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International Ayurveda Research Day

9 March 2014

The second International Ayurveda Research Day conference was organized at Pune on Sunday, 9 March 2014 by International Ayurveda Association (IAA). Deerghayu International (DI) and Institute of Indian Medicine (IIM) collaborated for the event along with 'Societa Italiana Professor Kulkarni Ayurveda (SIPKA), Rimini, Italy, The Ayurveda Federation South Africa (TAFSA) and Beyond Horizons health and social circle (BHHAS) India'.

This conference was a celebration of 3 decades of Ph. D. (Ayurveda) started in Pune University, as well as 3 decades of our peer reviewed journal 'Deerghayu International'. On 9th March 2014, our founder Prof. Dr. P. H. Kulkarni entered 80th year. This conference was a tribute to his contribution to Ayurveda research worldwide for last over 5o years.

This conference was an interdisciplinary Ayurveda research conference that involved around 300 researchers. Over 120 researchers presented their work in the conference through articles published in DI, Poster gallery and scientific presentation sessions.

Around 60 research papers were presented during 2 parallel scientific sessions of 4 hours each.

A special issue of our peer review journal Deerghayu International was published on the occassion.

IIM President Prof. Dr. P. H. Kulkarni, Executive President Dr. Atul Rakshe, MUHS Ayurveda faculty dean Prof. Dr. Satish Dumbre, Tilak Maharashtra University Ayurveda Faculty dean Prof. Dr. S. P. Sardeshmukh, Asst. Director of Ayurveda Dr. Sarita Gaikwad, Lucia Tommasini (Director, the Ayurveda heal school, Veteran Ayurveda ambassador from Rome), Vaidya Etienne Premdani (Director, Premdani Ayurveda, Olst, The Netherlands), Dr. Rani Pargaonker (USA), Principals and Head of the departments from various Ayurveda Institutes were present.

Prof. Dr. Dilip Puranik and Prof. Dr. Yogini Kulkarni were conferred the most prestigious 'International Ayurveda Research Ratna Award'. Prof. Dr. Kavita Indapurkar and Prof. Dr. Bharat Kadlaskar were conferred the 'International Ayurveda Research Bhushan Award.'

Glimpses of
International Ayurveda Research Day
9 March 2014

Glimpses of
International Ayurveda Research Day
9 March 2014

Hon. Prof. Dr. S. P. Sardeshmukh (Dean, Faculty of Ayurverda Tilak Maharashtra University), Prof. Dr. P. H. Kulkarni (President IAA, IIm, DI), Lucia Tommasini (Director, the Ayurveda heal school, Veteran Ayurveda ambassador from Rome), Hon. Prof. Dr. Satish Dumbre (Dean, Faculty of Ayurveda, Maharashtra University of Health Sciences).

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Case Study

Study of Vayanupatini Prakruti in Femals

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ABSTRACT :

The objective of this topic was study of vayanupatini prakruti in females. According to Ayurved Samhitas references regardingprakruti were studied.Prakruti of the volunteers was done with the help Special Prakruti Parikshan Proforma. At the same time references regarding Menstrual Cycle were also studied from modern texts. Out of 90 subjects taken for study 30 females belong to Kaphapradhan Prakruti, 30 females were belong to Pitta PradhanPrakruti, and 30 females were belong to Vatapradhan Prakruti. The study shows, during menstrual cycle changes occurs in the female body according to prakruti.

INTODUCTION :

Ayurveda, the Indian traditional system of medicine describes a unique concept “prakruti” (constitution), which is genetically determined, categorising the population into several subgroups based on phenotypic characters like appearance, temperament and habits. The concept is claimed to be useful in predicting an individual’s susceptibility to a particular disease, prognosis of that illness and selection of therapy.

Ayurveda attributes these constitutional characteristics of an individual to the preponderance of certain “doshas”.Based on the predominance of individual doshas, there are three major types of prakruti named after predominant dosha, viz., vata, pitta and kapha.

The prakruti is believed to be determined at the time of conception and is influenced by the the dietary habits and lifestyle of the mother. Menstrual cycle is the combination of ovarian and uterine cycle also the hormonal changes and the related cyclical changes in the breast and the cervix.

AIM AND OBJECTIVES :

AIM : Study of Vayanupatini Prakruti in Females.

OBJECTIVES :

- The concept of SharirPrakruti – Vayanupatini Prakruti, from Ayurvedic Samhitas, was studied in detail and the references were compiled.
- The concept of Artav –Raja from AyurvedicSamhitas, was studied in detail and the

references were compiled.

- The Mensrtual Cycle from modern text was studied and references were compiled.
- The relation between VayanupatiniPrakruti and Menstrual Cycle was studied statistically.

MATERIALS AND METHODOLOGY :

- **MATERIALS :**
  1. Ayurvedic Samhitas.
  2. Modern Texts and Techniques.
  3. Prakruti Parikshan Proforma.
- **Inclusion Criteria :**

  The study consist of 90 female students from 18 to 22yrs age group.
- **Exclusion Criteria:**

  The students suffering from any major illness.
- **METHODOLOGY:**

➢ **SHARIR PRAMAN PARIKSHAN:**

- Prakruti Parikshan.
- Raja Parikshan.
- Breast Parikshan.
- Tarunyapitika Parikshan.

➢ **PROFORMA OF PRAKRUTI:**

Dehakruti : -

- Aayam
- Vistar
- Upachaya

Mukha Darshan-

- Prassana
- Durbhag

Artav Parikshan-

- Varna
- Praman.
- Kala
- Others.

➢ **PROFORMA OF SHARIR PRAMAN:**

Swa-anguliPraman :

Avayav	GranthPrman	Parikshan
Pada	04	
Jangha	18	
Janu	04	
Uru.	18	
Trika	12	
Prushta	18	
Griva	04	
Shir	06	
Total	**84**	

P**arinah Parikshan:**

Avayav.	GranthPraman.	Parikshan.
Bhaga	12	
Kati	16	
Udar	10	
Parshwa	10	
Mukha	24	
Shirodhara	22	
Shir	32	

➢ **PRAFORMA OF RAJA :**

● **Onset of Menses -**

Age :

● **Menstrual Cycle -**

a. Time :

b. Duration between two menses :

c. Regularity :

● **Gandha (Odour) -**

● **Varna(Colour) -**

- Others -
- Praman -
- Swarup -
- Body Temp -

➢ **PROFORMA OF TARUNYAPITIKA :**

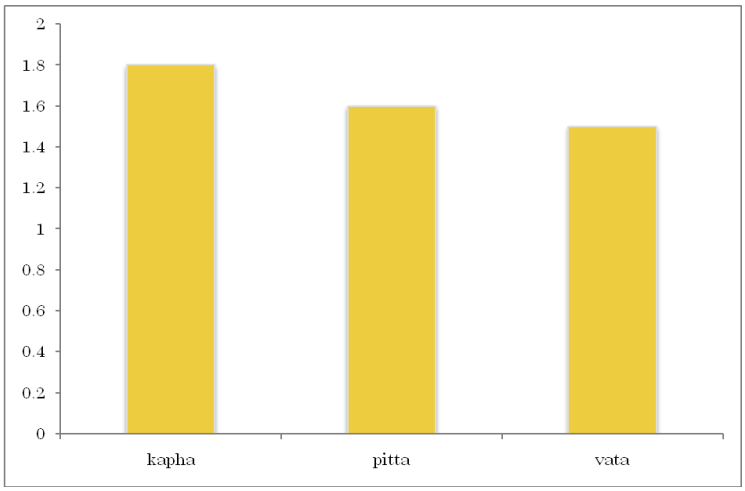
- MukhaTwacha :
- Varna :
- Sparsha :
- Aakar(Size) :
- Painful/with pus :

➢ **ADDITIONAL EQUIPMENTS :**

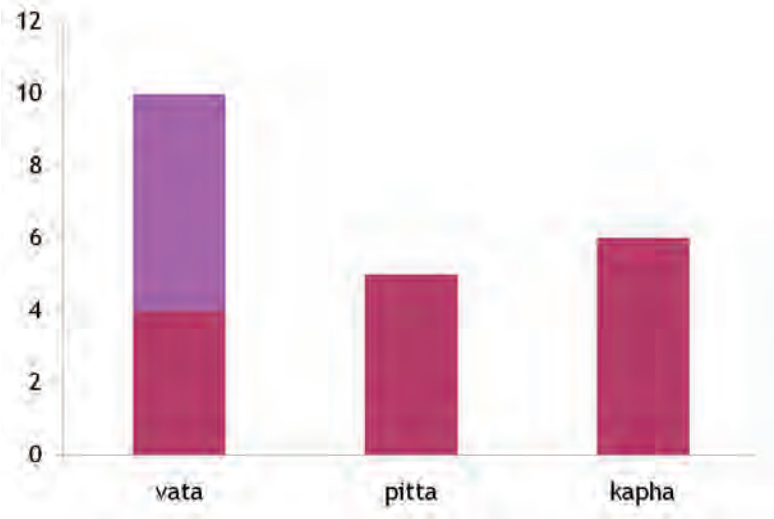
- Measuring Tape
- Weighing Machine
- Thread(for swa-anguli)
- Clinical Thermameter
- Calculator
- Sanitary pads

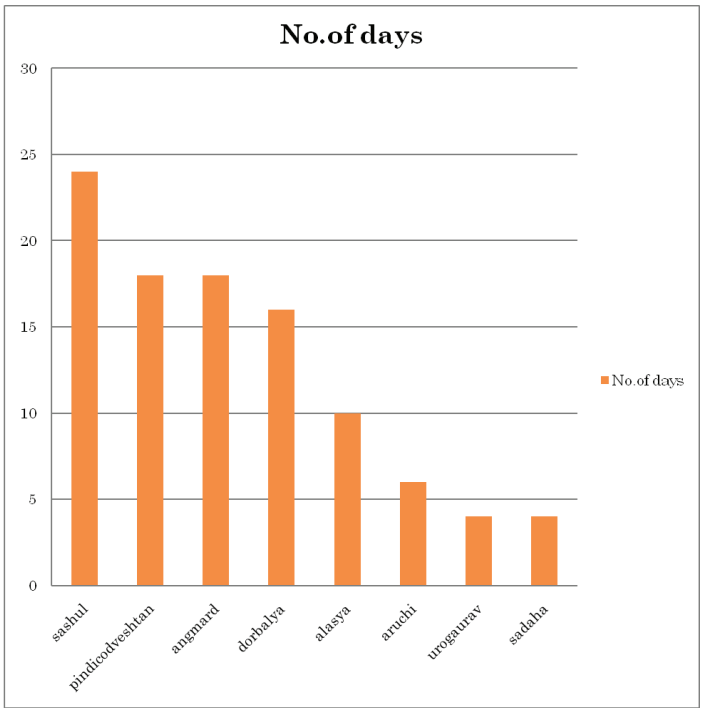
❖ **OBSERVATION :**

· **ANGULI PRAMAN.**

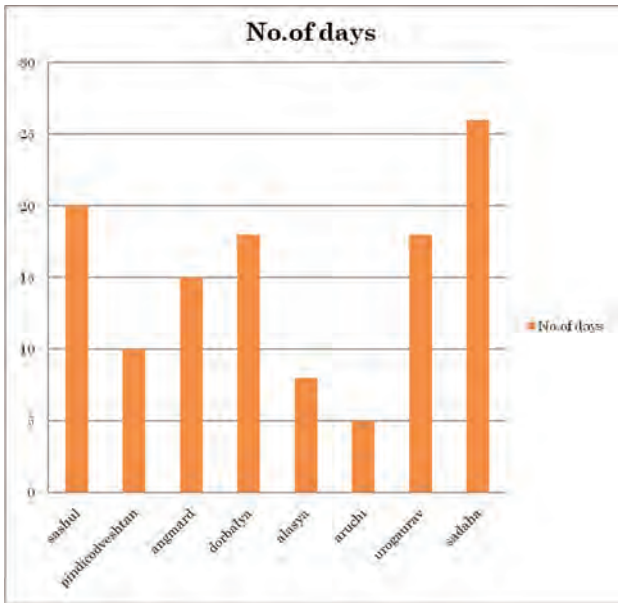


· **DURATION OF MENSTRUTION ACCORDING TO PRAKRUTI.**

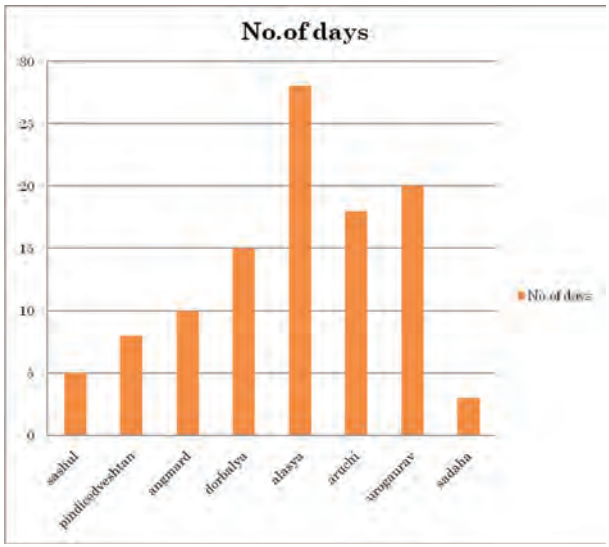




SYMPTOM FOUND DURING MENSTUAL CYCLE IN VATAPRAKRUTI..



SYMPTOM FOUND DURING MENSTUAL CYCLE IN PITTA PRAKRUTI..



SYMPTOMS FOUND DURING MENSTRUAL CYCLE IN KAPHA PRAKRUTI.

AVAYAV.	GRANTH PRAMAN.	VATA PRAKRUTI.	PITTA PRAKRUTI.	KAPHA PRAKRUTI.
Pada	04	4.5	4	4.5
Jangha	18	19	18	18.5
Janu	4	4	4	4
Uru	18	20	18.5	19
Trika	12	12	12	12.5
Prushta	18	17.5	18	17.5
Griva	4	5	4.5	5
Shir	6	5	6	7
Total	84	87	85	88

BREAST EXAMINATION	VATA PRAKRUTI.	PITTA PRAKRUTI.	KAPHA PRAKRUTI.
Distance between two breasts	16	14	12
Circumference of chest	52	52	56

Discussion :

IN 30 VATA PRAKRUTI FEMALES. :

- Normal bleeding was 4 to 6 days in 7, more than was in 5, less than in 18.
- Time interval between two cycles was 28 days in 11,more than was 12 and less than was 7.
- Raja strav was blackish red and vistragandhi in all.
- Tarunyapittika were in 18 during menses.
- Distance between two breast was increased by 1cm
- Body temp increased by 0.5 in all.

IN 30 PITTA PRAKRUTI FEMALES. :

- Normal bleeding was 4 to 5 days in 25,more than was in 3 ,less than in 2.
- Time interval between two cycles was 28 days in 26,more than was 2,less than was 2
- Raja strav was red and vistragandhi in all.
- Tarunyapittika were in 22 during menses.

- Distance between two breast was increased by 1cm
- Body temp increased by 0.8 in all.

N 30 KAPHA PRAKRUTI FEMALES. :

- Normal bleeding was 4 to 6 days in 27,more than was in 1 ,less than in 2.
- Time interval between two cycles was 28 days in 28,more than was 1,less than was 1
- Raja strav was red and vistragandhi in all.
- Tarunyapittika were in 8 during menses.
- Distance between two breast was increased by 1.5cm
- Body temp increased by 0.3 in all.

❖ **CONCLUSION :**

- **In KaphaPrakruti :**
- Swaanguli = 88 ayam is 100%
- Menstrual flow and time interval between 2 cycles was regular is 90%
- Associated symptoms-Painful bleeding,recurrentmicturation is 94%
- Temp increase by 0.3 is 100%
- Appearance of tarunyapittika is 27%.
- **In Pitta Prakruti :**
- Swaanguli = 85 ayam is 100%
- Menstrual flow and time interval between 2 cycles was regular is 85%
- Associated symptoms-Painful bleeding,recurrentmicturation is 87%
- Temp increase by 0.8 is 100%
- Appearance of tarunyapittika is 85%
- **In VataPrakruti:**
- Swaanguli = 87 ayam is 100%
- Menstrual flow and time interval between 2 cycles was irregular is100%
- Associated symptoms-Painful bleeding,recurrentmicturation is 100%
- Temp increase by 0.5 is 100%
- Appearance of tarunyapittika is 60%

- **It was found that change occurs as per age in female body which affects prakruti.**
- **So age is the important factor to determine prakruti in females.**

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"Comparative study of Duralabhadi Lehyam and Tablet. Hetrazan in vatajkasa with special reference to Pulmonary eosinophilia."

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ABSTRACT -

Vataj kasa is a most common disease found in day to day practice,affects Respiratory system .Hence in the present study,effect of DuralabhadiLehyam is studied and is compared with Tab.Hetrazan.

Two groups of 30-30 patients were formed. Group A was treated with DuralabhadiLehyam and Group B treated with Tab.Hetrazan for 21 days.Follow up was done on Day 7,14 and 21.Clinical evaluation was done on basis of symptoms like dry cough (Shushkakasavega), chestpain (Urahshoola), diaphragmaticpain (Parshvashoola), headache(shirahshoola), horseness of voice (swarbheda), dryness in throat and mouth (kanth-vaktrashushkata), feeling of darkness infront of eyes(Pratamyata), weakness(Daurbalya) and objective parameter i.e.eosinophilic count. Statistical analysis of data was done by applying chi square and student's t-test.

On the basis of statistical tests of significance,DuralabhadiLehyam was found more effective in reducing symptoms of Vataj kasa and eosinophilic count.

KEY WORDS-Vataj kasa,Pulmonary eosinophilia,DuralabhadiLehyam.

INTRODUCTION -

Excellency of ayurveda is that it described kasa is an independent disease having its own pathogenesis, types, symptoms, signs and treatment. If kasa is not treated earlier, it can produce life threatening diseaseslikeShosha,Shwasa, Urahkshata, Raktapitta, Rajyakshma etc. Vataj kasa is a disease which affects respiratory system. In this desease,vatadosha is mainly vitiated and produce the desease.It is a common disease at present,affecting a large number of people.

In Ayurveda text-Bharat bhaishajyaratnakar, third part (Kalpa no.3025), Duralabhadi Lehyam is described as a treatment for vatajkasa.

Aims and Objectives -

Aim - To evaluate effect of DuralabhadiLehyam in Vataj kasa.

Objectives - To minimize signs and symptoms of vatajkasa such as

1) Shushkakasavega 2) Urahshoola

3) Kantha-vaktrashushkata 4) swarbheda

To study the effect of DuralabhadiLehyam on eosinophillic count.

MATERIALS -

Group A :

DuralabhadiLehyam contains1

- Yawasa (Alhagicamelorum)
- shati (Hedychiumspicaticum)
- pippali (Piper longum)
- Yashtimadhu (Glycerrhizaglabra)
- sharkara (sugar)
- madhu (Honey)

Randomly selected 30 patients were given DuralabhadiLehyam 3gm after food twice in a day for 21 days.

GROUP-B :

Randomly selected 30 patients were given Tab.Hetrazan 100mg thrice a day for 21 days.

Follow up- At Day 7, Day 14, Day21.

Diet and behavior regimens were same for patients of both groups.

METHODS - Selection of patients-Clinical study was carried out on randomly selected 60 patients from O.P.D. and I.P.D. of Kayachikitsa Dept.of Arogyashala rugnalaya,Nashik, showing signs and symptoms of vatajkasa.

INCLUSIVE CRITERIA-

1) Age group-30-60yr.

2) Sex-Both male and female.

3) Patients with symptoms of vatajkasa(as per charaksamhitachikitsa sthana-18)

Shushkakasa(dry cough),urahshoola (chest pain),parshvashoola (diaphragmatic pain) ,shirahshoola(headache),swarbheda(hoarseness of voice),kantha-vaktrashushkata(dryness in throat and mouth),Pratamyata(feeling of darkness in front of eyes),Daurbalya(weakness).

EXCLUSIVE CRITERIA -

1) Patients suffering from serious illness like Cardiac diseases, Malignancies,Tuberculosis,

Asthma, Diabetes Mellitus, Renal impairment etc.

2) Other types of kasa

3) Pregnant women.

ASSESSMENT CRITERIA -

Subjective criteria :

Shushkakasa

Urahshoola

Parshvashoola

Shirahshoola

Swarbheda

Kantha-vaktrashushkata

Pratamyata

Daurbalya

Objective criteria -

Chest X-ray PA view, CBC on cell counter with ESR.

OBSERVATIONS AND RESULTS -

TABLE NO.1 : Table showing difference in Dry cough(Shushkakasavega) during follow up days between Group A and Group B.

Group A vs. Group B at 5% level of significance

Days	X^2	Df	X^2 Table value	Probability	Result
D 7	5.08	1	3.84	X^2cal> X^2 table	Significant
D 14	6	2	5.99	X^2cal> X^2 table	Significant
D21	2.05	1	3.84	X^2 ca l< X^2 table	Not significant

On comparison of observation,there was significant difference noted on Day 7.

TABLE NO.2 : Table showing difference in Chest pain (Urahshoola) during follow up days between Group A and Group B.

Days	X^2	Df	X^2 Table value	Probability	Result
D7	4.28	1	3.84	X^2cal> X^2 table	Significant
D14	2.2	1	3.84	X^2cal< X^2 table	Not significant
D21	1.07	1	3.84	X^2cal< X^2 table	Not significant

On comparison of observation,significant difference was observed on Day 7.

TABLE NO.3 : Table showing difference in Diaphragmatic pain(Parshvashoola)during follow up days between Group A and Group B.

Group Avs Group B at 5% level of significance

Day	X^2	Df	X^2 table value	Probability	Result
D7	5.44	1	3.84	X^2cal> X^2 table	Significant
D14	0.73	1	3.84	X^2cal< X^2 table	Not significant
D21	0	1	3.84	X^2cal< X^2 table	Not significant

On comparision of observation,significant difference was observed on Day 7.

TABLE NO.4 : Table showing difference in shirahshoola(Headache) during follow up days between Group A and Group B.

Group Avs Group B at 5% level of significance

Days	X^2value	Df	X^2 Table value	Relation	Result
D7	13.12	2	5.99	X^2 value>x^2 table value	Significant
D14	0.98	1	3.84	X^2 value<x^2 table value	Not significant
D21	0	1	3.84	X^2 value<x^2 table value	Not significant

There was significant difference observed on Day 7.

TABLE NO.5 : Table showing difference in horseness of voice(swarbheda) during follow up days between Group A and Group B.

Group Avs Group B at 5% level of significance

Day	X^2value	Df	X^2 table value	Relation	Result
D7	0.082	1	3.84	X^2 value<x^2 table value	Not significant
D14	1.64	1	3.84	X^2 value<x^2 table value	Not significant
D21	2.068	1	3.84	X^2 value<x^2 table value	Not significant

In this comparison,no significant difference was observed in swarbheda.

TABLE NO. 6 : Table showing difference in dryness of mouth and throat(kantha-vaktrashushkata) during follow up days between Group A and Group B.

Group Avs Group B at 5% level of significance

Day	X^2value	Df	X^2 table value	Relation	Result
D7	0.402	1	3.84	X^2 value<x^2 table value	Not significant
D14	2.956	1	3.84	X^2 value<x^2 table value	Not significant
D21	4.28	1	3.84	X^2 value>x^2 table value	Significant

There was significant difference was observed on Day 21.

TABLE NO. 7 : Table showing difference in feeling of darkness infront of eyes(Pratamyata) during follow up days between Group A and Group B.

Group Avs Group B at 5% level of significance

Day	X^2 value	Df	X^2table value	Relation	Result
D7	0.734	1	3.84	X^2 value<x^2 table value	Not significant
D14	0.3494	1	3.84	X^2 value<x^2table value	Not significant
D21	0	1	3.84	X^2 value<x^2table value	Not significant

There was no significant difference observed in both groups.

TABLE NO. 8 : Table showing differencein weakness(Daurbalya)during follow up days between Group A and Group B.

Group Avs Group B at 5% level of significance

Day	X^2value	Df	X^2table value	Relation	Result
D7	2.856	1	3.84	X^2 value<x^2 table value	Not significant
D14	3.75	1	3.84	X^2 value<x^2 table value	Not significant
D21	4.04	1	3.84	X^2 value>x^2 table value	Significant

There was significant difference observed on Day 21.

Table no. 9 : Table showing difference in eosinophilic count.

Paired t-test

	Group A	Group B
S.D.	1.3	0.7239
S.E.	0.237	0.1320
t 29	6.03	115.15
Table value at 5% level	2.05	2.05
P	<0.05	<0.05

Unpaired t-test

Calculations	Values
S.D.	1.0538
S.E.	0.2718
t 58	3.7895
t-table value	2.02
P	<0.05

DISCUSSION -

Effect of DuralabhadiLehyam invatajkasa can be explained by its vatashamak and Vatanulomak property.Yawasa gives soothing effect to respiratory tract due to its snigdha guna and acts as mucolytic,expectorant.Yashtimadhu acts as anti-inflammatory, antibacterial i.e.inflammation of respiratory tract is encountered by yashtimadhu. Due to madhur rasa,madhurvipaka,sheet virya reduces weakness by brunhana action. Shati and pippali having katu rasa, katu vipaka andushna guna, shows vataghna, analgesic action due to vatashamanaagnidipana, vatanulomana hence helps to inhibit pathogenesis of vatajkasa.Pippali itself have antibacterial,antiinflamatory activity. Shirahshoola,urahshoola,parshvashoola reduces by analgesic action of pippali and shati. Sugar shows expectorant activity due to its madhur rasa and demulcent action.Honey enhances effect of DuralabhadiLehyam and acts as a vehicle.Duralabhadilehyam reduces inflammation of lungs in Pulmonary eosinophilia.Dry cough,chest pain and eosinophilic count is reduced in pulmonary eosinophilia.Statistically DuralabhadiLehyam is more effective in reducing eosinophilic count.

CONCLUSION -

From the clinical trials conducted for the study"Comparative study of DuralabhadiLehyam and Tab.Hetrazan in Vataj kasa with special reference to Pulmonary eosinophilia." Following conclusions are drawn:

On the basis of statistical tests of significance,DuralabhadiLehyam is effective in reducing symptoms dry cough(Shushkakasa), chest pain(urahshoola)diaphragmatic pain(parshvashoola) headache(shirahshoola),dryness in throat and mouth (kantha-vaktrashushkata) and weakness(dourbalya).Eosinophilic count was reduced significantly in both groups where DuralabhadiLehyam is more effective than Tab.Hetrazan in reducingeosinophilic count.

Thus it can be concluded that DuralabhadiLehyam is significantly effective in the management of vatajkasa.

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Efficacy of Aja Ghruta in Vataja Vikruti Lakshanani (Pathological Eye Symptoms)

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Abstract :

Vataj Netra Vikruti" is the ophthalmic disorder occurred due to exasperation of Vayu in the ophthalmic tissue. The Vayu gets irritated due to overuse of eyes without any rest.. To prevent the diminishing phenomenon of tissues Ayurved has adviced to consume oleation. Cow Ghee and Goat Ghee are best Regenerative drugs either consumed orally or if installed in eyes.

Method-Aja Ghrit was prepared with strict hygienic precaution and step wise traditional method.

Assessment criteria

Subjective Parameters

1. Nistoda (Pricking Pain), 2. Sangharsha (Rubbing sensation), 3. Âadhmân (Bulging Sensation), 4. Sthabdhatâ (Difficulty in ocular movement), 5. Netra Šośa (Atrophy and degenerative changes), 6. Netra Klama (Eye fatigue), 7. Šiśira Aśrutâ (Cold tears), 8. Kampana (Trembling in eyes), 9. Avil Netra (Turbid eyes), 10. Viśuśka Bhava (Dryness), 11. Alpa râga (Slight rednees)

Objective Parameters :

1) Tear film break up time

2) Vision test

Both tests were performed in ophthalmic O.P.D. at Bharati Vidyapeeth Ayurved Hospital Pune 43; Maharashtra.

Dose :

Two drops in each eye, once in a day.

Duration: 15 days

Follow up: on 7th & 14th day from the starting day of treatment.

1.Ethical Clearance:

Clinical Trials were started after obtaining ethical clearance .

Conclusion -

Subjective Parameters -

Ajâ Ghruta has proved significant in Nistoda, Sangharsha, Âadhmân, Netra Klama, Šišira Aśrutâ, Viśuśka Bhava, Alpa Râga, Avil Netra. Non Significant results were found in Stabdhata and Netra Kampana.

Objective Parameters -

1) Tear Flim Break Up Test is used to measure the quality of the tear film. More the tear flim Cornea is moist. As Viúuúka Bhava is well treated by instillation of Ajâ Ghrita so Tear Flim Break Up Test has also proved significant.

2) Non Significant result was found for vision test. The drug was given for only 15 days , it should be administered for long duration of time to see its efficacy in vision test.

Introduction -

The improper diet and wrong behavioral pattern has altered the ability of sense organs. All the Indriyas (Sense organs) are equally important but the Chakshu (eyes) are foremost important of all; since damage to Chakshu (eye) leads to miserable life.

Worldwide 800 million patients suffer from ophthalmic disorders. Five to seven million people suffer from blindness. Five to seven million people require spectacles for reading and other close up activities. 145 million people have low vision due to uncorrected refractive errors. Women face greater risk of vision loss. 2/3 of blind people worldwide are women[1]. Early aging related macular degeneration, dry eye syndrome, presbiopia; ocular pain caused due to fatigue and ophthalmic nerve degeneration are the today's common problems.

"Vataj Netra Vikruti" is the ophthalmic disorder occurred due to exasperation of Vayu in the ophthalmic tissue. The Vayu gets irritated due to overuse of eyes without any rest. Continuous watching T.V; computer screen and other vibrant and glistening things increase Vayu and slowly damage the Occular tissues in degenerative way. To prevent the diminishing phenomenon of tissues Ayurved has adviced to consume oleation. Cow Ghee and Goat Ghee are best Regenerative drugs either consumed orally or if installed in eyes.

The current preventive and curative measures for these disorders are Vit A ; multivitamin treatment ;Zink and other nutritive supplements. These problems can be solved in the better way with adopting proper food and medicines regularly .

Amongst all the above beneficial factors, Goat Ghee is selected for this research project because it is "Cakshusya" as well as it has excellent vitality.

Attributes of Goat's ghee according to Sushrut samhita[2] -

"Ajam Ghritam Dipaniyam Cakshshyam Balavardhanam"(su,Su 45/98)

Vataj Netra Vikruti Lakshanas-[3]

"Alpastu rago anupdehavanshch

Satodabhedo Anilaj Akshiroge" (c.ci26/129)

Conventionally, the symptoms are mainly classified as Vataj, Pittaja and Kaphaja (i.e. developed due to dominant Vata; Pitta & Kapha Dosha).Overuse of eyes and lack of proper nourishment of eye tissues leads to vitiation of Vayu.

The increased Vayu creates ocular pain; dryness and fatigue which are named as " Vataj Netra Vikruti."

