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Index

Review of Kushmanda (Benincasa Hispida)

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Review :

REVIEW OF KUSHMANDA (*Benincasa hispida*)

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Abstract

Benincasa hispida i.e. Kushmanda, described by acharyas under *Shakavarga* belongs to the Cucurbitaceae Family, also known as wax gourd or winter melon. An annually growing creeper with branched tendrils, is grown as a food plant. The fruits of great size and its juice is useful in various diseases. The plant is tonic, braintonic, carminative, diuretic, refrigerant, anti helminthic and has haemostatic property. Seeds are also helpful in abdominal worms specifically tapeworms. This whole plant is useful for heart, body life, being *rasayana* and *brihaana* i.e. promoting dhatu due to its *madhura rasa, madhur vipaka, sheeta virya* and *laghu* and *snigdha* property. In this article complete review of 'Kushmanda' has been described.

Keywords: *kushmanda, Benincasa hispida*

Introduction

Plants have been one of the important source of medicines since the beginning of human cultivation. Human have used plants for medicinal purpose for centuries; because of its minimal side effects and records of safety, the demand of medicinal plants are increasing tremendously.

The reference of kushmanda in Vedic literature is found as kushmanda,and is used for animal in Yagyana for sacrifice. In Brihatrayee, application of kushmanda is mentioned in detail. AcharyaCharaka has described kushmanda as Aharadrvya, while AcharyaSushruta has described Kushmanda in the class of madhura rasa dravya .Kushmanda is also described under tailavarga. Taila of this fruit being madhur in rasa and vipaka .Kushmanda is again described under Shakavarga. Unripe kushmanda is pitta nashak, half ripe is kaphakarak, while ripen is laghu, ushna,kshar, deepan and bastishodhak .Kushmandasneha is indicated in mutrsanga. In SiddhabhaishjyaManimala, kushmandaswarasa is quoted as hair bleaching agent or causes hair grey. Benincasahispida i.e. Kushmanda belongs to the Cucurbitaceae Family commonly called as Winter melon or Wax guard, and is used frequently in Ayurvedic system of medicine. The genus name was given to it by famous Italian botanist, GaetanonSavi, in 1818 to honour Giuseppe Benincasa, an Italian patron of botany.

SCIENTIFIC CLASSIFICATION

- Kingdom : Plantae(unranked): Angiosperms : Eudicots: Rosids
- Order : Cucurbitales
- Family : Cucurbitaceae
- Subfamily : Cucurbitoideae
- Tribe : Benincaseae
- Subtribe : Benincasinae
- Genus : Benincasa
- Spesies : B. hispida
- Binomial name : Benincasahispida

Hindi name :Petha, Raksa

Synonyms : Pusyaphala, Brihatphala, Phalaraja, Mahaphala, Pushpaphala, Pitapushpa, Vrittaphala, Sukaphala, Gulaphala

Classification :

1. Bhavprakashnighantu – Shakavarga
2. Dhanvantarinighantu - Guduchyadivarga
3. Shaligramnighantu - Shakavarga
4. Raja nighantu - Mulakadivarga
5. Nighantuadarsh - Kushmandadivarga
6. Kaidevnighantu - Shakavarga
7. Priyanighantu - Pippalyadivarga
8. Shodhalanighantu – Guduchyadivarga

Distribution and cultivation :

Plant grows in plains and hills to an altitude of 1,204 meters. It is commonly cultivated for producing fruits used as vegetable and edible fruits. It is generally cultivated over warm countries. It is found in India, Ceylon and Burma. Though it grows all over India but most commonly found in Punjab and Uttar Pradesh. Seeds do propagation and cultivation of kushmand. In the plains cultivated plant, seeds are sown during the month of February. The fruits are ready in 3-6 month period. Flowering and Fruiting Time: Plant flowers and fruits are present during the month of June to October.

A annual branched large trailing gourd climbing by means of tendrils, stem stout, angular, hispid.

Leaves 4-6 inch in diameter, deeply cordate, 5-7 lobbed, hispid beneath.Petioles 3-4 inch long.

Flowers large yellow; male peduncle 3-4 inch in diameter, female peduncle is shorter.

Calyx-teeth when young often narrowing and scarcely serrate.Filaments angular hispid at the base.

Fruits fleshy, broadly cylindrical and 30-40 cm long, hairy when young waxy bloom when mature,

Seeds may oblong, compressed marginally, yellowish white.

PHYTOCHEMISTRY

1. Fruits-Lupeol, â-Sitosterol& there Acetate, Cucurbitin, Rhamnose, Mannitol, Triacontenol, Alkali, Fat, Vitamins, Glucose, Adenine, Trigonelline, Histidine.

2. Seeds- 24z-ethylidene cholesterol- 7 enol (Avenasterol) & 24 â- ethyl cholesterol ˇ ì˘ <Å—ˇ 7,25Cucurbita

3. Leaves, stems, pericarp & roots- 5,24 – dienol.

4. Roots- Pentacuclictriterpine, bryonolic acid.

USES OF INGREDIENTS

LUPEOL- It has complex pharmacology, displaying antiprotozoal, antimicrobial, antiinflamatory, antitubercular, & chemo protective properties. It is an effective inhibitor in laboratory models of prostate & skin Ca. Lupeol to decrease IL-4 production by T-helper type 2 cells.

â-SITOSTEROL It is being studied for potential to reduce beningprostetic hyperplasia (BPH) & Blood Cholesterol Level.

CUCURBITIN It is an inhibitor of histidine decarboxylase, which is associated with inhibition of the biosynthesis of histamine responsible for the formation of inflammatory response. It is used in cosmetic for dry and sensitive skin and for the treatment of Schistosomiasis.

RHAMNOSE High rhamnose extracts from the water have found use in antiwrinkle cream

MANNITOL In plants it is used to induce osmotic stress.Manitol is used clinically in osmotherapy to reduce raised intracranial pressure until more definite treatment can be applied. It is also used to treat patients with oliguric renal failure. Manitol can also be used as fascilitative agents for the transportation of pharmaceutical directly into the brain. It is commonly used in the circuit prime of heart lung machine during cardiopulmanory bypass. It is also the 1st drug of choise for T/t of Glucoma in veterinary medicine.

TRIACONTANOL Tricontanol is a growth stimulant for many plants, most notably roses in which it rapidly increases the no of basal breaks.

HISTIDINE It is an essential amino acid in humans & other mammals. It was initially thought that it was only essential for infants, but larger term studies established that it is also essential

for adult human. It is an á-amino acid with an imidazole functional group. It is one of the Z3 proteinogenic amino acid.

ADENINE It is nucleobase with a varity of role in biochemistry including cellular respiration, in the form of both the energy rich adenocine triphosphate (ATP) & the cofactors nicotinamides adenine dinucleotide & protein synthesis as a chemical component of DNA & RNA.

VITAMINES

GLUCOSE.

AYURVEDIC VIEW:

- VARGA : Shaka, Guduchyadi,Mulakadi, Aushadhi
- RASA : Pakva: Madhur.
- GUNA : Pakva: Laghu, Na-Aati-himam. Guru, Ruksha.Bal: - Sheeta. Guru.
- VIRYA Sheeta.
- VIPAKA : Madhura
- DOSHAGNATA
- Bal : - Pittapaham.
- Madhya : Kaphakaraka.
- Pakva : Sarvadoshajita Vata-Pittajita.
- ACTIONS
- Pakva : Deepan, Bastishudhikara, Vrushya, Hrudya,Mutraghatahara, Pramehanashan, AshmariChhedana, Vrushya, Balya, Arochakahara, Trushna-AratiShaman.

Therapeutic Indication :

1. Unmada-apasmaar [Vangasena 35, Bh.P.madya.23-17, Chakradatta, AH U.7-28]
2. Trishna-daha-jwara [RajaNighantuMulakadi Varga161]
3. Rajyakshma-kshya [Vangasena 47]
4. Madatyaya [Sushrutsamhita Uttartantra.47-45]
5. Raktapitta [Bha.P .Nighantushakavarga 56]
6. Amla pitta-Parinamshuala [Bha. Pra. II 30/53-56,]
7. Mutraghata-Mutrakrichha-Ashmari-Bastishula [Raj NighantuMulakadi varga161, Bh.PAsmarirogadhikara 37-52, Chakradatta, Vrindamadhav, Harita 3-29-5]
8. Prameha [Raj NighantuMulakadi Varga161]

Kalpa :

1. Kushmandabeeja yoga: (vrundamadhavnidaan)- Mutravrodha
2. Kushmandadiyog: (yogaratnakar)- Apasmar

3. Kushmandashifachurnam : (Vrundmadhavnidaan/ vangasen/ yogaratnakara) Darunshwas-kasa
4. Kushmandaksharam : (Bhavprakash-shoole)tivra shola
5. Kushmandavleha, kushmandakhanda, kushmandaguda: balya, brihaniya, pittajaroga
6. Kushmandadighrita : (yogratnakara)- apasmara
7. Kushmandasav : (gadanighrahachp 6) pleehodara, bhagandara, aamvata, raktpitta, sthoulya

Researches:

1. www.tmjournal.org Access this article online QR CODE Introduction Biradar et al, Pharmacognostical Evaluation of BenincasaHispida__macroscopic and microscopic evaluation of fresh fruit and powder microscopy of Benincasahispida.

   Conclusion : Fruit is pepo, powder color is dull yellow; taste is slightly sweetish in nature, slightly aromatic & coarse in touch. Microscopic study reveals epicarp consisting of single layer of epidermis. Mesocarp has heterogeneous structure consisting of multilayered hypodermis composed of tangentially elongated, thin walled parenchymatous cells, parenchyma cells with prismatic crystals. Microscopy of powder bers,showed cells in surface view; annular vessels, calcium carbonate crystals which are the important striking characters of the fruit and its powder.

2. Ali Esmail Al-Snafi / International Journal of Pharma Sciences and Research (IJPSR)The Pharmacological Importance of Benincasahispida. A review

   Conclusion : **Central nervous effects:** The anxiolytic effects of alcoholic extract of *B. hispida,* showed anticonvulsant activity against pentylenetetrazole-induced convulsion and protected mice against strychnine-induced convulsions, Themethanolic extract of *B. hispida*showed significant antidepressant-like activity in mice, The juice of *Benincasahispida*showed significant activity against symptoms of morphine withdrawal. **Effects on gastrointestinal system:** inhibited gastric ulceration by decreasing the gastric volume and free and total acidity. **Antioxidant effects:** Benincasahispida fruit extract probably inhibit gastric mucosal injury by scavenging the free radicals **Effects on renal system:** extract produced a significant increase ($p<0.001$) in the urinary volume.supplementation with *Benincasahispida*extract significantly lowered the urinary excretion and kidney retention levels of oxalate, protein and calcium. Moreover, elevated serum levels of sodium, creatinine, calcium and phosphorus were significantly reduced by the extracts **Hypoglycemic and hypolipidemic effects:** induced dose dependent decrease in glucose, triglyceride and insulin levels in plasma. It was also increased the glucose uptake from hemidiaphragm

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Dr. RAJAN B. KULKARNI

Dr. S. L. DASARI

Pharmaceutical & Analytical Study of Bilwagarbha Ghruta

Pallavi Gawade

Standardization :

A Pharmaceutical & Physico Chemical Study of Bilvagarbha Ghrita

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Abstract :

*Bilva(*Aegle marmelose*)* is a well-known plant in relation of its multipurpose use of different parts of the plant in Ayurvedic literature. The drug *Bilva* is used by Acharya Sharandhara and Acharya Govinddas for the treatment of *Grahani*. Many formulations of *Bilva* have been described by Acharyas. **Aim:** To prepare *Bilvagarbha ghrita* and to generate Physico chemical profile of the same.**Materials and Method:***Bilvagarbha ghrita* is prepared from the reference of Bhaishjya Ratnavali, Bilva Phala majja and *Masoor kwatha* were prepared. Organoleptic and Physico chemical profile were generated. **Result:**pH value is 6.67, specific gravity is 0.873, ash value 4.6%, refractive index1.4621 %, saponification value224, acidity is 1.03%, iodine value 32,Peroxide value 2, and congealing point 20-22 degree Celsius. **Conclusion:** The present study provides the detail of Bilvagarbha ghrita preparation, its Physico chemical characters which may help in laying down a standard protocol for further research works.

Key words : Aegle marmelose, Bilvagarbha Ghrita, formulations,Grahani, Physico chemical

Analysis Sneha kalpana. {**Ref.**-Bhaishjya Ratnavali 8/554}

Introduction :

The drug *Bilvagarbha ghrita* is one of the classical Ayurvedic medicines where *Bilva*(Aegle Marmelosine (Corr.) Cong.)is used as a main ingredient. Also, properties of *Bilva* have been described by Acharya Bhavmishra. Ripen and unripe fruit have different properties and it acts differently on Dosha.*Bel Phala* (ripe fruit) is used for *Pitta shaman*(neutralizing the acid level).Unripe fruit used for Deepan and Pachan.*Bilva* is used in many forms. Different formulations of *Bilva* like *Bilavadichurna*is used inadministered in digestive disturbances, such as dysentery and diarrhea, Irritable Bowel Syndrome (IBS) and Inflammatory Bowel Disease (IBD). (Deepan Pachan karma.)

In the modern era due to “westernization” of life newer and newer problems are created. These problems are start with gastro-intestinal tract. Additional to this physiological stress is one of the cause to increase prevalence of the disease.

As per W.H.O.survey irritable bowel disease prevalence rate is mostly

Increasing in northern Indian communities. IBD typically affect young people butmay have an incidence with a second pick in later life period. Grahani can becorrelated with irritable bowel disease. It is very important organ of Ahara paka (Digestion) and greatly depend upon its function. The term Grahani-dosha impliesthe malfunctioning of the Agni.

Bilva is widely used drug by the Ayurvedic practioners for the management of Grahani and it shows excellent effect on Grahani.

Materials and Method :

Test drug *Bilvagarbha ghrita* is a pure herbal formulation and consists of three drugs. (Table 1) and reference was taken from Bhaishjya Ratnavali 8/554 from *Grahani Rogadhikar*. All drugs are very common in nature and easily available in market. Drugs were procured from local market and *Bilvagarbha ghrita* was prepared in departmental laboratory at Ayurvedic College Nigadi, Pune.

Pharmaceutical procedure :

It involves manufacturing of *Murchhita ghrita, MasoorKwatha and Bilva Kalka*.

Ingredients of ghrita murchhana

S. No.	Ingredient	Quantity
01.	Cows ghrita	640 gms
	Kalka	
02.	Harataki	40 gms
03.	Bibitaki	40 gms
04.	Amalaki	40 gms
05.	Haridra	40 gms
06.	Matulunga swaras	40 gms
07.	Musta	40 gms
08.	Water	2600 ml

Ingredients of Bilvagarbha ghrita

Sr. No.	Ingredient
1	Murchhita ghrita
2	Masoor kwatha
3	Bilva phala majja

Process of *Ghrita murchhana*preparation (for all 3 samples)

Go-ghrita (640 ml) was taken in clean vessel.Preparation of Matulunga was done by extracting juice (40 ml). All of 5 row drug churna took in vessel andpreparation of kalka was also done by adding Matulunga swaras.After melting ghrita kalka and water was added. Constant stirring was done and temp was maintained till 94 degree Celsius. Sneha siddhi lakshanas was observed.

Process of *Kwatha*preparation(total 3 in batches)

The whole Masoor drug (456 gm) for each batchwere shade dried.And soaked in 4 times (2000 ml) of water for overnight.Next day it was subjected to mild heat with water 7300 ml and continuous stirring without covering its mouth.Reduction was done until the quantity became 1/8th (1830 ml) of the original volume.After desired characters and volume, the Kwatha was filtered through double-folded clean cotton cloth.

Process of preparation of Bilvagarbha ghrita (for all the 3 batches)

Murchhita ghrita (445 gm) was taken in a vessel, heated on mild flame and after appearance of a fumes gas was switched off and allowed to cool as some extent till 80 degree Celsius.Kalka (114 gm) and Masoor kwatha(1830 ml) was added in murchhit ghrita and mixed properly by the help of spatula, then again gas was started. It was kept over Mandagni (mild flam), without lid over it and slowly continuous stirring was done.Heating was done for 3 hours 10 minutes, with constant stirring. Temperature was maintain till 92 degree Celsius.Sneha siddhi lakshanas were observed.

Analytical study

Bilvagarbha ghrita was subjected to organoleptic and physico chemical studies in order to develop analytical profile. The following parameters were carried out in this phase:

- Organoleptic characteristics: Colour, odour, touch taste and form. (Table no.2)
- Physicochemical analysis: Loss on drying, Refractive index, Saponification value, Iodine value, Acid value, Peroxide value, pH, Specific gravity and Congealing point Details are given in table no 5.

Observation and Discussion :

Table 5. 24 showing organoleptic characters for all batch of murchhita ghrita and Bilvagarbha ghrita.

