# JOURNAL OF INDIAN SYSTEM OF MEDICINE

Official Publication of
Mahatma Gandhi Ayurved College, Hospital & Research Centre
Sawangi (Meghe), Salod (H), Wardha– 442 004, Maharashtra (India)

July – December, 2013 | Volume 1, Number 2 | ISSN - 2320 - 4419



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**Datta Meghe Institute of Medical Sciences,**

(Deemed University)

(Declared as Deemed to be University under section 3 of the UGC Act 1956)

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## Mahatma Gandhi Ayurved College, Hospital & Research Centre

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MAHATMA GANDHI AYURVED COLLEGE HOSPITAL & RESEARCH CENTRE
A Constituent College of
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(DEEMED UNIVERSITY)

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# *Editorial*

# Crossroad Philosophy

"Ayurveda is at crossroads" - is the statement of Ayurveda learned community for past two decades. A science developed from many centuries in the shade of multi ethnic, multi lingual, multi racial Indian peninsula exhibited its impact on health uplift and also foreign trade economy. Present day Ayurveda stalwarts' contributions are inadequate to bring back the glory of the past to Ayurveda. One way the Ayurveda is at crossroads. The CCIM (Ayurveda education Governing body), AYUSH (Ayurveda Health & Family welfare body), CCRAS (Ayurveda research directional body) and Scientific Medicine (Alternative medicine for Ayurvedic physician) are the 4 directions sited at crossroad of Ayurveda to approach. Will the Ayurveda Panacea able to get the past glory?

When one is at a crossroads in life, what does one do? If you're standing on the Path and you've come to a fork in the road, you might notice yourself saying, "Ahh! What do I do? Do I go left, do I go right, or do I just go straight..?" How does one know which step to take towards which direction?

To be in a cross, we should be from either of the way. The common loom to the cross is through CCIM curriculum for an introducing scholar of Ayurveda. When he reach the cross is unable to judge what curriculum is given to him and not able to get the confidence over the system or able to develop the skills. There are many recommendations appear to reform and put forth in practice. The big question from past four decades is whether the Ayurveda student is taught the Samhita based or Subject based teaching. Of course the followed 'subject oriented teacher centered education' is proving the inadequacies. These areas must be bridged with introducing the researches incorporated in to the subject and making the subject stronger with evidences. There by the Ayurveda practicing area is get facilitated with suitable evidences and skills.

Crossroad philosophy is too perilous phenomenon where the pessimistic attitudes are developing. Ayurveda even though claim that it is a lifestyle making medical faculty, do not wish to adopt the present day circumstances of lifestyles and advances in the medical practice. The age old traditions must reframe to the present situation and brought forward as skill to the learner. At the cross it is certain that we do not know what is behind curtain. But still with the scientific guidelines available have to take a chance of making something instead of nothing.

In this process of adaptations in the field of research a blind follow or plagiarism is increasing. The established patterns of research are to be followed from either CCRAS or WHO alternative medicine guidelines. AYUSH as a governing body has to invite the mandatory research projects from the institutes, centers and even from the dispensaries to improve and standardize the Ayurveda medicines and concepts. Good olden traditional formulations do require the authorization of practice in present scenario either with the help of CCRAS or AYUSH.

A step towards this direction certainly makes the Ayurveda fraternity to have bright tomorrow. This is a time of epochal change in Ayurveda and to spread across the developed countries who have ability to pay for their better health in the world. It would be a grave mistake if we turned inward as a result of current difficulties appearing at crossroads. We should be confident and outward looking.

. . . . . There must be a few times in life when you stand at a

precipice of a decision. When you know there will forever be a before and an after . . . . . .

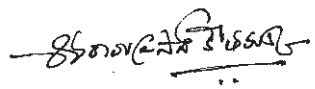
I knew there would be no turning back if I designated this moment . . . . . .

Each day is a new beginning. You can start fresh, anticipating what today will bring.

Or you can just settle for yesterday's doubts, fears, or worries.

Which road will you take?

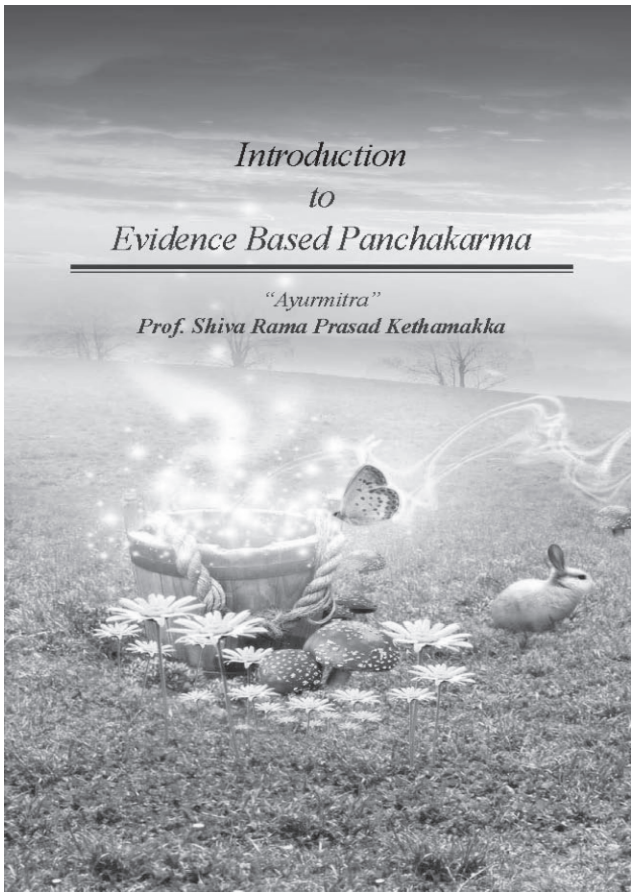
Do you take the path to the clear present or the shadows of the past?



**Ayurmitra KSR Prasad**
(Technoayurveda)

# *BOOK REVIEW*

## *KSR Prasad's Introduction to the Evidence Based Panchakarma*




It gives me great pleasure to go through this monograph on "Introduction to the Evidence Based Panchakarma" written by Prof. Dr. Shiva Ram Prasad Kethamakka, Head of Department, Panchakarma, Mahatma Gandhi Ayurvedic College, DMIMS, Salod, Wardha. I started to read his book with a critical if not so censorious eye.

Medicine is the most dynamic of biological disciplines. It is regarded as the oldest Indian sciences and is proved to be the science in which Indians specialized first. It is undoubtedly true that all people are different, and that the ideal form of medicine should take such differences into account. Ayurveda strength in this regard is one of its sources of appeal. However, the mere fact that medicine ought to treat people individually doesn't imply that Ayurveda's individualized treatment techniques that are actually grounded in reality. They could be wishful thinking rather than an insight into the truth.

The increasing popularity of Ayurveda in the west and in India has naturally led the consumers and therapists to assess its clinical potentials and theoretical under pinning closely. But search for ancient cure of Human diseases and ailments is both intriguing and mind-boggling. Ayurveda contains declarative statements based on the crystallization of accumulated experience and observation of natural phenomena. The conclusive statements made generations ago could be the end result of experiments conducted by ancestors. But the methods of derivation employed to arrive at the conclusion remain largely unclear and unknown to the later generations of Ayurvedic professionals. The effect of this appears to be a shift in approach which is exploratory analytical and conditional based in contemporary medical issues including patent laws.

It is also be noted that modern medical approach today is inclined towards accepting multifactor etiologies for diseases, individualizing treatment and has started giving emphasis on homeostasis are all strongholds of Ayurveda.

In spite of having tremendous wealth of knowledge based on real experience, a statue observation, the system has been relegated to back benches and raises many a eyebrows considering a non-science a witch craft because efforts were not made to apply Cartesian principles of drawing inferences and conclusions based on hard data, obtained by designing experiments around hypothesis.

Hence, what appeared essential was to create a base of evidence for fundamental principles of Ayurveda, which are explained in its own terminology. And for this purpose, interpreting the paribhasha in contemporary scientific language was necessary as only then it would be possible to design protocols for experiments.

In medicine, observation alone can ensure correct diagnosis in majority of cases provided it is followed up by the right deal of logical reasoning. At times, however, finality of opinion would have to be reserved to be made only after relevant investigations.

Dr. K. S. R. Prasad has taken scrupulous care in presenting all the relevant information regarding need of evidence based Panchakarma both in procedure as well as therapeutically, approach to conquer or concur-explained about main

defective areas and given more stress towards the need of standardization of procedure and Herbo-mineral compounds.

Further he has presented the importance of Research in Ayurveda and presenting the clinical data for publication in the standards so that it will help for further researchers as evidence to continue the same.

The entire compendium is well designed and written keeping in view for research scholars of Ayurveda and the time constraint busy practitioner who is practicing Panchakarma as an Evidence Based method.

The Monograph "Introduction to the Evidence Based Panchakarma" written by Prof. Shiva Ram Prasad Kethamakka is surely an attempt in that direction and finds a slot in that category to be very useful both to the teacher, research scholar and the taught, particularly so in the current trends and modes of teaching of the subject imparted in the Ayurvedic Institutions.

Every thoughtful person who has ever been asked to respond to a writer's work has probably experienced the anxiety and difficulties I have described. I say if you feel a little wary about responding, that's a good sign.

I Personally Congratulate Prof. Shiva Rama Prasad Ketamakka for this useful endeavor and conclude by…

You are thinking, lots of hard work, much clearer, super progress, I am proud of you, showing your stuff, that's the way, keep studying, almost there, so close, better than ever, I knew you could do it, way to go.

*"The greatest discovery of any generation is that human beings can alter their lives by altering the attitudes of their minds."* - Albert Schweitzer

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# Effect of Guduchi satva in Functional Menorrhagia

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## Abstract

Menstrual problems are one of the commonest presentations to the physicians. The understanding of the physiological spectrum of menstruation is essential to tackle such problems. Menorrhagia is defined as cyclical bleeding occurring at normal interval but bleeding is either excessive in amount or duration or both. Functional Menorrhagia is a such condition in which no any organic pelvic pathology can be found with excessive amount or duration of menstrual bleeding. Guduchi is such drug, which has been described in various books of Ayurveda for this type of bleeding. Aim of present work is to see the effect of Guduchi in functional menorrhagia. Total 20 cases were selected for the present study and treated with Guduchi satva 1gm. B.D with milk two times daily for three consecutive cycles. 70% of women were cured & 20% improved. Guduchi Satva is very effective drug for functional menorrhagia by curtailing both duration & amount of menstrual bleeding.

**Key words:** Menorrhagia, *Guduchi*, Menstrual bleeding

## Introduction:-

Every healthy woman menstruates regularly every month during her reproductive life. Menstruation [10,16,19] is the periodic and cyclical discharge of blood, mucus, cellular debris from the uterine mucosa, which occurs due to progesterone withdrawal after ovulation in non fertile cycles and initiated in response to changes in the hormonal production by the ovaries, which themselves are controlled by the pituitary and hypothalamus. It takes place at interval of 28 days, duration most often varies from 3-5 days and total amount of blood loss is 50-60 ml with an average of 35 ml. from menarche to menopause but more than this is accepted abnormal. Between menarche to menopause 400 to 500 menstrual cycles occur in the average female. One fifth of women have the problem of heavy menstrual bleeding at some period during their reproductive life and change in normal amount or duration of menstrual bleeding is commonest cause of deterioration of women's health. Menorrhagia [10,16,19] is a condition in which cycle is normal but excessive amount or duration of menstrual bleeding seen with pelvic pathology,

While in functional menorrhagia [15] cycle is normal, excessive amount or duration of menstrual bleeding found without any pelvic pathology. It is a symptom caused by conditions affecting uterus and its vascular apparatus rather than by any ovarian disturbance and usually due to failure in corpus luteum formation, but may result in endometrial dysfunction. It may occur due to imbalance in local uterine factors, which normally control the menstruation. Emotional [13] and nervous disorders are the most important causative factors for excessive uterine hemorrhage. Tension, anxiety, environmental changes, unsatisfied sexual urge, over straining work [13] can affect the normal menstrual cycle and cause for menorrhagia [12,13] because female reproductive system is closely related to hypothalamic and limbic system where hormonal and emotional influence meet. After influencing each other, they carry information to cerebral cortex and peripheral organs. Hypothalamic GnRh is regulated by two biologic amines, First Nor-adrenaline, which stimulates and second Dopamine, which has inhibitory effect. So any emotional stress may cause imbalance in the formation and metabolism of these two neurotransmitters [9]. Endogenous opiate peptides [endorphins] act as modulator of these neurotransmitters by altering their effectiveness at synapse in hypothalamus. Release of endomorphine is also affected by stress. Various treatments prescribed in modem medicine like hormone therapy, antiprostaglandins and antifibrinolytic agents etc., have not proved their definite efficacy in-spite at high price and side effects. In Ayurvedic texts [1, 2, 7, 8, 22] many drugs have been described for the treatment of this type of bleeding, out of them Guduchi 8 is one having Kashaya Rasa [Astringent], Raktastambhak [Styptic] and Raktavardhak [Haemostatic] properties. Seeing these properties Guduchi is choosen for the present work.

**Material And Methods:- [14]**

Aim of study is to see the effect of Guduchi in fuctional menorrhagia.

**Criteria For Selection Of Drug:-**

Guduchi has been prescribed for excessive bleeding during menstruation by various ancient scholars like- Charak [Cha.chi. 30/99], Vagbhtta , [Ash.sang.utt. 39/66] and Yogaratnaker [Yogaratnaker –Strirogadhikar] [1,2,7,22]. Further it has Raktastambhak( Haemostatic) and Immuno-modulatory properties [8,17,20,21]. That is why Guduchi has been selected for the present study.

**Criteria for Selection of Cases:-**

Patient attending the O.P.Ds of Prasuti Tantra, S.S. Hospital, BHU, Varanasi with complaints of abnormal excessive uterine bleeding during menstruation were randomly selected for the present study.