Aschyotana' (installation) is a kind of local treatment for 'eye' which is implemented as eye drops . Goat ghee was administered as eye drops in the selected patients of Vataj Eye Disorder .Cow Ghee is most often used for this purpose as it is easily available. No research work has been done so far on Goat ghee as to assess its efficacy as Opthalmic drops . Hence this project was undertaken. The efficacy of goat's ghee in the Vataj eye disorders is explored in this research project with clinical approach.

Aims and objectives -

AIM – To study Efficacy of Ajaghrita(Goat's ghee) as ophthalmic drops in Vataj Netra Vikruti.

MATERIALS AND METHOD -

MATERIALS :

1. Goat Ghee
2. 50 patients having Vataj Netra Vikruti Lakshanas.

METHOD :

Preparation of Goat Ghee :

Goat milk was collected from the healthy goats residing at village in periphery of Distict Sangali ;Maharashtra. These Goats were fed Green Grass and were set free to roam for 4 to 5 hours per day. They were not given any medicine or extra food to increase milk output. Aja Ghrit was prepared with strict hygienic precaution and step wise traditional method. Butter was extracted from Goat milk and was again heated to prepare ghee.Since Goat milk contains less fat ; from **34 liters of Aja milk only 330 ml** of ghee was obtained.

1. Preparation of CRF :

Case Record Form was designed with the help of the compiled data of symptoms from Ayurvedic Texts and after discussion with Optholmplogist. This includes subjective as well as objective parameters and Patient's Consent Form.

Selection of Patients and drug administration :

50 patients were selected for the study.

ii) Inclusion criteria

1. Clinically diagnosed patients having Vâtaj Netra Vikruti Lakśnâs were selected.
2. Sex – either sex
3. Age group – from 15 years to 50 years.

All people in this age group are in the educational phase or working. They are undergoing extensive use of computer, over reading, and exhaustive use of eyes. Hence to minimise the Vatavriddhi they are included.

iii) Exclusion criteria

a) Age below 15 years and above 50 years

b) Congenital ophthalmic anomalies.

c) Traumatic eye injuries.

d) *Asâdhya and Darun* (incurable and deserving emergency treatment)

The children below 15years of age have dominance of Kapha and usually do not suffer from Vataj Disorders. So they were excluded. The people in the age group of more than 50 years have already dominance of Vâta. Due to senility Aggravated Vata causes degenerative changes which are irreversible and hence are excluded from study.

Dose :

Two drops in each eye, once in a day.

Duration: 15 days

FOLLOW-UP : on 7th & 14th day from the starting day of treatment.

Assessment criteria -

1) Subjective Parameters[4]

"Nistodanam Stambhan romaharsha samgharsha parushya shirobhitapah[4]

Vishushkabhavah Shishir ashruta ch Vatabhipanne Nayane Bhavanti"

This Shlok reveals that following symtoms are observed when vitiated vayu gets accumulated in eyes.

1. Nistoda (Pricking Pain), 2. Sangharsha (Rubbing sensation), 3. Âadhmân (Bulging Sensation), 4. Sthabdhatâ (Difficulty in ocular movement), 5. Netra Šośa (Atrophy and degenerative changes), 6. Netra Klama (Eye fatigue), 7. Šiśira Aśrutâ (Cold tears), 8. Kampana (Trembling in eyes), 9. Avil Netra (Turbid eyes), 10. Viśuśka Bhava (Dryness), 11. Alpa râga (Slight rednees)

2) Objective Parameters :

1) Tear film break up time 2) Vision test

Both tests were performed in ophthalmic O. P. D. at Bharati Vidyapeeth Ayurved Hospital Pune 43; Maharashtra.

Tear Film Break Up Time :

Tear film break up time has been defined as the interval between the complete blink and the appearance of the first randomly distributed dry spot. The T.F.B.U.T. is measured by instilling fluorescein solution into the conjunctival sac and scanning the cornea with cobalt blue filter illumination at the slit lamp microscope for the first sign of dry (fluorescein free) areas. The normal tear film B.U.T. is 10-35 secs. And readings of less than 10 seconds suggest mucin deficiency. As uniform normal wetting of the corneal surface depends on even spreading of the adsorbed mucin layer, then the rapidity of appearance of dry spots on the cornea between blinks becomes an index of the adequacy of the mucin layer. T. F. B. U. T. was used to measure the quality of the tear film. This test was done as follows, between the complete blink This test was done as follows,

A moistened fluorescein strip was applied to the inferior temporal bulbar conjunctiva. Patients were instructed to blink several times to facilitate an even distribution of fluorescein. The patient was then positioned for slit lamp examination and asked to stare directly ahead without blinking or holding the lids after one complete blink. The tear film was then scanned through a cobalt blue filtered light by magnification and broad vertical beam. A stopwatch was used to measure the interval between the last complete blink and the first appearance of a randomly distributed dry spot, the T.F.B.U.T. Three consecutive readings were taken in each eye and the mean value of these readings were considered above 10 seconds as normal and less than 10 seconds as cases of dry eyes. Observations were noted according to signs and symptoms with gradations as follows :

T. F. B. U. T. -

O – Normal - In Seconds. > 10,

+ - Mild —**+** = 8 to 10.

++ - Moderate = 5 to 7, +++ - Severe —< 5

Drug administration :

1. Ethical Clearance :

   Clinical Trials were started after obtaining ethical clearance from Institutional Ethical Committee.

2. Patients were supplied sterile plastic bottles with 5ml Aja Ghrita in each bottle. The patients were taught the" Ashchotan procedure" in strict hygienic method when Ghrita

was instilled in the morning patient had discomfort. So it was decided to instill eye drops in the evening.

Initially patients were administered 8 drops as per textual reference

"Bindavo ashtaou lekhaneshu snehane dash bindavah[5]

Ropane dwadasha proktaste sheete koshnarupanan"

It was observed that only 1 or 2 drops were absorbed in eyes. Rest of the medicine was flown away. Hence patients were advised to install 2 drops in each eye.

The patients were examined subjectively on each follow –up day with help of case paper. The severity of symptoms was noted each time.Gradation of symptoms was done accordingly before and after treatment.Patients were advised to avoid diet which is harmful to eyes such as hot strong and pungent food material.

Drop out- The patients who complained discomfort ; itching or redness due to Ashchotan were dropped out. There were total 7 patients who were dropped out. Ayurvedic texts explain contraindication of oleation when the patient is suffering from indigestion.These patients were having symptoms of indigestion like constipation; loss of appetite and flatulence

Observations-

Subjective Parameters -

After follow up with time interval of seven days and scrutiny of all case papers statistical analysis was done. Following observations are recorded

1) **Significant Results**- Ajâ Ghruta has proved significant in **Nistoda** (Pricking Pain) **(Sangharsha** (Rubbing sensation)**, Âadhmân** (Bulging Sensation)**, Netra Klama** (Eye fatigue)**, Śiśira Aśrutâ** (Cold tears)**, Viśuśka Bhava** (Dryness)**, Alpa Râga,** (Slight rednees) **Avil Netra** (Turbid eyes).

2) **Non Significant results** were found in **Stabdhata and Netra Kampana**. In present study Ajâ Ghrita was given in Ashchyotan form. If it is given in the form of Tarpan significant results could be seen in Stabdhata and Netra Kampana.

Objective Parameters -

1) Tear Flim Break Up Test[7;8] is used to measure the quality of the tear film. More the tear flim Cornea is moist. As Viśuśka Bhava is well treated by instillation of Ajâ Ghrita so Tear Flim Break Up Test has also proved significant.

2) Non Significant result was found for vision test. The drug was given for only 15 days , it should be administered for long duration of time to see its efficacy in vision test.

3) The Vâtaj Netra Vikrutî Lakśanas were observed higher in the group of 15 to 30 years & minimum in the patient above the 45 to 60 years.

3) The incidence of Vâttaj Netra Vikruti Lakśanas was observed higher in patients doing minute work, reading books or watching television.

4) Vâttaj Netra Vikruti Lakśanas were observed higher in patients taking Achakshusya Ahar. These patient were consuming Salty and spicy Diet more than three days per week.

Conclusion -

1. Ajâ Ghrita is significant in Vâttaj Netra Vikruti Lakśanas.
2. Ajâ Ghruta has proved highly significant in the symptoms- Viśuśka Bhava, 'Nistoda' and 'Netra Klama' .
3. Ajâ Ghruta has proved highly significant in dryness assessed by TFBUT.
4. Ajâ Ghruta is non- significant in the improvement of vision assessed by vision test.

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"To Study The Effects of Langhana (Adravyarup Chikitsa) in Amavata."

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Abstract :

Amavata is very common disease of joint which occurs more frequently in females of middle age group. In present study the effects of Langhana (adravyarupa chikitsa) in Amavata patients were studied. Total 40 patients were selected for study.For clinical evaluation of patient subjective criteria was taken as like pain, swelling, kathinya, Angamarda, sparshasahatva, kashudhamandya, jawara, jivha samta, foot pressure, grip strength & warmth of joint. Also the objective criteria were observed like hb, TLC & ESR. Statistically Langhana gives symptomatic relief to the patients.

Key word :- Amavata, Langhana, Modern view about Langhana & statistical analysis.

Introduction :

Diseases are mainly of two types: (1) Infectious (Agantuj) and (2) Constitutional (Nij). Infectious diseases are caused by the foreign substances and the constitutional diseases are caused by untoward changes occurring within the body. Diseases caused by Aama are the type of constitutional diseases.

Amavata is such a disease caused by Aama. Ama and Vata are the predominant pathogenic factors but the disease shows Tridoshic vitiation. Amavata is a debilitating disease in view of its chronicity and complications. Amavata is a disease of Madhyama Roga Marga which affects Sandhi and Hridaya Marma.

Amavata is merely insufficient in the other pathies of medicine and patients continuously looking hopefully towards Ayurveda to overcome this challenge.

Yogaratnakara and others have described the base line treatment of Aamavata and have given the foremost position to langhana.

AIMS & OBJECTIVES:

AIMS:-

"TO STUDY THE EFFECTS OF LANGHANA (ADRAVYARUP CHIKITSA) IN AMAVATA."

OBJECTIVES :-

- To evaluate the clinical efficacy of Langhana in the management of Aamavata.
- To reduce the sign and symptoms of Amavata such as pain (Shoola), swelling (Shwayathu), stiffness (Kathinya) etc.

MATERIALS & METHODS

MATERIALS :

1) Sphygmomanometer,
2) Weighing machine.
3) Treatment modality- Langhana (Adravyarup Chikitsa).

Duration : 7 days.

METHODS :

Selection of Patients :

Total 40 patients were chosen for the study. Clinical trials were taken on the patients of IPD

Inclusive Criteria :

1) Age: 25 to 50 years
2) Sex: Both sex (mainly female as majority of occurrence)
3) Socio-economical status: All
4) Patient of Amavata presenting features as per Ayurvedic text such as Shoola, Shwayathu, Kathinya, Redness, and Sparshasahatva.

Exclusive Criteria:

1) Tuberculosis (of any system), Diabetes, Cardiac disease.
2) Infective pathology of any system
3) Renal disease
4) Chronic joint deformity
5) Habitual Alcoholic patients
6) Pregnancy
7) Gout, SLE
8) Shariric and Manasa Bala parikssheenata
9) Steroid dependent

10) Psoritic/Haemorhagic arthritis.

Criteria for Assessment :

A) Subjective Parameters :

1) Pain
2) Swelling (Shwayathu)
3) Stiffness (Kathinya)
4) Angamarda
5) Tenderness (Sparshasahatva)
6) Warmth of joint
7) Kshudhamandya
8) Jwara
9) Jivha samata

B) Functional Assessment :-

1. Grip strength
2. Foot Pressure

INVESTIGATIONS :

1) Hb%
2) CBC
3) ESR
4) RA TEST.

OBSERVATIONS AND RESULTS :

Total 40 patients were examined, since the present study contains single group with two variables, Wilcoxon signed- rank test is applied here for subjective criteria,

1) Pain(Shoola) :

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-820	40	5.51	-2	‹0.001	Yes (‹0.05)

Relief in Sandhishoola was observed in 77.68%. The relief was highly significant statistically (P <0.001)

2) Swelling (Shwayathu) :

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-741	38	5.38	-2	‹0.001	Yes (‹0.05)

The relief was highly significant statistically(P<0.001).

3) Kathinya (Stiffness):

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-666	36	5.24	-1	‹0.001	Yes (‹0.05)

The results was highly significant (P<0.001).

4) Angamarda :

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-820	40	5.51	-2	‹0.001	Yes (‹0.05)

5) Sparshasahatva (Tenderness) :

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-630	35	5.16	-2	‹0.001	Yes (‹0.05)

The relief was highly significant statistically.

6) Warmth of joint :

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-666	36	5.24	-1	‹0.001	Yes (‹0.05)

7) Grip strength :

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-819	40	5.51	-1	‹0.001	Yes (‹0.05)

Result was statistically significant (P<0.001).

8) Foot pressure :

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-820	40	5.51	-2	‹0.001	Yes (‹0.05)

The improvement was highly significant statistically (P<0.001).

9) Kshudhamandya:

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-820	40	5.51	-2	‹0.001	Yes (‹0.05)

10) Jwara :

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-300	24	4.29	-1	‹0.001	Yes (‹0.05)

11) Jivha samata :

W (sum of signed ranks)	No. of pairs	Z	Med	P	Significant
-820	40	5.51	-2	‹0.001	Yes (‹0.05)

On the Langhana provided highly significant improvement statistically (P<0.001) in the general symptoms like Angamarda, Kshudhamandya, Jwara and Jivha samata.

OBJECTIVE CRITERIA :

For objective Criteria (Quantitative Data) Paired t test will be applied. For that 40 patients will be get divided into 2 groups of 20-20. As the paired t test is applicable only for sample less than 30.

1) Hb%:

SAMPLE	Mean	SD	SE	t	Df	t table	P
1-20	0.17	0.9085	0.2031	0.8368	19	2.09	›0.05
21-40	-0.13	0.5017	0.1122	1.159	19	2.09	›0.05

2) TLC:

SAMPLE	Mean	SD	SE	t	Df	t table	P
1-20	-335	1291	288.6	1.161	19	2.09	›0.05
21-40	310	1257	281.2	1.103	19	2.09	›0.05

3) Neutrophills :

SAMPLE	Mean	SD	SE	t	Df	t table	P
1-20	-2.590	9.078	2.030	1.276	19	2.09	›0.05
21-40	-0.270	8.384	1.875	0.1440	19	2.09	›0.05

4) Lymphocytes :

SAMPLE	Mean	SD	SE	t	Df	t table	P
1-20	2.275	8.686	1.942	1.171	19	2.09	›0.05
21-40	-0.055	6.775	1.515	0.0363	19	2.09	›0.05

5) Monocytes :

SAMPLE	Mean	SD	SE	t	Df	t table	P
1-20	0.27	4.157	0.9295	0.2905	19	2.09	›0.05
21-40	0.335	4.432	0.9910	0.3381	19	2.09	›0.05

6) ESR :

SAMPLE	Mean	SD	SE	t	Df	t table	P
1-20	-6.350	5.851	1.308	4.853	19	2.09	›0.05
21-40	-4.400	4.122	0.9217	4.774	19	2.09	›0.05

There is no statistical significant improvement occur in case of Hb%, TLC, and differential count. Hb% was seen to be raised in some cases but these are not statistically significant. But in case of ESR, significant statistical improvement is found (‹0.05).

DISCUSSION :

Ama & Vata are the two main pathognomic factors responsible for causation of Amavata. Excessive consumption of Nidana of Amavata in preexisting stage of Mandagni leads to formation of Ama and simultaneous vitiation of Tridosha, especially the Vata Dosha. The Samprapti originates initially from the Annavaha Srotasa and in due course spreads to the other Srotasa a mainly Rasavaha, Asthivaha and Majjavaha Srotasa. The Dushyas involved inthis disease are Rasa, Mansa, Asthi and Majja.Sandhi is the main site of Abhivyakti of Lakshana. As per the samprapti of Amavata, Ama, under influence of vitiated Vata, comes in Sleshamasthana mainly in sandhis and gets lodged there. Sandhishoola, Sandhishotha, Stabdhata and Sparshasehatva are the cardinal features of Amavata.

Several formulations have been mentioned for the management of Amavata in Ayurvedic classics. For this study Langhana is selected from Ayurvedic text Yogaratnakara. He has given the foremost position to langhana.

Effect of therapy :

1. Effect on Sandhishoola (Pain) :-

   The significant relief may be due to the Amapachana effect of Langhana. Langhana helps to digest the Ama and removing of the obstruction to the normal movement of Vata.

2. Effect on Shwayathu (Swelling) :-

   The significant relief observed in Shwayathu may be due to the ama shoshana by Langhana from the sandhi sthana.

3. Effect on Kathinya (Stiffness) :-

   This may be due to the resolution of the Ama in affected parts by the Ama digestion property of langhana.

Effects on Investigation :

Only in case of ESR, significant statistical improvement is found (<0.05).

Probable Mode of Action :

Samprapti Vighatana is said to be the treatment. Therefore the action of a drug means to dismantle the Samprapti Ghataka of the disease. Hence to explain the mode ofaction of a drug means to establish an Anti relationship between the Samprapti Ghataka of the disease and the property of drug used. On the basis of these results, the probable mode of action of Langhana in the disease Amavata is being discussed here. Ayurvedic classics provide a clear therapeutic guideness for the treatment of Amavata. The treatment is based on Ama pachana and amelioration of vitiated vata. As the present disease is born out mainly due to the formation of Ama so I have selected Langhana karma to remove the main causative factor of the disease. Langhana by Upavasa also removes the doshas of Alpa Bala (A.S.Su.).So the langhana reduces the symptoms of Amavata by digesting the Ama and removing the vitiated dosha.

MODERN VIEW :

Ama can be compared to the unstable reactive Free Radicals in the human body. Free radicals are the main cause of many disease and degenerative changes in the body. Generally the body can handle free radicals, but if antioxidants are not available, or the free-radical production becomes much more excessive, then damage can occur. Oxidative stress plays important role in arthritis.

FASTING BOOTS THE IMMUNE SYSTEM

Fasting has various effects on the immune system. This immune enhancement is due to three factors.

1) The absence of the burden of digestion that demands all the resources of the immune system.

2) Lowered plasma viscosity due to less traffic in the bloodstream (less fat, sugar and protein).

3) Increased nutrients assist in immune performance.

The result of fasting on immune system is amazing. Fasting detoxifies years of toxic built up in the immune system due to many factors.

FASTING AND DETOXIFICATION

FASTING INCREASES RESISTANCE TO TOXINS

PRODUCTION OF CORTICOSTEROIDS:

Langhana also create hunger reflex in the patients resulting indirectly in enhanced production of internal corticosteroids which provide beneficial effect by reducing the Inflammation. Thus the langhana plays an important role in amavata.

CONCLUSION :

At the end of the study, "To study the effects of Langhana (Adravyarup chikitsa) in Amavata", following conclusions can be drawn on the basis of observations, achieved result and discussion. Ama is nothing but the undigested food which lies inside the body and causes many diseases. It can be concluded that hypo-functioning of Agni otherwise termed as Mandagni (decreased digestive and tissue fire) is largely responsible for the formation of Ama, which is chief pathogenic factor of the disease Langhana which is used to study the effects on Amavata has given good improvement and it also follows the chikitsa sutra of Aamavata.

The present study was conducted with limited facilities and limited number of patients. A study of larger group of patients may help to understand the mode of action of the langhana. If the patients have less chronicity then perhaps better results could be achieved.

Any drug we are providing the patient first undergoes digestion, and then it produces its effect. For this digestion (it may be Aushadha or Ahara) Agni is the essential factor. So first one should correct the Agni by Ama pachana, and this achieved by Langhana. Langhana did not show any marked improvement on Hematological values or Biochemical values. Finally it can be concluded that the Langhana taken for the trial was found very effective in alleviating the symptoms of Amavata.

But after discontinuation of the Langhana, most of the patients complained of similar pain. Thus the further study is necessary.

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Study The Efficacy Of Goghrit In The Treatment of Dry Eye Syndrome

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- The dry eye syndrome is a symptoms complex occuring as a sequelae to deficiency or abnormalities of the tear film. Keratitis or Dry eye is a very common problem caused due to the lack of sufficient moisture and lubrication on the eye's surface. Due to this problem, generalised decrease in the tears production is seen both quantitatively and qualitatively. The tears are basically made up of the three layers, mucous layer, lipid layer and the watery layer. Any problem in these layers lead to the problem of dry eyes.
- **Other conditions that may cause dry eyes are :**
- The natural aging process, especially during menopause.
- Side effects of using certain medications such as antihistamines and birth control pills .
- Diseases that affect the ability to make tears, such as Sjogren's syndrome ,rheumatoid arthritis.
- Structural problems with the eyes that don't allow them to close properly or a problem with the tear ducts.
- Living in dry, dusty, windy, and hot climate, or over-exposure to pollution, air conditions, dry heating systems .
- **Symptoms of Dry eyes :**

  Foreign body sensation in eye
- Itching in eye
- Burning sensation in eye
- Light sensitivity
- Blurring of vision
- Redness in eye

v **Ayurvedic view -**

- According to Ayurvedic point of view Dry Eyes is nothing but Vata Prakop in the eyes and related anatomical structure of eyes, along with lack of nourishment to the tissues of the eyes. Vata is the predominant dosha and it later vitiates pitta . The ushna , teekshna, laghu gunas are increased and sara , drava gunas are decreased. Due to vata vitiation srotorodham also develops and rasadhatu is decreased.

v **Aims and Objective -**

To find out the efficacy of Goghrit pana, nasya and tarpana on dry eye syndrome.

v **Materials and methods –**

For this study goghrit was taken from Agmark approved company.

Selection of Patients -

- A randomized open labeled study was conducted in 30 patients of dry eye syndrome of OPD of Shalakyatantra dept. of LRP Ayu. Med. Coll. , Hosp, P. G. Institute and Research Centre, Islampur , Dist- Sangli , Maharashtra.

v **Inclusion criteria**

Patients with the sign & symptoms of dry eye

Irrespective of age, sex, occupation and duration of illness.

Patients between age of 30 to 50 yrs.

v **Exclusion criteria**

Patients with other systemic disease.

Age below 30 yr and above 50yr.

Recent ophthalmic surgery

Patients with local or systemic medication

Contact lens users.

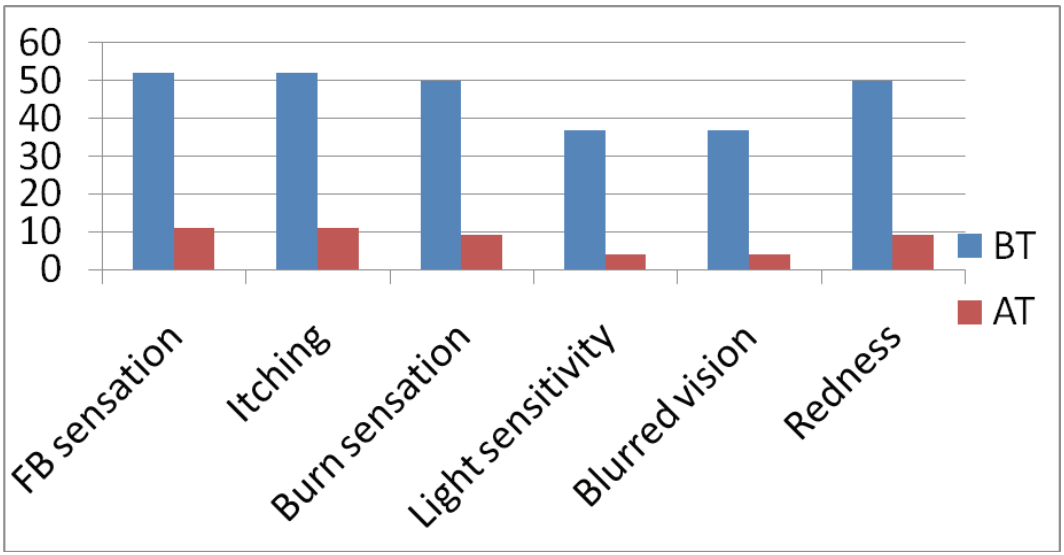
- **Study Design -**
- Group A. Ghritpana , Tarpana and Nasya
- 30 patients- were given Goghrit 5 ml BD internally
- These volunteers were treated by 3 sittings of seven days tarpana with seven days interval between 3 sittings. Goghrit tarpana is given at morning for 10 - 15min per day as described in classical text
- Goghrit nasya 2 drop B.D (pratimarsh nasya as per procedure mentioned in ayurvedic texts.

- Treatment continued for 45 days .
- F/ U taken on 15 th,30 th 45th day & after treatment on 90 th days.

Observations –

Incidence of demographic profile of dry eye

Sr. No.	Findings	Predominance
1	Age	35-50 yrs
2	Sex	Both
3	Religion	Hindu
4	Socio-economic status	Middle class
5	Dietary habit	Mixed
6	Prakriti	Vata-pittaj
7	History of ophthalmic illness	No
8	Visual acuity	6/9 – 6/12



v **Discussion**

- GOGHRIT (COW'S GHEE)
- PROPERTIES AND ACTION
- Rasa : Madhura
- Guna : Guru, Snigdha, Mridu
- Virya : Shita
- Vipaka : Madhura
- Karma : Chaksushya, Balya, vatapittashamak (ch.su.25), (Su.su.45) , tridoshaghna (kai.ni.ghrit varga, Bha.pra.ni.ghrit varga)
- **Goghrita contains -** triglycerides,diglycerides,, ketoaeis glyceride, glycerylesters, free fatty acids, phospholipids, steroids, vitamine A, vitamine D, vitamine C , vitamine K. It's digestibility coefficient or rate of absorption is 95 % , which is highest of all oils and fats . So it is easily digestable and assailable food which provided essential nutrients and critical antioxidants.
- **TARPANA -** As ayurved texts says , tarpana gives strength to eyes i.e it is dristiprasadak so used in various diseases as degenerative conditions . Tarpana is in the form of suspension containing unctuous nature and the particles does not leave the eye as quick as other water based solutions . This increases the tissue contact time and bioavailability hence higher therapeutic concentration can be achieved by tarpana . This facilitates the action of drug by two ways –
- 1) by allowing more absorption of the drug by the corneal surface and
- 2) by exerting direct pressure upon the cornea . Thus it reduces the signs and symptoms of dry eye syndrome
- **NASYA -** The medicine applied is directly absorbed through the mucous lining of the structures. Thus nasya cleans the strotas so, daily application of pratimarsa nasya will prevent the accumulation of vitiated kapha in the strotas of the eye.
- In the phalaprapti of pratimarshya nasya, vagbhatacharya has mentioned klamanaasha i.e. it reduces the fatigue. It improves the vision and hence can be useful in releaving the symptoms like blurred vision. (As. Hri. Su. 20/4)
- It also does the vaatashamana, hence can be useful in releaving the foregin body sensation,itching . . (As. S. Su. 20/ 29, As . Hri. Su. 20/6)
- Pittashamana - reduces the symptoms like burning eyes and redness of eyes.

  (As. S. Su. 20/ 29, As . Hri. Su. 20/6)
- The shaman nasya, decreases the linear venous congestion, and hence helpful in

reducing redness of the eyes. . (As. S. Su. 20/ 29, As . Hri. Su. 20/6) , The snehana nasya causes the keenness of sense organs, i.e. improvement in the vision so helpful in blurred vision. (As. Hri. Su. 20/23)

- **CONCLUSION -**
- From all observation and discussion made, it can be concluded that

v Goghrit is effective in dry eye syndrome and effect will remain even after treatment without any complications.

v The result founds are encouraging and can be used routinely in everyday practice for safe recovery.

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Tables -

Sr. No.	Findings	Predominance
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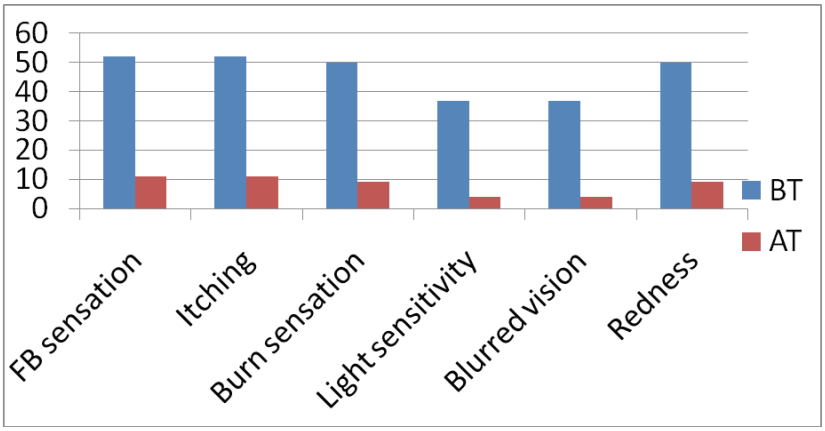
5	Dietary habit	Mixed
6	Prakriti	Vata-pittaj
7	History of ophthalmic illness	No
8	Visual acuity	6/9 – 6/12



SYMPTOMS

SYMPTOMS	S.D.	S.E.	"t" Value
F.B.Sensation	7.37	1.34	1.697
Burning sensetion	7.37	1.34	1.697
Photophobia	5.9	1.07	1.697
Itching	7.37	1.34	1.697
Redness of Eye	7.37	1.34	1.697
Blurred vision	5.9	1.07	1.697

To Study The Efficacy Of Haritakyadi Gutika In Kasa W.s.r. To Allergic Bronchitis.

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Abstract :

Kasa is very acute disease of lungs & disturb the routine work of the patient. Occur very commonly so in present study, the efficacy of Haritakyadi Gutika in kasa w.s.r to allergic bronchitis was studied.

Total 60 patients were selected for study. Haritakyadi Gutika was given to 30 patients (study group) & Lavangadi Vati was given to 30 patients (control group). Follow up was done on day 3rd, 5th & 7th. Clinical evaluation was done on the basis of symptoms of kasa vyadhi like kasa vega, shool (site & severity), shtheevan (consistency & quantity), swarbheda & kanthavaktra sushkata.

Statistical test :- t test was applied

Statistically Haritakyadi Gutika was found more effective than Lavangadi Vati in reducing the symptoms of kasa.

Key word:- Kasa Vyadhi, Haritakyadi Gutika, Statistical analysis, discussion & conclusion.

Introduction

Kasa (cough) is prevalent all over the world due to air pollution & is certainly the most common acute disease of the lungs & also of Pranavaha Srotas.

Generally the people don't pay attention towards the disease like Kasa but as per the Ayurvedic samhitas the negligence towards Kasa may lead to dangerous entity like rajyakshma i.e. tuberculosis.

Ayurvedic science said that prevention is better than cure. So to prevent the population from tuberculosis & to keep the population healthy it is necessary to treat Kasa in early stage. So Ayurvedic shaman kalpa will be very useful in treating the diseases & preventing the recurrences of diseases.

"Haritakyadi Gutika" is one such shaman kalpa mentioned in sahasrayogam.

