generations as modern treatments and medicines became popular, but there has been a revival of sorts in the last decade. Almost all modern-day medicines and treatments cause harmful side effects, and these side effects are often more pronounced than the main issue. Therefore, many people now want to try out alternative remedies that not only provide very good results, but are safer too. Today, a lot of research is being

*Research Fellow-Journal of Ayurveda, NIA, Jaipur

carried out on this ancient healing system, and as a result, we have some very good Ayurvedic products that are reportedly providing very good results too.

The Ayurveda skin care on offer from Apsara includes facial cleansers, facial toners, face lotions, face serums, face masks, and massage oils. All products are developed after extensive research and testing, and all of them are based on the ancient practices of Ayurveda that have been proved to be effective. All Ayurveda skin care products from Apsara are completely safe. The products on offer are for normal skin, dry skin, acne-prone skin, and combination skin.

Apsara's products are made with some of the best herbs and natural products for the skin. Some of the ingredients used are neem, turmeric, rose dew, root of vetiver, carrot seed, eucalyptus, lavender, sweet almond, papaya, and olive. There are many others too. Often, many of these ingredients are blended together in just the right mix to bring out a product that is just perfect for the human skin. As a result, Apsara's Ayurveda skin care products are known to provide a young and vibrant look, remove the signs of aging such as wrinkles and dark spots, get rid of acne, and make the skin appear glamorous. Many products are also known to detoxify as well and bring back the lost health.

Asian Herbal Show 2011 Passionate experience with green herbs

April 27th, 2011, Asian Herbal Show is being organized to promote natural and herbal-based products and to provide a platform for both consumers as well as manufacturers. The basic idea is to create a hub for all the players and bridge the gap between the players and the global market. A meeting point for all stakeholders with the prime focus on purchase and identification of the latest in the market.

This event will be held at NSIC Exhibition Grounds, Okhla, New Delhi, India between 25th – 27th September 2011.

It would be a grand show delivering diverse assemblages of elites playing a major role in creating awareness in the society and educating people about the latest advancements.

Objectives of Asian Herbal Show 2011:

- To bring in new opportunities.
- To enhance knowledge and information.
- Initiate and foster the need of Herbal Industry.
- Facilitating links between domestic & global market.
- To create awareness to general public on Herbal Products.
- A platform for showcasing products and exploring market trends for all stakeholders
- Increase the visibility of the farmer/company/ individual/s in a significantly short amount of time.

Ayurveda festival to be held in Sharjah

April 26th, 2011, Ahmed Al Midfa, Chairman of Sharjah Chamber of Commerce and Industry and Sanjay Verma, Consul General of India in Dubai will inaugurate the Indo-Arab Fest, an ITEC statement said.

"Ayur Fest is an industry focused expo which has been conceived to promote Ayurveda. The expo shall also promote the famous Indian Ayurvedic products, health packages and treatments all under one roof", it said.

Leading team of academicians in Ayurveda and exponents from the Ayurvedic field from different states in India will also be honoured at this event.

Seminars on common diseases among expats and the various Ayurvedic remedies shall be one of the highlights of the fest. Sripriyaa, the Director General of ITEC said.

"The aim of ITEC is to organise India-centric exhibitions that help to promote trade and investments between India and the Gulf region. The Ayur fest is a step in that direction," she said.

Step out into the Sun with radiant skin!

April 21st, 2011, With the harsh summer heat and long exposure to the Sun your skin begs for nothing but relief. Your skin makes up the largest organ in your body, protecting the insides. So it

becomes your duty to protect your skin from the harmful effects of the sun and also the pollution.

All skin types require a daily routine of cleansing, toning and moisturizing. If good skin is what you want for a long time to come, then 10 minutes a day is all you need to spend.

Your day should start with cleansing your facial skin with an appropriate cleanser meant for your skin type. Avoid chemical based products as they harm your skin in the long run. Splash some warm water on your face and neck so that the pores open up. Do not use hot water since it will harm the sensitive skin layers. Take a few drops of the cleanser that you have chosen on a cotton ball or swipe and apply it onto your skin gently and wipe away with upward strokes so that the surface dust will be cleaned. If you have oily skin, make sure all the oil is cleared up and use a different cotton ball to wipe away the second time. If you are using a face wash for cleansing, use soap free cleanser.