**Inclusion Criteria:-**

a) Women of different age, gravidity and parity
b) Regular Menstrual Cycle of 28 - 30 days
c) Increased menstrual blood flow either in amount or duration.

**Exclusion Criteria:-**

a) Women belonging to early menarche and perimenopausal age group.
b) Lactating women and history of using contraceptives.
c) Psychological unstable women, who unable to give a reliable history.
d) Women with significant past, family, personal and common drug allergy history.
e) Women with any systemic disorder, organic pathology of reproductive system, diabetes, severe anaemia, Jaundice, liver diseases, hypertension, T.B and metabolic disorders

**Follow up:-**

a) Total 4 follow-ups.
b) One month interval.
c) Three were with medicine.
d) 4th one was without medicine
e) In each follow up change in following parameters were observed and noted.
   i. Amount of menstrual blood loss
   ii. Duration of menstrual blood loss
   iii. Character of menstrual blood loss
   iv. Relief in Associated symptoms

**Results Assessment:-**

Results were assessed on the following basis.

1. Average amount of blood loss
2. Normal duration (3-5 days) of blood loss.
3. Normal consistency of menstrual blood loss.
4. Relief in associated symptoms.

**Cured:** When all the above parameters were fulfilled

**Improved:** When 3 out of above 4 parameters were fulfilled.

**Unchanged:** No change was observed in any of the parameter.

**Table –** 1 Scoring of different menstrual parameters

| Parameters | Criteria | Score |
|---|---|---|
| Amount of menstrual bleeding | Average:- Complete soakage of 1-2 pads in 24 hrs. | 0 |
| | Moderate:- Complete soakage of 3-4 pads in 24 hrs. | 1 |
| | Excessive:- Complete soakage of 5-6 pad in 24 hrs. | 2 |
| | Very Excessive:- Complete soakage of 7 or more pads in 24 hrs. | 3 |
| Duration of menstrual bleeding | Normal:- 2-3 days | 0 |
| | Long:- 4-5 days | 1 |
| | Very long:- 6-7 days | 2 |
| | Very very long:- 8-10 days | 3 |
| Pain during menstruation | No pain:- No any complaint of pain | 0 |
| | Mild:- Complaint of pain but not require any drug | 1 |
| | Moderate:- Complaint of pain & need to take 1 or 2 doses of Drug for relief but not affect her routine work. | 2 |
| | Severe:- Complaint of pain & need to take 3 or 4 doses of drug for relief but affected her routine work. | 3 |

**Table- 2** Incidence of age, gravidity, parity and marital status.

| Statistical Values | Age ( in years) | Gravidity ( In number) | Parity ( In number) | Marrital Stats ( in years) |
|---|---|---|---|---|
| MEAN | 28.48 | 2.85 | 2.6 | 7.3 |
| SD | 5.5 | 1.68 | 1.53 | 5.23 |

**Table- 3** Change in the amount and duration of blood loss during subsequent follow-ups

| Variables | Mean SD during different follow-ups. | | | | |
|---|---|---|---|---|---|
| | Initial | 1st FU | 2nd FU | 3rd FU | 4th FU |
| Amount of blood loss | 2.05 | 1.4 | 1.2 | 1.1 | 1.1 |
| | 0.59 | 0.49 | 0.4 | 0.3 | 0.3 |
| Duration of blood loss | 2.5 | 1.65 | 1.5 | 1.35 | 1.35 |
| | 0.6 | 0.6 | 0.5 | 0.48 | 0.48 |

**Table- 4** Comparison between initial and subsequent follow-ups in the amount & duration

| Variables | t and p values during different follow-ups. | | | |
|---|---|---|---|---|
| | Initial vs 1st | Initial vs 2nd | Initial vs 3rd | Initial vs 4th |
| Amount of blood loss | 4.96 | 5.66 | 7.03 | 7.03 |
| | < .001 sig | <. 001 sig | < .001 sig | < .001 sig |
| Duration of blood loss | 5.12 | 5.64 | 5.89 | 5.89 |
| | < .001 sig | <.001 sig | < .001 sig | < .001 sig |

**Table- 5** Presence of clot in menstrual bleeding and other associated symptoms during subsequent follow -ups.

| Variables | Initial | | 1st FU | | 2nd FU | | 3rd FU | | 4th FU | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NO | % | NO | % | NO | % | NO | % | NO | % |
| Clot present | 12 | 60 | 4 | 20 | 1 | 5 | 1 | 5 | 1 | 5 |
| Weakness | 13 | 65 | 5 | 25 | 2 | 10 | 1 | 5 | 1 | 5 |
| Backache | 14 | 70 | 9 | 45 | 7 | 35 | 4 | 20 | 4 | 20 |
| Vaginal Discharge | 10 | 50 | 7 | 35 | 6 | 30 | 5 | 25 | 5 | 25 |

**Table- 6** Results of total cases

| Result | No of cases | Percentage |
|---|---|---|
| Cured | 14 | 70 |
| Improved | 4 | 20 |
| Unchanged | 2 | 10 |

After detailed history, complete examinations and investigations total 20 cases were selected and they were advised to used Kotex diaper (7"x 2.5"x 0.8") during menstruation. In selected cases scoring was done (Table-1), which was purely based on patient's statements and treated with Guduchi satva 1gm. B.D with milk two times daily for three consecutive cycles.

**Discussion:-**

During observations it was found that most of the women having excessive bleeding were from active reproductive age group 26-30 years multigravid or multiparous women had married life more the 5years (Table-2). These findings show that functional menorrhagia is more common in early reproductive age of married women. This age group faces the maximum changes and responsibilities. In this time the women is either too much anxious to conceive or is burdened with other problems. These situations give rise to neuro- hormonal imbalance, which is the causative factor for functional menorrhagia. Further the repeated coitus and deliveries may be the causative factor to produce active or passive congestion of the reproductive organs, which causes excessive uterine bleeding due to increased vascularity. As increased vascularity is one of the causes mentioned in etiology of functional menorrhagia.

During observations initially mean amount and duration of blood loss were seen 2.05 and 2.5 respectively. Amount and duration of blood loss were started declining from the 1st follow-up and during 3rd follow-up maximum number of cases was normalized. Significant change was seen in amount and duration of blood loss from the 1st follow-up (Table-3,4). Consistency of menstrual blood was also started returning towards normal and effective results

were seen from the 1st follow-up. Gradually changes in associated symptoms were also observed during subsequent follow-ups. No women had complained for recurrence of any symptom during 4th follow-up neither of any side effect complaints came in light (Table-5). 70% women were cured and 20% women were improved (Table-6). Due to styptic, haemostatic, anti-inflammatory and immuno-modulatory properties of Guduchi helps in reducing the bleeding and shows very good results in functional menorrhagia. Further according to Ayurvedic texts [3,6,8,11,1718,20,21,22] Guduchi has Kashaya Rasa [Astringent], Raktastambhak [Styptic] and Raktavardhak [Haemostatic] properties by which it shows very beneficial effects in functional menorrhagia.

**Conclusion:**

1. Functional Menorrhagia is a symptom of early reproductive age group of multiparous women.
2. Guduchi effects in excessive or prolonged bleeding by curtailing both duration and amount of blood loss but more effective in reducing the duration of blood loss with reliving the associated symptoms.
3. Guduchi has styptic, haemostatic, anti-inflammatory and immuno-modulatory properties by which might have influenced vascularity of reproductive system and shows beneficial effects.
4. Guduchi has Kashaya Rasa, Raktastambhak and Raktavardhak [Haemostatic] properties by which it shows very good results.
5. Guduchi is very effective treatment for functional menorrhagia.

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# Antibacterial Effect of Kutaj Bark (Holarrhena antidysenterica Wall.) with respect to Enteropathogenic Escherichia Coli (EPEC)

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## Abstract

As stated in Ayurvedic texts Kutaj bark mainly useful in treatment of diseases like diarrhoea, dysentery etc. E-coli is most dangerous bacteria causing diarrhoea. Ayurveda has included all the microbes under the heading 'Krimi'. Bhavaprakasha Nighantu affirms, Kutaj bark having Atisaraghna and Krimighna property. Hence Kutaj bark having action on bacteria (Krimi) may have action on Enteropathogenic Escherichia Coli (EPEC) causing diarrhoea. So it is necessary to do the physicochemical standardization of Kutaj bark, to study its antibacterial activity on EPEC (In-vitro), to determine minimum inhibitory concentration of Kutaj bark for antibacterial activity against EPEC. Materials used are self collected sample, clinically isolated EPEC. Method used for antibacterial susceptibility is disc diffusion method. After study result came are, foreign matter is negligible, moisture content is 7.65%, total ash is 4.54, acid insoluble ash is 0.5%, water soluble ash is 5.67%, water soluble extract is 32.35%, alcohol soluble extract is 31.40%. Kutaj bark shows the antibacterial activity against EPEC in methanolic extract having MIC value 2.0gm/10ml.

**Key words –** Kutaj, Krimi, Atisaraghna, Krimighna

## Introduction

Ayurveda is the flawless ancient science of life, the word 'Ayur' literally means 'life' and 'veda', the 'science' or 'knowledge'. This system of medicine is based on holistic approach and origin of it can be traced to as early as dawn of the civilization and Vedic period. Its aim is not just the cure of disease but the maintenance of a positive healthy state of body, mind and spirit in a healthy environment and in harmony with the universe. It also provides way of living for prevention of disease [1, 2].

As traders are supplying raw materials, they are aware of knowledge of medicinal plants in terms of external appearances, similar looking drugs; hence they do the adulteration because of which patient's health is hampered. So the question arises about the safety and efficacy of the drug. Hence standardization is the key to overcome these problems.[3,4,5]

Kutaj bark mainly useful in treatment of diseases like diarrhoea, dysentery etc, E-coli (EPEC) is most dangerous bacteria causing diarrhoea. Ayurveda has included all the microbes under the heading 'Krimi'. As stated in Bhavaprakasha Nighantu Kutaj is most commonly used as Krimighna. Hence Kutaj bark having action on bacteria (Krimi) may have action on E-coli (EPEC) causing diarrhoea.

**Aims & Objectives:**

1. To study the physicochemical parameters of Kutaj bark (Holarrhena antidysenterica Wall.)
2. Lab practical tests to evaluate antibacterial susceptibility of Kutaj bark against EPEC
3. To determine minimum inhibitory concentration of Kutaj bark for antibacterial activity against EPEC.

**Materials and Methods**

Collection of sample: - Sample which self collected from the kutaj tree in Vidarbha region in Maharashtra state in India. The sample was collected in the month of March. The sample was allowed to dry on cotton cloth in a room (temp. between 30 0 C – 35 0 C) in such a way that insect, flies and other contaminants should not damage it. The sample was powdered with khalva and passed through mesh of 72 no. and packed in self sealed polythene based after labelling [6, 7, 8, 9]

**(A) Pharmacognostical study [10, 11]**

**(1) Morphological Study:**

**Materials:** The materials collected for the studies were.

**Drug:** Bark of Kutaj (Holarrhena antidysenterica Wall.)

**Equipments:** Sense organs

**Methods:**

**Organoleptic method-** natures of the bark, colours, taste, size, shape, odour, characteristics were studied.

**(2) Microscopical study:**

**Materials:** The materials collected for the studies were

**Drug:** Kutaj bark (Holarrhena antidysenterica Wall.)

**Equipments:** Compound microscope, eye piece, camera lucida, glass slides, cover slips, watch glass, camel brush, mountain brush, filter paper, blades, spirit lamp, pipettes.

**Chemicals:** Phloroglucinol, Chloral hydrate, Conc. HCl. Glycerin, Iodine.

Methods:

1. Section Method
2. Staining Process Method

**(B) Physico-chemical study [12,13]**

Foreign matter

Moisture content

Total ash value

Acid insoluble ash value

Water soluble ash value

Water soluble extractive value

Alcohol soluble extractive value

pH value

**(C) Phyto-Chemical Study [14, 15, 16, 17]**

1) Solubility of Kutaj bark

Materials: Funnels, beaker, filter paper, test tube, fine powder of Kutaj bark

Solvents:

1. Water
2. Ethanol
3. Chloroform

**(D) Experimental Work [18,19,20]**

To evaluate the antibacterial activity of Kutaj bark (Holarrhena antidysenterica Wall.) the following various materials were used

Materials:

A) Drugs:
   1. Methanolic extract
   2. Water extract
   3. Ethanolic extract of Kutaj bark

B) Micro organisms

   Clinically isolated E-coli (EPEC) bacteria

C) Equipments:
   1. Distillation apparatus
   2. Water bath
   3. Petri dish
   4. Borer
   5. Loops and loop holder
   6. Hot air oven
   7. Auto clave
   8. Incubator
   9. Spirit lamp
   10. Cotton
   11. Digital balance
   12. Test tubes

**Method:**

Preparation of plant extracts: 2.5gm of samples were extracted with water, ethanol and methanol. The extracts obtained from the above were used for testing antimicrobial efficacy.

**Cultural media:** Standard nutrient agar Petri plates were prepared for the growth of bacterial cultures.

**Test culture:** Enteropathogenic Escherichia coli.

**Preparation of discs:** Discs of 5mm diameter were prepared from Whatman's filter paper no.41 (ash less) were cut out with a punch press and were soaked in water, alcohol, methanol for some time and then dried. Few of these discs were used as standard discs and the remaining discs were transferred to the above plant extracts for thorough moistening. They were maintained for 48 hrs so that maximum amount of extract or active principle in it was impregnated on each disc. These discs were used for antimicrobial efficacy.

About 0.1ml of 8 hrs old culture was placed in each nutrient agar plate with a Pasteur pipette. The plates were then gently rotated to spread the inoculums uniformly. Then the impregnated discs were placed on the media with a sterile forceps; 3-4 discs impregnated with plant extract.

The discs were then pressed gently on the surface so that they are not shifted from position subsequently and firmly affixed to the plate. This reacts to the uniform diffusion. All this operation was carried out aseptically. The plates were then incubated at 35-370c for 24hrs.