Test	All Batch of MG	All Batch of BGG
Color (Rupa)	Yellow	Reddish yellow
Touch (sparsha)	Snigdha	Snigdha
Odour (Gandha)	Haridradi sweet smell	Bilva fruit sweetish smell
Taste (Rasa)	Characteristic ghrita like	Sweet ghrita like

Pharmaceutical Result :

Table no 1.5 showing pharmaceutical Result of Murchhita ghrita

Sr. no	Test	Batch A	Batch B	Batch C
1	Wt. of goghrita (gms)	640	640	640
2	Wt. of Kalka (gms)	240	240	240

3	Wt. of obtained murchhit ghrita(gms)	560	554	548
4	Wt. of kalka after Sneha paka (gms)	932	920	938
5	Time (Sneha siddhi pariksha)(minutes)	265	230	220
6	Temp (Sneha siddhi lakshanas) (degree Celsius)	92	94	94
7	Loss in ghrita (gms)	80	86	92

Table no 5.20 showing pharmaceutical Result of Masoor kwatha

Sr.No	Test	Batch A	Batch B	Batch C
1	Masoor taken for kwatha (gms)	456	456	456
2	Water taken for soaking (ml)	1830	1830	1830
3	Water taken for kwatha (ml)	7300	7300	7300
4	Obtained kwatha(ml) without residue	1830	1830	1830
5	Time taken for kwatha(min)	195	190	200
6	Temp. for kwatha(degree Celsius)	96	98	96

Table no 5.21 showing pharmaceutical result for Bilvagarbha ghrita

Sr.no	Test	Batch A	Batch B	Batch C
1	Wt. of murchhit ghrita (gms)	445	445	445
2	Wt. of kalka(gms)	114	114	114
3	Wt. of obtained Bilvagarbha ghrita(gm)	377	343	379
4	Wt .of kalka after sneha paka(gm)	225	248	220
5	Time (Sneha siddhi lakshanas(min)	180	190	200
6	Temp (Sneha siddhi lakshanas) (degree Celsius)	94	92	92
7	Loss in ghrita (gms)	68	102	66

Table no 5.22 showing Sneha siddhi lakshanas according to temp. and Bilvagarbha ghrita of all batches (A, B, C)

		Sample A		Sample B		Sample C	
Sr. No	Sneha siddhi Lakshanas	Time (min)	Temp	Time (min)	Temp	Time (min)	Temp
1	Phena shanti	175	94	175	92	155	94
2	Varti formation	155	92	155	94	175	92
3	Agnipariksha	180	92	180	92	180	92
4	Istha Gandha Rasavarna utpatti	185	92	190	94	190	92

Table no 5.38 showing the physicochemical test result for go ghrita, MG, BGG for all the batch

Sr. no	Test	Go-Ghrita	MG (A)	BGG (A)	MG (B)	BGG (B)	MG (C)	BGG (C)
1	Loss on drying(105)	4.9%	2.6%	4.3%	2.8%	4.3%	2.7%	4.6%
2	Refractive index at 40 degree	1.4618	1.4622	1.4620	1.4621	1.4621	1.4622	1.4622
3	Saponification value	221	236	227	239	224	235	223
4	Iodine value	33	34	32	33	33	32	32
5	Acid value(NMT)	1.04	1.05	1.03	1.04	1.02	1.04	1.03
6	Peroxide value	1.96	2.1	2	2.2	2.1	2.2	2
7	pH	6.50	6.37	6.70	6.43	6.68	6.35	6.65
8	Specific gravity at 40 degree Celsius	0.812	0.851	0.824	0.853	0.824	0.853	0.824
9	Congealing point	18 to 20	20 to 22	19 to 21	20 to 22	20 to 22	19 to 21	20 to 22

Table no 5. 39 showing average values of physiochemical test for murchhita ghrita and Bilvagarbha ghrita

Sr. No	Test	Murchhita ghrita (Average value)	Bilvagarbha ghrita (Average value)
1	Loss on drying (105)	2.8%	4.6%
2	Refractive index at 40 degree	1.4621	1.4621
3	Saponification value	236	224
4	Iodine value	33	32
5	Acid value (NMT)	1.04	1.03
6	Peroxide value	2.2	2
7	Ph	6.38	6.67
8	Specific gravity at 40 degree Celsius	0.853	0.873
9	Congealing point	20-22	20-22

Discussion :

The process of murchhana is essential and should be followed compulsorily to avoid any ill effects of Sneha **Ama Doshaharatva**.Probably the natural Guna like Guru, Snigdha, Sandra, Manda, Hima etc. may change after murchhana and natural bond between molecules of ghrita may differ after murchhana and it's become comparatively lighter to digest than uncooked ghrita.**Bilva fruit kalka**

Bilva fruit is used as anti-diarrheal, anti-microbial, anti- inflammatory and anti-ulcerative.

Masoor : Lentil is used as strengthening and stimulating article in food. Lentil soup used in simple diarrhea and also used in constipation.

For pharmaceutical procedure:-

For Bilvagarbha ghrita preparation ghrita murchhana and Bilvagarbha ghrita prepared individual 3 batches as Batch A , Batch B and Batch C. all observations are shown in the table. Loss in preparation of murchhita ghrita and Bilvagarbha ghrita was may be due to bumping of ghrita, absorption of ghrita in kalka and adherence of ghrita to the vessel during siddhi lakshanas of ghrita and during filtration to the cloth.

Analytical study result :

Organoleptic test:- for goghrita , murchhita ghrita, Bilvagarbha ghrita inobservation table, no significant difference are observed in all batches of MG and BGG.

Analytical tests for murchhita ghrita and Bilvagarbha ghrita

Loss on drying :

In present study – for goghrita **4.9%** for MG batch A, B, C are 2.7%, 2.8% and 2.7% and the average is **2.7%.**For Bilvagarbha ghrita batch A, B, C are 4.6%, 4.3%, 4.6% the average is **4.6%.** Value of L.O.D. increase in BGG because of addition of the contents during sneha paka.

Refractive index :

The study of goghrita **1.4618**. For MG batches A, B, C are 1.4622, 1.4621, and 1.4622. The average is **1.4622**.For the Bilvagarbha ghrita batch A, B, C are 1.4620,1.4621, 1.4621 are the almost equal. No significant change in it. The average is **1.4621**.The refractive index of MG slightly higher than Goghrita, which indicatesthat some active substance of MG incorporated into goghrita. The average value of MG and BGG are equal.

Saponification value:

The study shows –for Goghrita **221**, for MG batch A, B, C are 236,239,235. So average is **236.6** and for Bilvagarbha ghrita batch A, B, C are 227,224,223. In this no significant changes found, the average is **224.6.**BGG value decrease as compare to the MG, due to decrease molecular wt. MG value is higher than Goghrita and BGG. Which shows MG is easily absorbed

and digest in body. On other side BGG also easily absorbed and digest as compare to Goghrita.

Iodine value :

The study shows – for Goghrita **33,** for murchhita ghrita batch A, B, C are 34, 33, and 33. The average is **33**. For Bilvagarbha ghrita batch A. B, C are 32, 33, 32 .the average is **32**. It indicates that unsaturated fatty acid are decreased in BGG.

Acid value:-The study shows – for Goghrita **1.04**, for murchhita ghrita batch A, B, C are 1.05, 1.04, and 1.04. The average value is **1.04** and Bilvagarbha ghrita batch A, B, C values are 1.03, 1.02, and 1.03. The average value of BGG is **1.03.**

Peroxide value :

The study shows – for Goghrita **1.96,** for murchhita ghrita batch A, B, C are 2.1, 2.2, 2.2, the average value is **2.2.** For Bilvagarbha ghrita batch A, B, C values are 2, 2.1, 2. The average value of BGG is **2.**

pH :

The study shows- for Goghrita **6.50**, for murchhita ghrita batches A, B, C values are 6.37, 6.43, and 6.35. The average value of MG is **6.38**. For Bilvagarbha ghrita values of batch A, B, C are 6.70, 6.68, and 6.65. The average value of BGG is **6.67**. In all values of BGG is no significant difference.

Specific gravity :

The study shows- for goghrita **0.812**. For murchhita ghrita batch A, B, C values are 0.851, 0.853, and 0.853. The average value is **0.853**. Here the specific gravity increased. In Bilvagarbha ghrita batch A, B, C values are 0.824, 0.824, and 0.834. The average value of BGG is **0.824.**

Congealing point :

The study shows – for Goghrita **18-20 degree Celsius**. For murchhita ghrita batch A, B, C values are 20-22, 20-22, and 19-21 degree Celsius. The average value for MG is **20-21 degree Celsius.** For Bilvagarbha ghrita batch A, B, C values are 19-21, 20-22, and 19-21 degree Celsius. The average value **19-21degree Celsius.**

Conclusion :

As per study to standardize every step of preparation of Bilvagarbha ghrita which achieved by repeating the every process of including in pharmaceutical study.

As per the study to analyze the finished product of Bilvagarbha ghrita by using pharmaceutical and analytical standard done in section of observation and result which taken as its average value taken as standard. This mean value is given below:-

Loss on drying-4.6, Refractive index-1.462 , Saponification value-224 , Iodine value -32 ,

Acid value -1.03 , Peroxide value – 2 , pH- 6.67 , Specific gravity- 0.873, Congealing point- 20-22.

The study shows fulfilment of Aim. So, study shows all standard parameters for the preparation of murchhita ghrita and Bilvagarbha ghrita.

Bilvagarbha ghrita is the important widely prescribed Ayurvedic formulations. In the present study we have tried to standardize the quality control aspects of it. The results of the present study will definitely help in standardization and quality evaluation of Bilvagarbha ghrita.

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''Effect of *Vasavleha* in *Tamak Shwasa* (Bronchial Asthma) Disease''

Yogesh Patil

Arati Dubewar

Clinical :

"Effect of *Vasavleha* in *Tamak Shwasa* (Bronchial Asthma) Disease"

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ABSTRACT: -

The *Shwasa*(Asthma) disease is also become a major health problem of the society. Along with the other causative factors mostly the environmental pollution playing a major aggravating factor of the *ShwasaVyadhi.* Different dosage forms of *Vasa* (*Adhatodavasica*) are recommended to treat *TamakShwasa* (Bronchial Asthma). These formulations were prepared by keeping the ingredients same to evaluate their efficacy in *TamakShwasa*(Bronchial Asthma). In reference to this, '*Vasavleha*' *kalpa*was chosen to use *in TamakShwasa* (Bronchial asthma) as a *VyadhiharaKalpa* (Curative treatment).

*Vasavleha*was administered in 30 patients for 12 weeks in a prescribed dose. Aftercompletion of this treatment again evaluation of general symptoms, physical parameters & otherinvestigations were done. All data generated & collected during the study was subjected tostatistical analysis to reach to final results & conclusions. Out of the 30 patients included in thestudy, none patient showed total relief in symptoms, 21 patients were markedly improved (50-100% relief) while 09 patients showed improvement (25-50% relief). No one patient remainedunchanged. On follow up study of *TamakShwasa*in all 30 patients over a period of 06 monthsshowed that 22 patients had no attack of *TamakShwasa*while 08 patients had attack of *TamakShwasa*once in 06 months. This proved sustainability of effect of *Rasayana*this formulation. Thus,it is observed that *'Vasavaleha'* worked as *Vyadhihara*as well as *Rasayana*(Curative&rejuvenate treatment). It enhances the quality of *Dhatus* & this performs its *Vyadhinashana*functions. It gives strength to the *PranavahaStrotas*, thus recurrences of Respiratory tract infectionsare also reduced.

Key-Words: *Shwasa*, *TamakShwasa*, *Vyadhihara, Rasayana, Shwasahara*

INTRODUCTION :

*Ayurved*is the science of life. It is evergrowing eternal health science. It isconsideredas the oldest documented form ofhealth care system on the planet.*Bhaishajyakalpana*is the science whichdeals with preparation of various Medicinein details. It explains various methods ofprocessing to convert the drug into differentformulations into more palatable form withhigher shelf life. Herbal and Herbomineralformulations are prepared in *Ayurveda*namely *Swaras, Kalka, Kwath, Hima, Phanta,Churna, Avleha, Sneha, Sandhan, Satva*etc.[(1)]

To evaluate the bio-pharmaceutics, Vasa (*AdhatodaVasica*) were selected as drug of choice. In *Harita Samhita*, while narrating the importance of *Vasa*, *Acharyas* mentioned its *Kasahara* (Expectorant),*Raktapitta hara* (Bleeding disorder) and *Kshaya hara* (Tuberculosis), but did not give much emphasize on its *Shwasa hara* (Bronchodilatory) effect. There is no evidence of *Avaleha Kalpana* of *Vasa* during the period of *Samhita*. Later *Madanpala Nighantu* added the *Shwashara* (Bronchodilatory) effect of *Vasa*.[(2)]

*TamakShwasa*i.e. Bronchial asthma is a common disease affecting 10 - 20 % of the population & there is an evidence that the prevalence of *TamakShwasa*AS is increasing, but the reason for this being unknown. In various institutions of medicine, the study about the treatment of *TamakShwasa*is going on over a larger period of time however still no permanent solution regarding the control & treatment of *TamakShwasa*has not been established till today, so this is also an effort, which may be some sort of help for the management of this *vyadhi.*[(3)]

Materials & Methods:

Type of Study: Open uncontrolled (Single-Arm) Clinical Study

Criteria for Selection of Patients

A) Inclusion Criteria

1) Age group between 20 to 60 years of age

2) Sex- Both males and females

3) Patients having signs and symptoms of*TamakShwasa*(Bronchial Asthma) in*Awegawastha* (non-acute phase)

B) Exclusion Criteria

1. Patients having age below 20 years andmore than 60 years.
2. Patients having asthma or breathlessnessdue to renal or cardiacCauses
3. Patients having acute attacks or statusasthmatics stage
4. Patients having other systemic disorderslike Diabetes mellitus,Carcinoma, PulmonaryT.B., hepatitis
5. Patients having HIV, AIDS & otherSTDS

Plan of Clinical Trial :

Number of Patients : Total number ofpatients included in this study was 30.

Drug : *Vasavaleha*wasprepared in Pharmacy of *Rasashastra*&*Bhaishajya Kalpana* Dept.

Dose : 1 Pala (4 tola = 40gms) in twodivided dosage, with empty stomach

Duration of Treatment : 12 weeks

Follow up : Was taken after every oneweek.

Diet: Patient's regular diet

Criteria for the Assessment of Patients & Results of the Treatment:

The efficacy of the therapy was assessed on the basis of subjective as well as objective criteria. Most of the symptoms & signs of *Tamak Shwas* (Bronchial asthma) described in *Ayurved* are subjective in nature. Hence multidimensional scoring system was adapted for statistical analysis and to give results on subjective parameters.

Score was given according to the severity of symptoms as follows :

A] *Shwas - Kashtata*(Dyspnoea)

B] *Kasa (*Coughing)

C] *AasinoLabhateSaukhyam*(Relief in sitting posture)

D] *Peenas*(Nasal discharge)

E] *Anidra*(Sleeplessness)

F] *Sweda*– Pravritti (Perspiration)

G] *Ghurghurakam*(Rhonchi)

Investigations :

Following investigations were done forevery patient before starting the treatment & after completion of the treatment.

A) Blood Investigations: Haemoglobin,R.B.C., ESR, TLC and DLC

B) Lung Function Tests (LFT)
   1. Respiratory Rate (R/R)
   2. Expansion of chest (EOC)
   3. Breath Holding Time (BHT)
   4. Inspiration Time
   5. Expiration Time

Patients undergoing trial were examinedclinically at every follow up to maintain arecord of the same. Record and follow up ofall the patients included in the trial wasdocumented and maintained in the caserecord form.

Assessment of Effect of Therapy :

The effect of the therapy was assessed interms of cured (100% relief), markedlyimproved (50% to 100% relief), improved(25% to 50% relief) and unchanged (Lessthan 25% or no relief).All the data generated & collected duringthe study was subjected to statistical analysisto reach final results & conclusions.

A) For objective Parameters(Quantitative Data) (i.e. Improvement inPhysical Parameters & Improvement inHematological parameters) parametrictests are applied i.e. student's't' test.

B) For subjective Parameters (QualitativeData) (Relief in Symptoms) Non -Parametric test is applied i.e. Wilcoxonsinged Rank Test

Results :

Clinical Assessment of Patients - The patients suffering from *TamakShwasa*(Bronchial asthma) which were included inthe trial had to undergo clinical examinationat every follow up of one week for clinicalassessment of the improvement in signs &symptoms. For the assessment of patients,the specific criteria were used which has beenalready described in Materials & Methods(Design of Study). On the basis of thosecriteria the statistical analysis ofimprovement in symptoms & signs wasdone.