Once this is done, it is followed by Toning. Use an alcohol free toner so that the opened pores are closed and the pH balance is restored. Rose water, cucumber, sandalwood based toners, etc would be good options. The toner is taken in a cotton ball and applied all over the face and neck with upward strokes. While the skin is still moist from the toner, apply a suitable moisturizer on the face and neck. Make sure that the moisturizer is appropriate for your skin type as it may lead to extreme oiliness if your skin is already oily or may not work well if you have very dry skin. Turmeric, sandalwood, almond, cocoa butter, neem, tulasi etc are some of the moisturizer bases.

Liv.52 – Herbal Medicine for Liver Diseases

April 16th, 2011, A Blend of proven herbs with antioxidant properties ensures optimum liver function through the protection of the hepatic parenchyma. Liv.52 neutralizes all kind of toxins and poisons from food, water, air and medications, the detoxification process cleans and protect the liver.

India offers scholarship for higher studies in Ayurveda, Unani, Siddha and Homeopathy

May 31st, 2011, Colombo, 31 May, (Asiantribune.com): The Government of India has come forward offer ten scholarships for Sri Lankan Nationals under the "Ayush Scholarship Scheme" for UG/PG/Ph.D courses in Ayurveda, Unani, Siddha & Homeopathy during the forthcoming academic session of 2011 – 2012.

A new release from the Indian High Commission in Colombo revealed, that Meritorious Sri Lankan nationals will be selected for these scholarships by the High Commission of India, in consultation with the Ministry of Higher Education (MOHE), Government of Sri Lanka, for pursuing undergraduate and postgraduate courses in different universities.

AyurVAID Hospital, the first hospital in the country to receive the prestigious NABH accreditation

May 21st, 2011, Bangalore's first, and biggest, classical Ayurveda hospital- the AyurVAID Hospital at Domlur Extension- is a multispecialty hospital that offers comprehensive Kerala style Ayurveda medical care for serious chronic ailments. The complete range of purvakarmas, pradhanakarmas, including all panchakarma procedures, are rendered by a team of highly trained Ayurveda nurses under the supervision of a team of senior Ayurveda physicians with a collective experience of over 60 years in Ayurveda based medical management.

This exclusive 24-bed (30 bed capacity) Ayurveda hospital with air-conditioned (optional) premium, private, and semi-private rooms is located off the Intermediate Ring Road connecting Indira Nagar to Koramangala, adjacent to Dell-EGL. The treatment rooms are most hygienically maintained. All rooms are airy, well-lit, with en-suite bathrooms, flat screen televisions and WiFi internet access.

AyurVAID Hospital is the first Ayurveda Hospital in Karnataka to have a dedicated water treatment plant to ensure that all oil and other sediments are separated from treatment water before it is let off into the public drainage system. They also adhere to the Government of India's Bio-medical Waste guidelines, as well as the Water and Air Acts.

The residents of Bangalore are in for a world class Ayurveda medical care facility.

Ten reasons why Patchouli Oil is the answer to your problem

May 18th, 2011, Herbal oils are a rave in the present day scenario. People are settling for remedies that are not just effective but are harmless in the long run. Herbal oils are of various types depending on what herbs are used to prepare the oil. Amongst the popular oils is the Patchouli oil. The oil is extracted from the pogostemon cablin plant which is a bushy herb that belongs to the mint family. The oil is known not just for its health benefits but also for its fragrance.

Here are the top ten reasons why you should be using Patchouli Oil.