The experiments were performed in triplicates and the average zone of inhibition was recorded.

(Chandrakant R.K., 2007; Mandal P., Sinha Babu, S.P., and Mandal, N.C., 2005; Kavitha, D., 2004; Khan, M.R., Kikhara, M. and Omoloso, A.D., 2001; Nair, A. and Bhide, S.V., 1996; John, B.H., 1989; Kirti, S.L., 1985; Banerjee, Anup and Nigam, S.S., 1978, 197)

(E) Determination of Minimum Inhibitory Concentration (MIC) [21,22,23]

**Materials**

Plant extract : Methanol extract of Kutaj bark

Organism used : Escherichia coli (EPEC)

Preparation of the Sample solution:

2.00gm of plant extract was taken in vials separately. Then 10ml methanol was added.

**Preparation of inoculums:**

E. coli was grown at 37 degree Celsius in nutrient agar medium and was diluted in nutrient broth medium in such a manner that the suspension contains about 107 / ml. This suspension was used as the inoculums.

Procedure:

1. Twelve test tubes were taken, nine of which were marked 1, 2, 3, 4, 5, 6, 7, 8, 9, and the rest were assigned as TM(medium), TME(Medium + extract) and TMI(Medium + Inoculum).
2. 4 ml of nutrient broth medium was poured to each of the 12 test tubes.
3. These test tubes were cotton plugged and sterilized in an autoclave for 15 Ibs/ sq.inch pressure.
4. After cooling 2ml of the sample solution was added to the 1st test tube and mixed well and then 2ml of this content was transferred to the test tube.
5. The content of the second test tube was mixed well and again 2ml of this mixture was transferred to the 3rd test tube. This process of serial dilution was continued up to the 9th test tube.
6. 10µl of properly diluted inoculum was added to each of 9 test tubes and mixed well.
7. To the control test tube TME, 2ml of the sample was added, mixed well and 2ml of this mixed content was discarded to check the clarity of the medium in presence of diluted solution of the compound.
8. 10µl of the inoculum was added to the control test tube TMI, observe the growth of the organism in the medium.
9. The control test tube TM, containing medium only was used to confirm the sterility of the medium.
10. All the test tubes were incubated at 370c for 18 hours.

**Results:**

A) Organoleptic Characters

Shabda : Jvalankalin – Char-Char,
Bhanguratva : Abhangur

Sparsha: Kathin, Ruksha, Khara

Rupa: Brownish

Rasa: Tikta, Katu, Kashaya

Gandha:Mrudu

B) Pharmacognostic Study

**1) Macroscopic characters:**

Small re-curved pieces of varying sizes and thickness, outer surface buff to brownish longitudinally wrinkled and bearing horizontal lenticels, inner surface brownish, rough and scaly fracture short and granular.

**2) Microscopic characters:**

Transverse section of dried stem bark shows cork consisting of 10 rows of tangentially elongated cells, radial 30µ tangential 50µ cork cambium consists of a row of thin walled tangentially elongated cells, secondary cortex is wide, parenchymatous, interspersed with strands of stone cells, stone cell rectangular to oval, with numerous pits often containing prismatic crystals of calcium oxalate, non-lignified pericyclic fibres upto 52mm thick, present in bark, secondary phloem wide consisting of sieve-tubes, companion cells, phloem parenchyma and stone cells, stone cells arranged in tangential rows in concentric manner associated with crystal sheath containing prisms of calcium oxalate, biseriate medullary rays becoming wide toward outer part and consist of thin-walled, radially elongated, parenchy-matous cells, medullary ray cells near stone cells become sclerosed.

**1) Powder study:**

Cork cells: Thin walled, few colourless and few are with yellowish brown matter.

Stone cells: Rectangular to oval in shape, walls striated, pitted and lignified surrounded by sheath of parenchymatous cells containing calcium oxalate prisms.

Medullary rays: Parenchyma cells at right angle.

Starch: Few, simple grains.

**C) Physicochemical Values**

| | | |
|---|---|---|
| a) Foreign matter | : | Nil |
| b) Moisture content | : | 07.65 % |
| c) Total ash | : | 04.54 % |

d) Acid insoluble ash : 00.50 %

e) Water soluble ash : 05.67 %

f) Water soluble extract : 32.35 %

g) Alcohol soluble extract : 31.40 %

h) pH value : 05.53

**D) Phyto-chemical Studies**

Reducing sugar, amino acids, alkaloids, tannins, proteins, cardiac glycosides, anthraquinone glycosides, oils, flavonoids are present in water, ethanol & chloroform extract and saponins present only in water extract. Starch, mucilage, steroids are absent in all the three extracts.

**E) Antibacterial Activity**

Table1 is Showing antibacterial susceptibility against EPEC

**Table1:** Showing antibacterial susceptibility against EPEC

| Name of organism | Extract | Diameter of zone of inhibition (mm) |
|---|---|---|
| E- coli | Water | - |
| | Ethanol | - |
| | Methanol | 14 |

**F) Minimum Inhibitory Concentration (MIC) Value against EPEC**

Table2 is Showing MIC value against EPEC

**Discussion**

1. The rasa of Kutaj bark is Tikta, Katu, Kashaya, Veerya is Sheet and Vipaka is Katu. The drug is sparingly soluble in water, alcohol, oil and ghee (ghrit).
2. Macroscopic study shows small recurved pieces of varying sizes and thickness, outer surface buff to brownish longitudinally wrinkled and bearing horizontal lenticels, inner surface brownish, rough and scaly fracture short and granular.
3. Powder study shows few colourless thin walled cork cells, rectangular to oval shape stone cells containing calcium oxalate crystals, few starch grains also present.
4. The drug is standard as all the tests show result within the normal limit as per Ayurvedic Pharmacopoeia of India Part I, Vol.I.
5. Drug show antibacterial activity against EPEC in methanolic extract only.
6. Minimum inhibitory concentration for the antibacterial activity against E-coli (EPEC) in methanolic extract is 2gm/10ml.
7. So, extract of Kutaj bark powder is effective against Enteropathogenic Escherichia Coli (EPEC) in

**Table2.** Showing MIC value against EPEC,

| No. of test tubes | Nutrient broth medium added (ml) | Diluted solution of plant extract (gm/10ml) | Inoculum added µl | Observations |
|---|---|---|---|---|
| 1 | 4 | 0.1 | 10 | + |
| 2 | 4 | 0.5 | 10 | + |
| 3 | 4 | 1.00 | 10 | + |
| 4 | 4 | 1.5 | 10 | + |
| 5 | 4 | 2.00 | 10 | - |
| 6 | 4 | 2.1 | 10 | - |
| 7 | 4 | 2.2 | 10 | - |
| 8 | 4 | 2.3 | 10 | - |
| 9 | 4 | 2.5 | 10 | - |
| TME | 4 | 0.1 | 10 | - |
| TMI | 4 | 0 | 10 | + |
| TM | 4 | 0 | 10 | - |

'+' Indicates growth '-'indicates no growth

In E. coli the growth of the organism was observed in the test tube no. 4, indicating that the MIC value of the plant extract was 2.00 gm/10ml.

methanolic extract at the minimum inhibitory concentration of 2gm/10ml which is already mentioned in Ayurvedic text the Krimighna property and anti-diarrhoeal property of utaj bark.

8. The further research is required for providing efficacy of the drug in animals and then in patients

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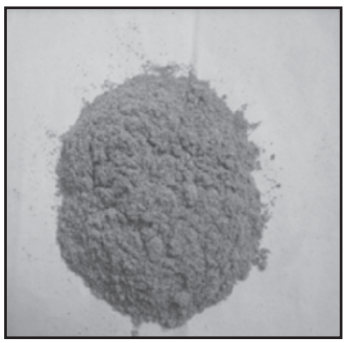

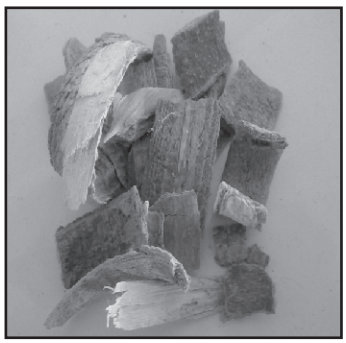

Fig.1 and Fig.2 showing macroscopic characters

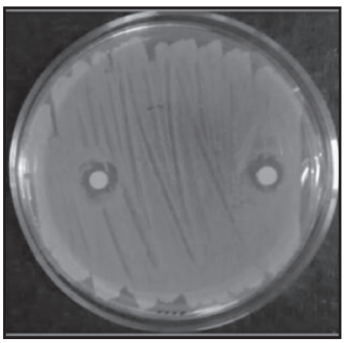

Fig.3 showing zone of inhibition

# Antigen Antibody Reaction under the Influence of Magnetic Field

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## Abstract

Magnet therapy can be one of the prime medical tools of the next millennium. How static magnet can benefit to your health. It is clear from a number of studies that static magnet can alleviate vascular disorder such as edema, but that isn't the only way magnet therapy can assist in the healing process by any means. Neurological diseases represent a class of disorder among the most difficult diseases to deal with. Hippocrates himself even said the same. Yet this kind of problem has grown exponentially during this century, so that Parkinson's, Alzheimer's, multiple sclerosis, arteriosclerosis cerebri and migraine have added to the increasingly common neural diseases arising from the way we live.

The study was carried out in the Department of physiology. This study includes 30 subjects in the age group of 20 to 30 years of either gender. The blood sample was collected in bottles after the consent of the subjects. The reaction of blood group of antigen with antisera containing antibodies will be observed the effect of magnetic field.

The exposure of Magnetic Field was observed change in antigen –antibody activity in vitro and may accelerate the reaction in between them.

**Key word-** antigen –antibody, magnetic field, multiple sclerosis

## Introduction:

Magnet therapy can be one of the prime medical tools of the next millennium. How static magnet can benefit to your health? It is clear from a number of studies that static magnet can alleviate vascular disorder such as edema, but that isn't the only way magnet therapy can assist in the healing process by any means. Neurological diseases represent a class of disorder among the most difficult diseases to deal with. Hippocrates himself even said the same. Yet this kind of problem has grown exponentially during this century, so that Parkinson's, Alzheimer's, multiple sclerosis, arteriosclerosis cerebri, and migraine have added to the increasingly common neural diseases arising from the way we live. [1]

The University of Thrace, Greece, presented numerous papers in a supposedly peer-reviewed journal (Intal. J. Neuroscience) reporting individual cases such as Parkinson's and MS (Multiple sclerosis) and other neural diseases treated by means of Pico Tesla alternating field [2] (Sandyk, 1993; 1994). He suggested that these fields influence the pineal gland and inhibit the secretion of melatonin thereby reducing hyperglycemia. Admittedly these are not static, but their flux density is much lower than the earth's half a gauss geo-magnetic field, which continually oscillates around a 20 nano Tesla variation. One might even argue that such minute oscillations are indispensable for cellular processes in living creature, through their mechanism of interaction is not understood.

Magnetic field (MF) can influence biological system in a wide range of animal species and human. There are reports on the influence of magnetic field locally applied to the immune system performance in the blood. The results of these studies provide further evidence of the complex interrelationship between the environment & the immune system [3].

Antigen-antibody reaction is considered to be the measure of diagnosis in immunological disorder. The antigen on RBC surface permitting the classification of blood groups based on agglutination reaction is simplest antigen – antibody reaction. The enhancements of rate of antigen-antibody reaction predict the probability of speedy recovery in living system. [4] Magnet therapy is practiced in India since a long time. The magnetic field is reported to affect living system in various ways. [5] In order to arrive at a better understanding of the interaction of magnetic field with living system, it appears logical to study first in-vitro system, with only a minimum controllable variable. We have undertaken a project to investigate the effect

of magnetic field on antigen-antibody reaction using the blood group agglutinogens. Result obtained will be interpreted to signify the consequences of use of therapeutic magnet.

**Study Design: Case control in vitro study**

Study Subject: 30 subjects in the age group of 20 to 30 years of either gender.

Study Setup: Central Research Laboratory Dept of Physiology, J.N.M.C., Sawangi (Meghe).

**Study Method:**

After the selection of subjects with their consents, they will be requested to attend the central research laboratory in the morning hours. In the laboratory, we will collect the 1 ml blood sample in bottles containing heparin anticoagulant. The RBC suspension will be prepared from sample by adding normal saline in the ratio of 1:10. After taking one drop of RBC suspension and one drop of anti-sera on the two glass slides, the reaction of blood group antigen with antiseras containing antibodies will be observed in the with & without magnetic field.

The results will be noted down at time intervals of 30 sec upto 10 minutes.

**Materials:**

- Antisera – A, Antisera – B, Antisera – D,
- Microscope (high resolution)
- Magnets of 35x 50 gauss (Magnetic field)
- Glass Slides
- Vibrator
- Petri dish
- Glass rods
- Pricking materials, Lancets
- Normal saline (0.9 %)
- Stop watch

In this study, the mean value of without magnetic field of ABO blood group system was 127.06 ± 67.4 initially after the exposure of magnetic field it was significantly decreased up to 99.7± 54.8. The Rh factor in system in the same subjects were assessed and found that the average value of without magnetic field was 130.26± 60.7 and after the exposure of magnetic field 104.43± 57.4 which was significantly decrease.

**Discussion**

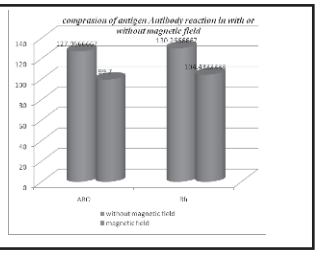
The present data indicate that Magnetic Field induces a significant increase in activity.

In our study, during the exposure most cells showed a back-and-forth motion along the direction of the magnetic field.