Percentage of Relief in General Symptoms Score –

1) *Shwas - Kashtata*- 76.12%

2) *Kasa*- 77.14%

3) *AasinoLabhateSaukhyam*- 70.17%

4) *Peenas*- 78.43%

5) *Anidra*- 55.56%

6) *Sweda - Pravritti*- 62.50%

7) *Rhonchi* - 65.63%

Table No: 1 Showing Effect on Physical Parameters of Patients of *TamakShwasa*

Sr. No.	Physical Parameters in their respective Units	Mean of Difference ± SD	S.E.	t_{29}	P
1.	Respiratory Rate(R/R)	4.20 ± 1.43	0.26	16.1	**<0.001 Highly significant**
2.	Expansion of Chest(EOC)	1.50 ± 0.69	0.13	11.54	**<0.00 Highly significant**
3.	Breath Holding Time(BHT)	2.70 ± 1.26	0.23	11.74	**<0.001 Highly significant**
4.	Inspiration Time	0.93 ± 0.36	0.07	13.29	**<0.001 Highly significant**
5.	Expiration Time	1.03 ± 0.41	0.07	14.61	**<0.001 Highly significant**

Table No 2. Effect on Haematological Investigations of Patients of *TamakShwasa*

Sr. No.	Haematological Investigations in their respective units	Mean of Difference ± SD	S.E.	t_{29}	p
1.	Haemoglobin (Hb gm%)	0.44 ±0.54	0.10	4.40	**<0.001 Highly significant**
2.	Total R.B.C.^{s} (TRC)	0.11 ± 0.14	0.03	3.67	**<0.001 Highly significant**
3.	Total Leucocyte Count (TLC)	200 ± 954.12	174.11	1.15	**>0.05 Not significant**
4.	Eosinophil Count	1.43 ± 1.77	0.32	4.47	**<0.001 HighlySignificant**
5.	Neutrophil Count	0.47 ± 6.38	1.16	0.41	**>0.05 Not significant**
6.	Lymphocyte Count	1.67 ± 8.07	1.74	1.14	**>0.05 Not significant**

Table No: 3. Statistical Analysis of Symptoms of Patients of *TamakShwasa*
Wilcoxon-matched-pairs signed-ranks Test

Sr. No.	Symptom		Mean	SD	SE	Sum of all Signed Ranks	No. of Pairs	Value of 'Z'	p
1.	***Shwas-Kashtata*** (Dyspnoea)	BT	2.23	0.43	0.08	465.0	30	4.78	**<0.001 Highlysignificant**
		AT	0.53	0.51	0.09				
		Diff.	1.70	0.54	0.097				
2.	***Kasa***(Coughing)	BT	2.33	0.48	0.09	465.0	30	4.78	**<0.001 Highlysignificant**
		AT	0.53	0.51	0.09				
		Diff.	1.80	0.48	0.09				
3.	***AasinoLabhate Saukhyam***	BT	1.90	0.40	0.073	378.0	27	6.42	**<0.001 Highlysignificant**
		AT	0.57	0.50	0.092				
		Diff.	1.33	0.66	0.12				
4.	***Peenas***	BT	1.70	0.88	0.16	378.0	27	6.42	**<0.001 Highlysignificant**
		AT	0.36	0.49	0.089				
		Diff.	1.33	0.71	0.13				
5.	***Anidra***	BT	1.50	0.51	0.09	325.0	25	4.37	**<0.001 Highlysignificant**
		AT	0.67	0.66	0.12				
		Diff.	0.83	0.37	0.07				

6.	***Sweda-Pravritti***	BT	1.07	0.58	0.11	210.0	20	3.92	**<0.001 Highlysignificant**
		AT	0.40	0.50	0.09				
		Diff.	0.67	0.48	0.09				
7.	**Rhonchi**	BT	2.13	0.57	0.104	465.0	30	4.78	**<0.001 Highlysignificant**
		AT	0.73	0.64	0.12				
		Diff.	1.40	0.50	0.09				

Table No. 4 Showing Total Effect of Therapy on 30 Patients of *Tamak- Shwas*

Sr. No.	Total Effect of Therapy	No. of Patients	Percentage
1.	Cured (100%)	00	**0%**
2.	Markedly Improved (50-100%)	21	**70%**
3.	Improved (25-50%)	09	**30%**
4.	Unchanged (0-25%)	00	**0%**
	TOTAL	30	**100%**

Observation of Recurrences of Shwas- Vega within period of 6 months

Recurrence of *shwas* was observed in all 30 patients on follow up study of six months.22 patients (73.3%) had no attack of *shwas* up to six months while 08 patients (26.67%) had attack once or twice with in the period of 6 months.

DISCUSSION :

In *Tamak-Shwas* the imbalanced status of *Vata&KaphaDosha*remains in *Lina - Awastha. Pranavahastrotas*is the main place of manifestation of the disease in *Vegawastha*(acute phase). *Charakacharya* has stated the *ShodhanaChikitsa*for *Balavan*patient having dominance of *KaphaDosha*while *Shamana*in the form of *Tarpana*or *Brimhanachikitsa*for *Hinabala* patient having dominance of *Vayu Dosha.Shamana*is advised for *Bala&Vriddha* also. Diet & medicine in *Shwasa*should have properties such as *Ushna, Vatanulomana,Vata - Kaphaharaka*& mostly *Anilapaham.*[4,5,6]

Shwas Kashtata, Ghurghurakam(Rhonchi*), Peenas&Kasa*were the mostprominent symptoms present in the patients included in this study. *Vasavleha*was given to the patients mostly inthe *Awegwastha*(non-acute phase) for 12 weeks which showed significant subside ofsymptoms which were shown by percentageof relief in symptoms & by statisticalanalysis which was highly significant.The onset of action of this drug couldbe in the very first week, symptoms started to fall from the first week & improvementwas noticed in the further weeks oftreatment. Hence it should be continued to furthermore, to reduce the risk of relapse &severity of *TamakShwasa*.

Out of the 30 patients included in the study, none patient showed total relief in symptoms, 21 patients were markedly improved (50-100% relief) while 09 patients showed improvement (25-50% relief). No one patient remained unchanged. On Follow Up study of six months in

all 30 patients for observation of recurrence of *Shwas - Vega* showed that 22 patients (73.33%) had no attack of *shwas* while 08 patients (26.67%) had attack once in the period of 6 months. It was done to prove the sustainability of effects of *Rasayana*.

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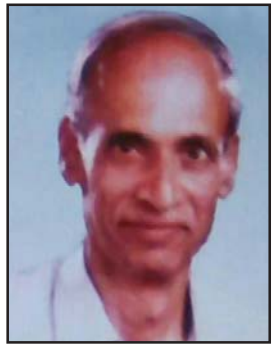
Assessment of role of Patra-Pottali-sweda in Osteo-Arthritis

Smita Mohole



Ramesh Gangal

Review :

Assessment of role of Patra-Pottali-swed in Osteo-arthritis

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Abtract :

Osteo-arthritis is becoming a leading cause of morbidity in all age groups. Analgesics, anti inflammatory drugs, NSAIDs, steroidal analgesics are the key modalities in the treatment of the same. They are known to cause toxicity in the vital organs of human body mainly the kidneys. Chronic renal failure, acid peptic diseases are some to name. Patrapottali Sweda of Vedanasthapak Gana one of the Ayurvedic convincing modality. This study is targeting the mode of action of Patra-Pottali-Sweda in details.

Key words :- Osteo- arthritis, Sandhigat-Vaat, Patra-Pottali-Sewda.

INTRODUCTION :

In today's mechanical era, every living being is bound to undergo 'n` number of blunt injuries. This in turn results into irreversible degeneration leading to osteo-arthritis.

Worldwide, osteoarthritis (OA) is estimated to be the fourth leading cause of disability. Most of this disability burden is attributable to the involvement of the hips or the knees. OA is strongly associated with ageing and the Asian region is ageing rapidly. OA is the precipitating diagnosis for more than 90% of the increasing number of total hip or knee joint replacement operations being undertaken worldwide.[1]

The treatment module available for osteo-arthritis,as per modern medicine is analgesics, anti inflammatory drugs, NSAIDs, steroidal analgesics. The route of administration is usually oral or injectable. These medicines give instant relief but have very grave side effects and complications. They are known to cause toxicity in the vital organs of human body mainly the kidneys. Chronic renal failure, acid peptic diseases are some to name.

It is the need of hour to come to some equally effective alternative treatment module which will not cause toxic side effects afterwards on the body.

As per Ayurved, Osteo-arthritis is due to the vitiation of Vaat Dosha,leading to the symptoms .Hence for Vaatshamana, is the best said treatment .

Patr-Pottali-Sweda is a variety of sudation performed with the help of heated bolus bags filled with cutting of leaves of certain medicinal plants duly prepared for the purpose. Eranda,Vasa,Nirgundi are some to name.[2]

PURPOSE OF THE STUDY :

Sandhi-shool in context with osteoarthritis is becoming a major cause of morbidity in elderly patients. Though modern medical science has many medicinal as well as surgical remedies to tackle this problem, none of them is free from side effects .It's the need and also the responsibility of Ayurved fraternity, to assess a precise mode of action of Patra-Pottali-Sweda.

AIM AND OBJECTIVES :

AIM : Assessment of role of Patra-Pottali-swed in Osteo-arthritis.

OBJECTIVES : To find out a treatment option for osteoarthritis :

- To maintain the routine activities of patients symptom-free.
- To slow down the progress of the disease.
- To postpone the surgical intervention in cases of severe osteo- arthritis.

DISEASE REVIEW

OSTEOARTHRITIS KNEE / O. A. KNEE[4]

Knee is the victim of weight bearing in human being. It is the most suffered joint as far as degeneration is concerned.

Symptoms of OA knee :

Pain ,Stiffness, Crepitus, Hard swellings ,Soft swellings . i) Knee giving way ii) Knee not moving as freely or as far as normal iii) Knees becoming bent and bowed iv) The muscles around joint looking thin or wasted.v) Its unusual, but some people have pain in their knee that wakes them up at night. vi) Pain will vary depending on how active the patient had been but sometimes for no clear reason.vii) Some people find that changes in the weather.

Causes of O. A. knee :

It is common in Late 40s or older peoplev Femalesv Overweight peoplev Parents or siblings have had osteoarthritisv People with history of knee injury, for example a torn meniscus-The person having an operation on knee, for example a meniscectomy (to remove the damaged cartilage) or repairs to cruciate ligaments Person having a hard, repetitive activity or a physically demanding job, for examplev farming or mining Have another type of joint disease which has damaged your joints, for example- rheumatoid arthritis or gout.

METHOD OF PREPARATION OF PATRA- POTTALI :

The fresh leaves of plant are to be first cut into small pieces and are to be fried in a sauce pan over a gentle fire duly added with Til-tail till they assume a reddish colour. This mixture is then to be divided into two equal parts and put into two separate pieces of cloth and tied up into two boluses. The cloth used is of cotton and new one for every patient. The same pieces cloths are used for the same patient throughout the treatment. These boluses are

then to be put into a sauce pan together with a sufficient quantity of Til-tail and are heated over a gentle fire for a few minutes. When sufficiently hot, one of them is to be taken out and applied to the affected joint of the patient at a temperature quite comfortable to him and gently massaged. When the bolus lost its heat, it is to be turned into the pan to replenish its lost heat and the one remaining in the plant is to be taken out and massage is continued with it. The procedure is to be repeated several times. It is to be continued for a period of 15-20 minutes or more according to the severity, till profuse perspiration appears. It is then to be cleaned with a piece of cloth. The procedure is to be repeated daily for a week[2]

Probable mode of action of Patra-Pinda-Sweda

It can be explained under following headings:

Thermal effect :

Diffusion through the skin is a temperature dependent process (According to Kligman), so raising the skin temperature will enhance the Transdermal delivery of various drugs by increasing skin permeability, body fluid circulation, blood vessel wall permeability, drug solubility. External heating will dilate the penetration pathways in the skin, increases kinetic energy and movement of particles in the treated area and facilitate drug absorption. Local heating of the cutaneous tissues doesn't generally affect the body core temperature. However will result in a local increase in subcutaneous blood flow rather than a body wide redistribution of systemic blood flow. Heating the tissue results in increased blood flow, increased metabolic activity and stimulation of neural receptors in the skin or tissues and having many other indirect effects.

Procedural effect :

Massage is exceedingly beneficial to the skin as it works directly on the lymphatic system. This system is supplementary to the blood vascular system and offers an alternative route for the return of tissue fluid to the blood stream. By stimulating lymphatic flow and generating heat through friction (rubbing) and application of the oils, massage cleanses and vitalizes the body without causing the build-up of toxins. Thus oil massage quickens the circulation of blood and lymph and dislodges the toxins and increases the vitality of the tissues.

Drug effect :

The Nirgundi Patras used for the Patra Pottali Sweda is Vatashamaka, Vedanasthapak and has Ushna Veerya,, and Laghu Guna. Thus the drug acts on the Vata directly. [3]

CONCLUSION :

From the above discussion it can be clearly concluded that Patra-Pottali-Sweda is convincing option :

- To bring down the morbidity due to Sandhi-shool.
- To maintain the routine activities of patients symptom-free.
- To slow down the progress of the disease.
- To postpone the surgical intervention in cases of severe osteo- arthritis.

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Efficacy of Pranayama on Stress Induced Moderate Hyperetension

A. T. Deshmukh

Sangita Nimbalkar

Clinical :

Efficacy of Pranayama on Stress Induced Moderate Hyperetension

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Research Abstract -

Yoga is the ancient Science of BhartiyaSanskruti which gives benefits physical & mental relaxation to every individuals. Now a day's stress factor is more common in every individuals. Yoga is the spiritual path that reduce Blood Pressure through reducing stress increasing Parasympathetic Activation & Altering Baro-Receieptor sensitivity. However despite review on Yoga & Cardio-Vascular Diseases. I come to conclusion that, due to stress & anxiety Pranayama is the best treatment for reducing Hypertension.

AIM – To find out the effect of Pranayama on Moderate Hypertension.

MATERIALS & METHODS -Fifty (50) patients having B.P. 140 to 160 mmHgsystolic &diastolic 90 to 100 mmHg were monitored weekly.

DURATION –Pranayama4-5 minutes per session twice a day.

DISCUSSION –Pranayama is best exercise for Cardiovascular system which gives supplementation of oxygen to heart that means expansion of lungs due to Inspiration, Deep Breathing expands alveoli and which expiration alveoli contracts the whole oxygen goes to heart. It improves the Parasympathetic Activation which lowers the Hypertension and I found that in three months the anti-hypertensive drugs reduction in their while monitoring Blood Pressure weekly. I stopped anti-hypertension drugs but there is no increase in Blood Pressure this is only due to effect of Pranayama.

CONCLUSION –Pranayama acts on Mental & Physical Activation so lowers the Blood Pressure.

KEYWORDS –Pranayama, Ayurveda, B.P.

1) Introduction :

Today's problems are due to stress&no peaceful mind due to fast food & everyone want to achieve the goal of money so in this matter automatically stress arises & this converts into Hypertension unknowingly. There are so many reasons of Hypertension. One of the most common cause of hypertension is stress & other reasons are dieatoryhabits, alcohol consumption, spicy, chilly, and salty contain food &always use of nonveg. Lack of exercise &sedentary work.

Patient comes in Swasthavritta O.P.D. for hypertension. I am advising only Pranayama to control the only stress induced moderate hypertension.

Yoga is an ancient science.In yoga practice book, yoga means co-ordination of individuals (Jeevatma&Suprem Soul). Effects of yoga specially are on body &mind that means physical, mental, emotional & spiritual dimensions will be control due to Yoga.

Pranayama is one of the component Asthang Yoga. Prana is that vital force which provides energy to human. Prana is the medium that links the body and soul.

Yama means to control. Thus Pranayama is the seriesof technique that aim at stimulating &increasing vital energy in the body by directing to particular area for special purpose. I am using Pranayama for only stress induced moderate Hypertension.

2) Material & Methods :

a) Fifty (50) patients having systolic B.P. 140 to 160 & mmHg &Diastolic B.P. 90 to 100 mmHg. And B.P. were measured weekly.

b) Inclusive Criteria – Stress induced moderate hypertension.

c) Exclusive Criteria – Secondary hypertension i.e. Diabetes Mellitus, Paralysis, Facial Palsy, Jaundice, Anemia, Cerebral Atrophy.

3) Duration of Pranayama :

For the patient of Hypertension, I am carrying Pranayama Classes in Swasthavritta Department of our college. Patients were guided me for first Preparatory exercise & then after Preparatory exercise. I advised patients toBreathing exercise as below.

The beginner should practice slowly & deeply both inhale& exhale phase wise& hold the breath phase wise. The period of breath stopping should as per below given chart.

First 1.5 months (Starting Phase)			**After 1.5 to 3 months (Progressive Phase)**		
Purak	**Kumbhak**	**Rechak**	**Purak**	**Kumbhak**	**Rechak**
8 seconds	8 seconds	16 seconds	8 seconds	32 seconds	16 seconds
5 cycles per session for twice a day			20 cycles per session for twice a day		

4) Discussion :

Pranayama deals with Purak, Kumbhak & Rechak.

Purak – i.e. controlled inspiratory phase

Rechak – This term is applied to the phase of controlled suspension of breathe.

Kumbhak - Either fulfill or empty. These phase are concerned with lungs.

There 2 are types

1) Antah Kumbhak : This is a suspension of breathe after full expiration.

2) Bahih Kumbhak : After expiration again inspiration phase arises between. This

hold the breath according to capacity of person.

By using this Pranayama stage blood circulation regulates due to supplementation of oxygen to Heart that means expansion of wings due to inspiration in deep breathing, alveoli expands &which expiration alveoli contracts in this phase whole oxygen goes to Heart. Breathe should be exhaled in rhythmic flow once in a second should be held up effortlessly. Duration – 60 times in 1 minutes & 300 times in 5 minutes & advised for practice to patient & advised for prolonged the duration as per fitness.

(For Statistical Data)

1) Sexwise classification - the patients Male - 27 Female – 23

2) Agewiseclassification

51-40 yrs.	41-50 yrs.	51-60 yrs.
12	23	15

Age30-60 yrs.

B. P. 140-160mmHg systolic B.P.

90-100mmHg diastolic B.P.

3) Follow up Chart Monthly.

1stFollow up – Stopped an hypertensive tablet.