- Patchouli oil is best known for its anti depressant properties. The oil not only lifts up your mood and relieves your senses of any tension but also reduces your anxiety and depressed feelings.
- As mentioned earlier, the fragrance of the oil lets it be a part of perfuming your rooms or even in incense sticks for your Pooja room.
- The oil is a popular massage oil and is also used in Aromatherapy for The oil has anti fungal, anti septic, anti viral and anti bacterial properties and hence can be used for any above mentioned related allergies or infections.
- It is a very good skin care oil that prevents skin infections and problems such as acne, drying of skin, scars, etc. It also has anti aging properties that keeps your skin looking young and rejuvenated.
- The oil's sweet smell also makes a great perfume. It helps it keeping your body odour at bay.
- Adding a few drops of the oil into your clothes before washing them will not only give them a fresh smell but also destroys the bacteria and other microbes that could be in the clothes which will cause allergy.
- Spraying Patchouli oil based liquid in your house will keep away insects, mosquitoes, bugs and other annoying flying creatures.
- It has also shown increased benefits in weight loss, sex related problems, urinary problems and helps in flushing out the toxins and cholesterol from your body.
- Last but not the least, it increases the immunity of your body and hence prevents illnesses like cold, cough, fever, headaches, infections and abdominal problems.

These reasons should cover the most important aspects of your daily life and hence the reason why Patchouli Oil should be a part of your health regime.

Cure migraine the natural way

May 14th, 2011, Migraine has become more than just a pain in the head; it affects your daily functioning and makes every day a painful experience. Summer just adds on to the pain due to exposure to the harsh sun rays.

Ayurveda looks at migraine as mostly a pitta dosha, which is an imbalance in the body heat. Migraine could also be caused as part of the vata dosha or kapha dosha as well but pitta dosha is looked into as the main cause.

Ayurveda looks at balancing the doshas so as to bring about not just a bodily balance but also solve the root cause of the problem.

Herbal cures include the use of chyavanprash, ashwagandha, shatavari, brahmi, jatamamsi and gudachi amongst others. Herbal hot oil massage also known as Shirodhara is used to relieve headaches.

Other than that, some basic things can one can incorporate to relieve oneself of migraine can be done on a daily basis. Since it is summer, avoiding the Sun as much as possible would help to a large extent since the heat from the Sun also increases the pitta levels in the body. If staying out in the Sun is unavoidable, protect yourself from the Sun by taking an umbrella or putting on a wide hat.

Nature has answers to everything. And to relieve you of a migraine, a walk amongst greenery is your answer. A regular walk in the evening in a park or a garden or any other scenic place will not only make you feel good and relaxed but will also keep your headache away.

Pranayama is another solution that will give permanent results when followed with punctuality. Shitali pranayama is also known as the cooling breathing exercise. This involves rolling your tongue like a tube and breathing in air through your mouth. You will feel your saliva and your tongue cooling while you inhale. Exhaling is done from the nose. Following this breathing technique regularly not only keeps you healthy but will be a sure solution to bring your headaches down and also keep your body cool and the pitta in check.

Following these simple techniques will help you keep your migraine at check.

Ophthacare – Alternative Medicine for Eye Disorders and Conjunctivitis

May 14th, 2011, According to the medical journals, Ophthacare from Himalaya is a combination of herbs enriched with perfectly safe components that provides relief from the strains and irritation of the eyes. The chilling signification of this product helps to treat the nerves. This herbal product has anti-inflammatory properties which work effectively to heal the inflammation-related eye conditions. Himalaya Ophthacare herbal eye drops is beneficial in the management of infective and inflammatory eye disorders. Ophthacare gives relief from congestion, and by virtue of its cooling effect, is beneficial in eyestrain.

It is stated that, the different ingredients in Himalaya Ophthacare are the natural herbs used in Ayurveda for the treatment of various diseases from ancient times and bears different properties like anti-inflammatory, anti-viral, anti-microbial and soothing. The various ingredients Yawani, Vibhitaki, Amalaki, Harida, Vishnu priya, Satapatri, Karpoora and Madhu work together to treat the eye disorders. Ophthacare acts as a range unbleached eye desire whitener. It gives relief from eye strain, eye irritation and congestion.

A study carried out on the effectiveness of Ophthacare on a group of people suffering from sore eyes and infections like sty, acute and chronic conjunctivitis states that a prescribed use of this herbal medicine cures any kind of conjunctivitis and associated complaints like swelling, irritation, redness of eye. The allergic infections due to dust, smoke and chemicals damages eye layers, Ophthacare in such cases removes the damage causing elements and cleans up the eyes.