The similar finding was observed by M. Iwasaka et al a video microscope system during magnetic-field exposures at 8 T. During the exposure, most cells showed a back-and-forth motion along the direction of the magnetic field. Specifically, the direction of cell extension immediately after cell division was parallel to the magnetic field. Cytoskeletons inside the cells were oriented in parallel with the magnetic fields, and introduced a cell motion parallel with the magnetic field. [6]

**[Table 1]** Comparison of antigen antibody reaction in the magnetic & without magnetic field. P <0.005 significant

| Sr. No. | Parameters | Without magnetic field N=30 | Magnetic field 35x50 cm N=30 | P value |
|---|---|---|---|---|
| 1. | ABO | 127.06 ± 67.4 | 99.7± 54.8 | 0.0001 |
| 2. | Rh | 130.26± 60.7 | 104.43± 57.4 | 0.001 |




Yousef Haik et al carried out study on magnetic device that separates red blood cells from the whole blood on a continuous basis is presented. The device utilizes permanent magnets in alternating spatial arrangements. Red blood cells are coupled with magnetic microspheres to facilitate the magnetic separation. Effectiveness of red blood cells separation and purity of plasma solution was improved using the device. [7]

Our study observed similar finding that living cells consisting of cytoskeletons materials had their motion may applied due magnetic field which accelerate the reaction.

Michael Faraday investigated the magnetic properties of dried blood and made a note "Must try recent fluid blood." If he had determined the magnetic susceptibilities of arterial and venous blood, he would have found them to differ by a large amount

(as much as twenty per cent for completely oxygenated and completely deoxygenated blood); this discovery without doubt would have excited much interest and would have influenced appreciably the course of research on blood and hemoglobin .[8,9]

Cerdonio M et.al finding that frozen solutions of human HbO2 show significant deviations from diamagnetism has revived the debate on the electronic state of oxyheme [10]

Our study seem the electronic structure of hemoglobin and its derivatives and in particular of the nature of the bond between the iron atoms and the attached oxygen molecules in oxyhemoglobin remains only partially solved.

Tang D et.al observed in their study, antibodies or antigens in aqueous solution have a net electrical charge polarity, which is associated with the isoelectric points of the species and the ionic composition of the solution. If antibodies are immobilized on the electrode, the surface charge of the electrode will rely on the net charge of the immobilized antibody. When antigen molecules are present in the solution, the immunochemi-cal reaction will take place at the interface with a resulting change of the surface charge. [11]

A basic contribution was made in 1936 when it was reported that oxyhemoglobin and carbonmonoxyhemoglobin have zero magnetic moment and hemoglobin has a magnetic moment corresponding to four unpaired electrons with parallel spins for each haem iron atom.

The present study shows with Magnetic Field resulted in a highly significant statistical difference ($p < 0.0001$) between the control and the exposed samples which leads to accelerate the antigen-antibody reaction.

## Conclusion

We have reported that MF (Magnetic Field) exposure can change normal (blood) antigen –antibody activity in vitro and accelerate the reaction in between them.

The experiments demonstrated that magnetic fields, using the above parameters, have a positive effect on the human blood in vitro.

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# Menstrual disorders in working women & its Preventive aspect

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## Abstract

Women play multiple roles of balancing between work and home resulting in negligence of their personal health. Tight schedules, deadlines of work, pressure in and out, untimely food, etc. are few reasons to alter life style and cause ailments. Stress at work leads to hormonal imbalances through the hypothalamo-pitutary-adrenal axis, causing alterations in ovarian hormones which may renders a woman susceptible to face menstrual disorders. The other problems to face are - poor quality sleep, pre menstrual syndrome (PMS), dysmenorrhea, intermittent bleeding, increased frequency of menstruation, heavy or scanty menstruation, and irregular menstruation.

Ayurveda explains Vata and Rakta are the responsible for this situation. In further the dietetics and regimens too have their impact on contribution of menstrual disorders. A survey was conducted in three groups with relation to working pattern which revealed that average 60% of females from all groups were experiencing menstrual disorders.

**Key words:** Working women, menstrual disorders, stress, Hormonal disturbances

**Introduction:**

Lifestyle diseases characterize those diseases whose occurrence is primarily based on the daily habits of people and are a result of an inappropriate relationship of people with their environment. In this competitive era of rat race Women play multiple roles specially working women, balancing between work & home resulting in negligence of their own health. Tight deadlines, work pressure, improper food, travel etc are some of the common reasons of an increase in life style ailments [1].

According to a survey conducted by the Associated Chamber of Commerce and Industry (ASSOC-HAM), 68% of working women in the age bracket of 21-52 years were found to be afflicted with lifestyle ailments [2,3].

The study 'Preventive Healthcare and Corporate Female Workforce' also said that long hours and working under strict deadlines cause up to 75% of working women to suffer from depression or general anxiety disorder, compared to women with lesser levels of psychological demand at work [2,4]. Working women suffer from various lifestyle disorders, amongst which menstrual disorders are most common. Today's hectic lifestyle & deviation from the biological clock are the prime reasons causing these disorders.

Causes of menstrual disorders- Factors that are responsible for this condition include the increased intake of sour, salty, hot, pungent, heavy, and fermented food; meat of fatty and domestic animals; alcoholic beverages; indigestion; and eating before the previous meal is digested. Conditions that also have a strong effect include repeated abortions, excessive sexual activity, increased physical exertion (walking, riding, weight lifting, etc.), emaciation, trauma, and day sleeping. Psychological conditions such as grief, anger, lust, and anxiety are also known to play a key role in aggravating menstrual problems [5].

Ayurvedic aspect- According to Ayurveda, poor diet and inefficient digestion are the main causative factors for these disorders. Improperly digested food leads to the production of toxins in the body. These toxins are circulated by the blood to the deep tissues and channels, where they cause blockages and stagnation. These conditions cause aggravation of Vata Dosha (air) and the Rakta Dhatu (blood). The aggravated Vata brings impaired blood into the channels carrying the raja (menstrual blood), leading to menstrual problems [5].

Physiological mechanisms suggest that excessive & prolonged activation of hypothalamic- pituitary adrenal axis by stress may alter hormonal profiles increasing the levels of corticotrophin releasing hormone & glucocorticoids. Consequently the synthesis & metabolism of gonadotropin & oestrogen are suppressed thereby disrupting women's irregular menstrual function [6, 7].

Biological conditions unique to women, like the menstrual cycle, pregnancy and menopause, can affect how well a woman sleeps. This is because the changing levels of hormones that a woman experiences throughout the month

and over her lifetime, like estrogen and progesterone, have an impact on sleep. Understanding the effects of these hormones, environmental factors and lifestyle habits can help women enjoy a good night's sleep [8].

**Study Method:**

Considering all these factors, a survey was conducted at MGACH & RC to rule out the evidence of menstrual problems with relation to working pattern. . The populations selected for the survey were all females of age group 25 to 45 yrs. They were divided into three groups as per their working pattern.

? Group A – Female teaching faculty -18

? Group B - Female Paramedical staff - 12

? Group C- Female attendants– 10

Survey was conducted by standard questionnaire related to the menstrual cycle pertaining to last three months & their daily regimen including food habits, work pattern & family background. The menstrual disorders included Irregular cycle length (the interval between menses less than 24 or greater than 35 days), hypermennorrhea (either menses excessive in duration i.e. more than 7 days or heavy menstrual bleeding), Dysmennorrhea (presence of menstrual pain) & Premenstrual syndrome.

**Results:**

The result of the questionnaire was as follows:

**Group A -** 14 participants who had various menstrual problems reported that excessive stress related to completion of targeted task in the last three months in view of forth coming NAAC inspection in the university.

**Group B -** Out of 8 females with menstrual problems, 5 confined that the problems worsened when night shift proceeded the menstrual cycle. 3 reported that multitasking led to physical & mental stress as one of the reason.

**Group C -** Out of 7 female attendants with menstrual disorders, 3 reported it as more physical stress whereas 2 of them confined it to family stress related to financial crisis. The rest of two were neutral.

**Discussion:**

In all the three groups vata dosha was aggravated, though the causative factor (hetu) was different in all the three groups. In group A, mental stress & strain is the prime factor, whereas in group B, disturbed sleep & in group C, intake of ruksha tiksna ahar are the hetu for vata vriddhi.

As per the modern aspect all these factors lead to hormonal imbalance resulting into various menstrual disorders

**Preventive Aspect-** A healthy lifestyle must be adopted to combat these disorders with a proper balanced diet, physical activity and by giving due respect to biological clock.

Women should never drink any ice-cold beverages before and during menstruation or swim in cold water. Cold causes stagnation in the body and will exacerbate any menstrual problems. The diet before and during the cycle should be light; foods should be nourishing, warm, for e.g., lightly steamed vegetables, well-cooked grains, lots of leafy green herbs [9].

Walking, deep breathing, warm baths, massaging the abdomen with warm sesame oil, drinking fennel tea or ginger tea will help alleviate many symptoms. Taking mild laxatives like triphala for about two days before the scheduled start of menstruation will help with constipation.

**Management:**

The herb shatavari should be taken regularly as it nourishes the female reproductive organs and cleanses the blood. The unripe papaya helps the contractions of the muscle fibers of the uterus and is thus helpful in securing a proper menstrual flow.

Spices such as fennel, coriander, turmeric, cardamom and saffron are wonderful to enhance digestion. Many women have food cravings and the cravings usually focus on sweets and snacks such as i.e. cream, chocolate and potato chips. Eating complex carbohydrates is probably the best way to ward off those food cravings. These foods are a good source of fiber, which helps to clear excess estrogen from your body. Also, research has found that high-carbohydrate foods actually relieve the psychological symptoms of tension & anxiety [9].

| Group | n | Irregular cycles | Pre- menstrual syndrome | Hyper- mennorrhea | Hypo- mennorhea | Dys- mennorrhea | Normal cycle |
|---|---|---|---|---|---|---|---|
| A | 18 | 7 | 9 | 3 | 1 | 5 | 4 |
| B | 12 | 4 | 3 | 2 | 0 | 6 | 4 |
| C | 10 | 2 | 2 | 0 | 2 | 3 | 3 |

Certain Ayurvedic formulation like Ashokarishta, Durvadi ghrit, vasaharitaki avaleha, pradrari loha, lodhrasav & pradrarantak rasa is widely used.

**Panchakarma-** Panchakarma offers the most powerful treatments for removing toxins and balancing the body/mind. Panchakarma procedures have to be decided according to the vitiation of doshas.

**Yoga:** Regular and proper practice of yogaasanas and Pranayama is beneficial for women who suffer from the menstrual disorders. However, it should be noted that, during menstruation yoga practices are not advisable for 3-5 days. Proper rest, medicines and relaxation are also necessary. Yoga helps by correcting and balancing the functioning of the endocrine system, toning up of the nervous system and it also relaxes the body and mind, thus, reducing the psychological problems.

Yogaasanas, such as, Tadasana, Vrikshasana, Chakrasana (sideward bending), Trikonasana, Bhujangasana, Ardha-salabhasana, Ardha-halasana with one and two legs, Viparitakarani, Sarvangasana followed by Matsyasana, Dronasana, Pavana muktasana, Setubandhasana, Vajrasana, Padmasana, Parvatasana, Vakrasana, Gomukhasana, Savasana, Makarasana are recommended for treating these kinds of health related problems in women [10].

Pranayamas like Anuloma-Viloma, Shitali, Bhramari are beneficial.

Meditation & recitation of Om proves helpful.

**Conclusion:** There is no reason for the monthly cycle to be uncomfortable. A woman's life should be filled with joy and bliss every moment, including during the menstrual cycle. Just taking a few little steps to create balance will have a profound effect on body and mind.

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# Shatavaryadi Ghruta Tarpan on "Computer Vision Syndrome" W.S.R. to Dryness of eye

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## Abstract

In 21st century, IT world is developing extensively. People work on computers for hours together, which is affecting their health adversely. Now days many people in the IT professions suffer from IT Syndrome, which affects different parts of body, the eyes are more adversely get affected. Within the IT syndrome, the groups of symptoms related to eyes are specially termed as "computer vision syndrome". This syndrome present the symptoms-Dryness, Itching, Pain, Redness, Burning sensation, Blurred vision, Discomfort, Photophobia, Excessive fatigue and Headache. Though the syndrome is not described in classical Ayurvedic text but in sushrut samhita the shatavaryadi Ghruta2 Tarpan is quoted as best drug to remove symptom- dryness of eyes. Therefore, hundred patients suffering from computer vision syndrome were treated with shatavaryadi ghruta tarpan (modified). It is observed that Shatavaryadi Ghruta Tarpan is significantly effective on Computer Vision Syndrome symptomatically. It is also observed that the modified tarpan method by using glassless swimming goggles and wheat dough is less time consuming and easy to carry out the treatment.

**Keywords:** Tarpan, Shatavaryadi ghruta, Computer vision syndrome, Dryness of eye

**Introduction :**

Now a day, Computer plays a vital role in each sector in the world. Machines and computers have become an inseparable part of our lives. In twenty-one century, IT world is developing extensively. People work on computers for hours together. No doubt, the computerization is beneficial economically, but at the same time it is affecting our health and we are facing especially ophthalmic problems. Dry eye syndrome is one of them. This syndrome is also termed as Computer vision syndrome. Some symptoms of Computer vision syndrome [1] include headaches, blurred vision, and neck pain, redness in the eyes, fatigue, eye strain, dry eyes, irritated eyes, double vision, polyopia, and difficulty refocusing the eyes. These symptoms can be further aggravated by improper lighting conditions (i.e. glare or bright overhead lighting) or air moving past the eyes (e.g. overhead vents, direct air from a fan).

For the treatment of similar symptoms, Shatavaryadi Ghruta Tarpana is used in Ayurveda [2]. To find out the statistical significance of the treatment a scientific study was carried out.

**Aims and objectives**

1. To study the efficacy of "Shatavaryadi Ghruta Tarpan" on "Computer Vision Syndrome".
2. To find out safety and economy of new easy method of tarpan by using swimming goggle, instead of traditional one.