1stFollow up 1 Month	42 patients tab. stopped B.P. range & 130-140 mmHg, 80-90 mmHg
	8 patients remained same because they are having history of Alcohol and portal hypertension B.P. range or 140-160 mmHgand 90-100mmHg.
2ndFollow up 1 Month	44 patients tab stopped.B.P. range as above.
	6 patients same as it is
3rdFollow up 1 Month	Range of 130-90 mmHg – 44 patients.
	140-150/80-90mmHg 6 patients.

4) Holding Breath Capacity :

Note : This chart flows suggest that age 51-60 yrs. group had got more result than age group 41-50 yrs. and as well as 31-40 yrs. Age group have good result of Pranayama

Prakruti Wise : (Constituency of Patients)

Vataj – 06	Pittaj – 08	Kaphaj – 06	Vatapittaj – 14
Pitta kaphaj – 04	Vatakaphaj – 06	Sannipataj – 06	(Tridoshaj)

The patients of pittaj and vatapittaj, pitta kaphaj got better result in third follow up.The patient having constituency (Prakruti) of vataj and kaphaj has got result in 1st month. Lowered the anti-hypertensive and blood pressure in normal phase according to constituency (Prakruti). This chart shows that Pranayama is most effective in vataj constituency (Prakruti) and pittaj is less effective.

Here Pranayama stimulates the body, mind & Blood pressure comes in normal phase. Yoga is the beneficial therapy for control the hypertension. Statistical Data as per PowerPoint Presentation.

5) Conclusion :

Pranayama of Yoga- type is most beneficial to normalize the Blood Pressure. It is costless therapy. Anyone can do Pranayamaanywhere. Patients dependents on anti-hypertensive drugs are free from it. This is the most benefit of my study.

6) Scope of Further Study : Effect of Anulom Vilon on Serum Cholestrol.

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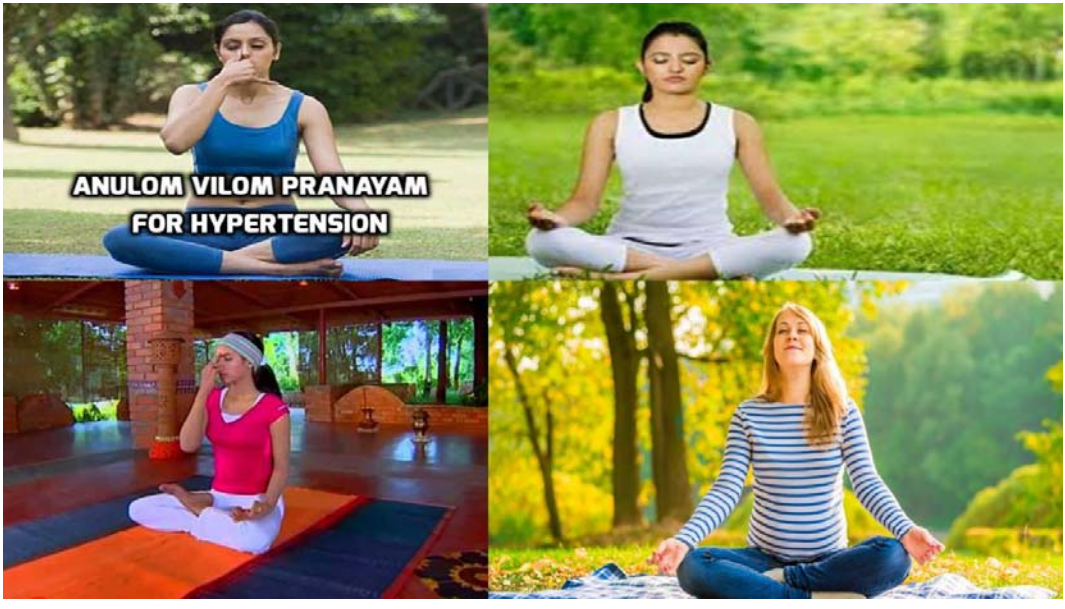
आयुर्वेद



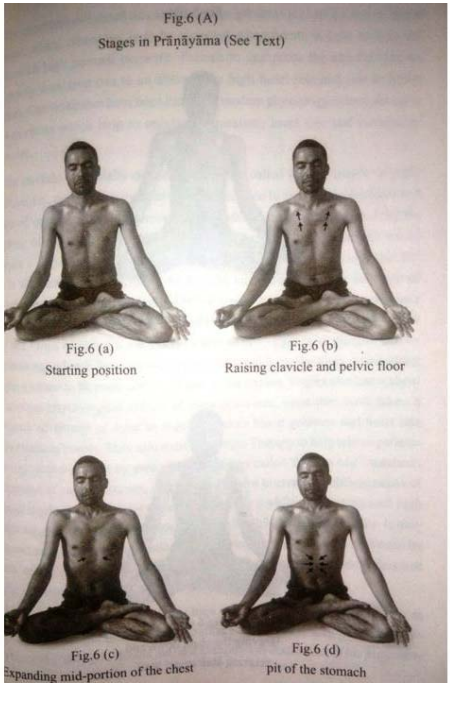


Fig.6 (A)
Stages in Prāṇāyāma (See Text)

Fig.6 (a)
Starting position

Fig.6 (b)
Raising clavicle and pelvic floor

Fig.6 (c)
Expanding mid-portion of the chest

Fig.6 (d)
pit of the stomach

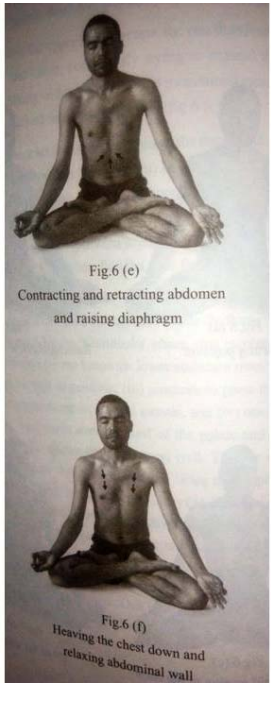


Fig.6 (e)
Contracting and retracting abdomen
and raising diaphragm

Fig.6 (f)
Heaving the chest down and
relaxing abdominal wall

Table 1: Sexwise Classification.

Sex	Total Distribution	Percentage
Male	27	54%
Female	23	46%

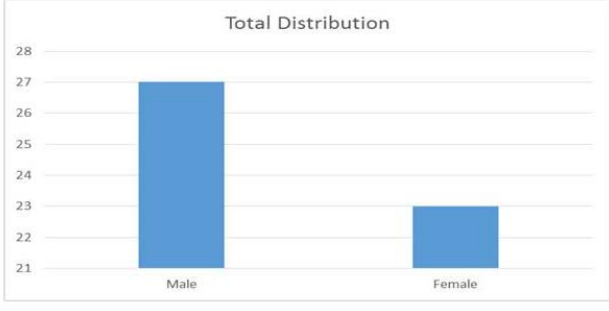


Table 2: Agewise Distribution.

Age Wise	Male	%	Female	%	Total
30-40 yrs.	12	44.44%	10	43.47%	22
41-50 yrs.	9	33.33%	9	33.33%	18
51-60 yrs.	6	22.22%	4	17.39%	10

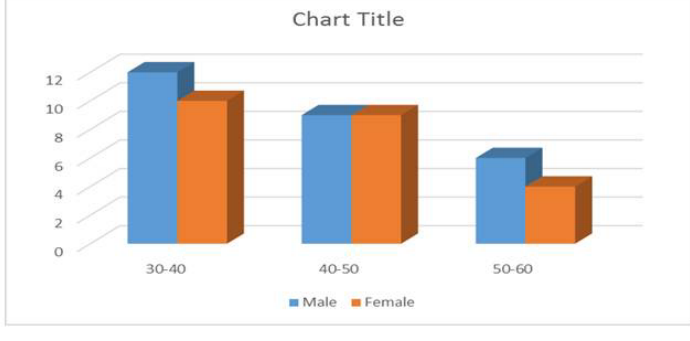
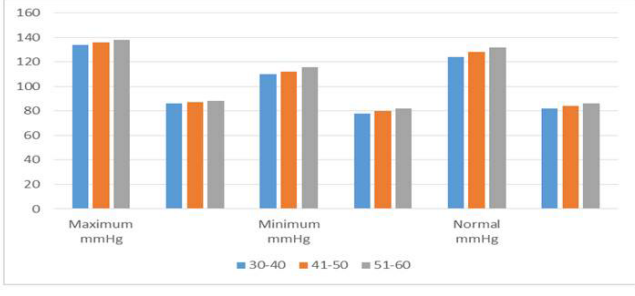


Table 3: SBP & DBP

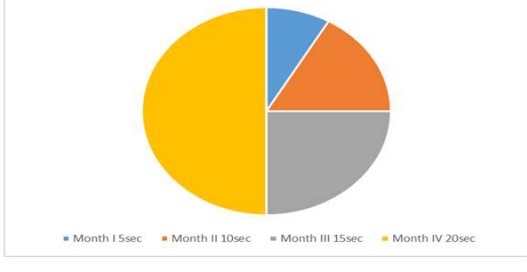
Age	Maximum mmHg		Minimum mmHg		Normal mmHg		x
30-40 yrs.	134	86	110	78	124	82	-4
41-50 yrs.	136	88	112	80	128	84	0
51-60 yrs.	138	88	116	82	132	86	4



Z = X-X/SD = 4/2.02 = 1.98

Table 4: BP in Sec.

Month I 5sec	Month II 10sec	Month III 15sec	Month IV 20sec
30	60	90	180



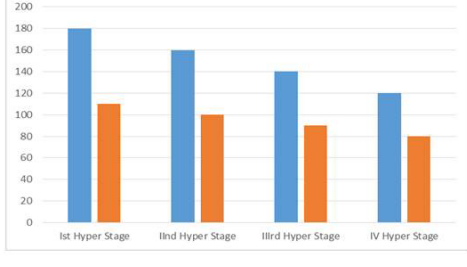


Table 5: Prakrutiwise Table.

Index	Prakruti Wise	No. of Hypertension	Tally Mark	Frequency	C.F.
1	Vataj	6	IIIII I	6	6
2	Pittaj	8	IIII III	8	14
3	Kaphaj	6	IIIII I	6	20
4	Vatapittaj	14	IIII IIII IIII	14	34
5	Pittakaphaj	4	IIII	4	38
6	Vatakaphaj	6	IIIII I	6	44
7	Sannipataj	6	IIIII I	6	50

Sr.No.	BP before Pranayam X1	BP after Pranayam X2	BP Difference X1-X2=x	Square
1	122	120	2	4
2	122	118	4	16
3	120	115	5	25
4	115	110	5	25
5	126	122	4	16
6	130	130	0	0
7	120	116	4	16
8	126	124	2	4
9	128	124	4	16

$t = X\text{-}0/(S/n)$

$t = 3/0.58 = 5.1 > \text{highly}$

THANK YOU...

Study of Developmental Changes in the Adolescents Girls and its Relation with Sharir Prakruti

Sheetal Pawar

Manisha Bhalsing

Study of Developmental Changes in the Adolescents Girls and its Relation with Sharir Prakruti

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INTRODUCTION :

Ayurveda is an ancient science of life which deals with every aspect of human life, Basic principals of ayurveda mainly concern with sharir kriya gives knowledge about dosha sdhatu &mala.

The aim of ayurveda is to maintain the health of healthy person and cure the diseases.

• CONCEPT OF SHARIR PRAKRUTI :

Prakruti is nothing but own nature of a person or constitution ortemperament of a person. Knowing prakruti helps to explain many of differences in individuals. For this it is very necessary to know the prakruti of an individual with the help of prakruti of particular person.There are different types of prakruti for e.g. Doshaja,manas etc. For studying predominance of dosha is the individual, study of prakruti is very important and useful. Prakruti deals with some physical, mental, sensory, motor and spiritual character of individual.

At the time of conception the doshas which are dominance state are responsible for prakruti of the respective foetus.

For study predominance of dosha in the individual, prakruti is very important and useful.

• CONCEPT OFMENSTRUATION :

India has largest adolescent population in the world.Adolescence is period of transition from childhood to adulthood.On account of urbanization and modernization life style changes are seen.The intake of spicy diet .fried food, are increases in today's life, which affect the development and growth of children.All these things affect the development of adolescent girls.Menarche is most important event in the life of an adolescent girls.The age of first menstrual periods is between 12-15 years.

According to ayurveda, Age of menarche is twelve years.

Kashyapa mentions the age as sixteen years, which is probably thedescription of appropriate age of conception.Kashyapa further says that this age can be influenced by specific ahara(diets) and arogya (health).

Menarche is the normal physiological process and changes occur in the female body before 1-2 years of menarche.

Due to accumulation of raja there is gradual development of breast, uterus, and vagina along with vulva.

According to Ayurveda age of menarche is 12 year but now days the study shows it decreases upto 10 years.

The term “adolescence” has been defined as including those aged between 10 and 19 years. Adolescence has multifaceted dimensions. The average onset of puberty is at the age 10 for girls. Every person’s individual timetable for puberty is influenced primarily by heredity, although environmental factors, such as diet and exercise, also exert some influence. These factors can also contribute to precocious puberty and delayed puberty. Puberty begins with a surge in hormone production, which in turn causes a number of physical changes. It is also the stage of life in which a child develops secondary sex characteristics (for example, development of breasts and more curved and prominent hips in girls) her hormonal balance shifts strongly towards an adult state. This is triggered by the pituitary gland, which secretes a surge of hormonal agents into the blood stream, initiating a chain reaction. The female gonads are subsequently which secretes a surge of hormone which puts them into a state of rapid growth and development; the triggered gonads now commence the mass production of the necessary chemicals. The ovaries predominantly dispense estrogen. The production of these hormones increases gradually until sexual maturation is met. Put simply, puberty is the time when a child’s body starts changing into an adult’s body.

Key words - Prakruti, Menstrual cycle,Adolscencent age

References - 09

AIM AND OBJECTIVES :

Study of developmental changes in the adolescents girls and its relation with Sharir prakruti.

OBJECTIVES :

1) Studyof sharirprakruti by special prakruti parikshan proforma.

2) Study of developmental changes in the adolescent girls.

3) Studyof onset of first menarche and current menstruation.

4) Study ofvatadi doshadhikya during menstruation

5) Study and scrutining of 2, 3, 4, with respect to types of sharir prakruti.

MATERIALS AND METHODOLOGY

A] Type of Study :

(1) Literary Study:-

Data of sharir prakruti & developmental changes in adolescent girls was taken from different Ayurvedic Samhitas, Modern texts, Journals, Internet, scientific networks & research papers etc.

(2) Clinical Study :

Total 170 volunteers were selected from Bharati Vidyapeeth College of Ayurved, Pune.

Consent was taken from all selected cases.

B] INCLUSION CRITERIA :

- No of females -170.
- Age group: 10-18 years.
- Marital status-unmarried.

C] EXCLUSION CRITERIA :

- Suffering from major illness.
- No selection will be done on the basis of caste and religion.

D] METHODOLOGY :

- Study of sharir prakruti parikshan of volunteers according to ayurvedic reference special parikshan proforma related to this topic was prepared.
- Developmental changes in the adolescent girls and its relation with sharir prakruti was studied.
- Study of menstrual history, special proforma was prepared.
- Study of doshadhikya during menstruation,special proforma was prepared.

OBSERVATION :

Out of 170 volunteers 20 volunteers left away.Distribution of 150 volunteers according to Prakruti.

PRAKRUTI	NO OF VOLUNTEERS	%OF VOLUNTEERS
VP	12	8
VK	12	8
PV	18	12
PK	48	32
KV	6	4
KP	54	36
Total	150	100

DEVELOPMENTAL CHANGES IN ADOLESCENT GIRLS :

ONSET OF FIRST MENSES :	VP	VK	PV	PK	KV	KP	TOTAL
12-14 years	8	8	10	31	4	38	99
More than 14 years	4	4	8	17	2	16	51
TOTAL	12	12	18	48	6	54	150

BREAST DEVELOPMENT :	VP	VK	PV	PK	KV	KP	TOTAL
1 YEAR(A)	6	11	15	24	5	27	88
1 YEAR(B)	6	1	3	24	1	27	62
TOTAL	12	12	18	48	6	54	150

STUDY OF MENSTRUAL CYCLE AT THE TIME OF MENARCHE :

Regularity of cycle	VP	VK	PV	PK	KV	KP	TOTAL
Regular	6	6	9	27	3	40	91
Irregular	6	6	9	21	3	14	59
TOTAL	12	12	18	48	6	54	150

STUDY OF MENSTRUAL CYCLE AT THE TIME OF CURRENT MENSTRUAL CYCLE :

Regularity of cycle	VP	VK	PV	PK	KV	KP	TOTAL
Regular	6	9	12	42	3	42	114
Irregular	6	3	6	6	3	12	36
TOTAL	12	12	18	48	6	54	150

STUDY OF VATADI DOSHDHIKYA DURING MENSTRUAL CYCLE :

	VP	VK	PV	PK	KV	KP
VATA	46%	50%	39%	40%	70%	15%
PITTA	50%	25%	42%	42%	58%	35%
KAPHA	42%	75%	38%	50%	50%	50%

STASTICAL ANALYSIS :

The data was collected by using questionnaire. It was qualitative type of data. Hence it was analyzed by using non-parametric test i.e. chi square test.S

	Statistically significant (alpha<0.05)
ONSET OF FIRST MENSES	NO
FEMINIZATION OF VOICE	NO
GROWTH OF PUBIC HAIR & BODY HAIR	YES
BREAST DEVELOPMENT	YES
BODY SHAPE & HEIGHT	YES
PIMPLES	YES

Hence developmental changes in adolescent girls has correlation with sharir parakruti

VATAPRADHAN PITTA PRAKRUTI	Statistically significant (alpha<0.05)
REGULARITY OF CYCLE	NO
DAYS	YES
NATURE	YES
COLOUR	NO
SMELL	YES
ABDOMINAL PAIN	YES
HEADACHE	YES
BACKACHE	NO

DISCUSSION :

Principles of Ayurveda are mainly based on Dosha, Dhatu,& Mala concept.The predominance of dosha's is described by 'Prakruti' examination.