Relish your fruits the healthy way this summer!

May 10th, 2011, When we talk Ayurveda we mean discipline. Ayurveda is known not just for its overall health benefits but also a certain system, obedience and restraint that we have to follow to gain the expected results. From curing major diseases to following a particular lifestyle, Ayurveda leaves no questions unanswered.

But for something so complex and intense, we never think that there would be a way of eating fruits to gain maximum benefits from the same. It's summer and it's the season of mangoes and watermelons. But have you ever thought for a moment that these could not only be enjoyable to eat but could also be made healthy if eaten the Ayurvedic way? Here's how you eat them!

Mangoes are rightfully called the king of fruits and we all await the summer season to relish this fruit. But mangoes are known to increase body heat and cause dysentery. To avoid this displeasure you could consume a pinch of ginger powder or just eat a small piece of ginger (you could add a pinch of salt and a drop of lime juice to the ginger piece) as soon as you eat a mango. This will control any ill effects a mango could cause to your body.

New research indicates ayurvedic drugs to have a two-yr expiry

June 27th, 2011, A research conducted for the stability of ayurvedic preparations involving medicated 'ghee' (grhita) and oil (taila), conducted at the department of Rasa Shastra, BHU, has fixed the shelf-life of such preparations as a maximum of two years.

Consumers need to note that only 'asavarishta' (herbal liquid preparation) and 'bhasma' (metallic-herbo formulations) have no expiry date and can be used even after two years of manufacturing.

SHORT COMMUNICATION

INSTITUTE NEWS

*N.N. Kutty**

The Hon'ble Minister for Health, Family Welfare and Ayurveda of Punjab, Prof. Laxmi Kanta Chawala visited the Institute. The visit of the Hon'ble Minister was to have an on the spot study about the set up and functioning of NIA in order to develop and enrich the various Ayurvedic teaching, training, research and patient care activities in the State of Punjab. The Hon'ble Minister was highly impressed and appreciative over the various activities of the Institute and remarked that the Institute is doing excellent activities in various fields of Ayurveda.

The Institute organized a Workshop of CCRAS on "Integrated Clinical Decision Support System(ICDSS). The Workshop was intended to provide an easy to use, standard Electronic Health Record(HER) for AYUSH Teaching Hospitals and Research Councils. The Software Module prepared for this purpose and the Knowledge Module(Ayurveda, Biomedicine) have to be built to make the Decision Support System functional. 1 Teacher and 2 Ph.D./Ph.D. Scholars each from all the 14 Departments were actively involved in the Workshop for helping in the content development work. The Objectives of the workshop was: (1)To collate information with respect to Disease pathology, Symptoms, Signs, Investigations, Treatment plan, Medicines, Procedures, Disease Counseling, Lifestyle advise from Ayurveda and Biomedicine. (2)Arrange the information in the set format and Enter them online into ICDSS Knowledge module.

Prof. Ajay Kumar Sharma, Director participated in the 1st Meeting of the Task Force on AYUSH. He also participated in a Meeting of Experts to Finalize a Trial Durg, Amalaki Rasayan to Study Anti-Aging Phenomenon for International Collaboration in Clinical Stuy on Rasayana organized by CCRAS. He was nominated as an Expert for Evaluation of the Candidature of an Assistant Professor of Institute of Indigenous Medicine of Sri Lanka for Promotion as Professor.

Prof. Naresh Kumar Khemani, Professor & Head of the Department of Dravya Guna participated in the 9th Meeting of Project Screening Committee of NMPB on Inventorisation, Survey, In-situ, Ex-situ Conservation etc.

Prof. Chandan Mal Jain, Head of Department of Prasuti Tantra & Stri Roga and Dr. V Nageswara Rao, Associate Professor(Rasa Shastra) participated in the Middle Level Management Programs in Indian Institute of Management, Ahmedabad.

*Administrative Officer, NIA, Jaipur