AIMS & OBJECTIVES

Aim : To study the efficacy of Haritakyadi Gutika in Kasa w.s.r allergic bronchitis.

Objectives :

- To study the efficacy of Haritakyadi Gutika in Kasa.
- To find out adverse effects if occurs any.

MATERIALS & METHODS

1) Patient

Selection of patients :

Clinical study was carried out on randomly selected 60 patients from I.P.D & O.P.D

2) Drug:- Haritakyadi gutika

Contents :- Haritaki (Terminalia chebula)

Musta (Cyperus rotundus)

Shunthi (Zinziber officinalis)

Guda (Jaggery)

Standardisation of gutika:- Standardisation of a gutika was done in Aushadhi bhavan, Nashik on 17/12/12. Analysis report no- AR/62/12.

INCLUSION CRITERIA :

- Age group :- 18 to 70 yr
- Sex:- any sex
- Patients with classical symptoms of kasa as per grantha
- Duration:- illness not more than 15days

EXCLUSION CRITERIA :

- Age group :- below 18yrs & above 70yrs
- Patients suffering from serious illness like cardiac diseases, malignancies, tuberculosis, Bronchiectasis, diabetes mellitus & renal diseases.
- Pregnant women & lactating mother
- Smokers

METHODS OF ADMINISTRATION OF DRUG

Group A

Haritakyadi Gutika is given to the randomly selected 30 patient

Contents : Haritaki, Nagar, Musta, Guda

Dose : 5gm bd

Duration: vyanodan kaal (bhojanouttar)

Follow up: after 2nd , 4th & on 7th day.

Group B

Lavangadi vati is given to randomly selected 30 patients

Contents: Lavang, Marich, Khadir, Bibhitak

Dose: 0.25gm bd

Duration: vyanodan kaal (bhojanouttar)

Follow up: after 2nd , 4th & on 7th day.

Subjective parameters:

1) Kasaveg (Bouts of Cough)

Score	Sign/Symptom
0 (0)	Kasaveg 0-1 times/day
1 (+)	Kasaveg 2-3 times/day
2 (++)	Kasaveg 4-5 times recurrence/day
3 (+++)	Kasaveg >5 times recurrence/day

2) Shoola (Pain)

a) Site

Score	Sign/Symptom
0 (0)	No Shoola at any site
1 (+)	Located at Single site (e.g. Ura, Shira, Parshwa)
2 (++)	Located at 2 sites.
3 (+++)	Located at more than 2 sites.

b) Severity

Score	Sign/Symptom
0 (0)	No Shoola.
1 (+)	Slight pain after 2 or more Kasaveg.
2 (++)	Bearable pain during each Kasaveg.
3 (+++)	Piercing pain during each Kasaveg, specially in Ura, Shira, & Parshwa.

3) Shtheevan (Expectoration)

a) Consistency

Score	Sign/Symptom
0 (0)	No expectoration of Kapha.
1 (+)	Expectoration of very tanu Kapha after lot of Kasaveg.
2 (++)	Expectoration of not very tanu, not very ghana & snigdha Kapha.
3 (+++)	Expectoration of totally ghana & snigdha Kapha.

b) Quantity

Score	Sign/Symptom
0 (0)	No expectoration of Kapha.
1 (+)	Expectoration of alpa Kapha after lot of Kasaveg
2 (++)	Expectoration of alpa Kapha after each Kasaveg
3 (+++)	Expectoration of excess Kapha after each Kasaveg

4) Swarbheda (Hoarseness of Voice)

Score	Sign/Symptom
0 (0)	Absent
1 (+)	Present

5) Kantha -Vaktra Shushkata (Dryness of Throat and Mouth)

Score	Sign/Symptom
0 (0)	Absent
1 (+)	Present

Objective parameters:

1 CBC with ESR

2 X-ray chest PA view

3 Eosinophillic count

Investigation done if needed

Stool examination

Observation & Result

Table no.1: Table showing differences in kasa vega during follow up days between Group A & Group B.

Group A Vs Group B at 5% level of significance

Day	x^2(cal)	Df	Table value of x^2	Relation	Result
D3	14.02	3	7.82	x^2(cal)> x^2(tab)	Significant
D5	3.78	3	7.82	x^2(cal)< x^2(tab)	Non-Significant
D7	27.64	2	5.99	x^2(cal)> x^2(tab)	Significant

On comparing the observation of the 2 group there is significances differences seen from day 3rd .

Table no. 2: Table sowing difference in shool presenting at different sites

Group A Vs Group B at 5% level of significance

Day	x^2(cal)	Df	Table value of x^2	Relation	Result
D3	4.94	2	5.99	x^2(cal)< x^2(tab)	Non-Significant
D5	5.46	2	5.99	x^2(cal)< x^2(tab)	Non-Significant
D7	1.46	2	5.99	x^2(cal)< x^2(tab)	Non-Significant

On comparing the observation of the 2 group there is no significant differences seen shool present at different sites.

Table no. 3: Table showing differences in shool severity

Group A Vs Group B at 5% level of significance

Day	x^2(cal)	Df	Table value of x^2	Relation	Result
D3	5.58	2	5.99	x^2(cal)< x^2(tab)	Non-Significant
D3	5.58	2	5.99	x^2(cal)< x^2(tab)	Non-Significant
D3	5.58	2	5.99	x^2(cal)< x^2(tab)	Non-Significant

On comparing the observation in severity of shool there is no significance difference seen.

Table no. 4: Table showing differences in stheevan consistency

Group A Vs Group B at 5% level of significance

Day	x^2(cal)	Df	Table value of x^2	Relation	Result
D3	2.02	2	5.99	x^2(cal)< x^2(tab)	Non-Significant
D5	7.16	2	5.99	x^2(cal)> x^2(tab)	Significant
D7	2.3	2	5.99	x^2(cal)< x^2(tab)	Non-Significant

On comparing the observation in stheevan consistency there is significant differences on day 5th & further on day 7th there is again no significant differences seen.

Table no.5: Table showing differences in stheevan quantity.

Group A Vs Group B at 5% level of significance

Day	x^2(cal)	Df	Table value of x^2	Relation	Result
D3	1.48	2	5.99	x^2(cal)< x^2(tab)	Non-Significant
D5	5.56	2	5.99	x^2(cal)< x^2(tab)	Non-Significant
D7	3.44	2	5.99	x^2(cal)< x^2(tab)	Non-Significant

On comparing the observations there is no significances differences is seen.

Table No. 6: Table showing differences in Swarabhed

Group A Vs Group B at 5% level of significance

Day	x^2(cal)	Df	Table value of x^2	Relation	Result
D3	1.44	1	3.84	x^2(cal)< x^2(tab)	Non-Significant
D5	0.33	1	3.84	x^2(cal)< x^2(tab)	Non-Significant
D7	1.01	1	3.84	x^2(cal)< x^2(tab)	Non-Significant

On comparing the observations there is no significances differences is seen.

Table no. 7: Table showing differences in Kantha Vaktra sushkata

Group A Vs Group B at 5% level of significance

Day	x^2(cal)	Df	Table value of x^2	Relation	Result
D3	5.28	1	3.84	x^2(cal)> x^2(tab)	Significant
D5	1.06	1	3.84	x^2(cal)< x^2(tab)	Non-Significant
D7	0.5	1	3.84	x^2(cal)< x^2(tab)	Non-Significant

On comparing the observations there is significant differences is seen on day 1st & on further days there is no significant difference seen.

Table no. 8: Table showing differences in the eosinophillic count

Paired 't' test

	Eosinophillic count	
	Group A	Group B
Mean	0.4	0.56
SD	1.132	1.432
SE	0.20	0.26
t29	1.95	2.00
ttable	2.05	2.05
P	<0.05	<0.05

Unpaired 't' test

Eosinophillic count	
SE	0.332
t58	0.48
ttable	2.02
p	<0.05

There is no significant difference seen in eosinophillic count but patient shows symptomatic relief. Statistically Haritakyadi-Gutika was more effective in lowering the symptoms of kasa than Lavangadi vati.

Discussion

In the study i.e "To study the efficacy of haritakyadi-gutika in kasa w.s.r. to allergic bronchitis" the following findings were seen which we are going to discuses now.

o Haritkyadi-gutika is a treatment for genralised kasa mentioned in sahastrayoga kalpa no 148, while reviewing the texts for understanding the action of indiviual drugs of the haritakyadigutika, it was found that each of them have kaphaghana action. Hence even though the inclusion criteria was designed to include all the three types of kasa the probable kaphaghana acton of haritakyadi gutika promote me to select patients suffering from kaphaj-kasa as subjectes of the study.

Probable action of Haritakyadi Gutika

Drug	Action	Samprapti
Haritaki, Musta & sunthi are deepan pachan	Does the ampachan, agnivardhana & stop the producton of saam kapha	Agnimandya Production of saam kapha
Musta, Haritaki are tikta rastamak	This tikta rasa does karshana of dried kapha in strotasa.	Margawarodha Pratilom gati of vayu Urdhwagaman of apan vayu
By singdha guna of sunthi & guda	This karshit kapha was removed out from the strotasa.	Increases udan vayu gati & because of this pranvayu gati gets obstructed.
Vatanilomak property of Haritaki, snigdha guna of sunthi & madhur vipaka of sunthi & Haritaki	All this guna does vtanuloman by which pratilom vayu gets its prakrut gati. Samprapti bhanga of kasa	Battle between pran vayu & udan vayu Finally pran vayu gets pratilom & expelled out from mukha with specific sound.
	Upashyaya	Kasa

Haritaki have antibacteri & antiviral activity, Musta have antimicrobial Activity, Sunthi have antibacterial Activity, Musta & sunthi both have anti-inflammatory action, All the above three drugs have antiallergic/antihistaminic action.

CONCLUSION

Following conclusion were drawn from the clinical trial "to study the efficacy of haritakyadi-gutika in kasa w.s.r. to allergic bronchitis".

- ☐ The subjective criteria i.e kasa-vega, the consistency of shtheevan & kanthavaktra shushkata shows better relief in trial group than control group.
- ☐ The objective criteria like the eosinophillic count didn't show considerable changes in both groups.
- ☐ Thus there is only symptomatic relief in kaphaj kasa patients of haritakyadi-gutika more than lawangadi-vati.
- ☐ So it can be concluded that haritakyadi-gutika is more effective in the management of kaphaj-kasa.

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Research : Clinical

Study Of Ratio Between Prakruti And Blood Group With Special Reference To Sex.

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ABSTRACT:

The objective of present study was the ratio of prakruti and blood group in relation to males and females. According to Ayurved Samhitas references regarding prakruti were studied. Prakruti of the volunteers was done with the help Special Prakruti Parikshan Proforma. At the same time references regarding Blood and Blood group were also studied from modern texts. Determination of Blood Group by ´ABO´ Rh method with Sera "Eryclone" manufactured by Tulip Diagnostics Pvt. Ltd. Was done. Out of 300 subjects taken for study, 60 males and 60 females belong to Kaphapradhan Prakruti,50 males and 50 females were belong to Pitta Pradhan Prakruti, and 40 males and 40 females were belong to Vatapradhan Prakruti.

INTRODUCTION:

Ayurved is an applied science which deals with every aspect of human life. Basic principals of Ayurveda mainly concern with sharirkriya,gives knowledge about dosha, dhatu and mala.There are different types of prakruti e.g. doshaj, manas etc.For studying predominance of dosha in the individual,study of prakruti is very important and useful.

By the union of shukra (sperm) and shonita(ovum),the foetus is formed. At the time of conception the doshas which are in dominance state are responsible for prakruti of the respectives foetus and at the same time the hereditary factors are transferred by shurka and shonita in that foetus. This prakruti of the foetus remains same till death.

In Ayurveda excellence of quality of spermatozoa and ovum is one of the BalavridhikarBhava and Bala is directly related to immunity and immunity is acquired by the offspring from the parents.Blood group is also inherited from parents.

The ABO blood grouping is based on two agglutinogens symbolised as A and B. Indiviuals whose erythrocyte manufacture only agglutinogen A is said to have type A;Those who manufacture only aggltinogen B are type B;Indiviual who manufacture both A and B are type AB and those who manufacture neither are type O.According to Mendelian's principle everyperson inherits two genes one from each parent, that are responsible for production of these agglutinogens . Blood group remains same till death.

➢ **AIM AND OBJECTIVES:**

AIM :

Study of ratio between Prakruti and blood group with special reference to sex.

OBJECTIVES :

- The concept of sharirprakruti from AyurvedicSamhitaswas studied in detail and the references were compiled.
- Blood group by ABO Rh method with Sera "ERYCLONE" manufactured by TULIP Diagnostics (Pvt)Ltd.
- The ratio between Sharirprakruti and Blood group was studied statistically.

➢ **MATERIALS & METHODS :**

MATERIALS :

- Ayurvedic Samhitas.
- Modern text & techniques.
- Prakruti parikshan proforma.
- Blood group Sera "ERYCLONE"by TULIP Diagnostics(Pvt) Ltd.

INCLUSION CRITERIA :

- 150 Male and 150 Female volunteers of age group 18-30yrs from Bharati Vidyapeeth Deemed University College Of Ayurved ,Pune.

EXCLUSION CRITERIA :

- Volunteers suffering from any major illness,specifically related to blood disorders were excluded.

METHODOLOGY :

- 150 male and 150 female volunteers between the age group of 18-30yrs wereselected for the study.
- Sharir prakruti parikshan was done with the help of Prakruti parikshan proforma.
- Blood group of each volunteer was carried out with the help of Sera.
- To avoid bias same time ,place,equipment and pattern was maintained.
- A comparative study was done with the help of collected data such as Sharirprakruti and Blood group.
- Statistical analysis was done with the help of collected data.

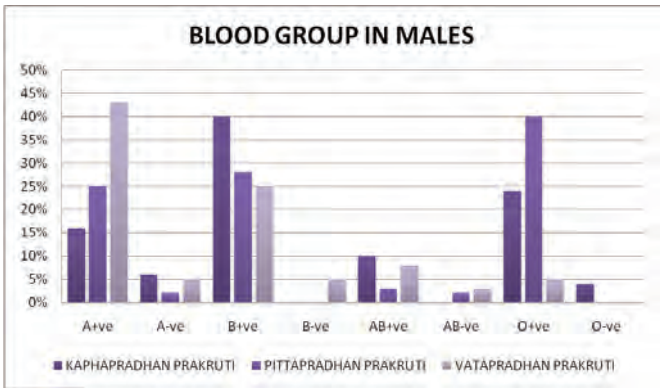
➢ **OBSERVATION :**

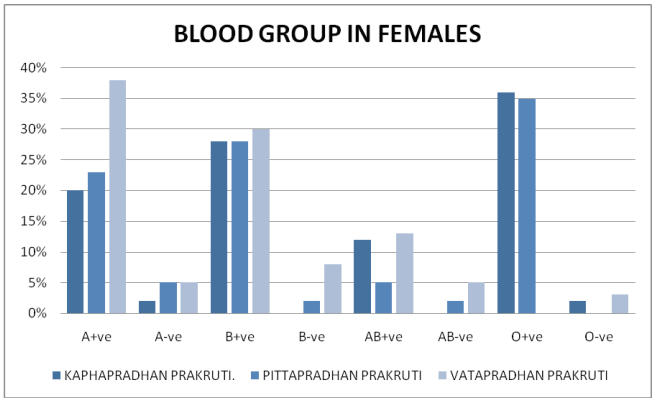
BLOOD GROUP	KAPHAPRADHAN PRAKRUTI.		PITTAPRADHAN PRAKRUTI.		VATAPRADHAN PRAKRUTI.	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
A+ve	08	10	15	15	17	15
A-ve	03	01	01	02	02	02
B+ve	20	14	17	17	13	12
B-ve	00	00	00	01	02	03
AB+ve	05	06	02	03	03	05
AB-ve	00	00	01	01	01	02
O+ve	12	18	24	21	02	00
O-ve	02	01	00	00	00	01

➢ **STATSTICAL ANALYSIS :**

RATIO OF BLOOD GROUP AND PRAKRUTI.

BLOOD GROUP	KAPHAPRADHAN PRAKRUTI.		PITTAPRADHAN PRAKRUTI.		VATAPRADHAN PRAKRUTI.	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
A+ve	16%	20%	25%	23%	43%	38%
A-ve	06%	02%	02%	05%	05%	05%
B+ve	40%	28%	28%	28%	25%	30%
B-ve	00%	00%	00%	02%	05%	08%
AB+ve	10%	12%	03%	05%	08%	08%
AB-ve	00%	00%	02%	02%	03%	05%
O+ve	24%	36%	40%	35%	05%	00%
O-ve	04%	02%	00%	00%	00%	03%





❖ CONCLUSION :

Study shows that

- In kaphapradhanprakruti the ratio of B+ve blood group in male is 40% and in female is 28%.
- In pittapradhanprakruti the ratio of O +ve blood group in male is 40% and in female is 35%.
- In vatapradhanprakruti the ratio of A+ve blood group in male is 43% and in female is 38%.

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Clinical Evaluation Of Dwinishadi Yoga In Madhumeha With Special Reference To Type Ii Diabetes Mellitus.

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ABSTRACT :

Worldwide the disease burden of Diabetes Mellitus is increasing day by day. Asian Indians are genetically more prone to DM. Hence in the present study, evaluation of efficacy of Dwinishadi Yoga in Madhumeha w.s.r. to Type II DM was studied as compared to Tab. Metformin.

Total 60 patients were included by dividing in two groups. Group A was treated with Dwinishadi Yoga and Group B with Metformin. Follow up was taken on day 7, 14, 21 and 28. Evaluation was done by assessing symptoms: Prabhuta Mootrata (Polyuria), Avila Mootrata (Turbidity of urine), Swedadhikya (Perspiration), Nidradhikya (Sleep), Pipasa (Polydypsia), Kshudha (Appetite) and objective criteria: USL and BSL.Statistical analysis of data was done by applying t test and chi square test.

On the basis of Statistical tests of significance, it was concluded that Dwinishadi Yoga was definitely effective in reducing the symptoms of Madhumeha but cannot be used as the only treatment as it was ineffective in reducing BSL.

KEYWORDS : Madhumeha, Type II Diabetes Mellitus, Dwinishadi Yoga

INTRODUCTION :

Diabetes mellitus is the fastest spreading non-communicable disease. Worldwide the disease burden of Diabetes is increasing day by day. The statistics by the International Diabetes Federation show that there were 40 million Diabetics in 2007 and the number is estimated to rise up to 70 million till 2025; with the largest number of Diabetics in India, China and US.As Asian Indians are genetically more prone to Diabetes mellitus, it has become a prime concern for the health care system of our nation.

Ayurveda had explained the entire entity as Prameha and described it as a 'Yapya' Vyadhi. Yapya means, which does not leave the body till death i.e. cannot be cured, but could be controlled by medicines.

There are multiple treatment modalities mentioned in Ayurveda which may act on the basic pathology of the disease and help in better control. Yogratnakara mentions one such preparation, Dwinishadi Yoga in its chapter, Samanya Prameha Chikitsa.

AIM :

To evaluate the effect of 'Dwinishadi Yoga' in Madhumeha w.s.r. to Type II Diabetes Mellitus.

OBJECTIVE :

To reduce the symptoms of Madhumeha such as; Prabhuta mootrata, Avila mootrata, Swedadhikya, Nidradhikya, Pipasa, Kshudha.

MATERIALS & METHODS

Materials :

- Dwinishadi Yoga :

1. Haridra (Curcuma longa)
2. Daruharidra (Berberis aristata)
3. Amalaki (Emblica officinalis)
4. Bibhitak (Terminalia bellerica)
5. Haritaki (Terminalia chebula)

- Oral Hypoglycaemic Drug :

  Metformin (a Biguanide)

- Preparation of medicine:

Dwinishadi Yoga from Yogratnakara has three contents namely, Haridra, Daruharidra and Triphala. These were taken in equal amount. The mixture was soaked in water for the whole night and taken orally in the morning after adding honey to it.

Methods :

- **Selection Criteria :**

60 patients from the OPD and IPD of Kayachikitsa Department were selected according to following inclusion and exclusion criteria.

- **Inclusion Criteria :**

1. Age – Patients between 30-70 yrs age group of both sex.
2. Patients with classical symptoms of Madhumeha.
3. Patients who are known cases of Type II Diabetes Mellitus.

- **Exclusion Criteria :**

1. Age – Below 30 yrs and above 70 yrs.
2. Patients of Sahaj Madhumeha (Type I DM).

3. Pregnant Women and lactating mothers.
4. Immuno compromised patients.
5. Patients having serious Diabetic complications.
6. Diabetes caused due to side effects of drugs like: Steroids, Diuretics (Thiazide Groups)
7. Diabetes caused due to other hormonal disturbances like Acromegaly, Thyrotoxicosis.

- **Administration of drugs :**

The selected patients were randomly attributed to either of the following groups.

1. Group A (Experimental Group)

Here 30 patients were treated with Dwinishadi Yoga.

Kala - Pratah Kala (Once/day in morning)

Matra - 80 ml

Duration - 28 days

2. Group B (Control Group)

Here 30 patients were treated with Oral Hypoglycaemic Drug (Metformin)

Kala - Before lunch

Matra - 500mg

Duration - 28 days

Follow up after every 7 days was taken. Hence in total patients were examined on D0, D7, D14, D21 and D28.

Criteria for assessment :

- Subjective Criteria :

1. Prabhuta Mootrata
2. Avila Mootrata
3. Pipasadhikya
4. Kshudhadhikya
5. Nidradhikya
6. Swedadhikya

- Objective Criteria :

1. Urine Sugar Level

2. Blood Sugar Level

OBSERVATIONS AND RESULTS:

Each table shows the difference in the particular symptom during the days of follow up in the two groups.

1) Prabhuta Mootrata (Polyuria)

Group A vs. Group B at 5% level of significance

Days	c^2	Df	Table c^2 value	probability	Result
D14	0.278	1	3.84	>0.05	Not Significant
D28	1.1	1	3.84	> 0.05	Not Significant

The Prabhuta Mootrata was seen to be reduced in both the groups. When subjected to c^2 test, both the groups were equally effective. Hence there was no significant difference between the efficacies of both the groups.

2) Avila Mootrata (Turbidity)

Group A vs. Group B at 5% level of significance

Days	c^2	Df	Table c^2 value	probability	Result
D14	0.658	1	3.84	> 0.05	Not significant
D28	0	1	3.84	> 0.05	Not significant

The insignificance in the c^2 test applied, shows that both group A and B have equal effect on Avila Mootrata.

3) Pipasa (Polydypsia)

Group A vs. Group B at 5% level of significance

Days	c^2	Df	Table c^2 value	probability	Result
D14	5.456	2	5.99	> 0.05	Not significant
D28	1.268	1	3.84	> 0.05	Not significant

While examining the patients, the Pipasadhikya was seen to be reduced. As it may be equally reduced by the treatments in both the groups, the result of the test applied is insignificant.

4) Kshudhadhikya (Appetite)

Group A vs. Group B at 5% level of significance

Days	c^2	Df	Table c^2 value	probability	Result
D14	5.406	1	3.84	< 0.05	Significant
D28	10.754	1	3.84	< 0.05	Significant

There was a reduction in excess appetite. This reduction was more in Study group; hence significant difference was seen in the efficacy of both the groups, on day 14 as well as 28. In patients from study group it was seen that the frequency of Kshudha was reduced but the food intake capacity (Abhyavaharan Shakti) was increased.

5) Nidradhikya (Sleep)

Group A vs. Group B at 5% level of significance

Days	c^2	Df	Table c^2 value	probability	Result
D14	8.148	1	3.84	< 0.05	Significant
D28	2.858	1	3.84	> 0.05	Not significant

There was a significant difference between the efficacies of both the groups on day 14; but this difference did not persist till day 28. This suggests that there is no significant difference in effect of both the drugs on excess sleep, but the drug of the study group is faster in its action than the drug of control group.

6) Swedadhikya (Perspiration)

Group A vs. Group B at 5% level of significance

Days	c^2	Df	Table c^2 value	probability	Result
D14	1.456	1	3.84	> 0.05	Not significant
D28	3.158	1	3.84	> 0.05	Not significant

This symptom was observed in a few patients. There was no significant difference in the effect of drugs in both the groups on Swedadhikya on day 14 as well as day 28.

7) Urine Sugar Level

Group A vs. Group B at 5% level of significance

Days	c^2	Df	Table c^2 value	probability	Result
D14	4.584	2	5.99	> 0.05	Not significant
D28	4.8	1	3.84	< 0.05	Significant

There was no significant difference in the effectiveness of drugs of both the groups in reducing urine sugar level on day 14; but on day 28, the drug of the study group was significantly different in its efficacy than the control group drug. Study group dug was better in its action.

8) BSL Fasting and PP

Paired't' test :

	BSL F		BSL PP	
	Group A	**Group B**	**Group A**	**Group B**
Mean	0.033	20.133	1.967	52.233
SD	32.885	15.249	53.844	23.754
SE	6.004	2.784	9.830	4.337
t_{29}	0.0054	7.231	0.2001	12.044
t_{table}	2.05	2.05	2.05	2.05
P	>0.05	<0.05	>0.05	<0.05

Unpaired't' test :

	BSL F	BSL PP
Combined SD	25.632	41.6139
SE	6.613	10.736
t_{58}	3.039	4.682
t_{table}	2.02	2.02
P	<0.05	<0.05

When subjected to t-test,

1. The study group showed no significant difference in the values of BSL Fasting and BSL PP, before and after treatment.
2. The control group showed significant difference in these values before and after treatment.
3. When compared with each other, the drug of the control group is significantly more effective in reducing BSL Fasting as well as PP than the drug of study group.

DISCUSSION :

As far as the assessment criteria is concerned, Dwinishadi Yoga reduced the symptoms of Madhumeha and DM, but it did not show any specific action against the plasma glucose levels, which remains to be the main criteria to assess the control of DM.

The Kapha Dosha in the Prameha is vitiated by Drava Guna. Hence it shows increase in its volume as well.It then involves Meda and Mansa Dhatu. In Madhumeha every Jala Mahabhoota Pradhana Dhatu, gets involved in the pathogenesis. Kleda or the liquid part of the body is expressed through all these Dhatus. This Kleda is vitiated in the pathogenesis of Madhumeha

and is then excreted through urine. Hence polyuria and Avila Mootrata are seen as the cardinal symptoms of the disease. Dwinishadi Yoga reduces these symptoms, thus may have action against vitiation of Kleda.

This could be the possible mode of action in reducing the symptoms of Madhumeha,

1. Every single drug of Dwinishadi Yoga has Kashaya Rasa and Ruksha Guna, thus is Kledanashak in action. The excessive Kleda formed in any Prameha is mainly responsible for its cardinal symptoms Prabhuta and Avila Mootrata. Thus the Rukshana by these drugs helps in reducing Doshachaya and thus the excessive Mootra Prawrutti.
2. Except Amalaki, every drug in Dwinishadi Yoga has Ushna Veerya. Thus Dosha Pachan by them could remove the Avarana and break down the Samprapti. This may have shown reduction in frequency of Kshudha with increase in intake capacity.
3. Haridra, Daruharidra and Triphala are well known for their Lekhana properties in Sthaulya. Thus the same action could have brokendown the complex of Kapha, pitta, Meda and Mansa in Sthool Pramehi causing Vatanulomana.
4. Triphala and Daruharidra are Rechaka in action. This property also helps in Vatanulomana. In Avaranjanya Vata Prakop, the Anulomana has to be done by removing the Avarana, this purpose is answered by Triphala and Daruharidra.
5. Triphala has a Rasayana property. This helps in re-establishing Samyak Dhatu Awastha in the Kshaya, which results from any type of Prameha in the end. Amalaki has been specifically proven to prevent the complications of DM, hence its Rasayana properties are emphasised again.
6. The effect seen on USL, irrespective of BSL may be due to increase in the renal threshold. Dwinishadi Yoga might have a retaining effect on the Dhatus, like the Stambhana action of Kashaya Rasa, so that the conversion of Dhatus in Mootra may be prohibited.

This could be the probable mode of action of Dwinishadi Yoga in Madhumeha to have attained the effects observed.

CONCLUSINON:

Dwinishadi yoga and Metformin are equally effective in reducing Prabhuta Mootrata (Polyuria), Avila Mootrata (Turbidity of urine), Swedadhikya (Perspiration), Pipasa (Polydypsia). Dwinishadi Yoga is better than Metformin in reducing USL and Kshudhadhikya; however does not have any significant action on plasma glucose levels (Fasting and PP) and is insignificant when compared to Metformin.

Thus it can be concluded that Dwinishadi Yoga is definitely effective in reducing the symptoms of Madhumeha but cannot be used as the only treatment as it is ineffective in reducing BSL.

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Management Of Recurrent Ovarian Haemorrhagic Cyst By Ayurvedic Treatment : A Case Report

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ABSTRACT :

Any ovarian follicle that is larger than about 2 cm is termed as ovarian cyst. A haemorrhagic cyst develops when one of the small blood vessel located in the wall of a recently formed cyst breaks for some reason .Blood from vessels then spill into the body of the cyst causing it to begin swelling at a fairly consistent pace. Incidence of this condition is growing amongst young women in reproductive age .It is almost ranging between 5-10% of young women .Infertility is the most common feature due to anovulation or improper luteal cyst formation. In allopathy it is treated by hormones , pain killers or surgery. Many people wish to avoid such treatment . There is increasing interest in the systemic evaluation of alternative therapies in reproductive medicine. Cysts are known in Ayurveda with a precise description and treatment . Haemorrhagic cysts can be co–related with Vataj Granthi described in Ayurveda.

A case study shows that Ayurveda could have the answer of recurrent ovarian haemorrhagic cysts.

Key words : Haemorrhagic ovarian cyst ,Ayurveda ,Granthi ,surgery, allopathy, alternative therapy, infertility.

INTRODUCTION :

The objective of Ayurveda is to protect health of healthy and to cure the disease of sick1.The vast majority of ovarian cysts in women of reproductive age are physiological (functional) either follicular cyst or cystic corpus luteum2Randomised controlled trials in women undergoing ovulation induction suggest that ovarian cyst resolution is not affected by oral contraceptive3The incidence of detection of ovarian cysts increased dramatically as a result of increased use of USG,CT scan. However the primary task in all cases is to take responsible steps to exclude malignancy. Younger women is also desirable to avoid unnecessary surgery so as not to compromise future fertility.4Laproscopic cystotomy or drainage of cyst fluid is the treatment for haemorrhagic cyst ,but such type of treatment carries a high risk of recurrence of the cysts. Women wish to avoid surgical intervention and there is increasing interest in the systematic evaluation of alternative therapies in reproductive medicine.