**Review of literature:**

Computer vision syndrome is a condition involving eye-strain and fatigue, temporary weak vision, dry and irritated eyes, light sensitivity and vision and muscular problems that stem from computer use. Computer vision syndrome is estimated to be 40% more common than carpal tunnel syndrome, another health condition affecting computer users who use computer more than 3 hours per day [3].

Computer vision syndrome [4] presents itself with symptoms - Dryness, Itching, Pain, Redness, Burning sensation, Blurred vision, Discomfort, Photophobia, Excessive fatigue and Headache. The Secondary effects [5] of computer vision syndrome are-Reduction of visual acuity, Fatigue or inability to beat stress, Pain in or around eyes, Headache, Disturbance of mental health up to some extent double vision and Technology hazard. Out of this, all dryness of eyes is a major clinical symptom.

As computers are not used in India before 20th century, in Ayurvedic texts and samhitas there are no references regarding this disorder, however the symptoms of computer vision syndrome are described in several eye disorders [6].

**Netra tarpan method [7]:**

Netra tarpan is a traditional and scientific gentle local eye treatment method, well known to each ayurvedic physician, which is soothing, relaxing, and particularly beneficial for anyone suffering from the effects of computers, pollution or whose eyes feel strained. Netra tarpan gives nourishment to the eyes and has a relaxing effect on the eyes and surrounding tissues, removing impurities from the eyes. It is used for any kind of eye problems [8] – dryness, irritation, burning and eyestrain. it removes Āma and clears the eyes. This special treatment aims to provide optimum rejuvenation to eyes as it relieves tiredness and improves eyesight. As per traditional Method of tarpan in supine position of patient, a wall of dough of urad (black gram) is constructed around the eye-socket, resembling a well to a height of 2 angula , Keeping the eyelids closed , warm medicated ghee, liquefied with the help of hot water is poured in the well up to the level of the eyelashes. The eyes are thus completely bathed in the ghee and the patient is asked to open and close eyes slowly and retain the ghee so that it can reach to every corner and bring about its soothing and relaxing action. After five to seven minutes depending up on the indication and time given in Ayurveda, with the help of needle, outer corner of well is punctured and all the ghee is removed slowly out of well. Afterward by breaking the wall of well by fingers, total adherent material is removed from face and closed eyes of patients are cleansed gently by using cotton gauze. Afterward patient is advised to keep eyes closed for five minutes and to take deep breathing.

**Review of research work:**

According to OSHA [9] (Occupational Safety and Health Administration), on November 19th 1999 , Computer vision syndrome is a repetitive strain disorder that appears to be growing rapidly with some studies, estimating that 90% of the 70 million U.S. workers using computers for more than 3 hours / day experience CVS in some form.

According to AOA ( American Optometric Association) American Eye- O1 Survey of 1005 Americans, 82% of the respondents frequently work with computer or handled electronic devices and 42% spent 3 or more hours a day in front of computer out of which, 41% of the survey respondents have experienced eyestrain, 45% have neck or back pain after prolonged use.

Although, many of these symptoms are temporary, some may continue experiencing visual problems such as blurred distance vision, even after computer work has stopped. It is observed that average 80% computer users still use CRT type of computer screen and rest 20% users use LCD type screen. The positioning of computer with respect to the user also affects the eyes.

**Material and methods:**

Material used for the actual procedure – Swimming-goggle, wheat dough, syringe, cotton, stopwatch and hot water.

Raw material for the preparation of shatavaryadi ghruta -

| | | | |
|---|---|---|---|
| i) | Go ghruta | - | 06 kg |
| ii) | Goat milk | - | 24 lit |
| iii) | Shatavari | - | 300 gm |
| iv) | Prushniparni | - | 300 gm |
| v) | Musta | - | 300gm |
| vi) | Amalaki | - | 300gm |
| vii) | Padmak | - | 300gm |

**Preparation of medicine –** Shatavaryadi ghruta was prepared as per snehasadhan vidhi described in Sharangdhar Samhita [10], in the department of Rasashastra Bhaishajya Kalpana by using all aseptic precautions and was standardized. The final prepared and tested six liter ghruta was packed in air tight food grade plastic bottles as 150 ml per bottle and labeled.

Hundred of patients were selected randomly from netrarogavibhag, Arogyashala hospital Nashik. They were examined on the basis of Ashtavidha pariksha from Ayurvedic point of view and on the basis of standard symptoms described in modern medicine for computer vision syndrome. Selected subjects were treated with Shatavaryadi Ghruta Tarpana, once in a day for consecutive 5 days.

Inclusive Criteria was as follows

1. Persons working on computer averagely more than 3 Hrs per day.
2. Persons suffering from Computer Vision Syndrome.
3. Sex – Either
4. Age - From 18 to 60 years
5. Belonging to any socio-economic class
6. With or without refractive error.
7. Persons willing voluntarily involved in the trial.

**Exclusive Criteria was as follows**

1) Persons below 18 years and more than 60 years.
2) Any acute infection of eyes
3) Non co-operative patients and patients showing symptom of samavastha.

**Method of the treatment (Tarpana)**

Due to advancement in the treatment, we use Swimming Goggles as a alternative against traditional dough wall for tarpan, for this purpose first glasses of swimming goggles were removed and rest body was sterilized by rinsing with povidone iodine solution and cleaning afterward with distilled water and cotton gauze. Afterward remaining further all processes were carried out as per the traditional method described above.

The patient was asked to lie down in supine and relaxed position on the examination table. Then he was asked to put on the swimming goggles, specially designed for Tarpan and lower outer side of goggle was sealed with wheat flour dough .The shatavaryadi Ghruta, 30 ml was taken in a sterile beaker and was liquefied with the help of hot water. When it became luke warm (as can be beared by the eyes) it was slowly poured around the eyes one by one with eyes closed .While pouring, it was poured from medial side of the eye as mentioned in the text. Then the patient was asked to open and close the eyes for seven minutes. Stopwatch was used to measure the time which the patient continues blinking of eyes. After seven minutes and when the ghruta became cool and the eyes started itching because of mixing of tears in the ghruta, the ghruta was removed with the help of a 5 ml syringe. Afterward patient eyes were cleaned by cotton gauze and patient is advised to keep eyes closed for five minutes and to take deep breathing. After five minutes subjects were directed to open eyes and evaluated for the symptoms. This procedure was repeated continuously for five days. During the course of five days all, the patients undergoing Netra-tarpan were advised to take the precautions as- Not going in sunlight or wind immediately after treatment. Using goggle while moving in open air or driving. Not watching television or working for late hours on computer, taking adequate sleep. Not performing any activity which may leads to strain on eyes. After five days regime again on seventh day the patient were examined. All the subjects were compared statistically for their health condition before and after the treatment.

**Parameters**

Selected subjects were evaluated with following Parameters before and after treatments -

1. Dryness 2.Itching 3.Pain 4.Discomfort 5.Redness 6.Photophobia 7.Secretions

**Subjective criteria for each symptom**

i. 0 - Absent

ii. 1 - Mild

iii. 2 - Moderate

iv. 3 - Severe

**Discussion:**

Symptom wise number of relieved subjects in the study is shown in Table no.1. As per the table, Shatavaryadi ghruta tarpana gives relief as under –

**Dryness -** The symptom eye Dryness was found in 100 subjects out of those 99 subjects got significant relief.

A symptom Dryness is developed due to evaporation of sclera. Cow ghee is known lubricant and due to tarpana sclera gets lubricated and develops a protective film on sclera resulting in to reduction of air exposure affecting the evaporation of sclera resulting in to relief in dryness.

**Itching -** The symptom itching of eye was found in 80 subjects out of those all subjects got relief in the symptom.

The symptom itching of eye is found in the subjects due to irritation on the dry surface of sclera. Shatavaryadi ghruta contains anti -inflammatory medicinal plants like Shatavari [11], hence due to due soothing effect it relieved itching.

**Table 1 –** Table showing symptom wise number of Relieved subjects in the study.

| Sr. No. | Symptom | Upashaya | Anupshaya | Total | X2 value | P value |
|---|---|---|---|---|---|---|
| 1 | DRYNESS | 99 (99%) | 01 | 100 | 156.0243 | P < 0.05 |
| 2 | ITCHING | 80 (100%) | 00 | 80 | | |
| 3 | PAIN | 12 (24%) | 38 | 50 | | |
| 4 | REDNESS | 6 (100%) | 0 | 6 | | |
| 5 | PHOTOPHOBIA | 7 (100%) | 0 | 7 | | |
| 6 | DISCOMFORT | 4 (100%) | 0 | 4 | | |
| 7 | SECRETIONS | 3 (100%) | 0 | 3 | | |

| | |
|---|---|
| Dryness | 99% |
| Itching | 100% |
| Pain | 24% |
| Redness | 100% |
| Photophobia | 100% |
| Discomfort | 100% |
| Secretions | 100% |

**Pain –** The symptom pain was observed in 50 subjects out of those 38 subjects relieved pain. Inflammation creates pain. The component Shatavari is having anti inflammatory [12] effect, hence relieves the pain

The symptoms redness, photophobia, discomfort and secretions get relieved 1oo %, but the no. affected subjects were very less. It needs to check the efficacy of Shatavaryadi Ghruta in redness, photophobia, discomfort and secretions on larger data.

**Conclusion:**

1. Shatavaryadi Ghruta Tarpan is significantly effective on Computer Vision Syndrome especially on the symptoms dryness, itching and pain.
2. It is observed that the tarpana using glassless swimming goggles is safe, time consuming and economical than the traditional method of tarpana using urad flour.
3. Further study is needed to test efficacy on huge and multi-centre data.
4. It is also needed to check the efficacy of Shatavaryadi ghruta tarpana on refraction error.

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# Effect of Nilumbu nucifera in Phenylhydrazine induced anaemia in rats

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**Abstract**

The present study investigate the haematinic activity of an aqueous extract of Nilumbo nucifera leaves on phenylhydrazine induced anaemic rats. Anaemia was induced by an oral administration of phenylhydrazine 10 mg/kg for a period of 8 days. Red blood cell count (RBC), haemoglobin(Hb), and haematocrite (HCT), mean cell haemoglobin (MCH), mean cell volume (MCV), mean cell haemoglobin concentration (MCHC), White Blood cell count (WBC) and Platlet (PLT) were analyzed as indices of anaemia. The Phenylhydrazine induced a significant decrease ($P<0.05$) in the blood parameters indicating anaemia. The same groups were treated with leaf extract of Nilumbo nucifera (Dose 200 mg/kg and 400 mg/kg, orally) and Lauha bhasma (11 mg/kg). The extract of Nilumbo nucifera shows significant ($P<0.05$) increase in the RBC and Hb, which had been originally decreased by phenylhydrazine administration within one week of treatment. And the results suggested that Nilumbo nucifera leaves have haematinic properties. Extract of Nilumbo nucifera in combination with Lauha bhasma shows significant haematinic activity ($P<0.05$) as compared to the Nilumbo nucifera and Lauha bhasma alone. This study shows that Nilumbo nucifera have anti anaemic potential and even it gives the synergistic activity with Lauha bhasma.

**Key words:** Haematinic activity, Nilumbo nucifera, haemolytic anaemia, phenylhydrazine.

## Introduction

Anaemia, one of the most common blood disorders, occurs when the level of healthy red blood cells (RBC's) in the body becomes too low. This can lead to the health problems because; RBC's contains hemoglobin, which carries oxygen to body tissues[1]. Anaemia is a common blood disorder that affects people of all ages, although the people at greater risk are the elderly, young women of child-bearing age and the infants [2]. This condition is not a disease but could develop as a result of various diseases. Anaemia is one of the most common health problems in India. The problem is much more in rural than the urban area [3]. The high-risk groups for anemia are pregnant and lactating females and children. Acute and chronic infections, including malaria, cancer, tuberculosis and HIV can also lower blood Hb concentration. [4] The presence of other micronutrient deficiencies, including vitamins like A, B12, folic acid, riboflavin, and trace elements like iron, copper, zinc can increase the risk of anaemia. Anaemia constitutes a serious health problem in many tropical countries because of the prevalence of malaria and other parasitic infections. [5]

Anaemia is one of the numerous ailments claimed to have been successfully treated with plant materials by traditional medicine practitioners.[6] In China for instance, blood diseases such as malformation of blood circulatory system, anaemia, varicose veins and haemorrhages have been treated with plant materials.[7] A good number of medicinal plants are traditionally employed to alleviate anaemia. Some of these plants include Telfeira occidentalis, Combretum dolichopetalum, Psorospermum ferbrifugum, Jatropha curcas, Flacourtia flavenscens and Brillantasia nitens.[8] The leaves of B. nitens are commonly used as haematinic and are claimed to be very effective in the treatment of malaria-induced and other types of anaemias.The Nilumbo nucifera (Family: Nymphaceae) leaves used to stop bleeding. It contains several flavonoids and alkaloids, and has been traditionally used as an effective drug for Hematemesis, Epistaxis, Hemoptysis, Hematuria and Metrorrhagia.

## Methodology

### 1) Animals

Sprague–Dawley rats (250-300 gm) of either sex were used for the pharmacological screening. The animals were housed in polypropylene cages with wire mesh top and husk bedding and maintained under standard environmental conditions (25 ± 20C, relative humidity 60 ± 5 %, light- dark cycle of 12 hours each). The rats were housed and treated according to the rules and regulations of CPCSEA and IAEC. The protocols for all the animal studies were approved by the Institutional Animal Ethical Committee (IAEC). Research Project number 650/02/C/CPCSEA/06.

**2) Plant Materials**

The leaves of Nilumbo nucifera were collected from campus garden of shri. Punjabrao Deshmukh Agriculture college, Amaravati, India in September 2011 and were identified and authenticated at the department of botany, Santa Gadge Baba Amaravati university, Amaravati.

**3) Extraction**

The fresh leaves of Nilumbo nucifera was air dried under shade for 7 days and ground into coarse powder using manual blender. 100 gm of powder was macerated with 5 liter of purified water for 72 hr. the filtrate was hot air dried to obtain the aqueous extract (10.5 % w/w). Preliminary phytochemical screening suggested that the extract contains alkaloid, tannin, saponin, and starch.