The term prakruti in Sanskrit words means "Nature", "Creativity" or the first creation. The combination of vata, pitta, and kapha that was present in individual at the time of conception is maintained throughout his life. Different person can have different combination of vata, pitta and kapha as their basicconstitution or prakruti.

The term adolescent means 'to emerge' or 'achieve identity.' Adolescence is defined as a phase of life characterized by rapid physical growth and development, physical, social and psychological changes and maturity, sexual maturity, experimentation, development of adult mental processes and a move from the earlier childhood socio-economic dependence towards relative independence.

On the basis of Vaya Kala of Stri, twelve and fifty years is the age of menarche and menopause respectively.

From Rasa (Dhatu), the Rakta named raja is formed Rakta reaching in Uterus and coming out for three days in every month is called Artava. Menstruation is a result of changes going on in Vascular apparatus of Uterus forwhole month or in other word this refers to Cyclical changes of endometrium .

In woman of Vatapradhana Prakruti and Rajashika Prakirutihave scanty menses occur which is often painful. The women withPitta pradhana Prakruti have a relatively more flow of Artava whichis painless and women with Kaphapradhana Prakruti have moderate amount of blood flow which is pain less. The purpose to study vayaparinaman is to understand the ayurvedic explanation about the sexual development through which the girl goes.

- Onset of menses in Vatapradhan prakruti is 12-14 years in 70% of volunteers.
- In pittapradhan Vata prakruti on set of menses is 12-14 years in 55% volunteers.
- In pittapradhan Kapha prakruti on set of menses is 12-14 years in 65% volunteers.
- Onset of menses in Kaphapradhan prakruti is 14-16 years in 70% of volunteers.

In Vata Pittaj Prakruti At the time of menarche cycle is irregular in50% of voluntters,& in current menstrual cycle is also irregular in 50

- Onset of menses in Vatapradhan prakruti is 12-14 years in 70% of volunteers.
- In pittapradhan Vata prakruti on set of menses is 12-14 years in 55% volunteers.
- In pittapradhan Kapha prakruti on set of menses is 12-14 years in 65% volunteers.
- Onset of menses in Kaphapradhan prakruti is 14-16 years in 70% of volunteers.
- In Vata Pittaj Prakruti At the time of menarche cycle is irregular in50% of voluntters,& in current menstrual cycle is also irregular in 50% of voluntters.
- In Vata Kaphaj Prakruti At the time of menarche cycle is regular in50% of voluntters ,& in current menstrual cycle is also regular in 75% of voluntters.
- In Pitta Vataj Prakruti At the time of menarche cycle is regular in50% of voluntters ,& in current menstrual cycle is also regular in 67% of voluntters.
- In Pitta kaphaj Prakruti At the time of menarche cycle is regular in56% of voluntters ,& in current menstrual cycle is also regular in 80% of voluntters.
- In Kapha Vataj Prakruti At the time of menarche cycle is regular in50% of voluntters ,& in current menstrual cycle is also regular in 50% of voluntters. •
- In Kapha Pittaj Prakruti At the time of menarche cycle is regular in74 % of voluntters ,& in current menstrual cycle is also regular in 78% of voluntters.

VATADI DOSHADHIKYA DURING MENSTRUAL CYCLE :

- In Vata Pittaj Prakruti volunteers, Vata – Pitta-& Kapha- doshadhikya is 46% ,50%,& 42% respectively.
- In Vata Kaphaj Prakruti volunteers, Vata- Pitta-& Kapha-doshadhikya is 50% ,25%,&75% respectively.
- In Pitta Vataj Prakruti volunteers, Vata- Pitta- & Kapha -doshadhikya is 39% ,42%,& 38% respectively.
- In Pitta Kaphaj Prakruti volunteers, Vata- Pitta- & Kapha-doshadhikya is 40% ,42%,& 50% respectively.
- In Kapha Vataj Prakruti volunteers,Vata – Pitta-& Kapha -doshadhikya is 70% ,58%,& 50% respectively.
- In Kapha Pittaj Prakruti volunteers,Vata- Pitta-& Kapha doshadhikya is 15% ,35%,& 50% respectively.

CONCLUSION :

Onset of menses in vatapradhanprakruti& in Pittapradhanprakruti was in between 12-14 years.

- In kapha pradhan prakruti onset of menses is in between 14-16 years.
- Feminazation of voice was maximum in kaphapradhan pittaprakruti.
- Breast development was maximum in vatapradhankaphaprakruti.
- Growth of pubic hair & body hair was maximum in pittapradhanvataprakruti.
- Pimples was maximum in pittapradhanvataprakruti.
- Body temperature was increased by 0.5oc in vatapradhanprakruti, 0.80c in pitta pradhan prakruti & o.30c in kapha pradhan prakruti.
- Regularity of cycle is maximum in kaphapradhan pittaprakruti.
- Red colour of bleeding was present in vata pradhan kapha prakruti & pitta pradhan kapha prakruti.

  Bleeding without clot was present in kapha pradhan vata prakruti.
- Vatadidoshadhikya during the menstrual cycle was nearly same in pitta pradhan prakruti.
- Smell & Headache was present in all prakruti except kapha pradhan pitta prakruti.
- Abdominal pain& backache Frequency of micturation& Irritability was present in all prakruti.
- Exacitability is present in all prakruti, except vata pradhan kapha, pitta pradhan kapha, kapha pradhan vata prakruti.

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Study of Preenan Karma of Rasadhatu With Special Reference to Rasadhatu Sarata

Sheetal Pawar

Manisha Bhalsing

Clinical :

Study of Preenan Karma of Rasadhatu With Special Reference to Rasadhatu Sarata

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Introduction :

There are many scientific concepts in Ayurveda which needs detailed scrutiny to assess their utility in the field of science. The aim of Ayurveda is to maintain the health of healthy person and cure the diseases. For both of this it is necessary to know the Dhatu sarata of a person which helps to maintain strength of that person.Sarata develops when one particular dhatu is in more developed state or in Upachit Awastha or we can also say Sarabhuta condition.

As concern with Rasadhatu, preenan is main karma of Rasadhatu. That can be assessment by skin examination. Rasadhatu plays an important role not only because it is first in the process of formation but also because of its healthy state & proper functioning decides the fate other Dhatus.

In other words it is the preenan karma of Rasa Dhatu which plays crucial role in formation and maintenance of healthy state of body and mind. And as mentioned above, assessment of Rasadhatu Sarata can be done by skin examination.

So by knowing the importance of Preenan, rasadhatu sarata & its relation to skin this topic was taken for study.

Key words- Rasadhatu, Preenan, skin

References - 07

Aim : STUDY OF PREENAN KARMA OF RASADHATU W.S.R. TO RASADHATU SARATA

Objectives :

Study of Dhatu sarata parikshan by special Sarata parikshan Pro-forma.

Skin (Twak) examination according to the points given in Samhita.

Study of skin disorders w.s.r. to Preenan karma mainly Sadhyakshat prarohatwam & Gambhir loma etc.

MATERIALS AND METHODOLOGY :

MATERIALS :

Ayurvedic Samhitas.

Modern text & techniques.

TYPE OF STUDY :

Literary and survey study

METHODOLOGY :

For study Sarata Parikshan of volunteers according to Ayurvedic reference special parikshan Pro-forma is prepared.

For study skin examination special Pro-forma is prepared.

A 15 days skin disease camp was arranged at Shri Narayan Ayurved hospital, Baramati. Dist-Pune.

Date- 20th aug 2012 to 3rd sept 2012. & 26th nov. 2012 to 09th dec. 2012.

A detail case taking has been taken likewise sarata parikshan (twak sarata) & questioner also carried out of same patients.

Then patients categorized under the heading of Uttam, Madhyam & Hina rasadhatu Sarata.

A well documentation of case paper, Sarata proforma, Questioner and given treatment is maintained

Follow up was taken on 15th, 30th, 60th, 90th day.

Here I tried to explore the importance of Rasadhatu Sarata in practical approach

INCLUSION CRITERIA:-

1. Group of 60 volunteers from chosen area.

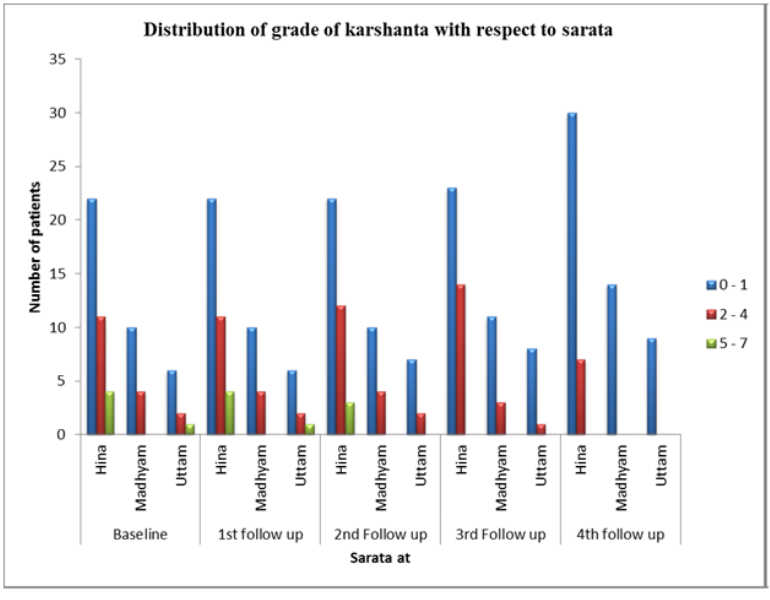
2. Age- 25-35 yrs.

3. Sex- Male & Female both.

EXCLUSION CRITERIA :

Volunteer suffering from any major illness

OBSERVATIONS :



DISCUSSION:

- Aruchi, Asyavaryasya, Pipasa, Valaya, Palitya Krushata, Ashradha, Arasandyata, Hrullas, Gaurav, Tandra, Angamarda, Tamodarshan, Pandutava, Angasada & *karshnata.*
- Above symptoms are related to rasavaha srotodusti. During study it was observed that Aruchi, Asyavaryasya, Pipasa Ashradha, Arasandyata, Hrullas, Gaurav, Tandra, Angamard Tamodarshan, Pandutava, Angasada & karshnata shows significance i.e. they are treated completely until last follow up this also proved statistically after proper treatment given to decrease srotodusthi in proper way by following gradation method & follow up.
- In this also found that uttam sara completely treated before 2nd follow up.
- Madhyam sara completely treated before 4th follow up.
- Hina sara after complition of last follow up & further.
- Also symptoms like valay,palitya,krushta have shown no significant changes.
- In above charts Aruchi,Asyavaryasya, Pipasa significant from 1st follow up.
- Ashradha, Arasandyata, Hrullas, Tandra, Angamarda, Tamodarshan, Angasada significant from 2nd follow up onwords.
- Gaurav, pandutva & karshanata significant from 3rd follow up.
- Symptoms in rasadhatu sarata are studied by 2 ways i.e before treatment & after treatment.

- In which Snigdha loma,Shlakshana loma,Mrudu loma,Prasanna loma,Snigdha twak,Shalakshana twak,Mrudu twak,Prasanna twak,Saprabha twak,Sadyakshat prarohatwam shows changes after treatment in hina, madhyam, & uttam rasadhatu sarata.
- In alpa loma,sukumar loma & gambhir loma no changes is seen.

CONCLUSION

- Uttam rasadhatu Sara volunteer show less severe symptoms in comparison with hina & Madhyam rasadhatu Sara volunteer.
- The Hina rasadhatu sarata are more susceptible to skin diseases and also Hina rasa Dhatu sarata is responsible for acceleration of skin disease pathogenesis.
- The Hina rasadhatu sarata patients have more number of symptoms , delayed response to treatment and with slow rate of recovery.
- The Madhyam Sarata before treatment the appearance of symptoms are of moderate gradation but after treatment the declination rate is slight slower than Uttam.
- Uttam rasadhatu sarata patients less prone to skin diseases & before treatment the manifestation of symptoms are less severe but after treatment, they resolved within 1-2 follow up i.e. recovery rate is very good compare to Hina.
- Sadhyakshat prarohatwam & gambhir loma. is good in Uttam Dhatu sarata. So, in other words Preenan karma is good in Uttam rasadhatu Sara.
- Hence Preenan karma of rasadhatu plays a important role in Sarata & prevention treatment and prognosis of various skin diseases.

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Modern Laboratory and Clinical Methods to Assess the Status of Rakta Dhatu

Basavraj C. Patil

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Opinion :

Modern Laboratory and Clinical Methods to Assess the Status of Rakta Dhatu

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Abstract :

Rakta dhatu is one of the important Dhatu. The etymology ofword 'Rakta' is 'Raj Ranjane' which indicate red colour.The Rasa dhatu is white in color, when it is converted into Rakta it becomes red colored body fluid . Synonyms of Rakta dhatu which indicate red color are ,Shonitam,Lohitam. Rakta dhatu is circulating with the stimulation of Vyanavayu from the Hrudaya to each and every organ of the body.Considering the metabolism of Rakta dhatu, Raktavaha Srotas is important, whose principle organs are liver & spleen. Raktadhara Kala is also concerned with the formation & storage of the Raktadhatu.

In metabolism of Rakta dhatu , Sira (Blood vessels) Kandara (tendon) are devepoped in form of Updhatu (secondary tissue) while Pitta as Mala (excreted part) is produced. To support the body & maintain the life process of thebody are main function of the Rakta dhatu .When Rakta dhatu is producedin excellant condition,that person is known as RaktasaraPurusha. Any kind of deviationin physiology of Raktadhatu (increase or decrease) leads to pathogenesis. Vitiation of Rakta dhatu causesthe skin disorder in the body. It is therefore needed to protect this Dhatu by every possiblemeasure.But in the Samhitas the Majority description related with the examination of Rakta dhatu is found to be subjective e.g. Sarata. So in this article we have tried to explain about the objective parameters of Modern Investigation and Clinical Examination for the examination of Rakta dhatu.

Total number of references - 5

Keywords: Raktadhatu and Haemoglobin, Rakta Sarata , RaktavahaStrotas,

VisuddhaRaktadhatu, Bone marrow.

INTRODUCTION :

Dhatuor tissue is an entity by whichsustenance, growth, & nourishment of thebody takes place. Dhatu are thefunctional apparatus of the Dosha (bio energies). Bioenergies are functioning with the media of Dhatu(Ashray-ashrayee sambandha) i.e physiological relationship in between Dosha and Dhatu. Pitta is working through the blood because their properties and functions are similar to each other. The important functions of Rakta Dhatu are Jeevana i.e. oxygenation, Ushma niyantrana i.e. temperature regulation. Rakta Dhatu

is responsible for the bala i.e strength, Varnaprasada i.e. colour and complexion, proper metabolism of body (Avyahata praktuvega),and proper physical touch sensation(Sparshadyana asanshayam) Mamsa pusti, Ayu vruddhi i.e logitivity of life.

Rakta word is originated from Sanskritword from 'Raj Ranjane' meaning isto stain. Synonyms ofRaktadhatu are Rudhiram, Asriga,Shonitam, Astram, Lohitam. Most of theseindicates the red coloured. Rakta maypresent in large quantity in some places &may be functioning specifically in contextto some organ. Such places are known asSthana (location) of the Raktadhatu.RaktavahaStrotas ismain site of Raktadhatu. Principleorgans of this Strotasare liver & spleen.Susruta added the Raktavahi Dhamini. Rakta is veryimportant entity in context to maintaininternal environment constant. It isextremely important for the sustenance oflife.Dosha are responsiblefor the creation sustenance of living body. Similarly Raktadhatu alsotakes part in origin, sustaining.Susruta described rakta as fourth Dosha.

METABOLISM OF RAKTADHATU :

Metabolism of Raktadhatu takes place in Raktavaha Strotas. Mula sthana of Raktavaha Srotas are Yakrut(Liver)& Pleeha(Spleen). These organs play an important role inproduction of Raktadhatu. Afterthe primary digestion of food, it is converted in to twoparts. One is Aahararasa (essence part) &another is Kittansha (waste part). According to Ayurved first Rasa Dhatu is formed, also poshak Rakta is formed.Susrutafurther explained that the Rasa is formedfrom Aahararasa (essence part). Afterreaching liver & spleen from Kostha itbecomes red. In living body, Tej mahabhutbrings thisred colour to Rasa dhatu and then Rakta dhatu is formed.

Inthe metabolism of RaktadhatuPitta is produced in the form of Mala(excreted part) which is known as VaikrutaDosha &Updhatus(Secondary tissues) areproduced called as Kandara &Sira. All the entities of thisuniverse is composed ofPanchamahabhuta, however Raktadhatu isTej &Jala predominant in nature.