Ovarian cysts are common and distressing to women particularly those who wish to preserve future fertility or those with particular anxiety about ovarian malignancy.5 Hemorrhagic cyst occur when the small blood vessels in the wall of an existing cyst rupture and fill the cyst with blood .Ovarian cysts usually form when fluid build up around an egg, when egg is improperly formed or when the egg is not released.6

As per Ayurveda improper formation and failing to release of egg occurs due to abnormal action of the vitiated Vata dosha.7

Most haemorrhagic cyst form and recede naturally during the course of few menstrual cycles ,though patient often experience pain near the location of the cyst .When the cyst fills with blood ,it causes the ovary wall to stretch rapidly, resulting in minor pain on either the right or left side of the lower abdomen.8

Characteristic of Vataj Granthi are stretching and tremering like pain. It ruptures with the pain as if being pierced ,thrown, cut or perforated. On rupture fresh blood is discharge.Vataj Granthi spread like urinary bladder when filled with blood .9 Vataj Granthi suddenly increases and decreases in size.10

Ovarian haemorrhagic cyst have almost same features as Vataja Granthi .

Treatment is , in all Granthis first of all cleansing should be done. Doshvishesh chikitsa have to be followed after it .Strength or energy of patient should be protected ,because maintenance of strength of patient decreases the strength of force of disease.11

CASE REPORT

A female patient of age 22 years from Nagpur attended at my OPD Pune ,with the following complains from past 2 years

*Dull abdominal pain during menstrual period

*Sharp streching in mid –menstrual period

*Fullness ,heaviness in the abdomen

*Periods were regular

USG was advised , there was big **ovarian haemorrhagic** cyst .

Reports are attached ,.Ayurvedic treatment was given for 6 months ,after treatment report was absolutely normal .During 6 months of treatment she never got pain in abdomen or any other complains. Menstrual cycles were regular.

TREATMENT

Only Ayurvedic medicine started based on Basic principles of Ayurveda.

Castor oil 40 ml at 7 pm———————— once in a week for 4 weeks

Chandraprabhavati 250 mg————————————BID before meal for 6 months

Yograj Guggul 250 mg————————————BID before meal for 6 months

DISCUSSION

According Ayurveda, release of ovum from the follicle is depend upon normally functioning of Apana Vayu.12 In all Granthis first of all cleansing should done by maintaining strength of patient.11 Mode of action of Ayurvedic medicine and treatment given to the patient is presented in Table No. 1 and Table No. 2 respectively .As disease occurred in Apansthana (place of Apana Vata) medicine was given before meal.

After six months of treatment patient is all right till date . Her cycles are regular as it was, have no pain as it was earlier ,she is absolutely free from recurrent Ovarian haemorrhagic cysts.

TABLE NO. 1

MODE OF ACTION OF AYURVDIC MEDICINE		
NAME	ACTIVITIES	REFERENCES
CASTOR OIL	Enters into minute channels,cleanses channel, purifies female genital tract ,alleviates Vata and Kapha,eliminates impurities from the downward passage,Gulmahar (remove cysts/tumors)	13,14
CHANDRAPRA-BHA VATI	Acts on urinary genital system ,useful in menstrual disorders , Granthi , Gulmahar, shulahar (pain releaver)	15,16
YOGRAJ GUGGUL	Vatroghar(useful in Vata predominant diseases),Gulmahar(remove cysts/tumors), relieve abdominal pain	17

TABLE 2

MEDICATION GIVEN TO THE PATIENT			
CASTOR OIL	40 ml	Once in a week	7am before break fast
CHANDRAPRABHA VATI	250 mg	BID	Before meal
YOGRAJ GUGGUL	250 mg	BID	Before meal

CONCLUSION

From this case study we can conclude that Ayurvedic treatment helps in reduction of ovarian haemorrhagic cysts; also controls recurrence of it .This is only single case study further detail experimental and clinical research studies are needed to draw final conclusion. This study can lead to better clinical service for other patients also.

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DHRUV
DIGITAL X-RAY & ADVANCED 4D COLOUR DOPPLER SONOGRAPHY

- Digital X-ray
- Whole body & Vascular colour Doppler
- 4D & 3D Vaginal/Obst/Abdominal Sonography
- Colour 2D & 4D Adult & Foetal Echocardiography
- USG guided biopsy/aspiration.

DR. ASAWARI K. DESHMUKH
M.B.B.S., M.D.
RADIODIAGNOSIS

PATIENT'S NAME :-MS. SNEHAL MENDHE

DATE:-29/10/2012

REF.BY :- DR. MRS. JAYASHRI SHINDE (BAMS)

SONOGRAPHY OF ABDOMEN & PELVIS.
(Done on 3-D & colour doppler high resolution machine)

***Liver is normal in size and echopattern** with no focal mass or diffuse lesion*
The intra and extrahepatic radicles are normal.
No nodes at the porta heaptis. Portal vein and common bile duct are normal.
***Gall bladder** do not shows any calculus .Wall thickness is normal.*
No evidence of pericholecystic fluid colllection seen.
Pancreas and spleen appears normal in size and echopattern.
No evidence of peripancreatic fluid collection seen
The diaphragmatic movements are satisfactory
There is no evidence of subdiaphragmatic pathology.
There is no evidence of pleural effusion or ascities
***Right kidney** measures 9.9 x 4.0 cm .*
***left kidney** measures 8.9x4.6cm.*
***Both kidneys** shows normal size and echopattern with no evidence of calculi or calyceal dilatation seen.Corticomedullary ratio is maintained.*
No renal or juxta renal mass seen.
***Urinary bladder** shows smooth contours. Post void residual urine is not seen..*
Wall thickness appears normal.
No mass localized fluid collection seen in right iliac fossa.
***Uterus** is anteverted and uterocervical length is 7.7 x 3.8x 4.2cm. in longitudinal. anteroposterior and transverse diameter.*
The myometrial echotexture is normal with no focal mass.
Endometrium is echogenic measures 5 mm. Cervix appears normal.
Right ovary is enlarged cystic with fine internal echoes measures 59x32x46mm. vol- 46 cc.
Left ovary measures 3.6 x 1.7 cm.
is normal in size and echoppatern .
No adenexal mass or free fluid is seen.
IMPRESSION :HAEMORRHAGIC RIGHT OVARIAN CYST IS SEEN.
NO OTHER SONICALLY DETECTABLE ABNORMALITY SEEN IN ABDOMEN AND PELVIS. Please co-relate clinically.

Thanks for referral !

DR. ASAWARI DESHMUKH

Add. : 227, Gorle Palace, Umred Road, Sakkardara Sq. Nagpur-9 Ph : 2744534, 2703209

ON PANEL OF :- LIC, INDIA, KOTAK MAHINDRA, ALLIANZ BAJAJ

DHRUV

DIGITAL X-RAY & ADVANCED 4D COLOUR DOPPLER SONOGRAPHY

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ed biopsy/aspiration.

DR. ASAWARI K. DESHMUKH
M.B.B.S., M.D.
RADIODIAGNOSIS

PATIENT'S NAME :.MS. SNEHAL

DATE-13.5.13

REF. BY :DR .MRS. J. SHINDE(BAMS)

SONOGRAPHY OF PELVIS

TAS

Uterus is anteverted measures 7.4x4.0x4.7 cm in longitudinal, anteroposterior and transverse dimensions.
Myometrial echotexture is normal with no focal mass.
Endometrium is echogenic measures 8 mm..
Cervix appears normal .

Right ovary measures 41x31mm..
Left ovary measures 30x20 mm.
Both ovaries shows normal size and echotexture.
No adenexal mass or free fluid seen.
Urinary bladder shows smooth contours.
No pelvic congestion is seen.

***IMPRESSION:- NO OBVIOUS SONICALLY** DETECTABLE ABNORMALITY SEEN IN PELVIC ORGAN.*

or referral !

DR. ASAWARI DESHMUKH

27, Gorle Palace, Umred Road, Sakkardara Sq. Nagpur-9 Ph : 2744534, 2703209

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Randomised study to determine deleterious functional impact of Pandu (Anemia) on college going students

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Abstract

Pandu (anemia) is an effect of Raktakshaya and Medakshaya which in turn responsible for Balakshaya , deranged Oja Guna1. So Pandu (anemia) reduces Sharirbala - physical work capacity and Manasbala -cognitive function. Objectives: To assess the Sharirbala -physical work capacity and Manasbala -cognitive function of college going students admitted for first year. Design: Prior to initiating anemia control interventions, First year students were studied with regard to their hemoglobin status, RBC count, HCT, MCV, MCH, MCHC values2, physical work capacity and cognitive functions. Methods: To access RaktaShaya- Hemoglobin, RBC Count, HCT, MCV, MCH, MCHC of subjects was done using standard methods.To access Medakshya Weight & BMI was taken. To access Sharirbala- physical work capacity Modified Harvard's Step test3 was carried out and to access Manasbala - cognitive functions test, selected tests from the modified Wechsler Intelligence Scale for Children (WISC)4, suitably adapted for this group.(n= 100).Results: The mean hemoglobin was 11.54 g/dL. The mean RBC count was 4.06 mill./cumm. The mean HCT was 34.87 %.The mean MCV was 85.94 fl. The mean MCH was 28.71 pg.The mean MCHC was 33.01 gm/dl. Therefore the Raktashaya in Pandu (anemia) prevalence is 62%. The mean weight was 48.6 kg. The mean BMI was 19.5. Therefore the Medakshaya in Pandu (anemia) prevalence is 62%. Higher number of steps were climbed and a shorter time was taken to revert to the basal pulse rate (recovery time) by subject not having or having Raktashaya and Medakshaya i.e. non-anemic students compared to anemic students ($P<0.001$). Significantly lower scores in digit span and visual memory test were seen in subject compared to not having or having Raktashaya and Medakshaya i.e. non-anemic students compared to anemic students. Conclusion: Pandu (anemia) is likely to adversely affect Sharirbal- physical work capacity and Manasbala- cognition in young students. Further research should be conducted in both adolescent and pubertal developmental age so as to develop healthy youth.

Key words: Pandu, Anaemia, Raktashaya, Medakshaya, Balakshaya, Cognitive function, Physical work capacity.

Introduction

Pandu (anaemia) is a formidable health challenge in developing countries and remains persistently high despite national programs to control this deficiency. In college going student's

nutrient requirements are high and reserves are being laid for the subsequent rapid growth and development. In this age group Pandu (anaemia) has been primarily studied for its detrimental effect on Raktashaya, Medakshaya leading to Ojakshaya i.e. deranged hematinic parameters. This may also reduce Sharirbala -physical work capacity and Manasabala -cognitive function. This in turn may adversely affect learning and scholastic performance of the students.

Sharirbala - Physical work capacity is reduced because in Pandu (aneamia), Raktashaya i.e. the decrease in hemoglobin reduces the availability of oxygen to the tissues, which in turn affects the cardiac output5. Further, Ojakshaya reflects in decreased Manasbala as anemia changes in brain iron content and distribution and in neurotransmitter function may affect cognition6, 7. Anemia may produce scholastic under-achievement and behavioral disturbances in students8. Research on these students has shown that students having Pandu - (anemia) performed less well on Harvard's physical work test & psychomotor tests than did by Non Pandu - (non-anemics).

Hence, the present research was planned with the objective of assessing the Sharirbala - physical work capacity and Manasbala -cognition of under-privileged anemic students as compared to their non-anemic counterparts. This research is the first phase of an ongoing intervention study to combat Pandu (anemia) in early college going students.

Study Design

All the students matching the following criteria were selected for purpose of sampling.

- ☐ The age group of the student was 18 & 19 years.
- ☐ The study focused on Student admitted in First Year in college to find out there Sharirbala -physical work capacity and Manasbala -cognitive function.

Thus, a sampling frame of 100 students admitted in First year were randomly selected and all were enrolled in the study (n = 100).

Profile of the subjects

Majority of the students (two third) were girls rest are boys. The students were in the age group of 18 to 19 years. Nearly (70%) of the students were hostel residents, and others were home residents.

Sample

Data on hemoglobin (n = 100), RBC Count (n=100), HCT (n=100), MCV (n=100), MCH (n100), MCHC (n=100), height and weight (n = 100) were collected on all students. Harverd's step test and modified Wehsler Intelligence cognitive tests (n = 100) were carried out. The Haemo autoanalyser of Transasia Sysmax company using three way method was used for estimating hemoglobin, RBC count, HCT values, MCV values, MCH values and MCHC values9. Standard methods for height and weight are adopted to calculate BMI10. The tests for both physical work capacity (PWC) and cognition were modified and pre-tested to make them

appropriate for this age group.

Physical Work Capacity

The Sharirbala -physical work capacity of the subjects was assessed using Modified Harvard's Step test. The students were asked to climb up and down a set of five steps of a height 50cm or 20 inch, for a period of three minutes as fast as they could. The total number of steps climbed up and down was counted. The resting pulse rate was recorded before the student began the test. Post exercise, the time taken (minutes) to revert to the basal pulse rate was also recorded (recovery time).

The Manasbala- cognitive functions of the students were assessed using selected tests from the Wechsler Intelligence Scale for Children (WISC) which was suitably modified. A Questioner was prepared for students and asked them to solve it in 20 minutes. This Questioner reflects the digit memory to assess short term memory, Maze test to assess visual-motor coordination and clerical task to assess the ability to concentrate and discriminate. The various tests used to assess logical reasoning.

Data Analysis

Means and standard deviations were calculated for Physical Work Capacity and cognition scores. Percentage of students suffering from Pandu (anemia) was calculated using WHO cutoff of hemoglobin <12 g/dL. On a smaller subset of data, students suffering from Pandu or non suffering i.e. anemic and non-anemic were compared within Prakrut Raktadhatu & Medadhatu i.e. well-nourished and Alpa Raktadhatu & Alpa Medadhatu i.e. undernourished groups.

Results

Anemia profile - To assess Raktakshaya in Pandu

The mean hemoglobin level of total sample of students (n = 100) was 11.536 g/dL; 10.59 g/dL for students suffering from Pandu i.e.anemics (n = 62) and 13.07 g/dL for non-anemics, not suffering from Pandu (n = 38). The mean RBC count of total sample of students (n = 100) was 4.06 mill./cmm; 3.85 mill./cmm for students suffering from Pandu i.e. anemics (n = 62) and 4.40 mill./cmm for non-anemics , not suffering from Pandu (n = 38)The mean HCT level of total sample of students (n = 100) was 34.87 %; 32.5 % for students suffering from Pandu i.e. anemics (n = 62) and 38.74 % for non-anemics, not suffering from Pandu (n = 38). The mean MCV level of total sample of students (n = 100) was 85.94 fl; 84.98 fl for students suffering from Pandu i.e. anemic (n =62) and 87.51 fl. for non-anemics, not suffering from Pandu (n =38). The mean MCH level of total sample of students (n = 100) was 28.71 pg; 28.03 pg for students suffering from Pandu i.e. anemics (n = 62) and 29.81 pg for non-anemics, not suffering from Pandu (n = 38). The mean MCHC level of total sample of students (n = 100) was 33.01 g/dl; 32.42 g/dl for students suffering from Pandu i.e. anemics (n = 62) and 33.97 g/dl for non-anemics, not suffering from Pandu (n = 38). The prevalence of anemia = Hb <12g/dl, HCT < 38 %, MCV < 76 fl, MCH < 27 pg, MCHC < 32 g/dl was very high (62 %). Considering severity of

anemia, 24 % students were mildly anemic (Hb = 11.0-11.9 g/dl, average RBC count 3.97 mill./cmm, HCT = 34.5 %, MCV= 81.57 fl , MCH = 29.42 pg , MCHC= 33.31 gms/dl); 38 % students were moderately anemic (Hb = 7.1-10.9 g/dl, average RBC count 3.78 mill./cmm ,HCT= 31.23%,MCV= 83.35 fl ,MCH=27.16 pg, MCHC= 31.87 gms/dl). There were no severely anemic Students. Using Hb= 12 g/dl, RBC count = 4.5 mill. /cmm, HCT= 38 %, MCV=76 fl, MCH= 27 pg MCHC=32 gms/dl as the cutoff level, the anemic and non-anemic students were compared with regard to their physical work capacity and cognitive functions.

Table 1

Sr.No.	Average Student type	Hb gm%	RBC count Mill./cmm	HCT %	MCV fl	MCH pg	MCHC Gms/dl
1	Total (n=100)	11.536	4.06	34.87	85.94	28.71	33.01
2	Anemics (n=62)	10.59	3.85	32.5	84.98	28.03	32.42
3	Non Anemics(n=38)	13.07	4.40	38.74	87.51	29.81	33.97
4	Mild Anemic (n=24)	11-11.9	3.97	34.5	81.57	29.42	33.31
5	Mod.Anemic(n=38)	7.1-10.9	3.78	31.23	83.35	27.16	31.87
6	Cut off level	12	4.5	38	76	27	32

Body Mass Index (BMI) - To assess Medakshaya in Pandu.

The mean weight of total student (n=100) is 48.6 kg. & the mean hight of total student (n=100) is 157 cm. So Average BMI of total student (n=100) is 19.50 Average BMI in mild anemic student was 19.24 & in moderate anemic was 18.96. So the Medakshaya was also seen in Pandu (anemic)

Physical work capacity - To assess the Sharirbala in Pandu

The students were asked to step up and down on a platform .The students were immediately asked to sit down on completion of the test and the pulse rates were counted for 1 to 1.5, 2 to 2.5, 3 to 3.5 minutes. However the time taken to recover to the basal pulse rate was significantly higher for anemic students, i.e., anemic students took longer than non-anemic students to return to their basal pulse rate after finishing the step test.

Table 2 : Physical Work Capacity in students.

Sr. No.	Students type	Recovery Time
1	Non Anemic	1 to 1.5
2	Mild Anemic	2 to 2.5
3	Moderate Anemic	3 to 3.5

Cognitive Function Test - To assess the Manasbala in Pandu Table 1 &2 further reveals that

when cognitive function test scores were compared between anemic and non-anemic students, the non-anemic students scored higher than their anemic counterparts, the difference being significant in digit span and visual memory tests. Average score of mild anemic students was 14.4, moderate anemic was 11.3. Average score for non anemic was 15.4.

Is Raktashaya & Medakshaya in Pandu affect Sharirbala & Manasabala - Does the level of anemia significantly influence physical work capacity and cognitive Function Test

When students having Pandu (anemic) were categorized into mildly anemic and moderately anemic groups, even mildly anemic students took longer to recover to their basal pulse rate compared to non-anemic students. The moderately anemic students similarly showed a longer recovery time than those mildly anemic. As regards cognitive function test, a similar trend was seen. Even the mildly anemic students tended to have lower scores than non-anemics, and the moderately anemics further had lower scores than those mildly anemic. Thus a trend was seen that even mild anemia could adversely affect the Sharirbala - Physical Work Capacity and Manasbala - cognitive abilities of students entering to First year course.

Discussion

The findings of this study indicate that Raktashaya - lower levels of Anemia Profile & Medakshaya - lower BMI in Pandu (anemia) is likely to compromise Sharirbala - physical work capacity and manasbala cognitive functions of students in the phase of development. Further, even mild anemia can have a deleterious effect on these functions.

Literature in this age-group of children entering First year which relates anemia to functional consequences is scarce. In ayurveda Pandu Vyadhi is explained in Rasavaha Strotas Vikruti Janya vyadhi where Acharyas have stated that Pitta vikruti is major entity. This Pitta Vikruti is responsible for Dhatu Shaithilya which in turn leads to Alpa Rakta, Alpa Medas. Again this leads to Ojakshaya by deranging its Guna - Varna, Bala ,Sneha. Here we tried to study the deranged Guna of Oja - Bala . This Bala entity means Sharirbala and Manasbala which was observed by doing Harvard Step Test & Wechsler Adult Intelligence Scale (WAIS).We found that 62 % student have less Sharirbala - physical work capacity and Manasbala - cognitive function as they are having Raktashaya and Medakshaya in Taratamatwa means in mild - moderate form.

It appears, therefore, that not just college student, but even preschool children, older school children and those entering adolescence are vulnerable to the adverse functional consequences of Pandu (anemia), that is Raktashaya and Medakshaya leading to ojakshaya, which is responsible for Balakshaya. This decreases Sharirbala and Manasbala causing poor growth and physical work capacity, and compromised cognitive abilities. In the absence of interventions, Pandu (anemia) will not only compromise the quality of life of these children; but the subsequent poor school performance. In children entering adolescence, anemia leads to several adverse consequences. So further study should be carried out on adolescent school girls as Pandu (anemia) can significantly compromise physical work capacity and cognitive abilities in

pubertal schoolgirls in early adolescence; including mild to moderate anemia.

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Quantitative assessment of Moisture content of skin & its Correlation with Prakruti with the help of Digital Moisture Monitor for skin.

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Abstract

Ayurveda the science of life which not only deals with the treatment of diseases, but also maintenance of health in individuals is its prime goal. Therefore every research in Ayurveda gives emphasis to health prophylaxis along with treatment.According to Ayurveda, "Prakruti" is a factor which originates in a person right from the time of conception & it determines the physical & mental attributes of man. Prakruti is an important tool of analysis of an individual. By determining the prakruti one can assess the most beneficial therapy for that particular individual. Examining the type or nature of skin (twacha) is one of the aspects to analyze ShareerikaPrakruti.

Moisture content refers to the percentage of water present in the skin Moisture content is a quantitative parameter to analyze the moistness of skin in an individual.

It gives an idea of the nature of the skin, which is a physical attribute of a person. It has also become a trend to possess a soft & healthy skin, which is only possible if the skin is well hydrated or moisturized.Thus an attempt to study the "moisture content of skin" in relation to "Prakruti".

Keywords : Prakruti, Skin, Moisture content

Introduction

According to Ayurveda every individual is unique. Not only each individual has different size, and shape but also different physiological and psychological characteristics.

Ayurveda principally refers to prakruti of human as 'Dosha-Prakruti' or 'Deha-Prakruti'.

Twacha is one which encloses the whole shareera & does the avarana of all shareera dhatus.

Twacha as Upadhatu

According to Charaka it is the Upadhatu of Mamsa.Sharangdhar has considered them as malas of dhatu.

Utpatti of twacha

During Garbhotpatti, the combination of shukra and shonita in the presence of bhutatma

becomes pakwa giving rise to layer of sapta twacha just like formation of layer of cream while heating milk on fire.

Moisture content of skin

Water is provided to the skin from the innermost layers and then moves upwards toward the outermost part of the skin, where it evaporates and so helps the body control its temperature, while at the same time controlling the moisture content in the skin and also hydrating the dead outermost part of the skin – the stratum corneum.

It cannot be stressed enough – the skin cells need proper moisture and hydration – without this, nutrients cannot be delivered to the living cells, and waste materials from the cells cannot be removed – and when this happens the skin is not able to function properly and this will result in a very uneven, poor looking and problematic skin.

The rate of water evaporation from the skin depends on various factors – such as relative humidity, the water retention power of the stratum corneum, and the rate of water supply from the innermost layers of the skin and the Natural Moisturizing Factor (NMF) in the skin.

Moisture content of skin comprises of many factors present in the skin, which are explained as follows:-

a. Natural Moisturizing Factors (NMFs)

The most important substance for all the suppleness of the skin is water. In young skin, water content of the upper horny layer accounts for between 10 & 20% of water in entire body.

The skin receives its moisture from the deeper layers (Transepidermal water) & from natural Sweat secretions.

NMF's, body's own substances derived from Sweat & Sebaceous oils help skin retain water in the horny layer. Without NMFs, water would evaporate leaving the skin dry & cracked.

b. Sebum

The sebaceous glands are microscopic glands in the skin which secrete an oily/waxy matter, called **sebum**, which helps to moisturize the skin.

Sebum acts to protect and waterproofskinand keeps them from becoming dry, brittle and cracked by dehydration.

c. Surface lipid (Hydrolipid film)

Sebum is a complex mixture of lipids, which is secreted by mammalian sebaceous glands, and forms a fluid film over the skin surface. After sebum is secreted, it becomes mixed with lipid from the keratinizing epithelium and forms the skin surface lipid film (SSLF).

d. Sweat

The skin receives its moisture from the deeper layers (transepidermal water) & from natural Sweat secretions. Sweat contains:

- Water
- Sodium chloride
- Urea
- Lactic acid

e. Health, resilience and youthful appearance of the skin depends, among other things, on several key classes of biological molecules. The most important skin molecules are collagen, elastin, glycosoaminoglycans and proteoglycans.

Factors affecting the level of moisture in skin:

Moisture in skin plays an important role in maintaining healthy skin. Lack of moisture can cause severe dryness and make the skin become less supple, both of which usually occur during the dry winter months or even during the summer. The skin can be deprived of moisture for a variety of reasons, ranging from cold winter air to over exposure to the sun. Surprisingly, many people tend to "over clean" themselves with hot water and some extremely harsh soap types which tend to steal away the skin's natural moisture, thereby damaging it

Aim

Correlation of Prakruti& Moisture content of skin with the help of Digital Moisture Monitor for skin.

Objectives

- ❖ All the references in Ayurvedic classics like Charak samhita, Sushruta samhita, Ashtanga Sangraha & Hridayaabout twacha were compiled.
- ❖ All references in Ayurvedic classics regarding Prakruti were gathered.
- ❖ Moisture of skin according toModern sciences was studied.
- ❖ The Prakruti of the subjects was assessed as per the format from C-DAC.
- ❖ The moisture content of skin of the subjects was recorded.
- ❖ Moisture of skin was compared with the Prakruti of a personstatistically.
- ❖ Literary study of measures to cope up with conditions like dry skin, wrinkled skin was done; by compiling all the remedies for the same from all the available sources.

Material

- Format of C-DAC for the assessment of prakruti.
- The Digital moisture monitor which records the Moisture content of skin.It is a standardized instrument
- Statistical tests.

Methods

The study was performed under two headings:-

Literary

- Compilation of Prakruti from Samhitas.
- Details about Skin as per Modern concept &Twacha as per Ayurvedic concept.
- Modern concept of Moisture content of skin was compiled.
- Comparison of concept of moisture content of skin with Ayurvedic concept.
- Details of the Digital moisture monitor for skin.
- Ayurvedic, Modern & Cosmetic Measures for healthy skin.

Practical

- Assessment of Prakruti of the subjects as per the format of C-DAC.
- Sorted the prakruti as per pradhanadosha.
- Recording of Moisture content of skin at the right & left dorsum, right & left cheek & forehead in the subjects.
- Statistical analysis of the recorded moisture content of skin & its correlation with the prakruti.

Inclusion Criteria

- The subjects included for the study were healthy individuals between 17-22 yrs of age & free from any major illness.
- Both male & female students were included for the study.

Exclusion Criteria

- Any subjects suffering from major ailments or skin disorders were excluded from this project.

The Digital moisture monitor

The Digital moisture monitor is a specially designed precision instrument which records the Moisture content of skin.It is a standardized instrument.This product utilizes the latest Bioelectric Impedance Analysis (BIA) technology.The moisture monitor used in this study is manufactured by the Company: Guangzhou Jinpeng Beauty Equipment Co., Ltd., Guangdong,

Statistical Analysis

Statistical Analysis was done with the help of "Test for correlation"

Random selection of 100 Subjects was done.

Out of 100 subjects,

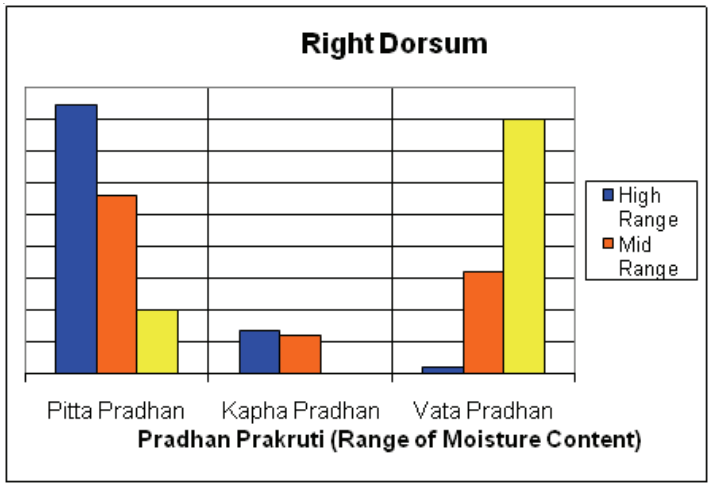
- 67 were of Pitta pradhanPrakruti,

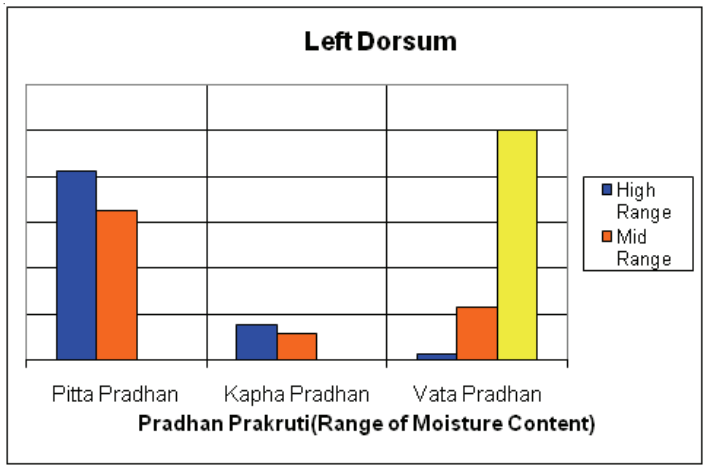
-12 were of KaphapradhanPrakruti,

-21 were of VatapradhanPrakruti.

It was found that there was Significant Correlation between Moisture content of skin and Prakruti.

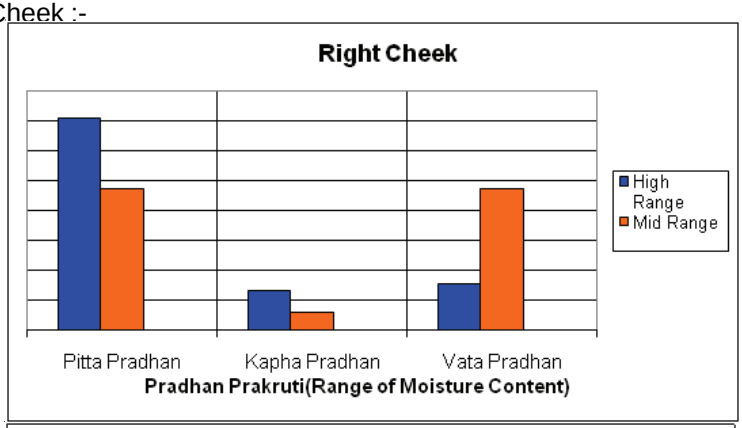
Graphs were drawn to analyze the Range of moisture content in PradhanPrakruti. The following graphs indicate the same at the sites Right & Left Dorsum:-

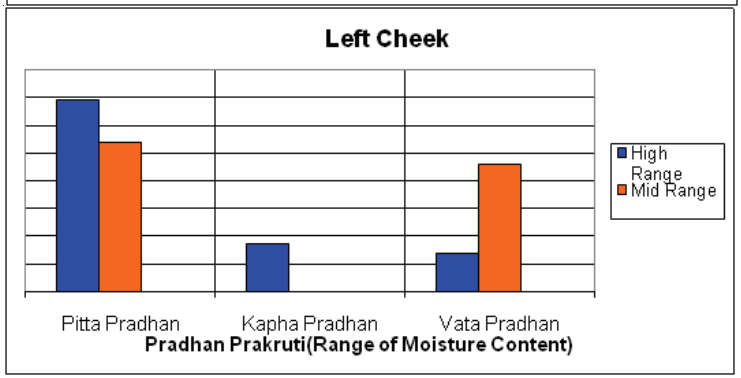




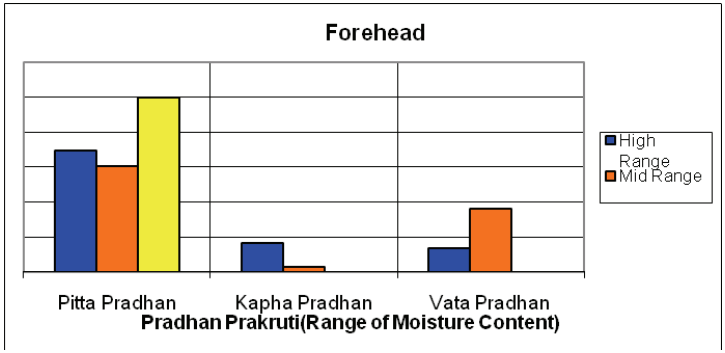
Result

The following graphs indicate the Range of moisture content in Pradhan Prakruti at the sites Right & Left Cheek :-





The following graph indicates the Range of moisture content in PradhanPrakruti at the site of Forehead:-



The above graphs indicate that Moisture content was high in Pitta pradhanPrakruti, moderate in Kapha pradhanPrakruti and low in Vata pradhan Prakruti.