**4) Experimental Procedure**

Six rats were kept as normal control group (Group 1 below), while 36 rats were made anaemic by oral intubations of Phenylhydrazine (10 mg/kg, orally) daily for 8 days. Red blood cell count, haemoglobin concentration, and pack cell volume were analyzed as indices of anaemia. [9, 10] Rats that developed anaemia with haemoglobin concentration <14 g/dl was recruited for the study and all the doses of herbal (TEST) and lauha bhasma (STD) was given by oral route for the period of 3 week.

Anaemic rats were randomly divided into 6 groups and treated as follows:

Group 1: normal control
Group 2: anaemic control (PHZ)
Group 3: receives PHZ + STD drug dose (11mg/kg)
Group 4: receives PHZ + test drug dose (200mg/kg)
Group 5: receives PHZ + test drug dose (400mg/kg)
Group 6: receives PHZ + STD drug dose and test drug dose (200mg/kg)
Group 7: receives PHZ + STD drug dose and test drug dose (400mg/kg)
The experiment last for 3 weeks. [9]

**5) Haematological Investigation**

Collect blood from the retro orbital plexus of experimental animals after an overnight fast (T=0) and after 1, 2 and 3 weeks of treatment with plant extract and lauha bhasma use for the determination of red blood cell count (RBC), haemoglobin (Hb) concentration and pack cell volume (PCV).The mean cell volume (MCV), mean cell haemoglobin (MCH) and the mean cell haemoglobin concentration (MCHC) was be determined by using auto cell counter. It includes the collection of 0.05 ml of blood sample in test tube containing 0.02 ml of EDTA solution. After collecting the samples, samples were analyzed with the help of auto cell counter of haematology.

**6) Statistical analysis**

The experimental results are represented as Mean ± SD. Statistical analysis was performed by one-way ANOVA followed by Dunnett test using Graph pad Prism 5 ( $P < 0.0001$) was considered as extremely significant.

**Result:**

The changes in the haematological parameters of the rats during the study are presented in Tables 1, 2, 3 and 4. The RBC, Hb, of rats administered phenylhydrazine (PHZ) decreased significantly ($P<0.05$) while the MCV and MCH increased (Table 1) giving rise to macrocytic anaemia. One week of treatment of anaemic rats (Groups 3, 4, 5, 6 and 7) with Nilumbo nucifera extract and Lauha bhasma reversed the effect of PHZ resulting to a period, the Hb, RBC, of the untreated anaemic rats (Anaemic control, Group 2) also increased significant ($P<0.05$) increase in RBC, Hb, (Table 2) During the experimental but at a slow rate. At the 1st week of the treatment with Lauha bhasma alone (group 3) did not show much more increase in Hb, RBC and HCT than other treated group and same observed in the 2nd and 3rd week of the treatment. The Hb only reached the normal range at the second week of the experiment (Table 3) while the RBC reached normal range at the 3rd week of experiment (Table 5). The Hb, RBC of group 3, 4, 5, 6 and 7 reached normal values after one week of treatment (Table 4) with maximum level of increase in the second week (Table 3). At this point, the Hb were significantly ($P<0.05$) higher in group 7 rats while less significant difference ($P<0.05$) was observed between the normal control rats and group 3, 4, 5, and 6 rats (Table 3). This explains that the response to treatment was dose related. It was also observed that the recovery of the treated groups was dose related with the highest dose of 400 mg/kg of Nilumbo nucifera and Lauha bhasma (group 7) effecting the highest change. At the third week of the experiment, treatment with Nilumbo nucifera and Lauha bhasma, anaemic rats increase the RBC, Hb and HCT. After the 3rd week of experiment, the Hb, RBC return to normal with further increases (Table 4). The Hb of anaemic rats increased sharply within the first week of the experiment, though the increase was higher for the groups treated with Nilumbo nucifera and lauha bhasma than the anaemic control. This increase was also shown at week 2 and in week 3 (Table 3 and 4). Similar results were obtained for RBC (Table 3 and 4). The combination of Nilumbo nucifera and Lauha bhasma at its maximum dose i.e 400 mg/kg (group7) shows significant increase in the RBC, Hb and HCT compared to the test drug i.e Nilumbo nucifera alone and Lauha bhasma,alone at 2nd and 3rd week of the treatment (Table 3 and 4).

**Discussion**

Phenylhydrazine produces both aryl and hydroxyl radicals when incubated with rat liver microsomes and oxidised by hydrogen peroxide at pH 7.4 and 370C. The radicals induced oxidative stress on the red cell membrane resulting in haemolysis by lipid peroxidation . Sub-chronic intoxication of rats with PHZ (10 mg/kg/day for 8 days) resulted in a marked haemolytic anaemia characterised by decreased RBC, Hb. Similar results were obtained in our study when experimental rats were administered PHZ in order to induce anaemia (Table 1). In addition, observed increased reticulocytosis, methaemoglobinemia and haemocatheresis in PHZ intoxicated rats. The main function of the RBC is the transportation of oxygen in to the tissues of the body. At such, any pathological or physiological condition that affects the RBC alters its function and this may be detrimental to the body. In this study PHZ altered the function of RBC by haemolysis characterised by decreased levels of RBC, Hb. However, this effect was restored after one week of Nilumbo nucifera and Lauha bhasma treatment. The lowest administered dose of 200 mg/kg reduced the recovery time of the blood parameters from 2 weeks in the anaemic control to 1 week (Table 2, 3). Also the recovery was progressive such that after 2 weeks of continuous treatment, the Hb concentration and RBC were higher in the treated groups than in the normal control group (Table 3). It was also observed that the recovery of the treated groups was dose related with the highest dose of 400 mg/kg of Nilumbo nucifera and Lauha bhasma (group 7) effecting the highest change. At the third week of the experiment, treatment with Nilumbo nucifera and Lauha bhasma, anaemic rats increase the RBC, Hb and HCT (Table 4). Under normal condition the body can generate new RBC to replace lost once but this will take much longer time as shown in this study. The recovery time of two weeks for untreated anaemic rats has earlier been reported when rats were bled 30% of their total blood volume to induce haemorrhagic anaemia. Giving the same doses of Nilumbo nucifera extract to normal rats did not alter the haematological parameters (results not presented). At the 1st week of the treatment with Lauha bhasma alone(group 3) did not show much more increase in Hb,RBC and HCT than other treaed group and same observed in the 2nd and 3rd week of the treatment. The combination of Nilumbo nucifera and Lauha bhasma at its maximum dose i.e 400 mg/kg(group7) shows significant increase in the RBC,Hb and HCT compared to the test drug i.e Nilumbo nucifera alone and Lauha bhasma,alone. The Lauha bhasma alone i.e group3 shows less significant increase in the RBC,Hb and HCT compared to the test drug Nilumbo nucifera alone after the 3rd week of treatment. A significant correlation with diagnostic values has been demonstrated between RBC, Hb, and the RBC indices (MCV, MCH and MCHC) in both humans and rats. The administration of PHZ to rats resulted in an increase in WBC ($p<0.05$) which is the indicator of and get recoverd after treatment at the 3rd week. Administration of PHZ to rats also resulted in an increase ($P<0.05$) in the MCV and MCH values which are indicators of macrocytosis thus describing the anaemia as macrocytic. This condition is also common in Vit. B12 and folate deficiencies probably as a result of iron deficiency (loss of iron). Macrocytic anaemia has also been reported in rats infected with Trypanosoma Brucei brucei and this has been linked to iron deficiency anaemia. The presence of macrocytosis reduced towards normal as the rats recovered from the anaemic condition. Anaemia is a disease characterised by a reduction in the concentration of haemoglobin, circulating red blood cell and pack cell volume per unit of the peripheral blood below the normal for the age and sex of the patient. The prevalence of anaemia is high in children with a high risk of placental malaria infection. Anaemia impairs normal development in children and it constitutes a major public health problem in young children in the developing countries with wide social and economic implications. Blood parasites, bacterial infections, viral infections, drugs/chemical agents and metabolic diseases may result in destruction of red blood cells leading to haemolytic anaemia, The speedy and progressive recovery of anaemic rats responding to treatment of Nilumbo nucifera alone and more significantly to the combination of Nilumbo nucifera and Lauha bhasma may be due to increased erythropoiesis.

**CONCLUSION:**

The Present investigation concluded that the aqueous extract of Nilumbo nucifera shows Haematinic activity in Phenylhydrazine-induced anaemia in rats. And even extract of Nilumbo nucifera in combination with Lauha bhasma shows significant rise in RBC, Hb and HCT. Hence in combination, it shows potent haematinic activity

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**Table 1.** Effect of phenylhydrazine (10 mg/kg, orally daily for 8 days) on some haematological parameters (T=0).

| Para -meter | Group 1 (Control) | Group 2 (Anaemic control) | Group 3 (PHZ+STD) | Group 4 (PHZ+test 200) | Group5 (PHZ+ test 400) | Group6 (PHZ+STD+ Test 200) | Group 7 (PHZ+STD+ test 400) |
|---|---|---|---|---|---|---|---|
| RBC | 6.88±0.95 | 4.16±0.64* | 3±0.15** | 3.37±1.2** | 2.74±0.65** | 3.44±0.15** | 3.19±0.38** |
| Hb | 12.7±0.35 | 10.05±0.63** | 7.5±0.42** | 7.86±1.25** | 6.7±1.24** | 8.33±0.76** | 7.43±0.58** |
| MCV | 55.95±5.16 | 63.85±1.06 | 76.55±10.67 | 81.33±23.70 | 82.4±9.45 | 74.56±3.81 | 67.7±9.42 |
| MCH | 18.7±2.12 | 23.4±0.98 | 25.15±2.75 | 24.63±4.85 | 24.76±1.61 | 24.2±1.38 | 23.36±1.67 |
| MCHC | 33.35±0.63 | 36.65±2.19 | 32.95±1.06 | 31±3.64 | 30.23±2.65 | 32.5±1.38 | 34.76±2.76 |
| WBC | 10.75±0.77 | 16.55±3.46 | 32.95±18.88 | 28.53±13.58 | 53.83±10.09** | 33.36±3.57 | 40.46±9.64* |
| PLT | 612±59.39 | 632±124.45 | 652±38.18 | 757.66±222.5 | 797±16.39 | 690.33±78.2 | 757.33±181.5 |
| HCT | 38.3±1.83 | 27.4±3.39** | 22.85±2.05** | 25.43±0.90** | 22.3±4.12** | 25.63±1.59** | 21.4±0.85** |

Values are Mean ± SD for (n=6)
*P<0.05, **P<0.01 Significantly lower as compared to Control

**Table 2.** Haematological parameter of rats after one week treatment with extract of Nilumbo nucifera and lauha bhasma.

| Parameter | Group 1 (Control) | Group 2 (Anaemic control) | Group 3 (PHZ+STD) | Group 4 (PHZ+test 200) | Group5 (PHZ+test 400) | Group6 (PHZ+STD+ Test 200) | Group 7 (PHZ+STD+ test 400) |
|---|---|---|---|---|---|---|---|
| RBC | 6.88±.10 | 2.32±1.08** | 4.28±0.99 | 5.04±0.07* | 4.31±1.40 | 5.1±.38* | 4.77±0.26* |
| Hb | 13±0.42 | 10.1±0.56** | 11.66±0.72 | 11.46±0.75 | 11.43±0.57 | 11.76±0.55* | 11.36±0.28 |
| MCV | 56.2±5.09 | 939±13.85** | 79.3±10.46 | 66.26±2.89** | 69.93±5.84* | 68.53±4.93** | 70.7±1.70* |
| MCH | 18.9±2.12 | 49.9±25.8* | 28.03±4.49 | 22.73±1.36* | 28.4±9.08 | 23.16±1.35* | 23.83±1.15* |
| MCHC | 33.1±0.14 | 51.65±20.01 | 35.23±1.29 | 34.26±0.61 | 40.36±11.29 | 33.86±0.85 | 33.66±0.94 |
| WBC | 10.95±0.7 | 10.45±1.76 | 13.1±3.90 | 8.4±1.65 | 13.3±2.66 | 9.1±1.68 | 12.4±2.0 |
| PLT | 610±59.39 | 741±72.12 | 713±86.11 | 501±196.19 | 1134±905.1 | 714±153.12 | 755±41.05 |
| HCT | 38.5±1.76 | 21±7.07** | 33.3±3.3* | 33.46±1.65* | 29.8±7.92 | 34.8±0.70* | 33.76±1.09* |

Values are Mean ± SD for (n=6)
*P<0.05, **P<0.01 Significantly lower as compared to Control
*P<0.05, **P<0.01 significantly higher as compared to anaemic Control

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**Table 3.** Haematological parameter of rats after two week treatment with extract of Nilumbo nucifera and lauha bhasma.

| Parameter | Group 1 (Control) | Group 2 (Anaemic control) | Group 3 (PHZ+STD) | Group 4 (PHZ+test 200) | Group5 (PHZ+test 400) | Group6 (PHZ+STD+ Test 200) | Group 7 (PHZ+STD+ test 400) |
|---|---|---|---|---|---|---|---|
| RBC | 6.96±0.87 | 3.7±0.56** | 4.95±0.21 | 6.13±0.20** | 5.46±0.35* | 5.86±0.89* | 6.13±0.64** |
| Hb | 13.35±0.77 | 10.5±0.14** | 12.26±0.47** | 12.2±0.60** | 12.4±0.62** | 19.93±0.15* | 13.03±0.20** |
| MCV | 56.5±5.23 | 77.25±1.3** | 71.06±2.7* | 60.6±0.52** | 63.56±1.48** | 67.83±0.11** | 64.06±2.41** |
| MCH | 19.05±2.19 | 41.35±1.62** | 24.53±2.06** | 20.43±0.68** | 24.1±1.51** | 21.6±0.88** | 21.4±0.70** |
| MCHC | 33.6±0.70 | 44.33±1.00** | 33.53±0.70** | 34.43±0.15** | 38.73±0.61 | 27.73±5.96** | 34.13±0.25** |
| WBC | 10.54±0.02 | 10.34±0.025 | 12.2±0.26** | 9.33±0.37* | 12.36±0.4** | 9.36±0.45* | 13.66±0.45** |
| PLT | 609±62.22 | 725±1.41 | 663.33±7.57 | 450.66±2.08** | 769±68.19 | 666±43.51 | 634.66±35.50 |
| HCT | 38.55±2.05 | 24.1±1.13** | 36.2±1.25** | 35.5±0.79** | 33.16±1.47** | 38.6±1.13** | 36.7±1.05** |