PHYSICAL & CHEMICAL PROPERTIESOF RAKTADHATU :

In Ayurved Raktadhatu is compared with heated gold(shiny red colour and luster), insect(Indragopa), red lotus andAbrusPrecatorius(Gunja). Rakta Dhatu is Panchabautik in nature i.e prepared from five elements and we have specific features of each Mahabhuta.

Panchabhautika Properties of Rakta Dhatu- Su.su 4/8,Su su 14/8

Mahabhuta	Quality of Rakta Dhatu
Prithvi	Vistra gandha (Odour)
Jala	Dravata (fluid)
Teja	Raga (Red Colour)
Vayu	Spandana (Pulsation)
Akasha	Laghuta (Lightness)

Status of Rakta dhatu as per textual reference-

Ayurved say Dhatu Sarata examination is very importantto assess quantity and quality of each Dhatu. Sarata means Vishudhatara Dhatu i.e the optimal quality of Dhatu. Sarata has been explained for each Dhatu but here we will try to understand the quality of Rakta in the body.

For practical purpose we must convert the language of the text in to the language which can be understood by many people in the society. So we have converted this proforma into practical useful way.

Characterstics of Raktadhatu sara individuals:

Dhatusarata (excellence of tissue)means supreme quality and function of dhatu. Individualshaving the excellence of Rakta show following features.

Beautifuldazzling appearance of the person and unctuousness and redness of the ears, face,tongue, nose, lips, sole of the hands & feet,nails, forehead, & genital organ. Such individualsare endowed with happiness,great genius, enthusiastic, delicate, moderatestrength, & inability to face difficulties.Their body remains hot**.**

Examination :

Ayurved Rakta Dhatu Sarata Parikshan -

Inspection(Darshan)-

- Look for pink color of nails, conjunctiva of eye, palms and face etc.
- Observe delicate features of personality(Saukumarata).

Palpation (Sparshan)

To assess Snigdhata in different parts of the body -

- Touch and feel softness of skin.
- To examine unctuousness, skin may be scratched and look for persistence of scratch mark. If it disappear quickly, the skin is said to be unctuous.

Interrogation (Prashna)

3=best quality of rakta

2=moderate quality of rakta

1=low quality of rakta

1. Sukha (Happiness)

By doing which kind of work you feel happy?

Physically non stressful, intellectual work in cold environment-3

Moderate type of stressfull but intellectual work in cold environment-2

Any kind of physical but non intellectual work in any environment-1

2. Uddhatammedha (Understanding capacity) -

How much time you take to understand things or new subjects?

Understands very Quickly-3

Understands when repeated Once or twice -2

Understands repeated again and again-1

3. Manasvitam (Ego) -

Do you feel bad if something happens against your will?

Yes I feel bad(When my ego is hurt)-3

Sometimes I feel bad -2

Its ok (I can tolerate my ego, I do not keep my ego on stake) -1

4. Sukumaratva (Delicate Personality) -

Can you sustain extereme cold or hot weather?

I Never sustain extreme hot or cold weather -3

I can tolerate extreme cold or hot , Sometimes-2

Yes, I deffinativly can tolerate extreme cold and hot weather-

5. Bala(Physical strength) -

Can you carry out strenuous physical work?

I Cannot tolerate strenuous physical work -3

I can tolerate moderate type of physical work -2

Yes, I can tolerate any type of strenuous physical work -1

6. Klesha asahishnutva (Mental stress) -

How you can tolerate Mental stress?

I cannot tolerate mental stress -3

If moderate I can tolerate mental stress-2

I do not get mental stress -1

7. Ushna asahishnutva(Intolerance to heat) -

Can you tolerate hot food and environment?

I Cannot tolerate hot food and environment -3

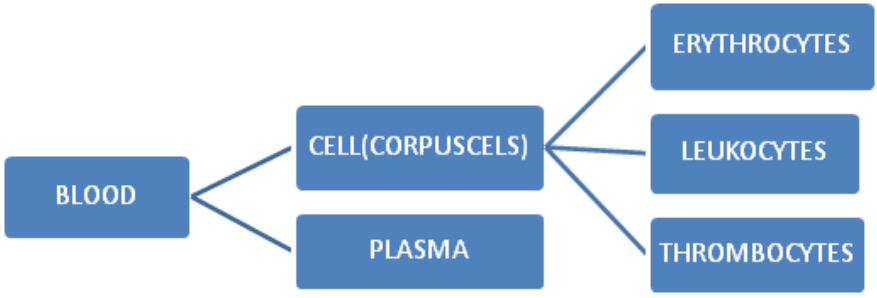
Sometimes, I tolerate hot food and environment-2

I can tolerate hot food and environment -1

Haemopoietic System-

As Rakta Dhatu is compared with the blood let us understand the basic facts of blood

1. Composition of Blood -



2. Constituents of Blood -

Plasma constitutes 90% of water, inorganic constitutes like Sodium , Potassium, Chlorides, Calcium, Irons, Coppers, Phosphorus, etc.

Assessment of functions of raktadhatu:

1) **Jeevanam –** jeevanam nama prana dharanam ||

Prana dharanam i.e Proper Oxygenation, if there is extreme loss of blooddue to any road traffic accidents,severe anaemia (Hb<5gm%) develops, the person may land up in cardiac arrest. Then doctor advice for emergency admission and advice blood transfusion.

Oxygeniscarriedthroughtheblood, that is why pulse oxymeter can measure the oxygen amount of blood(Rakta dhatu). It is indirect examination of Jeevan function of Rakta dhatu.

2) **Bala**- can be examine by physical efficiency index. (Harward step test indicates Cardio pulmonary endurance).

In anaemic person there is dyspnoea on exertion. It indicates, low cardio-pulmonary endurance. Normally the person should work minimum eight hours a day. So if the person get fatigued after working less than eight hours, his Bala is alpa.If the person is able to work for eight hours and get tired. But after rest for 1-2 hours, again able to work till 12 hours, his Bala is moderate. If person is able to work for 14 hours a day without rest his Bala is uttam.When person complains of fatigue, tiredness, initially we have to access his haemoglobin level.

3) **Varna parikshan** – varna includes colour and complexion. First let us see about complexion. In cosmetology centers the blotting papers are kept on face, on forehead, cheeks to check texture of facial skin.

If blottingpaper remains dry – the skin is diagnosed as dry skin.

If blotting paper show many wet patches- the skin is diagnosed as oily skin.

If few wet patches are seen on blotting paper- skin is moderate type of skin.

If doctor finds extreme dryness of skin or pallor, he can advise for hemogram. In intensive care units doctors examine for change in colour i.e cyanosis,which indicates that Jeevan function of Rakta dhatu is in endanger.

4) **Avyahat paktru vega**- Praktuvega in Sanskrit means metabolism. To examine normal metabolism of avyahat paktru vega, doctor can ask about appetite or hunger, bowel regularity etc.

Rakta dhatu examination, can be done, by observing pathological conditions like Rakta vruddhi and Rakta kshaya .

Rakta Vridhi and Kshaya Laksanas :

Rakta Vriddhi :

Vruddhimeans increasein quantity or quality.

In Rakta vruddhi two symptoms are mentioned- Raktanga Akshita and Sira purnatva. In clinical examination doctor can see congestion of conjunctiva and engorgement of blood vessels. For e.g. In CCF,engorgement of neck veins or in varicose veins engorgement of lower limb veins is seen.

Rakta Ksaya :

In Raktak shaya following symptoms are mentioned -

1) **Amla-Shishir-Preeti-** patient desires to eat sour butcooling substances**.** In history taking doctor can ask**,** whether the patient is craving for substances like pomegranate**,** Garcnia**.**

2) **Sira Shaithilya** – in severe blood loss, after haemorrhage, blood vessels are found collapsed.

Role of lab investigations to access Rakta dhatu-

1) Hemogram- low haemoglobin indicates Pandu.
2) Leucocytosis suggests Ama condition, due to bacterial toxins.
3) Raised ESR may suggest jirna vyadhi (chronic disease). Gruadual increase or decrease in ESR suggest that vyadhi samprapti(pathogenesis) is uncontrolled or controlled respectively.
4) Liver function test – Liver is mula sthana of Rakta vaha srotas. Mula sthana means prabhav sthan. If liver functions are abnormal it indicates that mula sthan is damaged. Doctor must give Rasayana for liver for better control on Rakta vaha strotas.
5) Liver biopsy – Indications same as above.
6) Bone marrow examination-Saraktameda is the term for bone marrow. Saraktameda is utpatti sthan of Rakta dhatu. So in unexplained Pandu or anaemia bone marrow examination is done to find out exact cause of pandu like aplastic anemia or leukemia.
7) BT CT and PT- Rakta skandana(blood clotting) is needed in the patients of accidental injury or post operative. By doing , BT , CT, PT we can get assured about normal clotting process(Rakta skandana prakriya)is existing in the patients body.hence BT, CT, PT, is done as a pre operative investigation.

Pathological test related to blood& its Approximate cost-

Sr. no.	Pathological test	Normal value	Approximately cost
1	Hemogram	Male-14gms-16gms% Female-11gms-14gms% Newborn Baby-23%	100/-
2	Liver function test	Serum Bilirubin- 0.3-1.1mg/100m lSGOT-5-40Units/ml SGPT-5-35Units/ml Alkaline Phosphatase- 5-13A.USerum Albumin- 3.5-5.5G/100mlSerum Globulin-1.5-3.0G/100ml Alb.&Globulin Ratio-2:1	600/-
3	B.T., C.T.	2-3 mins4-9 mins	80/-
4	Prothrombin time		300/-
5	ESRMaleFemale	0-9 mm0-20mm	80/-

Modern investigation cost:

Sr. no.	Investigation	Approximate cost
1	Bone marrow examination	1200/-
2	Liver Biopsy	3500-4000/-
3	Skin Biopsy	400-600/-

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Role Of Basti Karma Over Enteric Nervous System

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Role Of Basti Karma Over Enteric Nervous System

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ABSTRACT :

Ayurveda being an ancient science it has developed through many experiences and experiment in medicines. *Panchakarma* therapy is a very imperative and essential part of *Ayurvedic* treatment. *Basti*, one among the P*anchakarma* therapy is the main treatment as it possesses a wide spectrum of effects and is thought to be the *Ardhachikitsa* (50% of all treatment modality) in *Ayurveda.* Though *Basti* is given in the *Pakvashaya* (Rectum and Colon) its active ingredients i.e. "*Virya* of the *Basti*" spreads in the entire body to get desire action. *Basti Virya* may act through enteric nervous system (ENS). The gastrointestinal system has a network of nerve fibres, which is known as 'Enteric Nervous System (ENS). Like brain, ENS sends and receives impulses; record experiences and responds to various stimuli. It is in sheaths of tissue lining the oesophagus, stomach, small intestine and colon. It is considered as a single entity and has much similarity to the functioning of the brain. It comprises of large number of neurons, many neurotransmitters are synthesized and processed by it. *Basti* which is introduced into the rectum may act by stimulating peristalsis either because of the large volume or it causes osmotic retention of water in the bowel. *Niruha* therapy along with its therapeutic effects shows cleansing effect on the colon. Cleansing of colon could dilute the toxin concentration in the caecum and facilitate the removal of same. Therefore, *Basti* absorption has potent action over receptors present over the ENS.

KEY WORDS :

Basti Karma, *Panchakarma*, Enteric nervous system

INTRODUCTION :

The effectiveness of *Panchakarma* therapy depends on suitable application of different elimination procedures as well as on the proper preparations of various formulations required to complete the *Panchkarma*. In *Panchkarma Chikitsa*, *Basti* is superior to other (*virechan, vaman*) *Shodhanas*. *Basti* is a multidrug formulation that is given per rectum and reaches up to ileo-caecal junction and classical *Basti putak* proved more efficacious than enema pot method and has more retention time in both *Asthapana* as well as *Anuvasana Basti*, thus

absorption is more in classical method. *Shodhana* is entity that is associated with the removal of *Mala* from the body.

Enteric Nervous System (ENS) is the intrinsic nervous system of the gastrointestinal tract. It contains complete reflex circuits which perform the following functions:

1. Detect the physiological condition of the gastrointestinal tract.
2. Integrate information about the state of the gastrointestinal tract.
3. Provide outputs to control gut movement.
4. Fluid exchange between the gut and its lumen, and local blood flow.

It is the only part of the peripheral nervous system which has extensive neural circuits that are capable of local, autonomous function. The ENS has extensive, two-way, connections with the central nervous system (CNS), and works in concert with the CNS to control the digestive system in the context of local and whole body physiological demands. Because of its extent and its degree of autonomy, the ENS has been referred to as a second. The roles of the ENS are much more restricted than the actual brain, and so this analogy has limited utility. The ENS is a division of the autonomic nervous system, the other divisions being the sympathetic and parasympathetic, with which it has extensive connections. The enteric nervous system, receives inputs from the parasympathetic and sympathetic parts of the nervous system, and the gastrointestinal tract also receives a plentiful supply of afferent nerve fibres, through the vagus nerves and spinal afferent pathways. Thus, there is a rich interaction, in both directions, between the enteric nervous system, sympathetic pre-vertebral ganglia and the CNS.

DISCUSSION :

Acarya Charka has stated that *Basti* is the main treatment of *Vata Dosha*. *Vata* has the influence on *Trividha Rogamarga. Basti* enters the *Pakvashaya* which is the main Sthana of *Vata Dosha* and pacifies the aggravated *Vata Dosha* which is the originator of all *Vikara*. By subsiding the *Vata* all *vikaras* located in the other parts of the body also become cured, just as by the eradication of the roots of a plant, the stem, the branches, sprouts, fruits, leaves etc. also vanish. References of enema are mentioned in modern sciences as well. Nutritive enemas are of real importance of feeding and can be carried by the force of attraction through the intestine up as far as the stomach and it happens when the body is in great want of nourishment and the intestine is empty, the nourishment present in any part of bowel is drawn upwards. This fact is also mentioned by Best and Taylor that “materials introduced by Enema, in some instances pass through the walls into the ileum, such incompetence may permit the Enema fluid to reach the duodenum”. To explain the Mode of action of Basti is a difficult job because it acts by collective phenomenon like:

1. Absorption
2. Nervous stimulation ENS – CNS
3. By cleaning the colon

The enteric nervous system is composed of thousands of small ganglia that lie within the walls of the oesophagus, stomach, small and large intestines, pancreas, gallbladder and biliary tree, the nerve fibres that connect these ganglia and nerve fibres that supply the muscle of the gut wall, the mucosal epithelium, arterioles and other effector tissues. Nerve fibre bundles within the enteric nervous system consist of the axons of enteric neurons, axons of extrinsic neurons that project to the gut wall, and glial cells. Two major sets of ganglia are found, the myenteric ganglia between the external muscle layers, and the submucosal ganglia.

The myenteric plexus or plexus of Auerbach forms a continuous network, around the circumference of the gut and extending from the upper oesophagus to the internal anal sphincter. The submucosal plexus is present in the small and large intestines, but is absent from the oesophagus and contains only very few ganglia in the stomach. The enteric nervous system receives inputs from the parasympathetic and sympathetic parts of the nervous system, and the gastrointestinal tract also receives a supply of afferent nerve fibres, through the vagus nerves and spinal afferent pathways. Thus, there is an interaction in both directions i.e. between the enteric nervous system, sympathetic pre-vertebral ganglia and the CNS. The gastrointestinal tract has an extensive endocrine signalling system, and many gastrointestinal functions are under dual neuronal and endocrine control. Enteric neurons also interact with the extensive intrinsic immune system of the gastrointestinal tract. Functions of the enteric nervous system are :

1. Control of Motility
2. Regulation of fluid exchange and local blood flow
3. Regulation of gastric and pancreatic secretion
4. Regulation of gastrointestinal endocrine cells
5. Defence reactions
6. Entero-enteric reflexes
7. ENS-CNS interactions.

The ENS is the “brain of the gut” and its operation is involuntary. Just as the surface of the body must respond to the external environment stimuli in order to function properly, the surface of the GIT must respond to surrounding stimuli to generate proper homeostatic controls. The enteric division can and does function independently of CNS activity but it can also receive controlling input from the CNS. The entire network of nerves and ganglia contains sensory neurons capable of monitoring tension in the intestinal wall and accessing the composition of the intestinal contents. These sensory neurons relay their inputs signals to inter neurons within the enteric ganglia. The inter neurons establish an integrative network that processes the incoming signals and generate regulatory output signals to motor neurons throughout plexuses within the wall of the digestive organs. The motor neurons carry the output signals to the smooth muscle and glands of the git to exert control over its motility

and secretory activities. The plexuses of the ENS consist of motor neuron, interneuron, and sensory neurons.

Because motor neurons of the myenteric plexus supply the longitudinal and circular smooth muscle layers of the muscularis, this plexus mostly controls GIT motility, particularly the frequency and strength of contraction of the muscularis. The motor neurons of the submucosal plexus supply the secretory cells of the mucosal epithelium, controlling the secretions of the organs of the GIT. The inter neurons of the ENS interconnect the neurons of the myenteric and submucosal plexuses. The sensory neurons of the ENS supply the mucosal epithelium. Although the neurons of the ENS can function independently, they are subject to regulation by the neurons of the autonomic nervous system. The vagus (x) nerves supply parasympathetic fibres to most parts of GIT, with the exception of the last half of the large intestine, which is supplied with parasympathetic fibres from the sacral spinal cord. The parasympathetic nerves that supply the GIT form neural connections with the ENS. In general stimulation of the parasympathetic nerves that innervate the GIT causes an increase in GI secretion and motility by increasing the activity of ENS neurons. Sympathetic nerves that supply the GIT arise from the thoracic and upper lumber regions of the spinal cord. Like the parasympathetic nerves these sympathetic nerves form neural connections with the ENS. Sympathetic postganglionic neurons synapse with neurons located in the myenteric plexus and the submucosal plexus. In general the sympathetic nerves that supply the GIT causes a decrease in GI secretion and motility by inhibiting the neurons of the ENS.