Conclusion

- Moisture content of skin varies considerably along with prakruti.
- Pitta pradhan prakruti persons show high moisture content of skin.
- Kapha pradhan prakruti persons show moderate moisture content of skin.
- Vata pradhan prakruti persons show low moisture content of skin.
- Digital moisture monitor for skin-is an effective tool in measuring moisture content.
- Literary & experimental study shows that vataprakruti persons show minimum twaksnigdhata.

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Scientific Basis of Ayurvedic Management of Puerperium

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Abstract :

Postpartum maternal health care is a neglected aspect of women's health care. Differing perceptions of maternal needs of doctors, new mothers and family members also contribute to this apathy. The woman who had undergone critical phase of delivery needs care and support to recover completely. After birth, the child is dependent on the mother; hence it is the responsibility of mother to nourish him. This phase also leave the mother in some complications.

Nonetheless, management of common discomforts of postpartum, emotional disorders, and difficulties in role attainment are not addressed by modern system of medicine. Ayurvedic management besides supporting the general health status of mother, also helps in early involution of uterus, ensures proper lactation and quality, quantity of breast milk and prevents complications of Puerperium. By adopting this, perinatal mortality and morbidity rates can be effectively bring down. In the present study an attempt is made to review its scientific basis.

Introduction :

Puerperium is the period that begins as soon as the placenta expelled out after delivery of the baby and lasts approximately for six weeks. During this phase woman's body tissues, especially pelvic organs revert back to the pre-pregnant state by the process of involution.

In the immediate Puerperium, involution of genital organs, raise in the pulse rate, reactionary rise in temperature may be there. Urinary bladder becomes oedematous and woman becomes relatively insensitive to the raise of intra-vesicle pressure due to the trauma sustained to the nerve plexus during delivery. Because of this, bladder may be over distended without any desire to pass urine. Stagnation of the urine along with a devitalized bladder wall contributes to the urinary tract infection in puerperium.

In the late postpartum period, bleeding/discharges per vagina, pain abdomen, fatigue, tiredness, and other physical conditions such as hemorrhoids, constipation, urinary incontinence, disturbed sleep, sleeping disorders, lack of sexual desire, and painful intercourse etc., are the problems encountered by woman. These problems have a significant impact on mothers' physical and social health.

In order to reduce the postpartum maternal morbidity, reforming postpartum care measures by providing holistic and flexible maternal health care is necessary. The WHO suggested that maternal care be demedicalized, individualized, family-centered, multidisciplinary, holistic, and culturally appropriated. It is recommended to include medical assessment of postpartum complications, mother-infant attachment, breastfeeding, family visiting during hospitalization, community and partner support, and family planning under maternal care[1].

But, in the existing modern medical system, puerperal care limits to supplementation of the iron, calcium and prevention of infections. Two major demands of Puerperium; care for proper involution of genital organs and ensuring good Galactogenesis are also still left un-addressed.

According to Ayurveda, Puerperium is called as Sutikakala and its duration is mentioned as six weeks. Sushruta and both the Vagbhatas have said that after one and half month of regulated or restricted specific dietetics and mode of life the woman becomes free from the title of Sutika and also cited the opinion of others that the woman should be called Sutika till she does not re-start her menstrual cycle. Kashyapa has mentioned the duration of Sutika-kala as six months.

Bhavaprakasha besides agreeing with the description of Sushruta, has mentioned that after subsidence of complications and aggravation of dosha (caused during labour due to dhatukshaya) the woman should give up specific mode of life after four months.

Sutika paricarya – management of Puerperium: Ayurvedic treatment employs a specialized approach of postpartum care for mothers and babies. It includes a comprehensive regimen of diet, life style and medications to advise to Sutika (puerperal woman). It is by far most scientific and practical since it aims mainly at the restoration of the woman's health in all respects and extends to cater the nutritional and health needs of the baby too.

I. Ahara - Diet :

1. Rice gruel with Pippali, Nagara (Ka. sa. khi. 11/11-27)
2. Meat soup of wild animals (Ka. sa. khi. 11/11-27)
3. Kulattha soup mixed with oleaginous substance, salt, sour articles (Ka. sa. khi. 11/11-27)
4. Kushmanda, Mulaka, Ervaruka fried in ghee (Ka. sa. khi. 11/11-27)
5. Dravayavagu (thin gruel) or Yavagu (rice gruel) prepared with Pippali, Pippalimula, Cavya, Citraka, Nagara (Ca. sha. 8/48), (Ha. sa. tru. 53/1-4)
2. Milk (a. ra. ma. svadu/11)
3. Cooked Sali or Shashtika shali rice (Ha. sa. tru. 53/1-4)
4. Meat soup prepared with Yava (barley), Kola (jujube fruit), Kulattha (horse gram) (Su. sha. 10/16), (A. sa. sha. 3/38)
5. Rice gruel with Caturjataka (Ha. sa. tru. 53/1-4))

6. Yavagu (rice gruel) prepared with Vidarigandhadi group of drugs (Su. sha. 10/16), (A. hru. sha. 1/94-99), (A. sa. sha. 3/38)
7. Hot Jaggery water (A. hru. sha. 1/94-99)

II. Vihara - Lifestyle :

Dos : 1. Abdominal binding with cotton cloth (Ca. sha. 8/48)

2. Irrigation or bath with hot water in the morning and evening (Ca. sha. 8/48)

3. Irrigation with Bhadradaru decoction (Su. sha. 10/16)

Don'ts : 1. Anger, exercise, coitus (Su. sha. 10/16).

2. Cold air (Bha. pra. pu. 4/2,4), (Yo. ra. stri. 138)

III. Drug Regimen :

Single drugs :

Puerperal care : (Involution of genital organs) : (Internal use)

1. Pippali[1,2,4] 2. Pippalimula[1,2,4] 3. Cavya[2,4] 4. Citraka[1,2,4] 5. Shrungavera[1,2,5] 6. Hastipippali[2] 7. Yavani[3] 8. Upakuncika[3] 9. Saindhavalavana[3] 10. Haritaki[5].

(1. Ca. sha. 8/48, 2. Su. sha. 10/16, 3. A. sa. sha. 3/38 4. A. hru. sha. 1/94-99, 5. Ha. sa. tru. 53/1-4).

Expulsion of blood and discharges : (Internal use)

1. Bhadradaru (Su. sha. 10/16)

xternal use: (Fumigation)

1. Priyangu (Ka. sa. khi. 11/11-27)
2. Agaru (Ka. sa. khi. 11/11-27)
3. Guggulu (Ka. sa. khi. 11/11-27)
4. Kushta (Ka. sa. khi. 11/11-27)

Purification of Yoni (Reproductive tract) : (Internal use)

1. Lodhra 2. Arjuna 3. Kadamba 4. Devadaru 5. Bijaka 6. Karkandhu (Ha. sa. tru. 53/1-4).

Galactogenesis : (Internal use)

1. Virana, 2. Shali 3. Shashtika 4. Ikshuvalika 5. Darbha 6. Kusha 7. Kasha 8. Gundra 9. Utkata 10. Kattruna – Roots of all drugs [Ca. su. 4/12 (17-18)]

For Purification of Stanya (Breast milk): (Internal use)

1. Pata 2. Mahoushadha 3. Suradaru 4. Musta 5. Murva 6. Guduci 7. Vatsakaphala 8.

Kiratatikta 9. Katurohini 10. Shariva [Ca. su. 4/12(17-18)]

Group of drugs :

Sutikaparicarya –Puerperal care: (Internal use)

1. Vyosha (A. sa. sha. 3/38)
2. Jivaniya (A. sa. sha. 3/38), (A. hru. sha. 1/94-99)
3. Brumhaniya (A. sa. sha. 3/38), (A. hru. sha. 1/94-99)
4. Madhuravarga (A. sa. sha. 3/38), (A. hru. sha. 1/94-99)
5. Laghupancamula (A. sa. sha. 3/38)

Stanyakara - Galatogogue : (Internal use)

1. Padmakadigana (a. ni. padmakadigana 42)

Compound drugs: (Internal use)

I. General care :

1. Panchajirakaguda (Ca. da. str. 45-50).
2. Panchajirakapaka (Yo. ra. stri. 154-157)

II. Kshiravardhana - Galactotropic:

1. Vajrakanjika (Ca. da. stri. 44-44)

III. Stanyashodhana – Purification of breast milk:

Bhadrotkatadya ghrita : (Ci. sam. stri. 22-325)

Review of pharmacological activities of single drugs: Some of the above mentioned single drugs are reviewed for their pharmacological actions to establish their efficacy in Puerperium and details are presented below :

S.No.	Drug name	Pharmacological Action	Part/Active principle
1	Pippali - (Piper longum)	1.Produce a definite development of lobulo alveolar tissue and evidence of mammary secretion in oestrogen prime and post partum rats[2].2. Weight gain in mammary glands in post-partum and oestrogen primed rats[3].3. Anti-inflammatory effect[4,5].	Alcoholic extract Crude alcoholic extract of rootPiperine
2	Satavari -(Asparagus racemosus)	Increased weight of mammary glands in post partum[6].	Extract of the plant
3	Pisaca Karpasa (Abroma augusta)	1. Increase in growth of mammary gland and significant Galactotropic effect in albino rats[7]. 2. Oxytocic effect on isolated uterus of guinea pig rat and dog uterus in situ. The roots exhibited uterotonic activity on isolated rat uterus, uterine strip of guinea pig, rabbit, human & dog uterus in situ[8].	Cold water extract of the rootRoot
4	Vidari ˘ (Pueraria tuberosa)	Lactogenic activity[9].	Tuber
5	Arjuna(Terminalia arjuna)	1. Uterine contractions of virgin rat[10]. 2. Oxytocic effect[11].	Alcoholic extract of bark Arjunolone
6	Lodhra ˘(Symplocos racemosa)	Anti-inflammatory[12].	á-spinasterol
7	Upakuncika ˘ (Nigella sativa)	Galactagogue, diuretic, anti-inflammatory, analgesic, antipyretic, antimicrobial and anti-neoplastic activity. Seed extract induce changes in the haemogram (increase in both the packed cell volume (PCV) & haemoglobin)[13].	Thymoquinone
8	Guggulu(Commiphora wightii)	1. Anti-spasmodic[14]. 2. COX -1 enzyme inhibitory activity[15].	Gum resin Compounds of Gum guggulu extract-cembrenoids, a bicyclic diterpene, guggulusterone derivatives, myrrhanone derivatives, myrrhanol derivative, and a lignan.

9	Devadaru ˘ (Cedrus deodara)	1. Anti-spasmodic activity [16]. 2. Antibacterial activity[17]. 3. Significant anti-inflammatory activity[18].	Devadaru compound Water extract Aqueous extract of air dried Stem bark
10	Citraka (Plumbago zeylanica)	1. Antipyretic[19] 2. Anti-bacterial activity[20] 3. High potency against bacterial infection of B. Mysoides, B. pumilus, S. typhi, S. paratyphi, S. lutea, Staph. Aureus etc[21]. 4. Uterotonic[22].	Root Root Chloroform extract of Root Root

Discussion and Conclusion :

Comprehensive management of Puerperium is highly essential in order to reduce the postpartum morbidity. Around 35% of women had the major postpartum problems for up to eight weeks after delivery. Prevention of these complications depends mainly on maintenance of tone of uterus, urinary bladder, supporting general health of the mother and ensuring optimum lactation. Uterotonic drugs like Citraka, drugs having oxytocic effect like Arjuna, Pisaca Karpasa etc., are useful in bringing back the muscle tone of uterus and urinary bladder. These drugs further help in the proper expulsion of lochial discharges and prevents early or late postpartum hemorrhage too. Drugs like Pippali, Shatavari, Upakuncika are having galactotropic, galactagogue, lactogenic properties and thereby ensure the optimum lactation. Postnatal pain and spasm can be effectively counter acted by the drugs like Devadaru, Bala etc. Some of the above drugs like Citraka, Devadaru, Lodhra are very effective antibiotics; prevent postnatal infections.

Based on the review of above drugs and formulations mentioned in Ayurveda for Sutikakala management, it can be concluded that by and large this is an ideal and effective treatment for Puerperal phase.

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'Âyurved as an Adjuvant Palliative therapy to alleviate Adverse Effects of Cancer Chemotherapy'.

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Key words : Chemotherapy, Acute and delayed toxicities, Viºa , Agad

Abstract :

Cancer management involves Chemotherapy as a technique to target cancer cells irrespective of their sites in a systemic manner.Drugs like alkylating agents,antimetabolites etc.are used that simultaneously cause destruction of normal healthy cells viz. bone marrow,hair follicles etc. This results in G.I. manifestations, myelosuppression , immunosuppression , alopecia ,infertility as also cognitive impairment.

Chemotherapy drugs can hence be categorized as 'Viºa '"h-'" and causing 'Viºâd 'as a result of vitiation of doºa, dhatu and thus causing Ojakºya . The meticulous bâhya-abhyantra-panckarma cikitsâ as an adjuvant therapy can be administered to restore the smile on the patient's face.Similarly medicinal plants screened by the CCRAS have been reported as anti-cancerous against different cell lines and can be a safer option.

The anti-oxidants like Vitamins,Carotenoids,Flavonoids etc.present therein show anti-cancer activity but without the toxicities of modern drugs.The Agad can also prove to be the perfect choice especially siddha or plain Ghrit as adjuvants to Chemotherapy. This paper discusses the multi-disciplinary or integrative approach which is the current essentiality to combat Cancer.

Review report :

Two characteristic features define Cancer - 'Unregulated cell growth' and 'Tissue invasion or Metastasis'[1]. Cancer management currently involves all or any one of the following techniques viz. Surgery, Radiation, Chemotherapy, Biological or Immunotherapy. All these therapies involve the long-term administration of various drugs or medicines with the common aim of combating cancer cells or organs. Of these, Chemotherapy is a treatment modality that targets all cancer cells, irrespective of their site, in a systemic manner. It is hence also known as 'Anti-neoplastic' or 'Cytotoxic' therapy in medical terms.

The chemotherapy drugs have been developed for their potential to cause a greater proportion of cell death among neoplastic cells as compared to the normal cells. This is because the neoplastic cells are more susceptible to anti-cancer drugs by virtue of their biological and proliferation characteristics. Such drugs are used either singularly or in combination as per the requirement of the patient. However Chemotherapy is associated with significant side

effects and toxicities resulting in high dropout rates and morbidity. Thus patient management involves not only addressing disease along with its complications but also its treatment-related adversities as also the complex psycho-social problems arising thereby.

The Chemotherapy drugs are classified depending upon their mode of action, their chemical structure, their origin or derivation and their relationship with another drug. Thus knowing the drug action assists in the prediction of its adversities. A few commonly administered Chemotherapy agents are enlisted herein -

* *Alkylatingagents*: These are drugs like Cyclophosphamide, Carmustine, Temozolamide etc. that directly damage the DNA so as to prevent cancer cell reproduction thus in turn causing long-term Myelosuppression. It is also a known fact that they can eventually lead to 'acute leukaemia'. Though this risk is 'dose-dependent' i.e. lesser the dose, lesser the risk, it is more observed 5-10yrs after treatment.

* *Platinumdrugs*: The drugs are often grouped with alkylating agents as they show the similar type of cytotoxic nature.eg. Cisplatin, Carboplatin etc. However, they are less likely to cause leukaemia.

* *Anti-metabolites*: The drugs like 5-fluorouracil(5-FU), Gemcetabine etc. interfere with DNA and RNA growth during the S-phase of the cell cycle wherein DNA-copying takes place.

* *Anthracyclines*: These anti-tumour antibiotics eg. Daunorubicin, Adriamycin etc.work in all phases of the cell cycle by interfering with the enzymes involved in DNA replication.

* *Anti-tumourantibiotics*: Other types of anti-tumour antibiotics (excluding anthracyclines) like Actinomycin-D, Bleomycin etc. cause treatment-induced leukaemia and may also prove cardiotoxic.

* *Mitoticinhibitors*: The drugs like Vinca alkaloids viz. Vincristine, Vinblastine are plant alkaloids that stop mitosis or inhibit the enzymes from protein synthesis essential for cell division during the M-phase of the cell cycle.

All the above stated Chemotherapy drugs are known to produce significant adverse effects or toxicities - acute or delayed in nature. Such effects can be attributed to the damage or destruction of both neoplastic cells as well as the rapidly dividing normal cells such as those of the bone-marrow, hair follicles, Gastro - intestinal mucosa and the reproductive system. The manifestations resulting thereof include -

Gastro-intestinal tract:- Nausea, Vomiting, Anorexia, Stomatitis, Diarrhoea or Constipation, Weight loss etc.

Reticulo-endothelial system:- Myelosuppression leading to anemia (low Haematocrit levels), Leucopenia especially Neutrophilia (low Absolute Neutrophil Count) and Thrombocytopenia (low Platelet Count).

Cognitive impairment:- Loss of memory, Reasoning, Understanding, Concentration, Depression.

Alopecia:- It begins 2-3 weeks after the commencement of treatment and has a tremendous social and psychological impact.

Heart and Lung damage :- Cardiac muscle damage, Respiratory problems like dyspnoea, non-productive dry cough, lung tissue fibrosis etc.

Reproductive system :- Oligospermia, Vaginitis, Premature menopause, infertility etc.

Considering these adverse effects of Chemotherapy drugs,they can be categorized as ' Viºa' and their adversities as 'Viºâd'. The properties of Viºa viz. Rukºa Uºòa,, Tîkºòa, Sûkºma, Âºu, Vyavâyi, Vikâsi, Viºâd and Laghu are thus specified for Chemotherapy drugs too. They result in Vâta-Pitta prakopa, Kaphakºaya, Rasa-Raktâdî Dhâtukºaya and in turn to Ojakºya.To counteract these properties and awasthâ, it is essential that the cikitsâ dravya employed must be Vâta-Pitta ºâmak, Kapha vardhak Rasa-Rakta prasâdak and Ojovardhak as also Balya, Brimhan, Jîvanîya and Rasâyan.'Ghrit' has been stated as a Viºaghna dravya by the Âchâryâs [2]and also fulfils the above requirements as a cikitsâ dravya. Besides, its use in the form of a 'Siddha Ghrit kalpanâ' with dravya like Guduci[3] , Sârivâ[4] , Âmalaki[5], Yaºtimadhu[6], Pippalî etc. has proved to be more efficient. Researches on lab animals have also signified the efficacy of Siddha ghrit in myelosuppression[7]. Similarly clinical trials have also rendered good results on administration of several herbal formulations.These dravya also exhibit balya , rasâyan, doºaghna and viºaghna properties. [8]

The meticulous use of herbal formulations in the appropriate dosage, form and time as Bâhya cikitsâ (local application), Abhyantar cikitsâ (ghrit pân , leha etc.) or Panckarma (nasya, basti etc) [9] have proved to be the palliative therapy and transformed the pain and agony on a patient '"d '" s face into a smile.eg. A lepa of dâhaºâmak dravya may reduce the sthânik dâha after a chemotherapy session. Similarly , Siddha taila ghrit nasya may also reduce cognitive symptoms and assist faster hair growth in alopecia .Such possible remedies thus need to be clinically assessed.

Several medicinal plants have been screened by the CCRAS and 15 have been reported as anti-cancerous against different cell lines.eg. Dâruharidrâ (*Berberis aristata*) on oral tissue, lung and ovarian tissue ; Pippalî (*Piper longum*) and Kutaj (*Picrorrhiza kurroa*) both on colon tissue ; Vacâ (*Acorus calamus*) on prostate; Haritakî (*Terminalia chebula*) in prostate cancer and leukaemia. [10]

Scientists have established the pharmacological potential of Âyurvedic drugs like anti-oxidant, adaptogen, immuno-modulator, anabolic and cytoprotective.11 The plant anti-oxidants like Vitamins, Carotenoids, Flavonoids, Saponins, Enzymes, Minerals etc. show anti-tumour activity but without the adversities of modern chemotherapy drugs.[11]

Conclusion :

The utilization of Âyurvedic anti-cancer drugsor formulations as an adjuvant to Chemotherapy as Palliative therapy is the prime option that needs to be further explored in detail so as to effectively slay the demon named 'Cancer'. An integrated approach is hence the need of the hour.

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Dyslipidaemia - A Challenging Lifestyle Disorder

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KEY-WORDS : Dyslipedaemia, L.D.L, Lifestyle disorders, Nutrigenetics, Nutrigenomics

Abstract :

The World Health Organization (WHO) has identified India as one of the nations that is going to have most of the lifestyle disorders in the near future. The various factors viz. unhealthy lifestyle and diet, environmental and genetic among others contribute to such disorders, a primary one being Dyslipidaemia ,i.e.an abnormal amount of lipids in the blood. In fact, the developed countries show a trend of Hyperlipidemia or an elevation of lipids in the blood.

An important etiological factor of Dyslipidaemia is improper Diet and Nutrition. In the 21st century advances help us understand how the interactions between lifestyle and genotype contribute to health and disease. The highly relevant fields in this respect are those of Nutrigenetics and Nutrigenomics that focus on studying the interactions between nutritional and genetic factors as also their health outcomes .Hence personalized nutritional advice becomes a very attractive proposition, where, in principle, an individual can be given dietary advice specifically tailored to his genotype aimed at preventing disease and improving quality of life.

In Âyurved ,Dyslipidemia can be correlated to Rasa–Raktagata Snehanœ Vriddhî, Medo-Vriddhî and theaccumulation of Âma at the Dhâtu level. This paper investigates the causes of Dyslipidemia, examines the contribution of genetic and dietary factors and recommends a general line of treatment which includes management by Rasa-Rakta Pâcan, œodhan and Agnivardhan.

Review Report

Dyslipidemia is an abnormal amount of lipids in the blood or any abnormality of serum lipids and lipoproteins, including low levels of HDL-cholesterol (HDL-C) that is associated with increased Chronic Heart Disease (CHD) risk. While National Claims Data from IMS Health shows significant improvement in the percentage of patients diagnosed and treated for Dyslipidemia over the past 4 years (49/100 in2007:41/100 in 2011), a substantial number of patients diagnosed with dyslipidaemia still remain untreated. The National Cholesterol Education Program Adult Treatment Panel (NCAP -ATP III) Guidelines for the management of lipid and lipoprotein disorders for US adults, as revised in 2004 remain widely accepted both in the U.S. and internationally.

Increasing Body Mass Index (BMI) levels mediate a common pattern of Dyslipidemia characterized by higher triglycerides, lower High Density Lipoproteins (HDL), and increased small, dense Low Density Lipoproteins (LDL) particles, which are independent risk factors for coronary disease.[1] Atherosclerosis or hardening of the arteries results from buildup of cholesterol on the interior blood vessel walls.[2]

Dyslipidaemia associated with obesity predicts majority of the increased cardiovascular risks seen in obese patients.[3]In fact, Dyslipidaemia has a complex patho-physiology consisting of various genetic, lifestyle and environmental factors and has many adverse health impacts, notably in the development of chronic non-communicable diseases.

The management of Dyslipidaemia depends on the age, symptoms and overall health of the patient. A well regulated diet and committed exercise regime is the prime treatment but medication and/or surgery are also employed for more serious conditions to prevent further complications .However high levels of cholesterol and triglycerides especially need lifestyle modifications rather than a medical intervention. Incorporating soluble and insoluble fiber sources like wheat bran ,oat bran, flaxseeds, green leafy vegetables and fresh fruits etc. act as adjunct to a low-saturated fat diet especially in mild-to-moderate hypercholesterolemia by altering the volume, bulk and viscosity in the intestinal lumen in turn improving the metabolic pathways of hepatic cholesterol and lipoprotein metabolism thereby lowering plasma LDL-cholesterol. In short, Diet and Nutrition play pivotal roles in the management of Dyslipidaemia. The ability of the nutrients to interact and modulate molecular mechanisms underlying an organism's physiological functions has been recognized and has prompted a revolution in the field of nutrition[4]. Nutrigenetics and Nutrigenomics are promising multidisciplinary fields that focus on studying the interactions between nutritional factors, genetic factors and health outcomes .Their goal is to achieve more efficient individual dietary intervention strategies aimed at preventing disease, improving quality of life and achieving healthy ageing[5].

Nutritional genomics or **Nutrigenomics** focuses on the complex interaction among genes and environmental factors, specifically bioactive components in food and how a person's diet interacts with his/her genotype to influence the balance between health and disease.[6]The term **Nutrigenetics** was used by Dr R. O Brennan in 1975.[7]for the first time and is concerned with the effect of an individual's genetic make-up or functional ability of digestion, absorption and food utilization.[8]

Nutrigenetics and Dyslipidemia variants are associated with differential responses to nutrients or dietary patterns and a disease states.[9]The particular gene variant a person has determines the nutritional requirements for that person. These gene-based differences in response to dietary components and developing nutraceuticals that are most compatible and maintain health based on this individual genetic makeup is important.[10]Thus Nutrigenetics helps in identifying the optimal diet for a given individual, i. e., personalized nutrition.[11a,b] Despite the immediate goals differing, the long-term goal of improving health and preventing disease with nutrition requires the amalgamation of both discipline.[12]Thus, personalized nutrition advice where, inprinciple, an individual is given dietary advice specifically tailored to his/ her

genotype has currently gained popularity. Nutrigenomics is an important factor indicating that dietary interventions must be matched to genotypes to effect the intended lipid-lowering responses. The major focus of nutritional genomics research is on identifying -

(1) gene-disease associations

(2) the dietary components that influence these associations,

(3) the mechanisms by which dietary components exert their effects, and

(4) the genotypes that benefit most from particular dietary choices.

Âyurved quotes no direct reference of a single disease entity that can be directly correlated with Hyperlipidemia but Rasa–Rakta Snehanœa Vriddhî, Medo-Vriddhî and Dhâtugata Âmasancitî show simulations.The line of treatment hence includes Rasa-Rakta Pâcan, œodhan and Agnivardhan .The protection of the body against the diseases can be achieved by properly following the regimen of Swasthvritta viz. Dinacaryâ,Rutucaryâ,Sadvritta, Âhârvidhî vicœeºâyatan and adoption of Rasâyana .

Agni (digestive fire) bears the sole responsibility of all bodily activities and any vitiation of Doºa, Dhâtu or Mala. Âma (undigested toxic substance) which results from hypofunctioning of Jâtharâgni (digestive fire) may clog the Srotas (channels) leading to Srotorodha (obstruction ofchannels) which in turn increases Medoduºtî and decreases the nutrient supply to subsequent Dhâtus namely Asthi (bone tissue), Majjâ (bone marrow), and œukra (fertility promoting substance).[13]

The most affected Dhâtu in Dyslipidaemia is the Medo Dhâtu Poºya Medo Dhâtu is immobile in nature (Gativivarjita) and is stored in the Medodharâkalâ whose site is Udara. Medodhâtvagnimândya(decrease in digestive fire of Medo Dhâtu) causes in assimilation of Poœaka Medo Dhâtu into Sthâyî Medo Dhâtu that accumulates along the walls of vessels (Dhamani) and causes serious complications related to circulation disorders like Atherosclerosis. Vitiation of doºa is thus inevitable as is srotorodha.

The management hence comprises the following measures as per Âyurvedic modalities viz:

- Preventive or Prophylactic therapy i.e. Nidân parivarjan.
- Curative therapy i.e.Sanœodhan and Sanœaman.

Nidana Parivarjana :

Âhârâtmak(Diet), Vihârâtmak(Daily regimen), Mânasika(Psychological) and other etiological factors which contribute to the disease should be avoided.

Sanshodhan:

Bâhya Sanœodhana(External purification therapy):

Rukºa Udâvartana (A.H.Su. 25/65-66, C.Su. 21/22) using Triphalâdî cûròa,(C.Su.23/14) Kolkulathâdî cûròa (Sahastrayogam/choorna) is Kaphahara, Medasa Pravilayana(A.H.Su.1)and

Sthirikaranam Angam .It removes the foetid odour, restricts the process of excessive sweating and alleviates the aggravated Doºa.

AbhyantarSanœodhana(Internal purification therapy)

Vagbhatâcaâya quotes Sanœodhana therapy including Vamana, Virecana, rukºa Niruha, Raktamokºaòa and Shirovirecana as the treatment of Atisthaulya provided the patient has Sharir and Doœabaladhikya. (A. H. Su. 14/14)

Caraka has mentioned Medoroga under the caption of Santarpanajanita Vyadhi recommending Vamana, Virecana and Raktamokkºana for its management. (C.Su. 23/6-9)

Sanœaman :

Among the ºadvidha Upakrama (six treatment modalities) described by Susrutâcârya, Langhana and Rukºaòa can be performed for Sanœamana purpose in Medoroga.[C.Su. 22/9) The administration of Guru and Apatarpaka dravya which possess additional Vata, Shleshma and Medonâúaka properties is considered ideal by Carakâcaâya .eg .Mustâ (*Cyperusrotundus*) ,Haridrâ (*Curcuma longa*),Darûharidrâ (*Berberisaristata),*Agnimantha *(Premnaintegrifolia)* etc. Cakrapâni has explained that Guru Guòa is sufficient to alleviate vitiated Agni and Ati kºudhâ (excessive hunger). Apatarpana property provides less nourishment and thus leads to depletion of Meda. Hence Madhu which is Guru and Rukºa is ideal for management of Medoroga.(C.Su. 21/20-21)

Gangâdhara has interpreted that Guru property is suitable to alleviate Tîkkºòâgni and vitiated Vâta especially Koºthagata Vâta which ultimately reduces Ati kºudhâ while Apatarpana causes reduction of Meda.