Values are Mean ± SD for (n=6)
*P<0.05, **P<0.01 Significantly lower as compared to Control
*P<0.05, **P<0.01 significantly higher as compared to anaemic control

**Table 4.** Haematological parameters of rats after 3 weeks treatment with extract of Nilumbo nucifera and lauha bhasma

| Parameter | Group 1 (Control) | Group 2 (Anaemic control) | Group 3 (PHZ+STD) | Group 4 (PHZ+test 200) | Group5 (PHZ+test 400) | Group6 (PHZ+STD+ Test 200) | Group 7 (PHZ+STD+ test 400) |
|---|---|---|---|---|---|---|---|
| RBC | 6.87±0.94 | 5.6±0.14* | 6.6±0.29 | 6.97±0.14* | 6.85±0.40* | 6.87±0.36* | 7.12±0.29* |
| Hb | 12.85±035 | 11.2±0.56 | 13.1±0.14* | 13.23±0.83** | 13.43±0.55** | 13.05±0.49* | 14.1±0.34** |
| MCV | 56±5.09 | 70.4±2.40* | 62.35±7.99 | 55.23±4.66* | 56.63±3.50* | 67.1±6.93 | 57.86±1.61 |
| MCH | 18.55±2.19 | 25.25±1.20** | 19.85±0.63** | 18.96±1.32** | 19.6±1.21** | 19±1.69** | 19.8±0.36** |
| MCHC | 33.2±0.70 | 41.1±2.26** | 32.1±3.11** | 34.3±0.17** | 34.66±0.23** | 28.35±0.35** | 34.3±1.054** |
| WBC | 10.65±0.77 | 10.65±3.32 | 10.9±3.53 | 10.73±3.94 | 11.93±3.19 | 9.7±0.14 | 15.3±3.48 |
| PLT | 613±58.69 | 707±257.39 | 629.5±20.50 | 412.6±36.8* | 538.6±25.4 | 464.5±7.7 | 531.6±109.7 |
| HCT | 38.25±1.76 | 28.9±1.69** | 41.05±3.46** | 38.5±2.52** | 38.73±1.90** | 46±2.40** | 41.26±1.70** |

Values are Mean ± SD for (n=6)
*P<0.05, **P<0.01 Significantly lower as compared to Control
*P<0.05, **P<0.01 significantly higher as compared to anaemic control

# An Important Drug of Ayurveda - Sesamum indicum Linn.

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## Abstract

Sesame (SesamumindicumsL) seeds may be the oldest condiment known to man. They are highly valued for their oil which is exceptionally resistant to rancidity. "Open sesame"—the famous phrase from the Arabian Nights—reflects the distinguishing feature of the sesame seed pod, which bursts open when it reaches maturity. In fact, its history as a medicine goes back 3600 years to Egyptian times where it was listed in the scrolls of the Ebers as a favored medicine. Also, women in ancient Babylon were believed to use a mixture of honey and sesame seeds (halva) to prolong youth and beauty, and Roman soldiers ate the mixture for strength and energy. Ayurvedic knowledge says that the sesame's (Til) survivor nature imparts a special strength to those who use it for medicine. Ayurveda knows sesame as a strengthener. Its luscious, unctuous nature fortifies immunity, protects those with debility, and deeply feeds bodily tissue.

**Key words:** Sesame, Til, Sesamum indicum Linn, immunity

### Introduction

Sesame (SesamumindicumL.) is one of the herbal remedy and healthcare preparations, as those described in ancient texts such as the Vedas. Sesame is used in villages for auspicious occasions, rituals, religious sacrifices and marriage ceremonies due to its religious and mythological importance. Apart from its religious significance sesame is used as medicine. In Ayurveda, it is considered to be an extremely beneficial and strong medicine. Sesame is one of the oldest crops in the world, and is under cultivation in Asia for over 5000years [1]. The crop has early origins in East Africa and in India [2,3]. Today, India and China are the world's largest producers of sesame, followed by Myanmar, Sudan, Uganda, Nigeria, Pakistan, Tanzania, Ethiopia, Guatemala and Turkey. Sesame is known as the king of oil seeds due to the high oil content (50 – 60%) of its seed[4].Out of 400,000 tons of sesamum seeds produced annually in the country, nearly 80% is used for oil extraction, 2% is retained for planting purpose and 18% for direct edible purposes. The export and import of sesamum seed is negligible[5].

### Botanical description:

It is an annual plant growing 50 to 100 cm (1.6 to 3.3 ft) tall, with opposite leaves 4 to 14 cm (1.6 to 5.5 in) long with an entire margin; they are broad lanceolate, to 5 cm (2 in) broad, at the base of the plant, narrowing to just 1 cm (0.4 in) broad on the flowering stem. The flowers are yellow, tubular, 3 to 5 cm (1.2 to 2.0 in) long, with a four-lobed mouth. The flowers may vary in colour with some being white, blue or purple [6,7].

### Pharmacognosy:

Sesame fruit is a capsule, normally pubescent, rectangular in section and typically grooved with a short triangular beak. The length of the fruit capsule varies from 2 to 8 cm, its width varies between 0.5 to 2 cm, and the number of loculi from 4 to 12. The fruit naturally splits opens (dehisces) to release the seeds by splitting along the septa from top to bottom or by means of two apical pores, depending on the varietal cultivar. The degree of dehiscence is of importance in breeding for mechanised harvesting as is the insertion height of the first capsule, seed flattened ovoid, pointed at one end, 3-4 mm long, 2mm broad & 1 mm thick, buff coloured or whitish or black, finely punctate with 4 delicate longitudinal ridges, hilum is located at pointed end. The epidermis is characterised by a thin wall palisade, the anticlinal walls being more or less wavy, cells contains spherical mass of crystals of calcium oxalate. The reminder of the testa consists of collapsed cells with yellowish membrane on the inside. The endosperms and cotyledons consists of cellulosic, polygonal parenchyma containing fixed oil and small aleurone grains and starch is absent [8,9].

### Varieties:

The commonly cultivated varieties are mostly either black or white seeded. In some states, the brown seeded varieties are grown to some extent. In UP white seeded varieties are called Tilli and black seeded once Til. There are various intermediate shades between black and white like black, ash, greenish brown, dark brown, light brown and dull white[10].In old treatise of Ayurveda three varieties are

mentioned i.e. black, white and red or brown. Usually Krishna tila or black sesame seeds are considered to have excellent medicinal properties and are recommended in ayurvedic treatments and ayurvedic preparations, white has medium& red or other have ordinary medicinal properties.[11,12]. One more variety has mentioned in kaiyadevanighantu i.e. wild and called Jartil [13]. But the white variety is richer in oil[14].

**Properties:** Rasa- Katu, Tikta, Kashaya, Madhur [15,16,17,18,19]

Vipaka- Katu

Madhur [20,21]

Veerya- Ushna

Guna- Snigdha, Sukshma, Vyavayi

**Chemical constituents:[22]**

The rich, almost odourless oil expressed from the tiny seeds is very stable and contains an antioxidant system comprising sesamol and sesamolinol formed from sesamolin, which substantially reduce its oxidation rate. If properly stored, sesame oil is not likely to go rancid, making it popular as cooking oil in India and China. It is also highly nutritious, rich in vitamins A, B and E as well as the minerals iron, calcium, magnesium, copper, silicic acid and phosphorus. It contains linoleic acid and alpha linoleic acid as well as lecithin, and this may go some way to explaining its benefit to the brain and nervous system. Sesame oil is considered good for lowering harmful cholesterol levels. White seeds produce the most oil, but in India they say the best oil for healing is extracted from black sesame seeds.

**Sesame Seeds Nutritional Profile:[23]**

As mentioned, sesame seeds have a fabulous nutritional profile, granting their capabilities in fighting, preventing, and reversing illness and disease. The seeds are especially high in copper, manganese, calcium, and magnesium. But the value doesn't end there. Here are some notable vitamins, minerals, and other nutrients you can expect to find in a 1 ounce (28g) serving of sesame seeds.

- Manganese – 0.7 mg. 35% RDA.
- Copper – 0.7 mg. 35% RDA.
- Calcium – 277 mg. 28% RDA.
- Iron – 4.1 mg. 23% RDA.
- Magnesium – 99.7 mg. 25% RDA.
- Tryptophan – 93 mg.
- Zinc – 2 mg. 13% RDA.
- Fibre – 3.9 g. 16% RDA.
- Thiamine – 0.2 mg. 15% RDA.
- Vitamin B6 – 0.2 mg. 11% RDA.
- Phosphorous – 179 mg. 18% RDA.
- Protein – 4.7 g.

**Medicinal properties of sesame:[24]**

**1] Dental problem:** Sesame is extremely beneficial in case of loose teeth or the person is suffering from pyorrhoea and toothache. In such case, let the sesame oil remain in the mouth for 10 - 15 minutes and do gargles. This relieves toothache. Another instant remedy to cure toothache is to do gargles with hot sesame oil mixed with asafetida and black cumin seeds.

**2] Bleeding dysentery:** Sesame is very beneficial for bleeding dysentery. Grind 20 gm of sesame and add 30 ml of goat's milk, this medicine gives relief in case of bleeding dysentery. Grind few sesame seeds and mix it with jaggery powder, let the child suffering with this problem lick it with honey, the child will get immediate relief.Grinded sesame mixed with butter also cures this problem.

**3] Burn:** If any part of the body has burnt and the person suffers from extreme pain and burning sensation, then apply the lep (pack) of sesame, camphor and ghee on the affected area. This reduces the pain and burning sensation. Grind sesame with milk and apply the lep (pack) on the affected part, this will slowly reduce the burning sensation and the pain.

**4] Impotency:** Consumption of sesame gives lot of strength and therefore it removes impotency. Boil 15 gm of sesame in 10 gm of Gokharu (briar) milk, this medicine taken regularly stops the secretion of vital humors of the body, reduces impotency and weakness. Regular consumption of this medicine for one month definitely cures the impotency.

**5] Menstrual cycle:** Consumption of Sesame can be very beneficial in case of severe pain during menstrual cycle or mild menstruation. Cook one tola (around 12 gm) sesame in 20 tolas (240 gm) of water and let it reduce to one-fourth of the quantity, remove it from flame and let it cool. Add jaggery in this syrup and consume it regularly every morning, this will cure the problem of mild or irregular menstruation. Add shakkar (jaggery powder) in sesame and barley powder and give this to a women who has delivered a baby, her bleeding will stop.

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# Pharmacological Profile of Enicostemma littorale: A Review

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## Abstract

Enicostemma littorale is growing widely throughout the Indian spacialy in Gujarat, Madhya Pradesh & Rajasthan.. In the Traditional system of medicine (TCM) like Ayurveda, Siddha and Unani, medicinal uses have been described as it is works in disease of every system. Swertiamarin, gentiocrucine, enicoflavine, apigenin, genkwanin, isovitexin, swertisin saponarin, ophelic acid, heptacosane, oelic acid, gentianine, and alkaloids are mainly believed to be responsible for its wide therapeutic actions. It is used as antioxidant, antimicrobial, antidiarrheal, anticancer, antidiabetic, antihypertensive and hepatoprotective agent. The present article attempts to provide comprehensive information on pharmacological properties of Enicostemma littorale for further research.

**Key Words:** Pharmacological properties, Enicostemma littorale, Ayurved

### Introduction

In the Traditional system of medicine (TCM) spicily in Ayurveda there is several medicinal plants are mention. The ayurvedic materia-medica call as Nighantu described lots of useful medicinal plants with their properties, action and morphology. Mamajjaka (Enicostemma littorale) is one of famous traditional medicinal plants used in Madhumeha especially in Gujarat, Madhya Pradesh & Rajasthan. It is used as a substitute for Chirayata [1] (Swertia chirayita Roxb. Lyons.). In the view of history Mamajjaka (Enicostemma littorale) was not mentioned in Vedic Kala and Samhita Kala. In Nighantu Kala, first time Mamajjaka (Enicostemma littorale) is mentioned in Shodhal Nighantu (12th cenctury) in Lakshmanadi Varg only.

**Synonyms [2]:**

Nagajihva, Mamajjaka, Nahi, Tiksnapatra, Vitikshnika, Krimihrit, Ksharakarma.

**Ayurvedic Properties [3]:**

Rasa – Tikta

Guna – Laghu, Ruksha

Veerya – Ushna

Vipaka – Katu

Doshaghnata – Kaphapittashamaka

Rogaghnata (Therapeutic indication) – Amadosha, Vibandha, Yakritdaurbalya, Krimi, Raktavikara, Shotha, Premaha, Madhumeha, Twagvikara, Vishamajwara,

Medoroga, Visha Atisara.