Conclusion :

Basti Chikitsa is considered to be a prime treatment modality among the *Panchakarma* in *Ayurveda*. It has not only curative aspects but also preventive aspects. The absorption and mechanism starts from colon hence it exhibits action like *shodhana* or *brumhana*. The multifaceted action of *basti karma* proves its relation of basti with physiology of ENS. It improves *Agni* and relives *vibhandha, sadyobalajanana, balya, dipana*, *brumhana, balavarnakara,* and acts as *rasayana*. Hence ENS plays an important role its pharmaco-dynamics and effects. To summarize;

1. *Basti* may acts through the nervous system or through the enteric receptors.
2. It may increase the secretion of local enzyme or neurotransmitters.
3. *Basti* influence the normal bacterial flora thus it increases the endogenous synthesis of Vitamin $B_{12,}$ Vitamin K etc.
4. *Basti* makes the whole metabolism normal.

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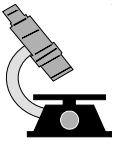
A Clinical Study on The Effect of Haridradi Ksheera Parisheka in The Management of Shushka Akshipaka (Dry Eye Syndrome)

Amol K. Walzade

Research



A Clinical Study on The Effect of Haridradi Ksheera Parisheka in The Management of Shushka Akshipaka (Dry Eye Syndrome)

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ABSTRACT - Eyes are said to be an important *Indriya* among all the *Indriyas*. *Shushkakshipaka* is one among the *Sarvagata Rogas* described by *Sushruta* and *Vagbhata.* It is the most common *rogas* seen in population in todays era. If remains untreated can cause serious sight complications.

Aims and objectives : 1. To study the concepts of *Shushkakshipaka* and dry eye syndrome in detail.

2. To evaluate the effect of *Haridradi Ksheera Pariseka* in the management of *Shushkakshipaka* (Dry eye Syndrome).

3. To compare the effect of *Haridradi Ksheera Pariseka* with Carboxy Methyl Cellulose Sodium (CMCS) eye drops in the management of *Shushkakshipaka* (Dry Eye Syndrome).

Method : 40 Patients was divided randomly in to two groups, each consisting of 20 patients, and treatment was given as per the schedule given below.

Group A - (Trial group) - 20 patients was treated with *Haridradi Ksheera Pariseka* once in the morning (10 min.) for 7 days.

Group B - (Control group) – 20 patient was treated with Carboxy Methyl Cellulose Soduim (CMCS) eye drop – 2 drops Three times a day for 7 days.

KEYWORDS : *Shushkakshipaka, Sarvagata rogas, Pariseka*

No.of references : (8).

INTRODUCTION :

The eyes are said to be the most important *indriya* than all other *Indriyas*. Hence all sincere efforts should be made by man to protect his eyes, throught his lifetime, as for a man who is blind;the beauty of this world becomes useless. *Ayuveda* is subdivision of *Atharvaveda* and was compose in one thousand chapters by *bramha* before he created living being there after in view of the short span of life of human beings and their limited intellectual capacities he again compilent it in to eight parts[1].

In modern days due to advancement of technologies many important improvement in area of ophthalmology came in existence. This enables easy and detailed diagnosis of eye diseases in very less time[2].

In present work I have dealt with the most common problem of the eye- Dry Eye Syndrome. It is usually caused by a problem with the quality/quantity of the tear film that lubricates the eyes[3].

According to modern science Dry eye is an umbrella term used to describe a heterogeneous group of disease resulting from inadequate wetting of the cornea tear film. Millions of people worldwide suffer from dry eye. The vast majority of patients have symptoms that are mild to moderate in severity. Although these patients suffer with discomfort of dry eye, frequently they fail to recive adequate attention and treatment[4]. The classification study group identified two major practical type of cause-based dry eye- Tear Deficient Dry eye and Evaporative Dry eye. Based on this classification a diagnostic algorithm was developed that helps to identify the disorders that cause dry eye and the underlying pathophysiology[5]

In Clinical practice, menopause, aging and RA-associated Sjogren's syndrome are the commonest causes of dry eye. As in today's era we see dryness of eyes due to exposure to wind, smoke, heat, allergens. Various other factors like food habits, daily regimen, seasonal regimen, if not followed properly can cause devastating effects in eyes and cause dry eye[6].

Lifestyle changes have known to be causing dry eye as people are unable to follow proper nutritious and seasonal diet. The dry and cold foods if taken in large quantity or for long period continuously can cause the disease. E.g. drinking cold water in cold season in the morning. Food without oily sunstance, like ghee and oil can also bring dryness[7]. . Bathing with cold water in cold season, with wetting the head and hair. Then avoid hair oil in scalp, avoiding *nasya* and *karnapuran* with oil. These factors can bring more dryness in body which can bring early symptoms of dryness as started in various ayurvedic texts[8].

Haridradi Ksheera Pariseka is said to the treatment of *Shushkashipaka* on taking in to the consideration of *samprapti* of *shushkakshipaka.* The *vranapaha*, *shophahara, kandughna, vatapitta shamaka, snighda and srotogami* properties of this medicine will help to cure the disease. CarboxyMethyl Cellulose (CMCS) eye drop- Is acts as Lubricant, for the temporary relief of burning, irritation and discomfort due to dryness of the eye. But it also has some drawbacks; like – vision may be temporarily blurred when this product is first used. Also minor burning, staing, irritation may oocur.

Therefore in this present study an effort has been made to evaluate the comparative efficacy of *Haridradi Ksheera Pariseka* and CarboxyMethyl Cellulose Sodium Eye drop in the management of *Shushkakshipaka*.

MATERIALS AND METHODS :

Source of data: Patients of Sushkakshipaka selected from the OPD and IPD of Salakyatantra department of Shri JGCHS Ayurvedic Medical College.

***Inclusion Criteria* :**

1. Age group between 16 and 60
2. The selection of patients was done on the basis of signs and symptoms of Shushkakshipaka (Dry Eye Syndrome) described as per Ayurvedic and modern medical science.

Exclusion criteria :

1. Age group less than 16 years and more than 60 years.
2. Known cases of infective conditions of eye
3. Patients in the complicated stage with corneal ulcer.

STUDY DESIGN :

40 Patients was divided randomly in to two groups, each consisting of 20 patients, and treatment was given as per the schedule given below.

Group A - (Trial group) - 20 patients was treated with *Haridradi Ksheera Pariseka* once in the morning (10 min.) for 7 days.

Group B - (Control group) – 20 patient was treated with Carboxy Methyl Cellulose Soduim (CMCS) eye drop – 2 drops Three times a day for 7 days.

Procedure	Medium	Duration	Periods	Follow up
Parisheka (Trial group)	*Koshna paya with Haridra, Daruharidra & Saindhava*	600 *matra* (10 min. App. 400ml)	7 days	Once in 2 week upto 1 month

Procedure	Medium	Duration	Periods	Follow up
Eye Drop (Control group)	CMCS (CarboxyMethyl Cellulose Sodium)	2 drops three time a day.	7 days	Once in 2 week upto 1 month

Ocular Surface Disease Index (OSDI)

Before starting treatment all patients were assessed by using OSDI. This index demonstrates sensitivity and specificity in distinguishing between normal subjects and patients of dry eye disease. This index helps to identify the severity of the disease (mild, moderate, and severe).

Standardized Grading Scales

Standardized grading scales were made inorder to assess the clinical improvement in signs and symptoms before and after the treatment. Scoring patterns were made as per the subjective and objective criteria. The grades range from 0 to 3. Scoring patterns and ocular surface disease index (OSDI) are attached in Annexure II

Overall effect of the therapy

The overall effect of therapy is recorded under the following headings.

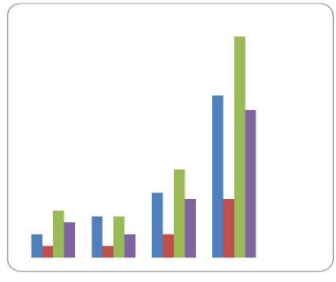
1) Complete remission =100 %
2) Marked improvement = 81-98%
3) Moderate improvement = 51-78%
4) Mild improvement= 1-48%
5) No improvement =0%
6) severity increased 0=% as per finding
7) Drop out = % as per finding.

Demographic Data

1) Age

Table 1: Distribution of Patients According to Age

Age	Group A	Group B	Total	Percentage
21-30	4	7	11	27.5
31-40	2	2	4	10
41-50	8	7	15	37.5
51-60	6	4	10	25
Total	**20**	**20**	**40**	**100**

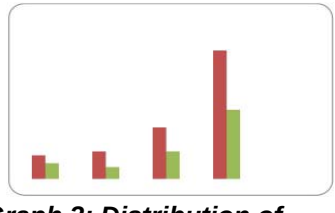


Graph 1: Distribution of Patients According to Age

2) Sex

Table 2 : Distribution of Patients According to Sex

Sex	Group A	Group B	Total	Percentage
Male	12	14	26	65%
Female	8	6	14	35%
Total	**20**	**20**	**40**	**100**

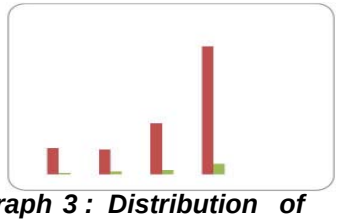


Graph 2: Distribution of Patients According to Sex

3) Religion

Table 3 : Distribution of PatientsAccording to Religion

Religion	Group A	Group B	Total	Percentage
Hindu	19	18	37	92.5%
Muslim	1	2	3	7.5%
Total	**20**	**20**	**40**	**100**



Graph 3 : Distribution of Patients According to Religion

Assessment Criteria : Effect of therapies was assessed by the signs and symptoms before and after the treatment.It was on the basis of self formulated scoring scale according to signs and symptoms.

Diagnostic Criteria

1. Dryness

Table 4: Analysis of Effect of Treatment on Dryness

GROUP A

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Dryness	20	1.55	0.3	1.25	80.64	0.993	0.222	5.483	<0.001	HS

GROUP B

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Dryness	20	1.45	0.25	1.2	82.75	0.871	0.194	6.001	<0.001	HS

2. Foreign Body Sensation

Table 5 : Analysis of Effect of Treatment on Foreign Body Sensation

GROUP A

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
F. B. Sensation	20	1.2	0.75	0.45	37.5	0.739	0.165	2.65	<0.05	HS

GROUP B

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
F.B. Sensation	20	1.35	0.65	0.7	51.85	0.90 1	0.201	3.39	<0.01	HS

3. Heaviness of Lids

Table 6 : Analysis of Effect of Treatment on Heaviness of Lids

GROUP A

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Heaviness of lid	20	1.05	0.55	0.5	47.61	0.591	0.132	3.682	<0.01	HS

GROUP B

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Heaviness of lid	20	0.8	0.4	0.4	50	0.663	0.148	2.62	<0.01	HS

4. Difficulty in Lid Movements

Table 7: Analysis of Effect of Treatment on Difficulty in Lid Movements

GROUP A

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Difficulty in lid movment	20	1.15	0.45	0.7	60.86	0.953	0.213	3.19	<0.01	HS

GROUP B

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Difficulty in lid movment	20	1.15	0.3	0.85	73.91	0.792	0.177	3.198	<0.01	HS

5. Burning Sensation

Table 8: Analysis of Effect of Treatment on Burning Sensation

GROUP A

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Burning sensation	20	0.8	0.1	0.7	87.5	0.714	0.159	4.737	<0.001	HS

GROUP B

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Burning sensation	20	0.75	0.05	0.7	93.33	0.641	0.143	4.765	<0.001	HS

6. Transient Blurring

Table 9: Analysis of Effect of Treatment on Transient Blurring

GROUP A

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Transient Blurring	20	1.15	0.85	0.3	26.08	0.781	0.174	1.67	>0.05	NS

GROUP B

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Transient Blurring	20	1.15	0.7	0.45	39.13	0.804	0.179	2.437	<0.05	S

Stringy Discharge

Table 10: Analysis of Effect of Treatment on Stringy Discharge

GROUP A

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Stringy discharge	20	0.9	0.3	0.6	66.67	0.861	0.192	3.042	<0.01	HS

GROUP B

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Stringy discharge	20	0.75	0.3	0.45	60	0.589	0.131	3.327	<0.01	HS

8. Shirmer's Test 1

Table 11: Analysis of Effect of Treatment on Shirmer's Test 1

GROUP A

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Shirmer's test	20	1.2	0.7	0.5	41.15	0.921	0.206	2.36	<0.05	S

GROUP B

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Shirmer's test	20	1.3	0.6	0.7	53.84	0.901	0.201	3.390	<0.01	HS

9. Rose Bengal Staining

Table 12: Analysis of Effect of Treatment on Rose Bengal Staining

GROUP A

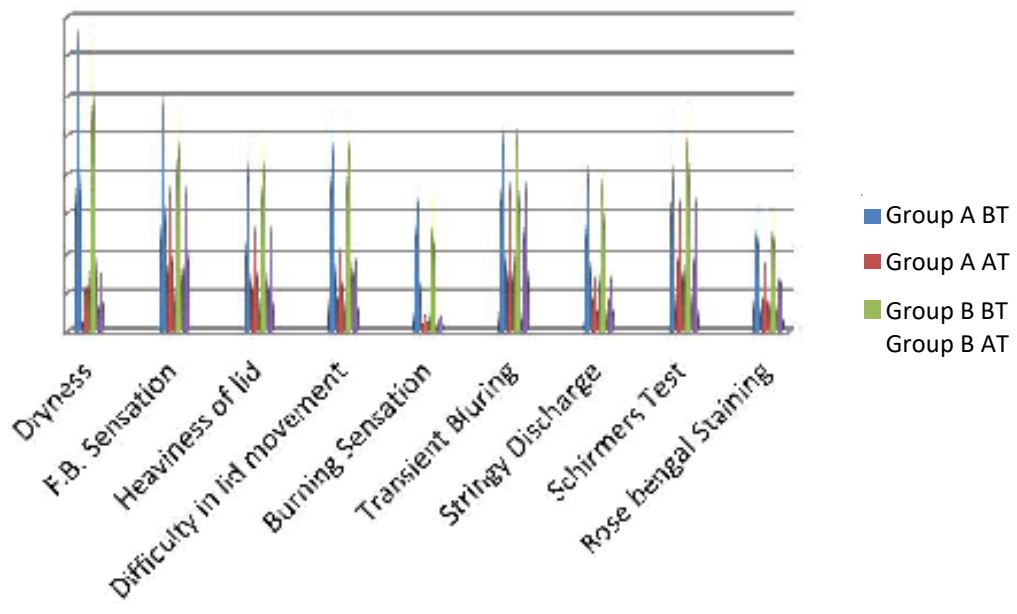
Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Rose Bengal Staining	20	0.65	0.35	0.3	46.15	0.458	0.102	2.852	<0.05	S

GROUP B

Symptoms	No. of Patients (n)	Mean Score			% of relief	S.D	S.E.	't' Value	'p' Value	Significance
		BT	AT	BT-AT						
Rose Bengal Staining	20	0.4	0.2	0.2	50	0.401	0.089	2.179	<0.05	S

Table 13:Comparison of effect of therapy between Group A and Group B

Sr. No	Symptom	Group A		Group B	
		BT	AT	BT	AT
1	Dryness	1.55	0.3	1.55	0.3
2	F.B. Sensation	1.2	0.75	1.2	0.75
3	Heaviness of lid	1.05	0.55	1.05	0.55
4	Difficulty in lid movement	1.15	0.45	1.15	0.45
5	Burning Sensation	0.8	0.1	0.8	0.1
6	Transient Bluring	1.15	0.85	1.15	0.85
7	Stringy Discharge	0.9	0.3	0.9	0.3
8	Schirmers Test	1.2	0.7	1.2	0.7
9	Rose bengal Staining	0.65	0.35	0.65	0.35



Graph : 4 Comparison of effect of therapy between Group A and Group B Discussion on Demographic Data

1) Age wise distribution showed maximum distribution in 41-50 age group (37.5%) and next (27.5%) in 21-30 age group. Though the disease is more predominant in males after 40, in this group the working age and environmental factors like pollution, dry wind, dust, sunlight etc in that particular desa played a major role in exhibiting this particular data.

2) Sex: majority of patients were males (65%) than females (35%). Here the difference is very more which suggests that, the exposure to nidana are more for females in that particular desa, where the females are usually housewives. The males mostly Farmers are usually prone to the disease especially sunlight, dust etc.

3) Majority of patients were Hindus which suggests the predominance of that community in this region.

Discussion of Disease Related Data

1) Chronicity of illness: As this is an agricultural area and majority of patients are drivers and farmers, even mild change in the eyes may affect their work adversely. That may be the reason that the males are coming to hospital even in the early stage of dryness and females are coming in the later stage. 45% of patents were having chronicity less than 1 year. 32.5% had chronicity between 1-2 years.