Similarly Tikta rasa being Laghu and Rukºa reduces vitiation of Kapha and Medoduºtî along with neutralization of Âmavicea through its Dîpanîya, Pacanîya, and Viºaghna[14] activities. Katu rasa exerts similar effect on Ama, Kapha, and Medodushti by its Laghu, Ushna, and Ruksha Gunas.[15] It can provide significant Rukºanîya effect in comparison to Tikta, Kaºâya Dravyas due to association with Uúòa Guòa. Kaºâya Rasa being most rukºa[16] may facilitate œoshana (absorption) of liquefied or detoxified Kapha and Medodhâtu. The Dravya possessingTiktta Rasa and Katu Rasa are to be prescribed in the initial stages (Border line of hyperlipidemia) of treatment of Dyslipidaemia and Kaºâya dominant drugs can be incorporated in the subsequent phases (High and very high hyperlipidaemia).

Conclusion:

The management of Dyslipidaemia depends on the age, symptoms and overall health of the patient. A well regulated diet and committed exercise regime is the prime treatment Diet and Nutrition play pivotal roles in the management of Dyslipidaemia. The ability of the nutrients to interact and modulate molecular mechanisms underlying an organism's physiological functions has been recognized and has prompted a revolution in the field of nutrition. Nutrigenetics and Nutrigenomics are promising multidisciplinary fields that focus on studying the interactions between nutritional factors, genetic factors and health outcomes .Their goal is to achieve

more efficient individual dietary intervention strategies aimed at preventing disease, improving quality of life and achieving healthy ageing

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Drugs that are Katu, Tikta, Kaºâya in Rasa, possessing Uºò Vîrya, and Laghu rukºa Guòa are largely responsible for Medohara and Lekhanîya activities. This observation is useful for designing new formulations to treat Medoduºîi and its complications.

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Review article :

Studies on effect of 17â estradiol on histology and glycosaminoglycans of uterus, cervix qnd vagina in bilaterally ovariectomized albino rats.

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Abstract

The histological structure and histochemical distribution of glycosaminoglycans (GAG) in uterus , cervix and vagina were studied after 17â estradiol administration in bilaterally ovariectomised rats (BLO). Variable doses of 17â estradiol were administered to BLO rats and were compared with normal and BLO rats. In BLO rats uterus , cervix and vagina were in unestrus condition , so that the mucosal epithelium and GAG were very much reduced in all the organs. The small doses of 17â estradiol showed the growth and development of uterine mucosa to some extent. The cervix and vagina also showed similar changes as in uterus. The 500 µg / 100gm. Body wt. 17â estradiol dose regained the normal histological total proteins were not appear like that in normal **.** These results indicate that mucoproteins were essential for development of well defined mucosal epithelium and for that only 17â estradiol administration was not sufficient but progesterone administration may necessary . Thus 500µg 17â estradiol dose was found to be optimum for repairment of histology and histochemical distribution of GAG in BLO rats.

Key words- Bilateral ovariectomy , glycosaminoglycans , 17â estradiol , uterus , cervix , vagina.

Introduction

Ovarian hormones influence the reproductive system organs in females in several ways. They regulate the growth and development of the accessory reproductive organs. Estrogens maintains morphological and functional state of the female reproductive system (Powar and Chatwal 1988). Estrogens regulate the differentiation and growth of uterus , the secretory activity of the epithelium and motor activity of the muscles. After ovariectomy epithelial cells become flattened and secretory activity was reduced (Greenwald 1969). Administration of estrogen regains the estrogen dependent hypertrophy of the uterus. Estrogen treatment causes an increase in the rate of secretion and alters its composition. Endometrial hypertrophy with cystlike appearance of uterine glands was seen in response to long term administration of estradiol dipropionate (Tripathi 1984). 17â estradiol treatment to bilaterally ovariectomized (BLO) rat showed large uterus with 40% increase in uterine weight , increase in thickness of mucosa and number of uterine glands. The estrogen treatment stimulate growth of the endometrium and myometrium leads to normal appearance of uterus along with normal

glycosaminoglycans (GAG) content in bilaterally ovariectomized rats (Devarshi etal 1986a). The fluid which is collected in uterus lumen after estrogen treatment contain high GAG . Estrogen also causes changes in the connective tissue of the stroma and large quantities of COOH containing GAG (CGAG) are produced. 17â estradiol increases lipid utilization but decreases carbohydrate utilization in animals (Carter 2001). Calio etal. 2008 showed that in BLO rat uterus there was low values of chondroitin sulfate and high amount of dermatan sulfate indicate presence of GAG influenced by 17â estradiol. Estrogen constrict the cervix and there by prevent the loss of luminal fluid . Estrogen stimulates eosinophilic invasion in rat cervix (Luque etal 1998). After ovariectomy the cervix epithelium disappears with decrease in thickness of mucosa. The 17â estradiol treatment to BLO rats regains the cervix epithelium and other tissue elements along with GAG as in normal. In BLO rats there was decrease in sulfated GAG (SGAG) and CGAG , while due to17â estradiol treatment total GAG were appear as in normal cervix (Devarshi etal.1986b). Mammalian vaginal epithelium undergoes cyclical changes dependent on the estrogen levels in the plasma. During peak levels of plasma estrogens the vaginal epithelium proliferates , the cells are keratinized and sloughed off (Korenberg and Clark 1985). The estrogen injection 2 days before the vaginal epithelium has become greatly thickened and that surface layer heavily keratinized results in the increase in the weight and size. In diestrous vaginal epithelium is thin having polymorphonuclear leucocytes. The ovariectomy causes thinning of epitheliumand severe degeneration (Onol 2006) . Surface morphology of vaginal epithelial cells of estradiol primed rats resembles the vaginal cells from estrus which show more fluidity where as vaginal cells of control rats resembles diestrus phase having less fluidity (Reddy etal 1989). In general rodent vaginal epithelium undergoes marked keratinization and strstification under the influence of estrogenic stimulation (Devarshi etal 1986a). Forsberg (1962) reported the occurance of PAS+ ve material in the vaginal epithelium of albino rats. Ejsmont (1968) reported presence of neutral GAG (NGAG), glycogen and acid mucoproteins in vaginal epithelium of rat. In BLO rats 17â estradiol treatment resulted in to the normal GAG and mucoproteins distribution in vagina (Devarshi etal 1986b).

Thus the histological structure and histochemical distribution of GAG in uterus , cervix and vagina indicate the role of metabolic processes involved in reproduction. Its study may help to explain the possible action of hormone at different doses in BLO albino rats. So the present work was planned to study the histological alterations and histochemical distribution of GAG in uterus , cervix and vagina of 17â estradiol treated BLO albino rats.

Material and methods

Adult female albino rats of Haffkine strain about 90 days old , weighing 150-200 gms. and having normal estrous cycle were maintained in a 12hr.L /12hr. D cycle and were provided with food (Amrit feeds, Sangli MS India) and water ad libitum. These rats were divided into 7 groups. Bilateral ovariectomy was performed under mild ether anaesthesia and in semisterile conditions during estrus phase of the cycle.

The rats in the group 1 were not operated and not given any treatment , so served as normal.

The groups 2 to 7 rats were bilaterally ovariectomized during estrus. The group 2 rats were not given any treatment were maintained. Group 3 rats were given oral dose of 1ml ground nut oil which served as control. The groups 4 , 5 , 6 and 7 were given 100µg , 200µg , 300µg and 500µg 17â estradiol dissolved in ground nut oil respectively orally by using feeding cannula. All the rats were killed by using ether anaesthesia after 24 hrs. of the treatment . Uterus , cervix and vagina were dissected and fixed in CAF and further processed routinely for wax sectioning. For histological observations H+E staining techniques was employed. Sections were stained with various histochemical staining methods for glycosaminoglyans as described by Thompson (1966). The following techniques were used for staining the sections.1) H+E 2) PAS 3) Diastage digestion PAS 4) Alcian blue at pH 1.0 5) Alcian blue at pH 2.5 6) Aldehyde Fuschin + Alcian blue at pH 2.5 7) Toludine blue at controlled pH levels 8) Alcinophilia with critical electrolyte concentration technique by using AB at pH 5.6 9) Van Gieson's picrofuschin stain 10) Bismark brown stain.

For biochemical estimation the uterus was crushed and 1mg / ml distilled water solution was prepared. Total proteins were estimated by Biuret method. The alkaline phosphatase (ALP) and acid phosphatase (ACP) were estimated as given in Plummer (1988). The experimental protocol as given in Table 1. During histological observations the changes in weights were given in Table 2. The photoplate shows histological and histochemical observations. Changes in total proteins , ALP and ACP of rat uterus under various experimental conditions are given in Table 3.

Results

Normal rat uterus , cervix and vagina showed well defined histological components with specific staining to H+E and glycosaminoglycans,

In bilaterally ovariectomized (BLO) rats the uterus remains permanently in the reduced anestrus condition. Epithelium was completely absent and there was reduction in intensity of GAG staining in different histological components. The protein content in uterus was decreased by 20% while ALP and ACP decreased by 46% and 24% respectively as compared to normal. The cervix has very thin epithelium with deep eosinophilic lining and no any presence of GAG and mucoproteins but increase in collagen. In vagina there was absence of cornified epithelium. The malpighian layer was without eosinophlic staining and GAG which showed inactive stratum germinativum and granulosum. Other tissue components showed decreased GAG content.

Group III (BLO+ground nut oil) rats were given only groundnut oil increases uterine weight 15% and showed estrogenic effect to some extent in mucosa , muscular layer and connective tissue. The protein content was increased by 21% while ALP and ACP decreased by 17% and 89% respectively. The cervix and vagina also showed similar histological changes and histochemical distribution in various components as observed in uterus unlike in BLO rats.

Group IV (BLO+ 100µg) rats were administered by 100 µg 17â estradiol. The weight of uterus was increased 50% than BLO rats. The thickness of different histological components

was increased with increase in eosinophilic staining and GAG distribution . Specifically both SGAG and CGAG observed in moderate amount in all components of uterus unlike in BLO rats, while collagen decreased and mucoproteins increased significantly. There was 3% decrease in protein content accompanied by 24 % increase in ALP and 19% decrease in ACP than BLO rats. The cervix had thick eosinophilic epithelium without normal cell architecture. The mucosa , muscular layer and connective tissue were increased in thickness and were more eosinophilic associated with presence of all types of GAG. The vagina showed thick dark basophilic cornified epithelium without any vacuolated cells. The stratum germinativum cell layer contained basophilic inactive cells with dense dark elongated nuclei. Other tissue layers were increased in thickness having only presence of GAG but increased collagen and mucoproteins as compared to BLO rats.

Group V (BLO+200µg E) and Group VI (BLO+300µg E) showed increase in uterine weight by about 25%. The thickness of tissue layers and GAG distribution did not showed significant changes with respect to BLO rats except mucosa and number of uterine glands . The protein content also increased by about 10% but ALP and ACP decreased. In both the groups cervix epithelium was thick stratified basophilic with solid nuclei. The epithelium showed moderate NGAG and SGAG but weak CGAG . The weight of the vagina was increased by about 25% having thin cornified epithelium . The stratum germinativum was in preparatory phase of differentiation. The thickness of tissue layers was increased as compared to BLO rats. They showed moderate NGAG , SGAG ,CGAG , collagen and mucoproteins unlike BLO rats.

Group VII (BLO+500µg E) rats showed 100% increase in uterine weight when compared with BLO rats. There was increase in size and number of uterine glands having intensely eosinophilic mucosal epithelium. Histochemically all tissue components showed traces of NGAG , while SGAG and CGAG were increased than BLO rats. Biochemically total protein content remain unchanged but ALP and ACP enzyme activities decreased significantly as compared to BLO rats. The cervix showed 3-4 cell layered stratified stratum corneum having dark basophilic staining. The mucosa , muscular layer and connective tissue had typical estrus phase architecture . The NGAG and SGAG content were similar with normal but CGAG was not observed as in normal . In vagina thickness of cornified epithelium was increased 5 times along with increased thickness of other tissue layers than BLO rats, but it had dark basophilic staining unlike normal. The malpighian layer showed 66% increase in thickness as compared to BLO rats. These cells become differentiated and just entered into active mitotic phase . Histochemically NGAG was also increased , but SGAG and CGAG showed only presence unlike that of normal. The mucoproteins were completely absent as in BLO rats and not appeared even if the histological architecture was similar to normal .

Discussion

In BLO rats endometrial lining remained permanently in the reduced anestrus condition. If variable doses of 17â estrdiol were given to the rat uterus showed developmental changes and grows into the estrus condition . The hormone treatment starts its activity within half an hour and after 24 hours complete normal histological architecture of uterus was achieved ,

but histochemical distribution of GAG was appeared differently to different doses of 17â estradiol. The results obtained indicate that bilateral ovariectomy casuses decreased carbohydrate utilization , so plasma glucose increased which resulted in to the loss tissue glycogen (Bailey and Sorour 1980).In BLO rat uterus the protein content was decreased as reported earlier by Devarshi etal 1991. The ALP and ACP activities were significantly decreased due to decrease in hormonal level as compared to normal. After ovariectomy the atrophy of the accessory reproductive organs occur with reduced blood supply. The cervix epithelium became very thin with smooth deeply eosinophilic surface , while other tissue layers became basophilic having large nuclei. Thus due to decreased estrogen cellular appearance of cervix changes with decreased thickness of tissue layers and GAG content , but collagen was increased. In vagina bilateral ovariectomy resulted into the thin and atropic epithelium with superficial nucleated cells. All the tissue layers lost the eosinophilic staining indicates nonfunctional state of vagina. It also showed reduction in GAG content in all tissue layers.

The 500µg 17â estradiol dose to BLO rats showed increase in the water and protein content of the uterus leads to high increase in uterine weight (Fawcett and Deane 1992). This may be due to the formation of new DNA and proteins which alter the cellular function resulted into the appearance of uterine gland epithelium and mucosal epithelium so intense eosinophilic staining reactions may be observed. Thus hormone treatment give rise to desired physiological effects by direct action or after transcription of genetic code. Recent evidences indicate that estrogen had more rapid effect on uterus mediated by receptors localized in plasma membrane. It was bound to specific cytosol receptor proteins in the cells which increased RNA synthesis in half an hour and protein formation in 3- 4 hours. These proteins may dissolved the collagen and stimulate the synthesis of SGAG , CGAG and mucoproteins which altered the cellular function (Guyton 1981). High level of estrogen in BLO rats may stimulate adrenal macrophase system may affect glucocorticoids and mineralocorticoids secretion from adrenal gland which altered carbohydrate , protein and fat metabolism and also fluid balance which resulted into the growth of the uterus (Mugalhaes and Mugalhaes 1984). In general estrogen stimulate development and maintained morphological and functional state of the uterus.

In cervix the significant increase in weight and appearance of stratified flattened epithelium was may be due to increased uptake of water by the cells.This was probably for the hydration of cytoplasmic proteins which was necessary for cell growth in interphase (Penev and Radomirov 1984). In epithelium the stratum germinativum cells had enlarged nuclei and upper stratified cell layers showed presence of glycogen also indicate that 17â estradiol treatment causes increase in RNA synthesis by 2 hours leads to protein and GAG synthesis (Arya 1979). So that the collagen solubility increases and normal histological topography was achieved (Downing and Sherwood 1986). The 500µg 17â estradiol dose to BLO rats was found to be optimum. Estrogens probably affect protein synthesis and growth by directly affecting certain enzyme controlled reactions in the cytoplasm. It may stimulate adrenal macrophase system resulted into the increased release of enzymes so that there was decrease in SGAG in different tissue layers which causes decrease in electrostatic interactions that would weakened interfibrillar connections. This resulted into the decline in collagen

concentrations and appearance of estrus phase histology of cervix (Huiling etal 2008). Similar observations were obtained in earlier experiments during the long term treatment of 17â estrasiol to BLO rats (Devarshi etal 1986a , 1986b).

In vagina the progressive development of superficial mucoid layer with mucin containing cytoplasmic vacuoles and the formation of stratum corneum was not observed in 500µg 17â estradiol treated BLO rats as in normal estrus phase (Westwood 2008). These results indicate that the mucoproteins were essential for development of cornified epithelium and its shedding. Whereas for the synthesis of mucoproteins ovarian hormones are required. Thus the histological architecture of vagina was found to be approximately normal. On the basis of previous results obtained in case of uterus , cervix and vagina (Masule etal 2008 , 2009 , 2010 , 2011a , 2011b) 500 µg 17â estradiol dose to BLO rats was optimum for repairment of histology and histochemical distribution of GAG in BLO rats .

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Table-1 Experimental protocol

Sr. No.	Animal	Treatment	Dose/ 100gm Body wt.	Duration
1.	Normal	-	-	-
2.	BLO	-	-	-
3.	BLO control	Ground nut oil	1 ml.	24 hrs.
4.	BLO + 100µg E	17â estradiol	100µg	24 hrs.
5.	BLO + 200µg E	17â estradiol	200µg	24 hrs.
6.	BLO + 300µg E	17â estradiol	300µg	24 hrs.
7.	BLO + 500µg E	17â estradiol	500µg	24 hrs.

Table 2 : Changes in weights of uterus , cervix and vagina during the effect of 17â estradiol on bilaterally ovariectomized albino rats.

Sr. No.	Animal	Wt.of uterus in mg. /100gm body wt.	Wt.of cervix in mg./100gm body wt.	Wt.of vagina in mg./100gm body wt.
1.	Normal	151.90	30	70.10
2.	BLO	94.70	29	60.40
3.	BLO control	118.10	29	67.30
4.	BLO + 100µg	148.80	29	56.10
5.	BLO + 200µg	147.80	29	72.20
6.	BLO + 300µg	122.00	27	81.70
7.	BLO + 500µg	203.40	38	71.80

Table-3 Biochemical changes in proteins , alkaline phosphatase and acid phosphatase during the effect of 17â estradiol on bilaterally ovariectomized rat uterus.

Sr.No.	Animal	Total proteins g/dl	Alkaline phosphatase IU/lit	Acid phosphatase IU/lit.
1.	Normal	0.46	54	2.34
2.	BLO	0.37	29	1.78
3.	BLO control	0.45	24	0.19
4.	BLO + 100µg E	0.36	36	1.45
5.	BLO + 200µg E	0.41	32	1.26
6.	BLO + 300µg E	0.41	05	1.00
7.	BLO + 500µg E	0.37	11	1.15

Concept of Jarana in particular to putilohas

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Abstract :

During medieval period *Rasa Shastra* as a branch of Pharmacotherapeutics bloomed with the use of metals in the medicine. It brought a great ease to the patients as the drugs were more potent, fast acting with markedly reduced doses. Various specialized processing techniques like *Shodhana,Jarana, Marana,* etc are carried out for manufacturing *Rasa Aushadhis* which are tedious yet essential.

Generally the word meaning Jarana is to digest, doesn't find any reference with puti lohas anywhere in the authentic textuals. The main requirement before subjecting any substance to Marana is that it should be in a powdered state. None of the Maha Rasas, Upa Rasas, Sadharana Rasas, Dhatu etc are subjected to Marana in their native forms. Where as in Puti-Lohas, some intermediate steps are designed in order to make the metal fit for Marana process & reduction in particle size. These are widely accepted in Rasashastra by the terms - Jarana.

Introduction

The metal & minerals are generally used in unique dosage form i.e. bhasma with out which these could not be absorbed & assimilated in the body. Jarana is the intermediate procedure between Shodhana and Marana in the context of Puti lohas. meaning of puti is Putrified smell,,whatever metals emits putrified smell on heating, The Puti-Lohas, which have now been accepted, are the Naga (Lead), Vanga (Tin) and Yasada (Zinc). Generally herbs or inorganic matter, salts, kshara of herbal drugs(Apamarga panchanga yavakuta choorna, Ashwattha twak choorna, Kukkutanda twak, etc) are added to the molten metal and stirred to facilitate the conversion of the metal to a fine powder, Once Puti lohas cooled they regain their hard metallic form.

Key words : Yashada, jarana, Apamarga panchanga, zinc.

Aims and objectives

1. To validate the process of jarana of puti lohas.
2. Considering its role in reducing the particle size of a puti lohas.
3. The rate of reaction i.e kinetic chemistry in Jarana.

Materials and methods[1]

Materials : This includes

1. vishesha shodhita yashada
2. Jarana dravyas - Apamarga panchanga.

Yashada jarana

Materials : Vishesha shodhita Yashada -850 gms, Apamarga panchanga yavakuta choorna - 225 gms, Red Litmus Paper, Water.

Apparatus : Big iron pan with handle (iron cauldron), Agni Chullika, Steel vessels, Steel spoons**.**

Jarana process can be divided into following 5 steps :[2]

1. Phase of Dravana.
2. a)Phase of Churna or Kshara prakshepana.
   b)Phase of Vighattana with loha or Kastha danda.
3. Phase of Sharava pidhana & heating upto Angaravarna.
4. Phase of Swangasheeta.
5. Phase of kshara nirmulana

Phase of Dravana :

Here the yashada is placed on a iron pan and heated till it melts.yashada after vishesha shodhana is partly powder and solid form. Optimum temp of melting the metal is achived in this stage.However oxidation of metal begins in this stage.

PHASE OF CHURNA OR KSHARA PRAKSHEPANA AND VIGHATTANA WITH LOHA OR KASTHA DANDA

- In this stage On melted Yashada, Apamarga panchanga yavakuta choorna is added little by little quantity.Stirring or rubbing is done with Lohadanda . This process was continued till the Yashada completely converted into powder form.This stage facilitates the oxidation providing the whole surface area to react.
- In first 45mins, thick black fumes was seen. In next half an hour, 75-80% of yashada turned into powder form. About 30-40gms of Apamarga panchanga choorna was used. After 2 and half hrs, yashada was almost converted into powder form. It is greyish in colour.Total 120gms of Apamarga panchanga choorna was used.

PHASE OF SHARAVA PIDHANA & HEATING UPTO ANGARAVARNA.

- Then yashada powder collected at the centre of the cauldron and covered with an earthen sharava , it devoid of air and intensely heated for half an hour. The powder became red hot.

PHASE OF SWANGASHEETA

- In the end, when the whole apparatus is being self cooled the slight lowering of temperature. After Jarana total quantity of the product -835 gms.

  PHASE OF KSHARA NIRMOOLANA

- For kshara nirmulana Jarita Yashada was taken in a steel vessel and water was added.

Yashada powder was macerated, and allowed to settle down over night without any shaking. The next day morning supernatant water was thrown out, then again procedure was repeated. Every time test with Litmus paper was done. It took seven days for kshara nirmulana.After Kshara nirmoolana, quantity of the product-705gms.

- Rekhapoornata test is positive.

Precautions :-

- Rubbing with ladle should be done with pressure but not vigorously, in order to avoid spillage of powder. Coarse powder of Apamarga panchanga should be used.
- The procedure should be continued till all the particles get converted to powder form.In order to avoid excess alkalinity to be product, Kshara nirmoolana is must.

Showing result of Weight of yashada before and after Jarana and Ksharanirmoolana.

Media	Method	Weight before jarana	Weight after jarana	Weight Loss
Apamarga churna	Jarana	859 gms	835 gms	24 gm
Water	Ksharanirmulana	735 gms	705 gms	**30 gms**

Showing Particle Size of Jarita Yashada,

Name of the Sample	Particle size Range		Mean Particle Size
Jarita yashada	Diameter at 10%	31.69 ìm	73.48 ìm
	Diameter at 50%	71.51 ìm	
	Diameter at 90%	119.61 ìm	

Discussion

- Yashada, classified under Dhatuvarga and sub-classified as Puti Loha indicating its low melting point was first mentioned in sharangadhara Samhita by teekakara Adamalla.
- The time required for Jarana process is four hours and The required quantity of panchanga yavakuta choorna of Apamarga for Jarana is only 1/7th to that yashada, though ideally mentioned quantity is 1/4th & temperature ranges 450-470^{o}c Which facilitates the oxidation of the metal into oxide form with the help of atmospheric oxygen. where as the continuous stirring of the molten metal absorbs a large quantity of air and such absorbed air oxidizes the easily oxidisable content & provides surface area of metal to react.
- This leads to create an environment devoid of air specially oxygen and then heat up to red hot stage. This may be compared with the process of calcinations, in which the metal is allowed to undergo decomposition without melting and reaction may take place to form a stable compound.The product from last stage may not be completely converted, but where as this stage provides enough time and temp for completion of the reaction and compound formation**.**
- In swangasheeta phase the compound formed will gradually lose its temperture, substances formed will be in exited stage in previous phase, this phase recrystalises the compound and brings it to stable compound form.

- During Ksharanirmoolana, the alkalis like calcium carbonate will readily dissolve in water unlike zinc oxide powder which is insoluble in water. Thus these alkalis are expelled easily along with water.
- Mean Particle size of JaritaYashada is 73.48 ìm,Significant reduction in particle size even seen in jarana procedure and Yashada Bhasma 9th puta i.e final product is 4.77 ìm. Sample has a progressively decreasing particle size in subsequent putas,

CONCLUSION

- Jarana is the intermediate process between shodhana & Marana in concept of puti lohas,.
- Final product of Jarana in the form of Oxide or sulphide as per the media used.Jarana brings about-Compounding the parent metal, which has low melting point, to a substance which can stand relatively more amount of heat, i.e. In short the metal does not volatilize during the further Marana process.
- Jarana yeilds a material which eases the further step of Marana.Jarana can be considered as Roasting in initial stage of Churna prakshepa. This Churna can be considered as Catalyst.
- Poling in the stage of Kashta Vighattana.Calcination in the stage of Sharava Pidhana.
- Kinetic Chemistry helps to understand the physical and chemical Changes taking place in each step of the process.

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Vishesha shodhita yashada bhasma

Jarita yashada bhasma

Jarana procedure

Role of Ayurvedic Treatment in Management of Prostate Enlargement

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Introduction :- Geriatric age group is increasingly associated with both benign & malignant alterations of prostate gland. Globally, benign prostatic hyperplasia affects about 210 million males as of 2010 (6% of the population).[1] The prostate gets larger in most men as they get older. For a symptom-free man of 46 years, the risk of developing BPH over the next 30 years is 45%. Incidence rates increase from 3 cases per 1000 man-years at age 45–49 years, to 38 cases per 1000 man-years by the age of 75–79 years. While the prevalence rate is 2.7% for men aged 45–49, it increases to 24% by the age of 80 years.[2] Most males with benign & malignant conditions of prostate gland are not diagnosed during their life time. Autopsies of men in the 8th decade of life show hyperplastic changes in >90% & malignant changes in 70%. [3] Prostate grows in two different ways. In the first type of growth, cells multiply around the urethra and squeeze it; much like you can squeeze a straw. The second type of growth is the middle-lobe prostate growth, in which cells grow into the urethra and the bladder outlet area. This type of growth typically requires surgery.

One of the main functions of the prostate gland is to produce prostatic fluid, one of the components of semen. There is no cure for Prostate enlargement and once prostate growth starts, it often continues, unless medical/ surgical treatment is given.

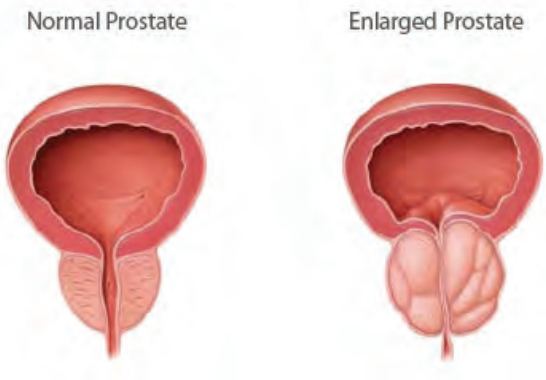
Causes of Prostate enlargement: - The actual cause of prostate enlargement is unknown. It is believed that factors linked to aging and the testicles themselves may play a role in the growth of the gland. Men who have had their testicles removed at a young age do not develop BPH.

Throughout their lives, men produce both testosterone, an important male hormone, and small amounts of estrogen, a female hormone. As men age, the amount of active testosterone in the blood decreases, leaving a higher proportion of estrogen. Studies done on animals have suggested that BPH may occur because the higher amount of estrogen within the gland increases the activity of substances that promote cell growth.

According to Ayurved, *Ashtila Vridhil* prostate enlargement is caused by vitiated Vayu & mostly Apan vayu, [4] which in term caused by forcibly controlling natural urge of defecation

/ urination, sexual- *Vegavarodh,* persons having chronic constipation, persons taking Ati-Tikshna, Ati-Ushna, Ati-Ruksha, Ati- snigdha, Ati- guru aahar (diet), Ati shram, persons involved in travelling- Ati pravas, indulgence in alcohol, etc.

Symptoms of Prostate enlargement:- Frequent of urination, particularly at night (i.e.Nocturia), Hesitant, interrupted or weak urine stream caused by decreased force, Blood in the urine (i.e. haematuria), caused by straining to void, Dribbling after voiding, feeling that the bladder has not emptied completely after urination, Pushing or straining to begin urination, Recurrent, sudden, urgent need to urinate, Leakage of urine (i.e. overflow incontinence).



Aims & objectives:- 1. To effectively treat cases of Prostatic enlargement by ayurvedic line of treatment.

2. To develop alternate line of treatment to Prostatic enlargement, obviating need for conventional surgical line of treatment.

Material & methods

Study design: - A prospective study was undertaken in 20 bedded Ayurvedic ward, Sassoon General Hospitals, Pune

Study period: - Jan 2008 to Dec 2012

Study subjects:- 27 Patients having suggestive symptoms of prostatic enlargement reporting to Ayurvedic OPD of Sassoon General Hospitals, Pune were investigated.

Investigations: - Clinically 'Per rectal examination' was carried out & those who had clinical evidence of prostatic enlargement were subjected for sonography examination before & after voiding urine. Tests like Prostate Specific Antigen which lacks specificity were not carried out. Routine blood & urine examinations were carried out. Renal function tests like Blood urea, serum creatinine were also carried out. Written consent was obtained & those who

agreed to be included in the study were included in the study. Thus 21cases were diagnosed as cases of Prostatic enlargement & included in the study.

Table No.1 showing Age composition of study subjects

Age group	No. of patients
55-59	2
60-64	11
65-69	6
70-74	2
Total	21

Table No.2 showing symptoms of study subjects

Symptoms	No. of patients
Nocturia	20
Frequency of urination	20
Reduced urinary flow	19
Hesitancy	4
Straining for initiating micturition	17
Feeling of incomplete emptying	20
Dribbling of urine	1
Hematuria	2
Loss of libido	19

Many patients experienced more than one symptom.

Treatment prescribed :-

1. Sadhho vaman was given to pacify vitiated kapha,
2. Gokshuradi guggul 500mg twice daily for 2 months
3. Gokshur + Punarnava + Varun + Sariva 500mg each with Gorakhmundi quath 40 ml twice daily for 2 months
4. Triwang bhasma 125mg + Shudhha Shilajeetwice daily 500 mg for 2 months
5. Matra Basti & Nirooh alternate day for 5 days -Matra basti by Narayan tail 50 ml. 1st ,3rd & fifth day followed by

6. Nirooh by Dashmool+Erandmool quath 300ml + Saindhav 3 gm+ Madhu 5ml +sahachar tail 20 ml on 2nd & 4th day

7. Uttarbasti by Sahachar tail twice weekly for 2 weeks

Treatment period - 2 months

Critera for assessment - Excellent relief- complete cure of symptoms

Moderate relief - > 75% of symptomatic relief

Mild relief - > 50% of symptomatic relief

No relief- no changes in symptoms.

Follow up :- Clinical follow up every month after completion of treatment for 3 months, followed by sonography examination done at the end of 3 months

Observations & Discussion :-

There was Symptomatic Upashay/ relief in all the 21 patients.

Table No. 3 showing symptomatic relief after 3 months follow up

Excellent relief	Moderate	Mild	No relief
17	4	Nil	Nil
80.95%	19.05%	-	-

The study revealed that ayurvedic treatment had given excellent relief to more than 80% patients. There was one patient of urinary retention with constant dribbling of urine, who also showed symptomatic relief within 2 weeks of treatment. Further there was one patient who had developed hydronephrotic changes due to massive prostate enlargement was put on dialysis by urologist. It was a case of shear negligence .This condition could have been prevented if the case was properly investigated. This case was also had symptomatic relief & the dialysis was stopped within a week.

Table No. 4 showing result of treatment on weight of prostate after 3 months follow up

Weight of Prostate	Before treatment	After treatment
Range	38-82 gm	27-39 gm
Average	61.52 gm	33.15 gm

The normal weight of prostate is 25-30 gm. In the present study the weight of prostate in the study subjects as noted by sonography had range of 38 to 82 gm with average weight 61.52 gm before treatment. After completion of treatment, there was marked reduction in weight of prostate having range of 27-39 gm with average weight 33.15 gm, this reduction in weight of prostate after treatment was found to be **statistically significant ($p < 0.05$)**

Baseline N=21 (Mean±SD) Prostate Weight	Post Interventional (N= 21) (Mean±SD) Prostate Weight	p value based on paired t test
61.52 (±15.17)ml	33.15(±3.47)ml	<0.05 Significant

Table No. 5 showing post voided residual volume after 3 months follow up

Residual urine	Before treatment	After treatment
Range	60-500 ml	31-54 ml.
Average	92.23 ml.	40.42 ml.

Post voided residual volume of >50 ml is indicative of significant Prostatic enlargement. In the present study the Post void residual volume was in the range of 60-500ml, the average being 92 ml. One extreme value has affected the mean however better average here was median that was 70 ml. After completion of treatment the post voided residual volume was within range of 31-54 ml with an average 40.42 ml & median 41ml that is indicative of non significant enlargement. Statistically also this difference was found to be significant. It gave strong evidence that the disease has regressed to almost normal state.

Baseline Residual urine (Mean ± SD) N = 21	Post Interventional Residual urine (Mean ± SD) (N = 21)	p value based on paired t test
92.23(±15.17)ml	40.42(±3.47)ml	<0.05 Significant

Conclusion:- The present study proved that Ayurvedic line of treatment is quite effective in treating prostate enlargement. Further it has given evidence that such ayurvedic line of treatment obviates the need of unnecessary surgical treatment.

Summary:-A prospective clinical trial was undertaken in 20 bedded Ayurvedic ward , Sassoon General Hospital, Pune, to treat 21 patients of prostate enlargement proved clinically & confirmed by ultra sonography, The vitiated doshaVat & kapha , Dhatu- Rakta & Mans were pacified by giving Sadhho vaman, followed by Ayurvedic management with Basti chikitsa. > 80% of the cases had excellent results with complete symptomatic relief while the rest of them received moderate relief with > 75% relief of symptoms. The cases were subjected for sonography after 3 months of completion of treatment. The average weight of prostate was reduced from 61.52 gm to 33.16 gm. Further the post voided residual volume the average being 87 ml. was reduced to an average of 48ml. It gave strong evidence that the disease has

regressed to almost normal state. The present study proved that Ayurvedic line of treatment is quite effective in treating prostate enlargement. Further it has given evidence that such Ayurvedic line of treatment obviates the need of unnecessary surgical treatment.

* The then Assistant Director, Ayurved, Pune & HoD 20 bedded Ayurvedic ward, Sassoon General Hospitals, Pune

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"Evaluation of Efficacy of Psoralia Corlifolia in Albino Mice with special reference to Cobra poisoning".

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ABSTRACT

Snake bite is serious medico legal problem in India for which only Polyvalent Anti snake Venom serum (PVASVS) is a scientifically validated treatment. In India averagely 35000 to 50000 persons dies per year due to snakebite, out of which 30 to 40 % dies due to cobra bite in which fatal time is very short. i.e. 30 minutes to 6 hrs. Out of this time first 2 hours are golden hours for PVASVS. In rural part ASV is not easily available at all places within golden hour. Therefore there is a need of some drug which can prolong the period of fatal time.

In Âyurveda 850 species of medicinal plants are mentioned as having Antiophidian activity. Psoralia corlifolia plant is one of them which is commonly used in south India. Therefore to evaluate the efficacy of Psoralia corlifolia in cobra bite poisoning, the animal study was carried out. Under this study suspension of Psoralia corlifolia seeds was given to albino mice and later on cobra venom was administrated. In all animals time period for development of poisonous effects in terms of paralysis, convulsions and survival period was observed and noted. From the above observations and analysis of data, it is concluded that Psoralia corlifolia seed suspension is efficient against Cobra venom as it delays the duration of appearance of symptoms like paralysis and convulsions; and it increases the duration of survival period.

Key words: Psoralia corlifolia, Cobra bite poisoning, PVASVS.

INTRODUCTION :

Snake bite is a common acute medical emergency faced by rural populations in tropical & subtropical countries. India paves the largest contribution to the global tally of snake bite deaths, numbers ranking between 35000 to 50000 a year[1]. Now a day the only validated treatment for snake bite is Polyvalent Anti Snake Venom Serum (PVASVS). Over the years many attempts have been made for the development of snake venom antagonist especially from plant sources. Many Indian medicinal plants are recommended for treatment of snakebite. 850 species from 138 families of plants are mentioned as Antiophidian. Psoralia corlifolia (Bâkuci) is one of the drug listed as Antiophidion by Sushrutâcârya[2], which is commonly used by vaidya's in south India still today, to treat majority of snake bite cases.[3]

In India out of 216 species of snakes only 4 venomous species viz. Common Cobra, Common Krait, Russell's viper and Saw-Scaled Viper are commonly found .The Cobra bite cases are

more common in India.[4] Hence present study was undertaken with an objective to evaluate the efficacy of Psoralia corlifolia seed suspension in Cobra poisoning in Albino mice.

MATERIAL AND METHODS :

a) Collection and Authentification of drug to be used:-

- Raw sample of Psoralia corlifolia seeds was collected from Dhanvañtarî Kashþhaushadhî store, Sadâúiva peþha, Pune in the month of October and was identified & authentified by Pharmacognostics at Botanical Survey of India, Pune.

- A dried Lyophilized form of Cobra venom (vial no.702 B) was collected from Haffkine Institute for Training, Research and Testing, Mumbai.

b) Standardization :-

Organoleptic tests of Psoralia corlifolia seeds like colour, odor, taste and Physiochemical tests such as foreign matter, total ash, acid insoluble ash, alcohol soluble extract and after soluble extract were done as per Âyurvedic Pharmacopeia of India (API) standards.[5]

c) Dose calculation of Drug and Cobra venom :-

According to the conversion factor from man to mice (0.0026), the dose of drug was 2.6 mg for 20 gm of mice. i.e. 130mg/kg body weight of mice. A uniform suspension of Psoralia corlifolia seed powder in water was prepared as per required dilution of 13mg/ml , so a fixed dose drug suspension for 20 gm mice was found to be 0.2ml. As per previous studies a fatal dose of Cobra venom to Swiss albino mice of 20 gm is 120 µgm [6].

d) Animals :-

Swiss Albino Mice of either sex of 20 gm weight were procured from National Toxicology Centre (NTC) Pune and they were housed under standard laboratory conditions (temp 23±2°c, relative humidity 50-60 %) with food (Amrut brand) and water ad libitum. All the experiments were performed only after the animal had acclimated to the laboratory conditions for at least 7 days and during morning hours (8:00am to 11:00am). The experimental protocol was approved by the institutional animal ethical committee.(IAEC Registration no.40/CPCSEA/1999).

e) Test formulation :-

The powder (churna) of Psoralia corlifolia *seeds* was prepared following the classical guidelines.[7] As per required dilution, 10 ml of distilled water was added in 130 mg of Psoralia corlifolia seed powder. The mixture was stirred till the uniform suspension was prepared. Each time before administration of drug, fresh suspension was used.

f) Animal Groupings :-

The selected animals were divided into two groups consisting of 6 animals in each group.

Group 1 – Received cobra venom and served as control group

Group 2 – Received cobra venom and Psoralia corlifolia seed suspension.

e) Experimentation :-

After measuring the weight of animals in both groups, in first group, i.e. in control group, according to the weight of animal cobra venom was administrated by Intramuscular route i.e. 120 µgm/mice. After that, time period for development of poisonous effects in terms of a) paralysis b) convulsions and c) death/survival period was observed and noted. Later on in second group, i.e. in experimental group suspension of Psoralia corlifolia seed was administrated orally according to the body weight i.e. 0.2ml/mice. After 5 minutes of administration of drug, cobra venom was administrated by Intramuscular route and time period for development of poisonous effects was observed and noted. All the comparative observations were tabulated and analyzed statistically by applying unpaired student t – test.

OBSERVATIONS AND RESULT :-

It was observed that, appearance of paralysis and convulsions are delayed by 22 min and 30 min respectively in experimental group with comparison to control group and duration of survival is increased by 50 min in experimental group. The collected data of this study shows that significant results are found in the appearance of paralysis where P value is 0.01 (one tail) and appearance of convulsions where P value is 0.006 (one tail). Also statistically highly significant result is found in duration of survival in experimental group, where P value is 0.0008 (one tail) which is <0.05.

CONCLUSION :-

From the above observations and analysis of data it can be concluded that Psoralia corlifolia seed suspension is efficient against Cobra venom, as it delays the duration of appearance of symptoms like paralysis and convulsions, and it increases the duration of survival period.

On the basis of obtained results we can say that the administration of Psoralia corlifolia seed powder will be useful in humans also to increase survival period and delayed appearance of toxic symptoms, which may help for proper management of human cobra bite in remote locations where PVASVS is not easily and handy available. This can be confirmed by more clinical trials in future. The said topic is open for research in future.

ACKNOWLEDGEMENT :-

This study was carried out in 2010 as a part of Postgraduate thesis work under Maharashtra University of Health Sciences, Nashik. We are thankful to Director of National Toxicology Centre (NTC), Pune for providing help and guidance to perform animal study.

CHARTS :

Result of Unpaired t - Test : Two - Sample Assuming Equal Variances in term of symptom Paralysis.

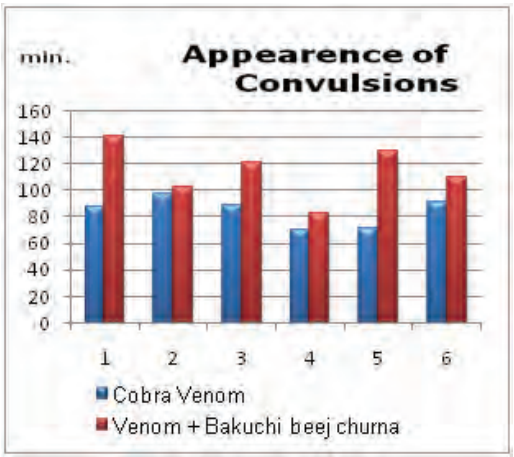
Duration of Paralysis	Common Cobra - Control Group	Psoralia corlifolia Experimental group
Mean	68.33333333	90.33333333
Variance	116.2666667	270.2666667
Observation	6	6
Pooled Variance	193.2666667	
df	10	
T Stat	-2.740973458	
P(T<=t) one-tail	**0.010398986**	
T Critical one-tail	1.812461102	
P(T<=t) two-tail	0.020797972	

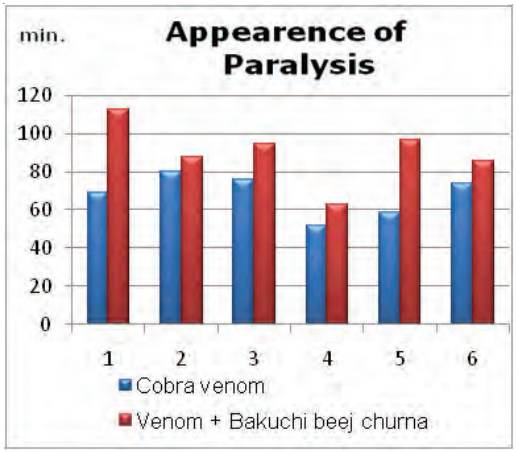
Result of Unpaired t - Test : Two - Sample Assuming Equal Variances in term of symptom Convulsions

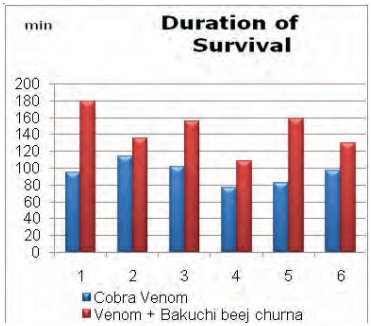
Duration of Convulsions	Common Cobra - Control Group	Psoralia corlifolia - Experimental group
Mean	84.5	114.1666667
Variance	129.9	437.3666667
Observations	6	6
Pooled Variance	283.6333333	
df	10	
T Stat	-3.051059976	
P(T<=t) one-tail	**0.006114788**	
T Critical one-tail	1.812461102	
P(T<=t) two-tail	0.012229575	

Result of Unpaired t - Test : Two - Sample Assuming Equal Variances in term of Death/Survival period :

Duration of Survival	Common Cobra - Control Group	Psoralia corlifolia - Experimental group
Mean	94.33333333	144
Variance	178.2666667	628.8
Observations	6	6
Pooled Variance	403.5333333	
df	10	
T Stat	-4.282387213	
P(T<=t) one-tail	**0.000802671**	
T Critical one-tail	1.812461102	
P(T<=t) two-tail	0.001605342	







Bakuchi beej churna = Psoralia corlifolia seed powder

Psoralia corlifolia seeds

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Effect of Jatamansi Ghanavati & Jatamansi Kwath Shirodhara in Management of essential Hypertension.

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Key words: Hypertension, Jatamansi, Shirodhara, stress.

Abstract :-

High blood pressure has been a subject of interest for research throughout the world because of its importance as a major cause of morbidity and mortality. High BP is the result of fast and stressful sedentary life style. Even though assumed to be an urban problem, available reports from India, indicate its presence both in urban and rural population. Psychological factors needs to be tackled invariably in order to reduce the incidence of hypertension. Ayurvedic treatment modalities like Shirodhara and certain herbs have the potential to deal with the mental tribulations. Present clinical trial was carried out in 100 patients having essential hypertension. Jatamansi Kwath Shirodhara and Jatamansi Ghanvati were administered as a treatment regiment for 30 days. Result shows that with the one month treatment 20-30 mm of Hg reduction in systolic BP was seen in 80% of patients and 10-20 mm of Hg reduction in diastolic BP in 68% of patients. Thus it can be concluded that, the regiment under trial is effective in management of essential hypertension and acts mainly on mental factors and regulate Vata hence reducing systolic BP efficiently.

Introduction :-

The prevalence of cardiovascular diseases and hypertension is rapidly increasing in developing countries.[1] Nearly one billion people or 26% of the adult population of the world are affected by hypertension.[2] Hypertension is an important independent predictor of cardiovascular disease, cerebrovascular accidents and death.[3] Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India.[4] The finding of the study, called Screening Indian's Twin Epidemic (SITE), states that one in every five Indian adults living in urban cities suffers from Hypertension. In Maharashtra more disturbingly, one in three persons in struck by the hypertension.

Essential hypertension is an instrumental disease which is the recent diagnostic invention of modern science. Hence there is no direct reference of hypertension in Ayurvedic classics by name as well as by its pathophysiological views. Various researches have been conducted to control the hypertensive state with different indigenous drugs and measures, by considering it as Raktashrita and Avaranajanya condition, various treatment modalities like Virechana, Shirodhara, Rasayana etc. were used. While some researchers have taken Hypertension as

Vatika disorder and treated with Basti Karma. However, mental involvement, and stress as a contributing factor for development of hypertension cannot be ruled out. Jatamansi is a well known drug for its stress modulating antioxidant effect.[5] With this background a clinical study was carried out to assess the effect of Jatamansi Ghanavati & Jatamansi Kwath Shirodhara in management of essential Hypertension.

Essential hypertension in modern and Ayurvedic view :

The force exerted by the Blood against the wall of the blood vessels is called blood pressure adequate to maintain tissue perfusion during activity and rest of the body. Hypertension can be classified as either essential or secondary.

Causes of essential Hypertension:

a) Hereditary – interaction of genitive, environmental and geographic factors.

b) Water & sodium retention-20% of pts are of high Na+ diet develop HTN.

c) Altered rennin-angiotensin Mechanism- found of 20% pts.

d) Stress

e) Insulin resistance and hyper insulinemia.

f) Endothelial cell Dysfunction.

Risk factors for essential Hypertension:

a) Age

b) Alcohol

c) Cigarettes smoking

d) Diebeties

e) Elevated serum lipids

f) Gender

g) Excess Na^+ diet

h) Family history

i) Stress, socioeconomic factor.

Hypertension clinical manifestations.

Target organ complication-

Myocardium- A)angina/ left ventricular hypertrophy.

B) Peripheral vascular- peripheral PULSE CHANGE.

C) kidney- renal failure creatinine /proteniuria.

D) Eyes- hemorrhages with or without papilla edema.

Silent killer - Asymptomatic and insidious

Sever HTN - fatigue, reduced activity tolerance, dizziness, palpitations, angina,

Hypertension medical diagnosis.

1. History and physical examination.
2. Renal function- serum creatinine and urine creatinine clearance.
3. Electrolytes- especially K^+
4. Blood glucose.
5. Serum lipids
6. Ambulatory BP mentoring.

Hypertension Ayurvedic view :-

Vyana Vayu helps in Vikshepan of Rasadhatu from Hriday to all over the body.[6] Thus any deformity in Vyana Vayu karma will cause obstruction to Rasa Dhatu Vikshepan i.e. peripheral resistance will increase. This is under control of Prana Vayu as Hridaya is one of the Sancharsthana of it. Hence symptoms of Pranavrutta Vyana and Vyanavrutta Prana are considered.[7]

Materials & Methods :-

Patients having hypertension with increased BP than normal were selected for present studies. Patients fulfilling the criteria & attending OPD & IPD of Panchakarma dept. & cases referred by other departments of Pd. D.Y,Patil Ayurvedic Hospital and research centre; were selected randomly irrespective of race, cast, sex, religion etc.

Inclusion Criteria :-

- Patients having BP more than 145/90 mm of Hg and less than 180/110 mm of Hg and not taking any medication were selected.
- Patients between age group of 30 years to 50 years were selected.

Exclusion Criteria :-

- Patients having age less than 30 years & above 50 years.
- Patients having BP more than 180/100 mm of Hg
- Patients having serious cardiac problems like MI, cardiac failure etc.
- Patients having major illness like IDDM, DM which is poorly controlled or newly diagnosed or is taking new therapy or recently adjusted therapy.

- Renal insufficiency or any other serious systemic illness.

Study Design:-

- Open clinical trial

Drugs and Posology :-

Selected patients were given Jatamansi Kwath Shirodhara for 30 mins daily at 9.00 a.m. morning along with Jatamansi Ghanvati internally in a dose of 250 mg B.D. for 30 days.

Assessment of Therapy :-

Criteria for assessment :

The patients were examined weekly and changes in BP were recorded to assess the effect of trial regimen. After completion of 30 days of treatment, the efficacy of the therapy was assessed on the basis of the effect on both systolic and diastolic BP.

OBSERVATIONS :-

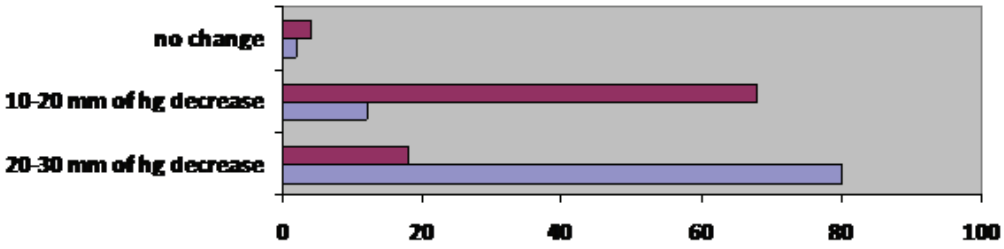
Toal 100 Patients were registered in the study of which all the patients completed the trial. Shirodhara along with consumption of Jatamansi Ghanavati internally was found to reduce the systolic BP by 10 to 20 mm of Hg in 80 Patients and its effect remains 20hrs for first 8 days. After 15 days it remained constant and after 1 month it found reduced by 30-20 mm of Hg. It was found that systolic BP reduced by 20-10 mm of Hg in 12 patients after 30 days treatment. 2 Patients didn't get any changes by Shirodhara and consumption of Jatamansi Ghanavati. Those pts were had history of addiction of alcohol and not gave response to advice about diet etc.

In 68 Patients diastolic blood pressure was reduced by 10mm of Hg in first week & it remains steady for 18 hrs. After 15 days range of diastolic pressure decreased by 10-20 mm of Hg and after month it found same.

In 18 Patients diastolic blood pressure was reduced by 20-10 mm of Hg and it remained constant for 8 days. After 15 days BP decreased again by 10 mm of Hg and after 1 month it was found to get reduced by 30-40 mm of Hg and remained constant.

4 Patients didn't found to have any changes in Diastolic pressure after 1 month. Also in whole study it was seen that 2 patients didn't found any changes in both systolic and diastolic pressure and 2 patients didn't found any changes in diastolic blood pressure but had change in systolic blood pressure by 10 mm of Hg these patients were referred to allopathic treatment for effective management as diastolic BP is considered to be a predictor of cardiovascular risk..

Graph 1: Effect of therapy after 1 month duration of treatment on Systolic and diastolic B.P. of 100 patients of essential Hypertension.



	20-30 mm of hg	10-20 mm of hg	no change
diastolic B.P.	18	68	4
systolic B.P	80	12	2

anticonvulsant, sedative and tranquilizing activities due to presence of jatamansone.[1] In Ayurvedic perspectives Jatamansi is having Vatapradhana Tridoshashamaka properties, Medhya, Nidrajanaka, Sanjnasthapana, and Mastishkashamaka effect.[2] Shirodhara works primarily on the mental health or Manovaha strotasa as it is referred to in Ayurveda. It has a calming effect thus can be considered to reduce the Chala property of Vata which is responsible for mental instability and thus hypertension. Shirodhara works on cerebral system, helps in relaxing the nervous system. 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 forebrain which then brings the amount of serotonin and catecholamine to the normal stage[3] which are known to have role in pathogenesis of hypertension.[4] This can be correlated to the balancing of Prana Vayu situated in the head.[5] It improves the function of five senses, helps in insomnia, stress, anxiety, depression, hair loss, fatigue, imbalance of Vata and makes one calm and fresh accompanied by distress or impairment in day time functioning. In Shirodhara, patients feel relaxation both physically as well as mentally. Relaxation of the frontalis muscle tends to normalize the entire body and achieve a decrease activity of SNS with lowering of brain cortisone and adrenaline level;[6] synchronizes the brain wave (alpha waves)[7] strengthens the mind and spirit and this continues even after the relaxation. Moreover, supine position also helps in relaxation. Imbalance of Prana, Vyan Vayu and Sadhaka Pitta can produce stress and tension. Shirodhara establishes the functional integrity between these three subtypes of Doshas through its mechanical effects. Pitutary gland is the master gland of endocrine system which responds to stress, anxiety etc. Results also confirm the fact that Shirodhara and oral regimen have affected the systolic BP more efficiently that is supposed to be a reflection of Vata vitiation in the body regarding hypertension.

CONCLUSION :-

Essential Hypertension is a disorder caused due to multiple factors that involves mental stress, vascular defects, endocrine imbalance etc. Vyana and Prana Vata are mainly associated in pathogenesis. From clinical study it can be concluded that the treatment regimen of Jatamansi Kwatha Shirodhara and Jatamansi Ghanavati is effective in management of essential hypertension.

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Study of Effects of Hina Yoga of Nidra on Khalitya

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Abstract : Today in the modern world, people are working day and night for their livelihood through which their Nidra gets disturbed which affects their health. So we tried to study the relationship of Nidra on Khalitya (baldness) which is major or most common problem among young generation. **Objectives:** 1.Study of Khalitya.2.Effects of Hina Yoga of Nidra on Khalitya. **Design:** Special case paper Performa has been prepared. A total of 101 volunteers has been studied on the basis of Darshan, Sparshan and Prashna Pareeksha. **Methods : Gradation of Nidra -**Nidra >7 hrs -0,Nidra 5-6 hrs -1,Nidra <4 hrs -2,**Gradation of time since sleep schedule has been disturbed-**3 yrs to 5 yrs -0,5 yrs to 10 yrs -1,>10yrs -2 **Gradation of Khality -**20 – 60 hair fall / day -0,61 – 90 hair fall / day – 1, >90 hair fall / day – 2 Gradation of volunteers on the basis of Khalita-'0' represents= Aa (absence),'1' represents, Alpa=(mild), '2' represents= Ati (severe) When the Khalitya was present above 90 hair loss per day it was considered as Ati. When the Khalitya was present between 60-90 hair falls per day then it was considered as Alpa and when the Lakshanas were present below 60 hair falls per day it was considered as normal. **Results:** The age group 31 yrs-40 yrs is more prone to Khalitya. Hina Nidra more than 7 yrs. severity of Khalitya increases. Pitta pradhan Vatanubadhi Prakruti is 69.69 % & Vata pradhan Pittanubandhi Prakruti is 68.18 % are more prone to Khalitya , followed by Vata pradhan Kaphanubandhi is 60 % . it shows that Rasavaha Srotas dusti 76.19 % & Raktavah Sroto dusti 76.19 % are more prone to Khalitya , followed by Majjavaha Srotas dusti 62.50 % and Astivaha Sroto dusti 58.82 % . **Conclusion:** Khalitya is closely related with Hina Nidra. As Nidra decreases Khalitya increases. As the grade of Hina Nidra (disturbed or irregular timings of sleep) increases it elevates grade of Khalitya from Mild Khalitya to Severe Khalitya. It was found that volunteers having Pittapradhan Vatanubandhi Prakruti and Pittapradhan Vatanubandhi Prakruti have more incidence of Khalitya. It was found that Rasavaha Strotas and Raktavaha Strotas dushti is the most predominant, followed by Asthivaha and Majjavaha Strotas dushti.

Key words: *Nidra*, Khalitya, Asthivaha Strotas dushti, Majjavaha Strotas dushti.

Introduction : Pitta Dosha present at Romkoopa (hair root follicle) increases along with Prakupit Vata Dosha and they both causes the hair fall (Kesha Patana) and that same time Rakta Dosha along with Kapha Dosha blocks that Romkoopas (roots of hair follicle)so new roma unable to grow their and the Samprapti of Khalitya (baldness) takes place. In this modern era human beings do not follow the Sadvritta, which is very essential for leading a

healthy life. They are not obeying Dincharya as discribed in Ayurveda. Due to our changing life styles, food habits, occupation, working style, standards of living, life has changed a lot which has a direct effects on our body just like our hair. Today in the modern world, people are working day and night for their livelihood through which their Nidra gets disturbed which affects their health. So we wanted to study the relationship of Nidra on Khalitya (baldness) which is major or most common problem among young generation. This is done with the idea so that people should understand the importance of sleep in their life and help them to prevent one of the cause of Khalitya (baldness) in society.

Study Design : Collection of the Literature present in ancient and modern era. Special case paper Performa has been prepared. Total 101 volunteers have been studied on the basis of Darshan, Sparshan and Prashna Pareeksha. Written consent has been taken from the volunteers prior to the study. **Inclusion Criteria-** Volunteers having Hina Yoga of Nidra for minimum 3 year. Volunteers irrespective of sex, marital status and socio-economic class. **Exclusion Criteria-** Volunteers suffering from prior ailments of Nidra. Volunteers below age 20 and above 50 years. Volunteer's history of family baldness. Volunteers having scalp disease.

Profile of the subjects- Gradation of Sex -Male-1,Female-2

Gradation of Age-21 yrs to 30 yrs –1, 31 yrs to 40 yrs – 2, 41 yrs to 50 yrs – 3

Gradation according to Socio-economic status - Lower Class -1,Middle Class -2,Upper Class -3

Gradation of Nidra -Nidra >7 hrs -0,Nidra 5-6 hrs -1,Nidra <4 hrs -2

Gradation of time since sleep schedule has been disturbed-3 yrs to 5 yrs -0,5 yrs to 10 yrs -1, >10yrs -2 **Gradation of Khality -**20 – 60 hair fall / day -0,61 – 90 hair fall / day – 1, >90 hair fall / day – 2 Gradation of volunteers on the basis of Khalita-'0' represents= Aa (absence),'1' represents, Alpa=(mild), '2' represents= Ati (severe) When the Khalitya was present above 90 hair fall per day it was considered as Ati. When the Khalitya was present between 60-90 hair fall per day then it was considered as Alpa and when the Lakshanas were present below 60 hair fall per day it was considered as normal.

Discussion :

Among 101volunteers Maximum number of volunteers (i.e.55) belonged to the age group of 31 yrs -40 yrs, followed by 44 volunteers from 21 yrs - 30 yrs & followed by 2 volunteers from 41 yrs – 50 yrs. It means that age group 31 yrs-40 yrs is more prone to Khalitya. When we see distribution of Khalitya in volunteers then it reflects that as time interval(in yrs.) reduced to Hina Nidra more than 7 yrs severity of Khalitya increases. Also when we see whole data then it indicates as Chronicity of Hina Nidra increases from more than 7 hrs to less than 4 hrs it indicates as Chronisity of Hina Nidra increases grade of Khalitya increases. The study shows that Pitta pradhan Vatanubadhi Prakruti is 69.69 % & Vata pradhan Pittanubandhi Prakruti is 68.18 % are more prone to Khalitya , followed by Vata pradhan Kaphanubandhi

is 60 % .Above chart shows distribution of Shroto Dusti according to Hina Nidra , it shows that Rasavaha Srotas dusti 76.19 % & Raktavah Sroto dusti 76.19 % are more prone to Khalitya , followed by Majjavaha Shrotas Dusti 62.50 % and Astivaha Shroto dusti 58.82 % .Means it indicates that Hina Nidra mostly affecting Srotas are Rasavaha ,Raktavaha Srotas followed by Majjavaha & Astivaha Srotas. When we consider Lavanrasa Yukta Ahar Atisevana it indicates that it is less effective than Hina Nidra on Khalitya as we found in Hina Nidra. Also in Amlarasa Yukta Ahar Atisevana it indicates that it is less effective than Hina Nidra on Khalitya as we found in Hina Nidra .In Ati Chinta we again observed same as Amlarasa Atisevana & Lavanrasa Atisevana.but it has increasing effect on Khalitya.