2) Time Spent in front of Visual Display Unit: Majority of patients was spending only less than 2 hours in front of VDU. Only 15% are spending >4 hours in front of VDU. These group may have reduced blink rate and thus may result in increased evaporation of tears resulting in consequent dryness

3) Distribution of Patients on the basis of OSDI Score: As the patients are coming for treatment even in the early stage, the majority of the patients are having OSDI score less than 40. The probable maximum score being 100. Higher OSDI score shows severity of dryness.

4) Distribution of Patients based on Severity of Disease (OSDI Colour Code): As the patients are coming for treatment even in the early stage the severity is usually less in majority of patients i.e., majority of patients have severity ranging from mild, mild to moderate and moderate.

5) Chief complaints of Sushkakshipaka: In this present study, the main clinical features include dryness (100%) , FB Sensation (100%), Vague discomfort of eye (95%), Difficulty in lid movements (90%), Transient blurring (90%), Burning sensation (75%), Stringy discharge (50%), Mild pain (37.5%), Itching (37.5%), etc.

6) Aharaja nidana: The data reveals that more than 80% of patients had aharaja nidanas like snigda ushna drava ahara, utklesakara ahara, vidagda ahara, atikshara- katurasa ahara, samasana, amlahara, visamasana, etc. 75% patients were having vidahi ahara. 55% of patients had asatmya and virudahara and 37.5% of patients had adhyasana.

7) Viharaja nidana: The data reveals that exposure to dust, wind, and sunlight and dry whether was the main cause in all causes of dry eye (100%) more than 70% patients had nidanas like, exposure to smoke, suppression of urges, violence of swasthavrita, irregular bath habits, etc. More than 50% had nidanas like irregular sleeping habits, eye strain, etc.

Discussion on Treatment Response :

Effect of therapy was assessed in 40 patients in two divided group on the basis of changes observed in cardinal signs, symptoms and diagnostic tests. Statistical analysis was conducted to know their significance.

- In both Group A and group B there was highly significant reduction in subjective and objective parameter.
- On compmarison of result in group A and group B; the Group B showed good result than group A.

On the basis of Parametric percentile inhancement in symptoms; *haridradi ksheera parisheka* showed equivalent result as CMCS eyedrop.

Probable Mode of Action of Drug

Vatha and pitha along with raktha are the factor which gets vitiated in sushkakshipaka. The vatha, pitha, vridhis indirectly leads to kapha kshaya. Decrease of snigda guna and increase of ruksha guna initiates the pathology. Ruksha, laghu, khara, sukshma gunas of vata and ushna, laghu, tikshna gunas of pitha increases and kapha kshaya sets in which leads to decreased netraposhana. Due to this sushkakshipaka occurs and vyadhikshamatwa of netra decreases. As a result, paka sets in along with different types of pains. So the principle of treatment should be vatha pitha samana, chakshushya and brimhana.

The parisheka drug contains Haridra, Daruharidra, paya and saindhava. All of which have vata- pitha hara property and chakshushya property.

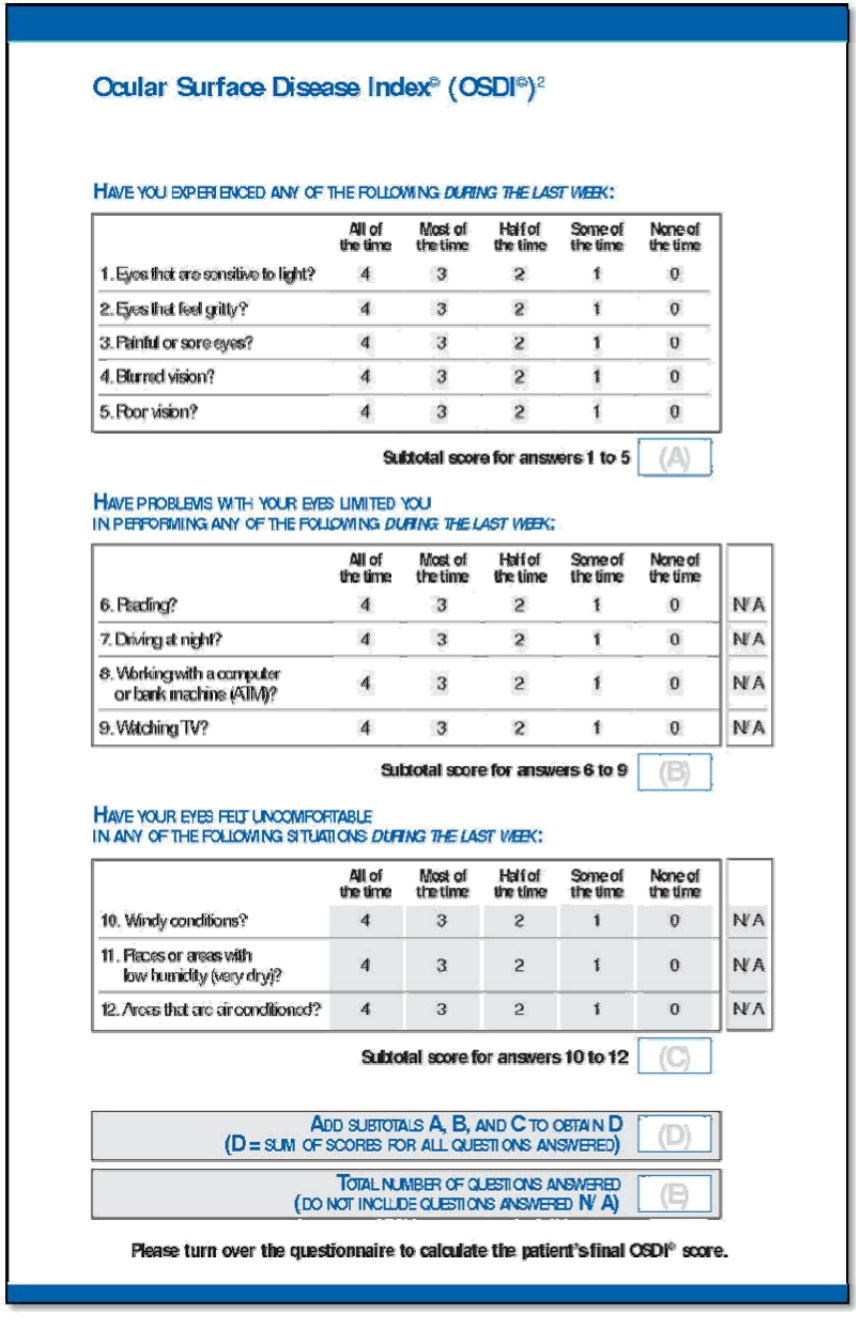
Haridra have properties like tikta and katu rasa, ruksha and laghu guna, and ushnaveerya. By those properties it is able to cure vata, pitta and kapha. Its Tridoshshamka and chakshushya, kandughana; vranaropana; pittashamaka.

Daruharidra have properties like tikta and kashaya rasa, ruksha and laghu guna, and ushnaveerya. By those properties it is able to cure pitta and kapha. Its chakshushya.

Paya (cow's milk) have properties like madhura rasa, and vipaka, guru and snigdha guna and seetaveerya. By these properties it is able to cure vatha and pitha

Saindhava lavana has sukshma guna. By virtue of this sukshma guna it can penétrate sukshma srothases of the eye. Hence with the help of saindhava lavana paya reaches the ocular tissues quickly and its action is accelerated. In modern ocular pharmacology it is told that ocular penetration enhancers and enhancing corneal permeability can improve the drug absorption via corneal and non corneal routes from the ocular surface.

OSDI



Ocular Surface Disease Index® (OSDI®)[2]

HAVE YOU EXPERIENCED ANY OF THE FOLLOWING *DURING THE LAST WEEK*:

	All of the time	Most of the time	Half of the time	Some of the time	None of the time
1. Eyes that are sensitive to light?	4	3	2	1	0
2. Eyes that feel gritty?	4	3	2	1	0
3. Painful or sore eyes?	4	3	2	1	0
4. Blurred vision?	4	3	2	1	0
5. Poor vision?	4	3	2	1	0

Subtotal score for answers 1 to 5 (A)

HAVE PROBLEMS WITH YOUR EYES LIMITED YOU IN PERFORMING ANY OF THE FOLLOWING *DURING THE LAST WEEK*:

	All of the time	Most of the time	Half of the time	Some of the time	None of the time	
6. Reading?	4	3	2	1	0	N/A
7. Driving at night?	4	3	2	1	0	N/A
8. Working with a computer or bank machine (ATM)?	4	3	2	1	0	N/A
9. Watching TV?	4	3	2	1	0	N/A

Subtotal score for answers 6 to 9 (B)

HAVE YOUR EYES FELT UNCOMFORTABLE IN ANY OF THE FOLLOWING SITUATIONS *DURING THE LAST WEEK*:

	All of the time	Most of the time	Half of the time	Some of the time	None of the time	
10. Windy conditions?	4	3	2	1	0	N/A
11. Places or areas with low humidity (very dry)?	4	3	2	1	0	N/A
12. Areas that are air conditioned?	4	3	2	1	0	N/A

Subtotal score for answers 10 to 12 (C)

ADD SUBTOTALS A, B, AND C TO OBTAIN D (D = SUM OF SCORES FOR ALL QUESTIONS ANSWERED) (D)

TOTAL NUMBER OF QUESTIONS ANSWERED (DO NOT INCLUDE QUESTIONS ANSWERED N/A) (E)

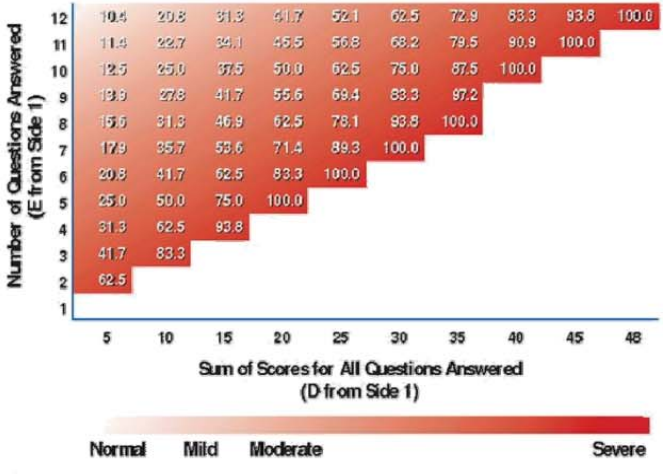
Please turn over the questionnaire to calculate the patient's final OSDI® score.

Evaluating the OSDI® Score[1]

The OSDI® is assessed on a scale of 0 to 100, with higher scores representing greater disability. The index demonstrates sensitivity and specificity in distinguishing between normal subjects and patients with dry eye disease. The OSDI® is a valid and reliable instrument for measuring dry eye disease severity (normal, mild to moderate, and severe) and effect on vision-related function.

Assessing Your Patient's Dry Eye Disease[1,2]

Use your answers D and E from Side 1 to compare the sum of scores for all questions answered (D) and the number of questions answered (E) with the chart below.* Find where your patient's score would fall. Match the corresponding shade of red to the key below to determine whether your patient's score indicates normal, mild, moderate, or severe dry eye disease.



*Values to determine dry eye disease severity calculated using the OSDI® formula:

$$\text{OSDI}^{®} = \frac{(\text{sum of scores}) \times 25}{(\#\text{ of questions answered})}$$

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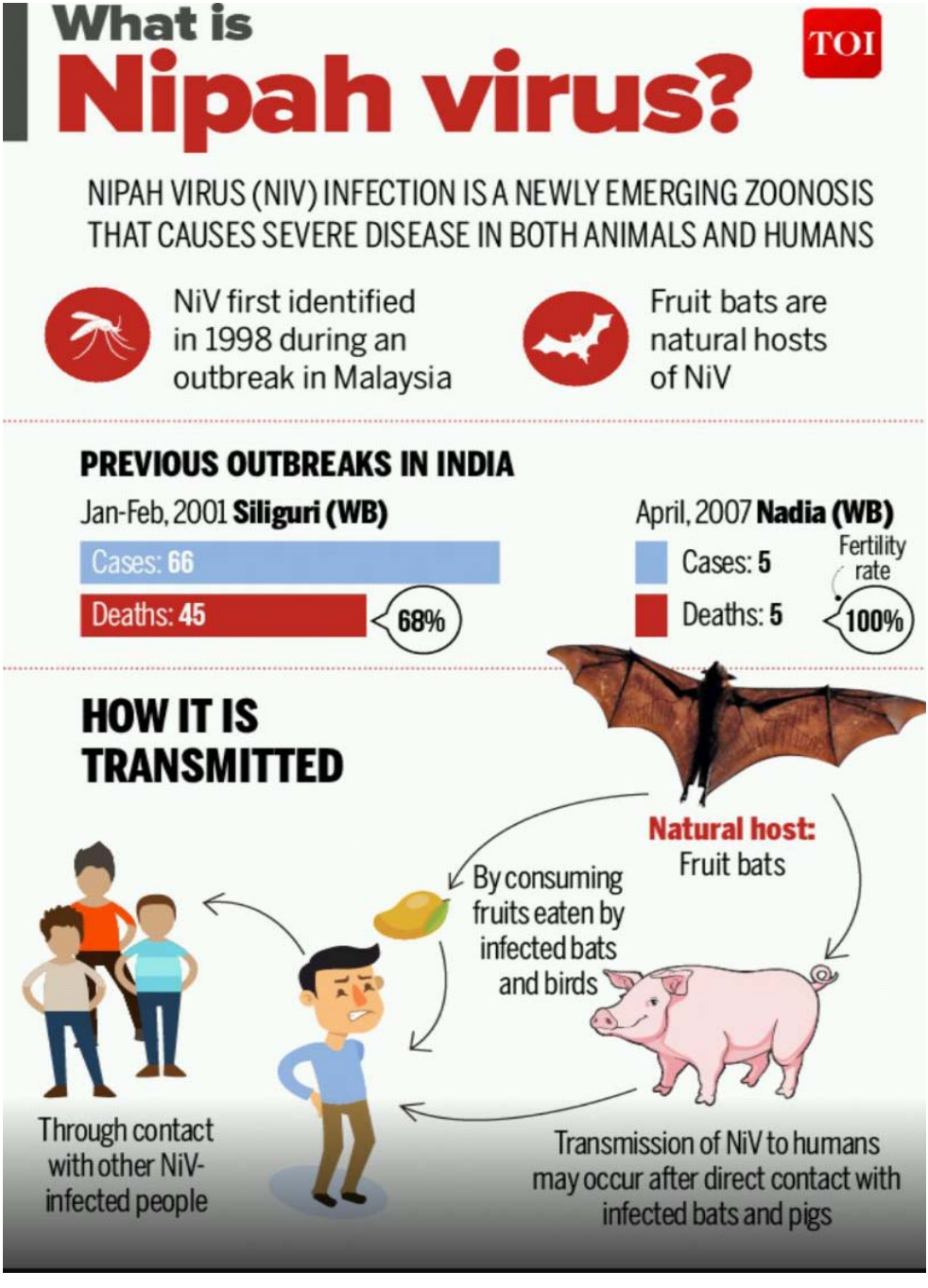
What is
Nipah virus?
TOI
NIPAH VIRUS (NIV) INFECTION IS A NEWLY EMERGING ZOONOSIS THAT CAUSES SEVERE DISEASE IN BOTH ANIMALS AND HUMANS
NiV first identified in 1998 during an outbreak in Malaysia
Fruit bats are natural hosts of NiV
PREVIOUS OUTBREAKS IN INDIA
Jan-Feb, 2001 Siliguri (WB)
Cases: 66
Deaths: 45
68%
April, 2007 Nadia (WB)
Cases: 5
Deaths: 5
Fertility rate
100%
HOW IT IS TRANSMITTED
Natural host: Fruit bats
By consuming fruits eaten by infected bats and birds
Through contact with other NiV-infected people
Transmission of NiV to humans may occur after direct contact with infected bats and pigs

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1) Left top corner of article write one of following :
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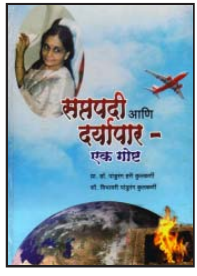

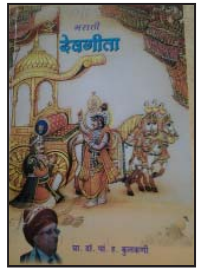

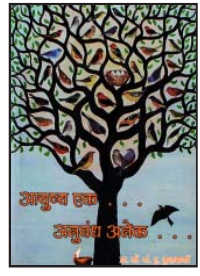

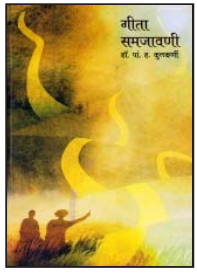

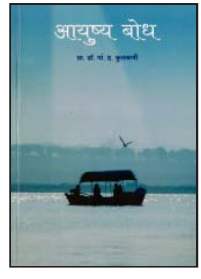

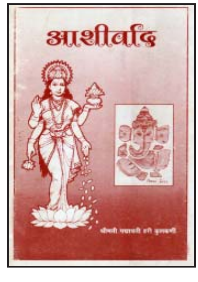

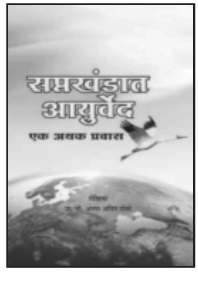

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to Dr. Joshi.

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