Conclusion :

Khalitya is closely related with Hina Nidra. As Nidra decreases Khalitya increases. As the grade of Hina Nidra (disturbed or irregular timings of sleep) increases, it elevates grade of Khalitya from Mild Khalitya to Severe Khalitya. It was found that volunteers having Pitta Pradhan Vatanubandhi Prakruti and Vata Pradhan Pittanubandhi Prakruti have more incidence of Khalitya. It was found that Rasavaha Strotas and Raktavaha Strotas Dushti was the most predominant, followed by Asthivaha and Majjavaha Strotas Dushti. Finally we can say that Hina Yoga of Nidra causes significant effect on Khalitya. Hina Nidra alone or combined with other Hetus promotes Khalitya.

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Research : Clinical

Clinical Evaluation Of Bibheetaka Putapaka & Bibheetaka Yoga In Kasa Lakshana & Kasa Roga.

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ABSTRACT

Background :- To evaluate the better efficacy of Bibheetakaputapaka&Bibheetakayoga on vata-kaphajakasa as per the reference in thetext.

-To study BibheetakaputapakaandBibheetakayoga on kasa as lakshana(symptom) &as a roga(disease).

Method : Single blindcontrolled randomized study. 60 patients were selected for the study and divided into two groups randomly.

Group A was given BibheetakaPutapakain 3 divided doses per day. i.e.4gm-3gm-3gm.

Group B was given BibheetakaYoga in 3 divided doses per day. i.e. 4gm-3gm-3gm.

Duration of treatment: 7 days with assessment on 0^{th}, 2^{nd} , 3^{rd}, 5^{th}, 7^{th} Day.

Results : Comparing all the symptoms of KasaVyadhibefore and after treatment: Group A and Group B was found to be equally effective.

Conclusion : The reductionsin symptoms in both the groups are equal. The statistical study shows that both the drugs are highlysignificant.Pvaluefor all the assessment criteria was found to be < 0.05.

Hence, from the above study it is concluded that both the drugs can be used in Vata-Kaphajkasa. But the preparation method of BibheetakaPutapakais bit critical than BibheetakaYoga and longetivityis also less hence for the practical point of view BibheetakaYoga is more preferable in vatakaphajkasaas symptom and as a disease.

Key Words : Bibheetakaputapaka, BibheetakaYoga, vatakaphajkasa, lakshana.

INTRODUCTION

Human respiratory tract mostly get exposed to the pollution, excessive crowding, change in climate, stress and imbalance diet which leads to various common clinical conditions. KASA (cough) is one among them increasingly prevalent now a days, demanding greater concern over it. The respiratory tract afflicts every human being at some or the other time in their life whether it's a cough associated with the common respiratory infections like allergies, asthma etc.

In the disease kasathere is “PranavahaStrotas” dushtiand as described in the ayurvedictexts. Pranais related with life; therefore any abnormality in its function leads to disturbance of all the body function as pranaissarwagat.

Pranaflows along with raktathroughout the body providing nutrition to all body tissues. So, its significance in the disease is of almost important. Though kasahas remained only as a minor and neglected common problem in the era, it is related with one’s immunity. Thus it is a major setback for the affected persons, which has become major burden in day to day activity of a person.

According to Ayurveda, the causative factors like dust (dhoolikana), dhoometc. irritates the respiratory path after exposure which leads kasa (cough) that means AprakrutSparsha. The repetitive episode of this aprakrutsparshadisturbs daily routine by causing a sound, like broken bronze metal pot i.e. “Kasnatkasa:”(cha.chi.17). This soundis called as KASA.

Many more herbal single compounds and combinations are described in Ayurveda and their therapeutic effect in KASA. “Bibheetakaputapaka” and “Bibheetakayoga” are also explained under the heading of “KASA.”

BibheetakaputapakaIs mentioned in BhaishajyaRatnavali, while Bibheetakayoga is mentioned in GadaNigraha. It is explained specially in the context of KASA and said to be very effective in vata- kaphajaKASA according to overall properties of trial drugs from respective granthas. The efficacy of both these drugs should be check through Ayurveda and modern research methods.

The simple kasadue to negligence may lead to Rajaykshma(Tuberculosis) as per given in the Ayurvedictext. As T.B. is national programme, prevention of KASA roga may help to prevent the T.B. Therefore, this study has been undertaken to test the better efficacy of both the drugs on KASA and try to prevent and cure the kasa.

Purpose ofwork :

Bronchitis is a universal experience, which has an important protective function in the face of danger. It becomes morbid when symptoms are out of proportion to external circumstances or if they persist long. However the clinical distinction between normal and pathological condition is decided on the cough reflex which is the chief symptom of the disease. If thishas been ignored then it produces more symptoms.

In Ayurveda various Respiratory disorders are mentioned, in all of them Kasalakshanais common, and this symptom is explained as Disease in Ayurveda. Hence the Bronchitis seems to be the nearest term for Kasa, which is one of the psychological disorder described byCharaka(Chi. 18)

Nowadays KASA being alarming problem it needs effective and safest treatment. Modern therapeutics though has a spectrum of drugs for the management of this disease, some of them having serious side effects and habit forming nature. Therefore there is a wide scope of research to find out a safest remedy from Ayurveda for the management of this disease.

Many beneficial drugs are explained in samhitasand many previous studies has been done on Kasadisease with different formulations of Ghrita, Kasahaya, Avalehaetc. but no one has studied PutapakakalpanaonKasa. The purpose of this research work is to study the effect of single drug on kasaand to study the new form of Kalpana. These two preparations which were used in this trial are cost wise very effective, as compare to the other formulations like Ghrita, Kashayaetc, hence BibheetakaPutapakaandBibheetakaYoga were chosen for this study.

AIM & OBJECTIVES

1) To evaluate the better efficacy of Bibheetakaputapaka&Bibheetakayoga on vata-kaphajakasaas per the reference in the text.
2) To study thekasafromBrihattrayeeandlaghutrayee.
3) To study Bibheetakaputapaka and Bibheetakayoga on kasa as lakshana(symptom) &as a roga (disease).

MATERIALS AND METHODS

- **Materials :-**

The compound drugs selected for this study are BibheetakaPutapakaandBibheetaka Yoga.

The referenceofBibheetakaPutapakais from BhaishajyaRatnavali.

The BibheetakaYoga is mentioned in GadaNigraha.The raw drug materials of both the compound drugs are collected from standard Ayurvedicstore. Raw materialsare authenticated at Pune University, Botony Dept. Pune, before clinical trial on patients.Compound drug i.e. BibheetakaPutapakaandBibheetakaYoga was prepared in standard laboratory.

- **Drug review :-**

BibheetakaPutapaka :- Method of preparation: (Ref. Sharangdharsamhita,2-1-22)

Putapakakalpanacomes under Swarasakalpana. This kalpanais used for thesedrugs from which direct SwarasaExtraction is not possible.A ball of mud holding within it the kalka (paste) of drugs is put into fire and removed when it has become red hot. The thickness of the layer of mud should be two angulisor two angushthas(thumbs).In this compound drug extraction of juice is not indicated, but this drug is prepared by giving PUTA to Bibheetaka. Hence thisdrug is called as BibheetakaPutapaka.

BibheetakaPutapaka :-

Bibheetakais smeared with little ghee, given a covering of paste of godhumaand cooked as a putapaka. Its outer rind thus cooked, held in the mouth for chewing, and relives Kasa.

According to *Sharangdhara*samhita, it relives Kasa(cough), Shwasa(dyspnoea), Pratishyaya(running of the nose) and Swarabheda.

Matra :-(Ref. Bhavprakash I- Khand, 35-37)

One of the synonyms of Bibheetakais Karsaphala, which means the BibheetakaFruit is weighing of one Karsha.

One Karsha - One Tola

One Tola - 10 grams

The MatraforBibheetakaPutapakais 10grams / day.

Bibheetaka Yoga :- (Ref. Gadnigraha,10/47)

BibheetakaPowder is cooked with Ghritaand then double the amount of Bibheetaka Powder Gud(Jaggery) is added in it. This yogagives relief from KasaandShwasa.

As this compound drug is in Yoga form, for the sake of patient's convenience,it was given in Vatiform to the Yoga.

Vatikalpana :- (**Ref. Sharangdharsamhita,7/2)**

Vatikalpanais solid dosage form of medication prepared by liquefying Guda, Sharkara, Gugguluetc.and adding fine powder of Aushadhadravyato it.

• **Dosage :-(Ref. Sharangdharsamhita,7/5)**

One karshais the dosage administered after considering the strength of the patient.

One tola = 10 grams

These bothdrugs have been given in three divided doses. i. e. 3-3-3 grams per dose.

But it is very difficult to find the 3grams Bibheetaka, so 3 grams is also divided into 1gram. Therefore 3 Bibheetakaeach of weighing 1 gram are given in single dose.

Content of Bibheetaka Putapaka :-

Drug	Rasa						Veerya		Vipaka		
	Madhura	Amla	Lavan	Katu	Tikta	Kashaya	Ushna	Sheeta	Madhura	Amla	Katu
Bibheetaka	-	-	-	-	-	+	+	-	-	-	+
Ghrita	+	-	-	-	-	-	-	+	+	-	-

Content of Bibheetaka Yoga :-

Drug	Rasa						Veerya		Vipaka		
	Madhura	Amla	Lavan	Katu	Tikta	Kashaya	Ushna	Sheeta	Madhura	Amla	Katu
Bibheetaka	-	-	-	-	-	+	+	-	-	-	+
Ghrita	+	-	-	-	-	-	-	+	+	-	-
Gud	+	-	-	-	-	-	+	-	+	-	-

Methods :-

A special case paper Performa with content was prepared for study.

1. Type of study :-

Comparative singleblind clinical research work. Two groupsof patients were taken for research.

Group A: 30 patients treated with BibheetakaPutapaka

Group B: 30 patients treated with BibheetakaYoga.

SELECTION CRITERIA :-

- Total 60patients were selected for study.
- PatientswithKasaasVyadhiand as Symptomswere selected.
- Selection wasdone according to AyurvedicNidanPanchak.

Inclusion criteria :-

- Age group: - 18 years and above.
- No discriminationof gender, caste, religion and economic status.
- Patients withsigns and symptoms of vatajaandkaphajaKASA.
- KASA notmore than 1 week.

Exclusion criteria :-

- Pregnant Women
- Pittaja,KshayajaandKshatajaKASA were excluded.
- KASA as symptom &as disease not more than 2 weeks.
- Patients withchronic debilitating diseases/ disorders.
- Patients on any other medication.

Diagnostic criteria:-

- All sign and symptoms of Kasarogawere taken into consideration as per given in Ayurvedictext.
- The symptoms were graded according to increasing order of severity, duration and intervals of the symptoms.

GRADING :

Symptoms	0	1	2	3
Kasavega	Nil	2-3 times/day	5-10 times/day	More than 10 times
Quantity of kaphashthivan	Nil	5ml-10ml /day	10ml-20ml /day	More than 20ml
Color of kaphashthivan	Nil	Whitish	Yellowish	Greenish/ reddish
Jwara	Nil	Up to 99^0 F	Up to 100^0 F	More than 100^0 F
Swarabheda	Nil	Mild change in voice	Hoarseness in voice	Unable to speak
KanthShool	Nil	occasionally	with every kasavega	Persistent through day and night

PLAN OF WORK :

PARTICULARS	GROUP A:(Trial Group)	GROUP B:(Trial Group)
No. of Patients	30	30
Medicine given	BibheetakaPutapaka	Bibheetaka Yoga
Dose	4gms-3gms-3 gms	4gms-3gms-3 gms
Time	Thrice a Day	Thrice a Day
Duration	7 Days	7 Days
Route Of Drug Administration	Oral	Oral
Assessment	0^{th} day(before treatment) & 7^{th}day of treatment	0^{th} day(before treatment) & 7^{th} day of treatment
Follow Up	2^{nd} , 3^{rd}, 5^{th}, & 7^{th} day	2^{nd} , 3^{rd}, 5^{th}, & 7^{th} day

OBSERVATIONS

- **Table I : Distribution according to Kasa Vega :-**

KASA VEGA	Day-1		Day-7		Wilcoxon Signed Ranks Test Z	P
	Mean score	SD	Mean score	SD		
Group-A	2.77	0.430	0.87	0.629	4.903	<0.001 HS
Group-B	2.60	0.498	0.47	0.629	4.939	<0.001 HS

- **Table II : Distribution according to Kaphashthivan (color) :-**

KAPHA SHTHIVAN (COLOR)	Day-1		Day-7		Wilcoxon Signed Ranks Test Z	P
	Mean score	SD	Mean score	SD		
Group-A	1.40	0.814	0.27	0.450	4.540	<0.001 HS
Group-B	1.17	0.747	0.07	0.254	4.443	<0.001 HS

- **Table III : Distribution according to Kaphashthivan (quantity) :-**

KAPHA SHTHIVAN (QUANTITY)	Day-1		Day-7		Wilcoxon Signed Ranks Test Z	P
	Mean score	SD	Mean score	SD		
Group-A	1.50	1.106	0.27	0.450	4.403	<0.001 HS
Group-B	1.23	0.971	0.07	0.254	4.311	<0.001 HS

- **Table IV: Distribution according to Jwara :-**

JWARA	Day-1		Day-7		Wilcoxon Signed Ranks Test Z	P
	Mean score	SD	Mean score	SD		
Group-A	0.53	0.776	0.03	0.183	3.035	0.002 Sig
Group-B	0.70	0.794	0.03	0.183	3.573	<0.001 HS

- **Table V : Distribution according to swarabheda:-**

SWARA-BHEDA	Day-1		Day-7		Wilcoxon Signed Ranks Test Z	P
	Mean score	SD	Mean score	SD		
Group-A	0.70	0.794	0.10	0.305	3.448	0.001 Sig
Group-B	0.62	0.775	0.24	0.511	3.051	0.002 Sig

• **Table VI : Distribution according to kanthashoola :-**

KANTHA SHOOLA	Day-1		Day-7		Wilcoxon Signed Ranks Test Z	P
	Mean score	SD	Mean score	SD		
Group-A	1.60	0.563	0.13	0.346	4.774	<0.001 HS
Group-B	1.23	0.728	0.13	0.346	4.562	<0.001 HS

DISCUSSION

Kasaisone of the diseases explained in ayurvedictext. It isthe disease of pranvahastrotasa. If kasais neglected it may lead to rajyakshma. Therefore in 5 types of kasatwokshayaj&kshatajkasahas explained which indicates shoshaofpranavahastrotasa&alldhatus. According to sushrutasamhitacommentator it is stated that kasa is mainsymptom but when it is present dominantly other associated symptom then it is calledaskasaroga.

- As from the above observations, it was noted that kasavegareduction was more in group B than Group A, but the difference was not much. And from the data it was noted that the chronicity and severity of the symptom in group A was more than group B.
- While observing kaphashthivanit was found that patients having yellowish expectoration were more in group A than group B. The reduction of yellowish expectoration was more in group B than group A. Patients who were having whitish expectoration reduced completely in both the groups. Same resultswere noted in quantity criteria.
- Jwarawasobserved commonly in both the groups. In group A, 4/11 patients were of JwaraVyadhiandkasawas associated symptom. In groupB, 4/16 patients were of JwaraVyadhi.
- In thisstudy trial patient with other diseases also found. i.e. Pandu, Amlapitta, Pratishaya, Sandhigatavata, and mutrakrucha. But theno. of patientswas very few as compared toJwara.
- Pandu – 1 group B
- Amlapitta – 1+1 group A &B
- Pratishyaya - 1+1 group A & B
- Sandhigatavata- 1 group B
- Mutrakrucha – 1 group B
- In boththe groups swrabhedasymptom had good results. i.e. it relived approximately completely. 20/29 (includingboth the groups) i.e. 68.96% patient got relief.
- For kanthashoola55/60 i.e. 91.66% patients had this complaint and after treatment 50/60 i.e. 83.33% got complete relief. But more result was seen in group A than B.

- Kanthoplepawas a symptom seen in both the groups and had the same results.

CONCLUSION

- The study entitled "Clinical Evaluation of BibheetakaPutapakaandBibheetakaYoga In KasaLakshanaandKasaRoga."
- As per the study aim was to test the better efficacy of both the drugs in Kasaas Symptom and as Disease.
- During this study it was found that both the drugs are equally effective in Kasaas Symptom and as Disease.
- The reduction in symptoms in both the groups is equal.
- The statistical study shown that both the drugs are highly significant.
- P value for all the assessment criteria was found to be <0.05.
- Hence, from the above study it is concluded that both the drugs can be used in Vata-Kaphajkasa.But the preparation method of BibheetakaPutapaka is bit critical than BibheetakaYoga, and longetivityis also less hence forthe practical point of view BibheetakaYoga is more preferable in vatakaphajkasaas symptom and as adisease.

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Review Article

Honey As Antioxidant

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ABSTRACT :- Pollution perversion is the key factor for the development of diseases due to extensive release of free radicals these days. Free radicalswere discovered by Gombergin 1900. If water split in body it produces ($^{OH-}$) known as free hydroxyl radical.

Anti Oxidantsare substances which prevent oxidation and rancidity of fat and protect body from free radical induced damage. Antioxidants protect body (scavenging system) from various illnesses arising out of, aging and degeneration of tissues through neutralizing free radicals. Excessive free radicals are generated due to exogenous factors like drugs, pesticides, smoking and ionizing radiation which lead to irreversiblecell damage. Certain vitamins, minerals, trace elements, and enzymes, as vit.E, vit.C, vit.A, Super Oxide Dismutase with selenium, copper, zinc and manganese. Earlier, traditional herbal medicines and dietary foods were the main source of Antioxidants can protect body from these free radicals.

Honey: Easily digestible, healthy, naturally energy rich food. Its antimicrobial activity protects human against, Reactive Oxygen Species, antioxidants capacity protects against lipid per-oxidation through inter-membrane space mechanism.

Key words- Super Oxide Dismutase, Anti-Oxidants,**($^{OH-}$)** Hydroxyl radical, Reactive Oxygen Species

INTRODUCTION

Nature has provided an excellent storehouse of remedies to cure all the aliments of mankind. In ancient days, almostall the medicines derived from natural sources like, plants, animals, and mineral origin, which contain antioxidant constituents responsible for several health benefits. Every manwants to live long and healthy. This is possible by promoting rejuvenation, healing, and regeneration of living tissue in the body.

Some herbs seem to exert their effect through immune-suppressant, immune-stimulant and immune-adjuvant activities or by affecting the effect or arm of the immune response. It has been found that the nervous, endocrine and immune systems are all interrelated. Immuneproducts like various cytokines have been found to stimulate thehypothalamus-pituitary-adrenal axis and corticotrophin release factor (CRF), which ultimately enhances the production of adrenal corticotrophin hormone (ACTH) resulting into increased secretion of gluco-corticoids which have an overall suppressive effect on the immune system. Stress also

acts on the same axis and brings about changes in the immune status of the body. Many drugsprobably reduce stress levels by affecting antioxidant levels.

The human body; although continuously produces free radicals it possesses several defense systems, which are constituted to enzymes and radical scavengers. These are called 'First-line antioxidants defense systems', but are not completely efficient because almost all component of living bodies, tissues, cells and genes undergo free radicals destruction.

The second line defense systems are constituted of repair systems for bimolecular which are damaged by the attack free radicals.

Free radicalsare atoms or groups of atoms with an odd (unpaired) number of electrons and can be formed when oxygen interacts with certain molecules. Once formed these highly reactive radicals can start a chain reaction, like dominoes. Their chief danger comes from the damage they can do when they react with important cellular components such as DNA, or the cell membrane. Cells mayfunction poorly or die if this occurs. To prevent free radical damage the body has a defense system of *antioxidant*.

Antioxidantsare molecules which can safely interact with free radicals and terminate the chain reaction before vital molecules are damaged. Although there are several enzyme systems within the body that scavenge free radicals, the principle micronutrient (vitamin) antioxidants are vitamin E, beta-carotene, and vitamin C. Additionally, selenium, a trace metal that is required for proper function of one of the body's antioxidant enzyme systems, is sometimes included in this category. The body cannot manufacture these micronutrients so they must be supplied in the diet.

Vitamin E: d-alpha tocopherol. A fat soluble vitamin present in nuts, seeds, vegetable and fish oils, whole grains (esp. wheat germ), fortified cereals, and apricots. Current recommended daily allowance (RDA)is 15 IU per day for men and 12 IU per day for women.

Vitamin C: Ascorbic acid is a water soluble vitamin present in citrus fruits and juices, green peppers, cabbage, spinach, broccoli, kale, cantaloupe, kiwi, and strawberries. The RDA is60 mg per day. Intake above 2000 mg may be associated with adverse side effectsin some individuals.

Beta-caroteneis a precursor to vitamin A (retinol) and is present in liver, egg yolk, milk, butter, spinach, carrots, squash, broccoli, yams, tomato, cantaloupe, peaches, and grains. Because beta-carotene is converted to vitamin A by the body there is no set requirement. Instead the RDA is expressed as retinol equivalents (RE), to clarify the relationship. (NOTE: Vitamin A has no antioxidant properties and can be quite toxic when taken in excess.)

Antioxidantshavean important role in maintaining health. They combatfree radicals. Free radicals are unstable reactive molecules that attack healthy tissues, damage membranes and can even kill cells.

Specific enzymes are known to have been involved in this context and several of them have

been identified in prokaryotes and in eukaryotes.

Differenttypesof Free Radicals and Their Systems

Types of free radicals or oxidants	**Defense system**
Superoxide anion (O_2)	Superoxide Dismutases (SOD)
Hydroxyl Radicals	Mn-SOD, Cu, Zn-SOD
PeroxyRadicals (ROO)	Tocopherols, Ubiquinon
Singlet Oxygen	Carotenoid
Hydrogen peroxide (H_2O_2)	Catalase, Se gluthioneperoxide (GPx)
Hydroperoxide(ROO) reductase (GR)	Se glutathione peroxidase (GPx), Glutathione
Transition (Fe2 +, Cu+)	Chelators

The enzymatically potential antioxidants are superoxide dimutase, glutathione peroxides, catalysesand peroxides. In the non-enzymatic category, some of the known and documented antioxidants are Vitamin C, Vitamin E, Vitamin A, ß-carotenoids, uric acid, Ubiquinone and synthetic compounds like melatonin, Di-hydro epi-androsterone(DHEA) etc.

Different types of free radicals and their role in cellular damage :

Superoxide anion(O_2) isthe most abundantly produced free radicals. It is essentially produced enzymatically from NADPH oxidizes (during phagocytosis), mitochondrial cytochrome P450 (oxidative metabolism of xenobiotics), and xanthine-oxidize (ischemia, reperfusion).

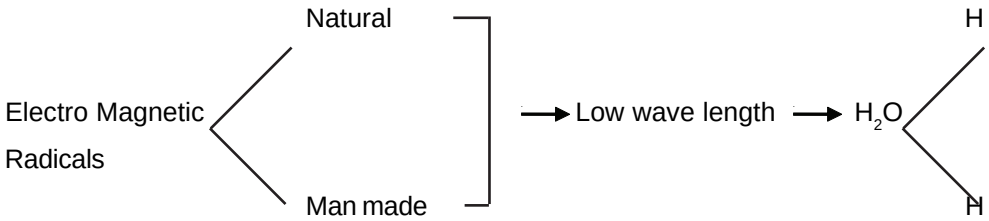
The biologically generated superoxide anion dismutaseinto molecular oxygen and hydrogen peroxide in the presence of proton and this reaction is highly favored in the presence of superoxide dismutase (SOD). $2O_2$ —2H——> $H_2O_2 + O_2$

Hydrogen peroxide induces cellular damage in the presence of ferrous ions by a Fenton reaction resulting in the formation of OH free radicals as follows.

Fe2+ + H_2O_2 Fe3+ ————>OH (1) + OH

Alkoxyl (RO) free radicals andperoxyl free radicals (ROO-) are also synthesized from polyunsaturated fatty acids by the action of cyclooxygenases and lipooxygenase to ROO involving lipid per oxidation.

RNA (ribonucleic acid) and DNA (deoxyribonucleic acid) are also targets for favorable attack by free radicals. It is found that the DNA of a cell undergoes about 10,000 free radicals attacks every day.



Free Radicals

Anti-oxidants protect body from various illnesses, aging and degeneration through neutralizing free radicals. The role of antioxidants in reducing the risk of wide range of chronic diseases and degenerative conditions is very important.

What follows is only the tip of the iceberg in this dynamic and interesting subject.

MATERIAL ANDMETHODS

This article is based on a review of Literatures along with researches related to the subject. Materials related to Honey, antioxidants and other relevant topics have been collected and searched from books, research papers and websites.

Honey : Honey, a sweet and viscous fluid with a unique flavor, is produced by honeybees from the nectar of various flowers. Honey offers many medicinal uses described in traditional medicine, in addition to just commonly being used as a sweetener. Modern medicine also finds it efficacious in various medical and surgical conditions. The objective of this perspective is to discuss the chemical composition and pharmacological properties of honey that are responsible for its therapeutic uses, previously encountered as 'hidden miracles' of honey. Honey gets its sweetness from the monosaccharide, 'simple' 6-carbon sugars such as fructose (38.5%) and glucose (31.0%). Other sugars include maltose (7.3%), a 12-carbon sugar composed of 2 glucose molecules, and sucrose (1.3%), a 12-carbon sugar composed of glucose and a fructose molecule. Unlike table sugar, honey contains several vitamins (vitamin B6, vitamin C, thiamin, niacin, riboflavin, and pantothenic acid), minerals (calcium, copper, manganese, phosphorous, magnesium, potassium,sodium and zinc), amino acids and antioxidants. Honey has a distinctive flavor and is 40% denser than water, with a density of 1.4 kg/l. Most microorganisms do not grow in honey because of its low water activity (~ 0.6) and high acidity (average pH 3.9).

Honey contains natural antioxidantproperties that can destroy biologically destructive chemical agents which have been linked to many diseases such as cancer. Studies also found that dark-color honeys such as Buckwheatseem to possess more antioxidants than light-color varieties. Not only could honey's antioxidantshelp to eliminate free radicals in the body, they are also part of the nutrient supply for growth of new tissue. These precious honey properties help protect the skin under the sun and help the skin to rejuvenate and stay young-looking. As such, there have been an increasing number of manufacturers of honey skincare products such as sunscreens and facial cleansing products for treating damaged or dry skin.

The global prevalence of chronic diseases such as diabetes mellitus, hypertension, atherosclerosis, cancer and Alzheimer's disease is on the rise. These diseases, which constitute the major causes of death globally, are associated with oxidative stress. Oxidative stress is defined as an "imbalance between oxidants and antioxidants in favor of the oxidants, potentially leading to damage". Individuals with chronic diseases are more susceptible to oxidative stress and damage because they have elevated levels of oxidants and/or reduced antioxidants. This, therefore, necessitates supplementation with antioxidants so as to delay, prevent or remove oxidative damage.

Honeyis anatural substance with many medicinal effects such as antibacterial, hepato-protective, hypoglycemic, reproductive, anti-hypertensive, antioxidanteffects. This review presents findings that indicate honeymay ameliorate oxidative stress in the gastrointestinal tract (GIT), liver, pancreas, kidney, reproductive organs and plasma/serum.

Antioxidant analyses of the different kinds of honey extract indicate that the water-soluble fraction contains most of the antioxidant components, including gluconicacid; ascorbic acid; hydroxyl-methyl-furaldehyde; and activities of glucose oxidize, catalyses and peroxides. Thus, the antioxidant capacity of honey appears to be a result of the combined activity of a wide range of compounds including phenolics, peptides,organic acids, enzymes, Millardsreaction products and possibly other minor components.

The phenolic compounds contribute significantly to the antioxidant capacity of honey, but are not solely responsible for it. Antioxidant properties of honey have made it greatly acceptable in meat products, where it not only retards the oxidation of meats, but also enhances its flavor. The antioxidant capacity of different kinds of honeys differs considerably in terms of protection against lipid oxidation. This is due to variation in their antioxidant contents of various kinds of honeys. Mixture of honey, beeswax and olive oil has been reported to inhibit growth of *Staphylococcus aureus*and *Candida albicans*isolated from human specimens (Al-Waili, 2005).

Honey contains a compound known as propolis, a natural product collected by honeybees from various plant sources. Propolisis one of the major hive products of honeybees, which protects them from bacterial and viral infections. In addition, propolisis now being used in many products, including toothpastes, mouth washes and skin creams. Propolishas a protective effect on ilealmucosa. It reducesbacterial translocation in the experimental obstructive model of jaundice (Sabuncuoglu et al., 2007). Propolisextracts have a wide multispectrumof activities, such as antimicrobial activity against a wide range of microorganisms (bacteria, fungi and viruses), antiinflammatory, anaesthetic, healing, vasoprotective, antioxidative, antitumoral, antiulcer and hepatoprotectiveactivities. The antimicrobial properties of propolis, focusing on respiratory pathogens, make propolisa valid agent for treating upper respiratory tract infections (De Vecchi and Drago 2007). Propolisisrich in flavonoids (polyphenoliccompounds), which are known for antioxidant activities. Chemical properties of flavonoids, in terms of the availability of the phenolic hydrogens as hydrogen donating radical scavengers, predict their antioxidant properties. In rat heart mitochondria,

flavonoids show scavenging activity protecting against the peroxidativedamage induced by the administration of an acute dose of doxorubicin (Alyane et al., 2008). This suggests that flavonoids in propolishave cardioprotectiveeffects in doxorubicin-mediated cardiotoxicity. The antioxidant capacity of different kinds of honeys differs considerably in terms of protection against lipid oxidation. This is due to variation in their antioxidant contents of various kinds of honeys.

Precautions : Honey frequently contains dormant endospores of the bacterium *Clostridium botulinum*, therefore honey can often be dangerous to infants due to ingestion of spores of*C. botulinum*together with food in their immature intestinal tracts, resulting in the production and the absorption of botulinic toxin that leads to Infant botulism; a disease that results in a blockade of voluntary motor and autonomic functions causing illness and even death (Schocken-Iturrino et al., 1999). Honey poisoning in humans is caused by the consumption of toxic honey produced from the nectar of Rhododendron. The specific grayanotoxinsvary with the plant species and cause honey intoxication. Grayanotoxinpoisoning israre in humans, but it should be anticipated everywhere.

CONCLUSION

Quest for a healthy and long life has always been attempted by mankind. With life expectancy rising, ageing with grace and leading a healthy &independent life will remain one of the main health concerns of all countries.

Many herbs and other natural products are used to delay the ageing process. These herbs are still being widely used in Ayurvedic parlance for this purpose. The available literature was screened and a comprehensive drugs having *Antioxidant* effect and potential anti-ageing effect was drawn.

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