Karma – Deepana, Amapachana, Saraka, Yakriduttejaka, Krimighna, Raktashodhaka, Shothahara, Premehaghna, Kusthaghna, Lekhana, Vishaghna

Botanical Name

Enicostemma littorale

Syn. Enicostemma hyssopifolium and Enicostemma azillare

Taxonomy

Kingdom : Plantae

Subkingdom : Tracheobionta

Superdivision : Spermatophyta

Division : Magnoliophyta

Class : Magnoliopsida

Subclass : Asteridae

Order : Gentianales

Family : Gentianaceae

Genus : Enicostema

Species : Enicostema littorale

**Vernacular Name [4]**

Hind : Chota Chirayata

| | | |
|---|---|---|
| Guj | : | Mamijava |
| Beng | : | Nagajivha. |
| Mal | : | Vellaruku |
| Mar | : | Kadavinayi Mamjava |
| Tam | : | Vallari |
| Tel | : | Chevvu-kurti |

**Distribution [5]**

Distributed in open areas throughout the greater part of India except some states like W. Bengal etc., up to an altitude of 500 m and also found in Coastal areas. Distributed in Sri Lanka, Malaya, Tropica Africa and West Indies.

**Morphologycal /Botanical Description [6,7]**

Perennial, glabrous, erect or procumbent herb 16-30 cm high; stem Quadrangular, 10 to 50 cm in length, branching from the base, internode short 0.8 to 1.5 cm long. subquandragular or ubterete. Leaves Green in colour, exstipulate, opposite decussate, lanceolate, 3 to 6 by 0.5 to 0.7 cm, sessile, apex obtuse, 3nerved, venation pinnate, upper surface rough, lower glabrous. Flowers Small whorled and in clusters, white; calyx 3 to 4 mm long obtuse with narrow membranous margins; corolla, tubular, 6 to 8a mm long, elliptic, acute; stamens 5, anthers included; stigma bilobed; capsule ellipsoid, 4 to 6 mm long and slightly narrowed athther base contains numerous seeds. The drug has no marked odour but all parts have bitter taste. Root - Thin slender, tapering, rough secondary root filiform, 5 to 15 cm in lengh, 0.3 to 2.5 cm in diameter, light yellow externally, creamish white internally.

Flowering and Fruiting: July-November

Collection: October-November

Doses : Powder – 1-3 gm; Decoction – 50-100ml

Part Used: Whole Plant

Formulations:

**Mamajjak Ghanavati [8], Vayuchhya surendra Tail[9].**
**Chemical Constituents [10]**

Swertiamarin, gentiocrucine, enicoflavine, apigenin, genkwanin, isovitexin, swertisin saponarin, 5-O-glucosylswertisin, 5-O-glucosylisoswer-tisin, gentiocrucine, swertiamarin tetraacetate, 3-acyl-3,4-dehydrogentiopi-croside, ophelic acid, nhexacosanol, heptacosane, nonacosane, myristic acid, stearic acid, oelic acid, gentianine, betulin, alkaloids (plant)

**Aims and objectives:**

To review the various Pharmacological activities of Enicostemma littorale. Main aim is to prove the action which mention in Ayurveda by modern parameters or investigation.

**Materials and methods:**

Available Ayurvedic Liturratures were studied for batter understanding of Enicostemma littorale. Information regarding Enicostemma littorale drugs from various National and International jouranals, Ayurvedic texts and also electronic search (using Pubmed, SciFinder, Scirus, Google Scholar, JCCCNSTIRC and Web of Science) was also used for availability and necessity for comprehensive understanding of the subject.

**Pharmacological properties of e. Littorale**

Antimicrobial activity of E. littorale

Tanna et al. reported the antifungal activity of Enicostemma littorale blume. The chloroform extract shows pronounced activity against Aspergillus niger and negligible activity against Candida albicans at the concentration of 100, 200 µg/mL. The ethyl acetate extract shows slight activity against A. niger and moderate activity against C. albicans. The ethanol extract shows pronounced activity against A. niger and C. albicans [11].

**Antihelminthic activity of E. littorale**

Mishra and Shukla reported that Enicostemma littorale exhibits antihelminthic effects. Petroleum ether and ethanolic extracts of aerial parts of Enicostemma littorale Blume were prepared and evaluated separately for finding an antihelminthic effect on adult Indian earthworm. The results indicated that an ethanolic extract of Enicostemma littorale was more potent than the petroleum ether extract [12].

**Anti Diabetic activity of E. littorale**

Prince and Srinivasan studied the effect of an aqueous Enicostemma littorale whole plant extract on antioxidant defense in alloxan-induced diabetic rats. It was observed that an administration of insulin (6 units/kg) to alloxan induced diabetic rats for 45 days brought back all the parameters to near normal status. E. littorale extract at the dose of 2 g/kg was more effective [13].

Vishwakarma et al. repoted the effect with hot and cold aqueous extracts of Enicostemma littorale for three weeks in STZ induced type 1 diabetic rats. Treatment of diabetic rats with hot aqueous extract of E. littorale reduced the food, water intake and glucose and AUC glucose levels and decreased the serum glucose, serum cholesterol and triglyceride levels. Swertiamarin was found to be a major component in hot extract of E. littorale while it was absent in cold extract. The result suggested that E. littorale possesses potential antidiabetic activity and improves lipid profile at a dose of 0.5 g/kg [14].

Gohil TA et al. repoted the effect of Aqueous extracts of Aegle marmelos and Enicostemma littorale reduces

hyperglycaemic conditions in diabetic wistar rats. After 15 days reported that the administration of aqueous extracts of A. marmelos and E. littorale for 15 days prevented hyperglycemia and hyperinsulinemia induced by a diet high in fructose [15].

Bhatt et al studied the protective effects of Enicostemma littorale was investigated for hypoglycemic and antioxidant effect in alloxan induced diabetic neuropathy in male Charles foster rats. This study provides an experimental evidence for the preventive effect of E. littorale on nerve function and oxidative stress in animal model of diabetic neuropathy [16].

**Anti-oxidant activity of E. littorale**

Thirumalai et al. investigated the hyperlipidaemic condition and antioxidant effects on patically injured male albino rats (ethanol induced) by treating with aqueous leaf extract of Enicostemma littorale at a dosage of 250 mg/kg body weight. He reports that an aqueous leaf extract of E. littorale blume has potent restorative effect on hyperlipidaemic and oxidative stress [17].

Mukundray et al. repoted the role of Enicostemma littorale as a promising antioxidant therapy in gentamicin iduced nephrotoxicity in rats. E. littorale extract was used in antioxidant therapy to counteract mitochondrial and post-mitochondrial oxidative stress generated in kidney upon gentamicin treatment, thus prevented nephrotoxicity [18].

**Antiulcer and anti-inflammatory activity of E. littorale**

Roy et al. repoted the aerial parts of Enicostemma littorale against aspirin, ethanol and pyloric ligation induced ulcers in rats and bovine serum albumin (BSA) denaturation were examined for antiulcer and anti-inflammatory effects. It was reported that the methanolic extract of E. littorale possesses antiulcer activity. And its anti-inflammatory activity may be attributed to the antioxidant potential [19].

**Antitumour activity of E. littorale**

Kavimani et al. repoted the antitumour activity of methanolic extract of Enicostemma littorale has been evaluated against Dalton's ascitic lymphoma (DAL) in Swiss albino mice. After 14 days of inoculation, methanolic extract of E. littorale is able to reverse the changes in the haematological parameters, protein and PCV consequent to tumour inoculation [20].

**Hepatoprotective activity of E. littorale**

Paracetamol induced hepatic injury is commonly used as an experimental model for the study of hepatoprotective effects of medicinal plant extracts and drugs. It produces hepatotoxicity by altering liver microsomal membranes in experimental animals. The study by Gite et al[21]. revealed that the extract was able to reduce all the elevated biochemical parameters since it has hepatotoxin detoxication property. Enicostemma littorale possesses a chemical compound called swertiamarin which has antioxidant and hepatoprotective properties against D-GalN induced hepatotoxicity given at 100 and 200 mg/kg body weight orally for 8 days, which might be due to its in vitro antioxidant activity [22]. The present investigation indicates that the ethanolic extract of E. littorale exhibits significant hepatomodulation against oxidative stress induced liver injury in rats through antioxidant potential and free radical scavenging activities along with reduction of fat metabolism [23].

Gupta et al. studied the hepatomodulatory response of ethanol extract of Enicostemma littorale were examined for oxidative stress induced liver injury by carbon tetrachloride (CCl4) in albino wistar male rats. The hepatic marker levels Total Bilirubin, Total Protein, Albumin etc. in serum were also restored to normal level dose-dependently after the supplementation of E. littorale extract in comparison to respective controls [24].

Antihyperlipidaemic activity of E. littorale: The aerial part of the Enicostemma littorale reduces the serum cholesterol level in hepatoma bearing rats which induces hypercholesterolaemia. A component of plant enhances cholesterol acyltransferase by esterification of free cholesterol in the HDL [25]. Treatment with this extract decreases the activities of erythrocyte CAT, SOD and LPO levels, with an increase in reduced glutathione levels, liver and kidney cholesterol levels were also decreased in E. littorale treated rats when compared to cholesterol fed untreated rats [26].

**Discussion**

The World Health Organization has estimated more than 80 % of the world's population in Developing countries depends primarily on herbal medicines for their basic healthcare needs.

In recent years, ethno-botanical and traditional uses of natural compounds, especially those of plant origin, have received much attention as they are well known for their efficacy and are generally believed to be safe for human use. It is best to use the classical approach in the search for new molecules to manage a variety of diseases. A thorough review of the ublished literature on Enicostemma littorale shows that It is a popular remedy in a variety of ethnic groups, as well as Ayurvedic and traditional practitioners for the treatment of a range of ailments. Researchers are exploring the therapeutic potential of this plant as it is likely to have more therapeutic properties than are currently known.

## 1. CONCLUSIONS

The recent article proved an effective role of from Enicostemma littorale due to derived phytochemical compound from E. littorale. These phytochemical compounds are either separated from whole plant or specific part of plant. It also showed anti-inflammatory, antimalarial, hepatomodulatory, hepatoprotective, antihyperglycemic, hypoglycemic, antioxidant, antitumor, hypolipidemic and antihelminthic activities of E. littorale. This review may focus scientists to develop clinical studies which might be of great scientific contribution for the society. The importance of medicinal plants in traditional Ayurvedic practices provides clues to new areas of research and in biodiversity conservation.

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# Management of Hepato- Splenomegaly – A case report

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**Abstract**

Splenomegaly is indeterminate in extremely interior forests hamlets of South India and also at village level. Usually many pathological conditions imply to bring the graveness in due course. If the proper attention is paid to notice in time, the condition is well managed with traditional time tested Ayurveda medicines viz. Yakrutpleehari Loha and Kumaryasava in short time effectively. The patient recovered in 10 days prescription of these medicines and the LFT is expressive as normal. All the presenting symptoms were disappeared with in 10 days.

**Key-words:** Splenomegaly, Yakrutpleehari Loha, Kumaryasava, Udara, Pleehodara, Virechana

**Introduction:**

Present day life style especially of a non local resident student in a University is difficult with respect to his diet habits. The maintenance of the familial food regulations are impossible and leads to the Indigestion, a chief cause of "Udara" i.e. ascites and organomegaly. Even though many infectious conditions are placed before to get a "splenomegaly" in contemporary medical practice, a most common cause is indigestion in Ayurveda. The presented case has no history or evidence of generating the splenomegaly other then his altered food habits.

**Case Presentation / Case Report:**

A 23 year old Male resident of Sawangi, Wardha (MS) approached to the hospital with abdominal discomfort, icterus, loss of appetite and weight loss. On examination, patient has palpable spleen and the Murphy's sign is positive. The eyes are yellowish and mild temperature (99.6°F) is present. Patient complains the malaise and nausea. The Ayurvedic diagnosis on these conditions is yakritpleehodara can be correlated with Hepato- Splenomegaly.

Patient initially on 24th May 2013 felt feverish with chills and loss of appetite and consulted the local doctor for the treatment. On examination it is found that the fever is fluctuating between 101°F to 103°F. The other symptoms associated are – weakness, body ache, and mild abdominal pain.

Physician suspected the malaria or typhoid and investigated further. The widal test, is negative for S.Typhi, S. Paratyphi A and B. Even the smear test for the malarial parasite also reveled negative. The heamogram is normal.

Prior complaints are stand still even after the medical attendance. Mean while patient developed more abdominal discomfort and pain along with icterus. The weight loss is 3 kgs in 3 days from 55 kgs to52 kgs body weight. Abdominal examination show the positive "Murphy's sign".

Physician Advised HCV test and HBsAg (Australian Antigen) are found non reactive. Ultrasonography dated 29th May 2013 expressed the opinion of mild (Grade-I) splenomegaly (pleehodara). Patient switched to the Ayurvedic management on 12th June 2013.

The diagnosis of Ayurveda to presented complaints provisionally is Udara. Later the splenomegaly is reveled by Ultrasound examination, which is Pleehodara in Ayurveda. The final diagnosis is Yakrut-Pleehodara.

**Management and Treatment:**

The treatment planned according to the norms affirmed by the Ayurveda as daily purgation (Nitya Virechana) to eliminate the "Pitta". The protocol of the Udara works with Virechana module, which gives rise to 3-4 loose motions to the patient. Some times it may be a bit more to cause the 5-8 loose motions. This situation may panic and weak the patient. Apart from this small inconvenience there is absolutely no unanticipated effects in the treatment schedule. This can be easily overcome by the Ayurvedic Diet schedule of peya and manda (liquid nutrient foods).

The treatment given for 10 days is –

- Tab. yakrutpleehari loha - 2 tabs thrice in a day before food
- Kumaryasava – 3 tsf after food mixed with equal quantity of water
- Tab. Nirocil – 1 tab twice daily after food

The Tab. Yakrutpleehari loha along with Kumaryasava is given as drug of choice in "Yakrut-Plehodara" for 10 days. The Tab Nirocil (Phylanthus niruri) is liver corrective, as added management. After the treatment, it communicates that the raised liver parameters are brought back to normal and the splenomegaly is reduced. The other disease manifestations such as icterus, malaise, nausea, loss of appetite are disappeared. The weight gain of 2 Kgs is observed. The investigations and parameters observed before and after are compared in the below table-1.

In the treatment schedule patient did not complain any disadvantages or discomforts. After 10 days treatment as the patient is brought back to the normal condition, advised to take Cap. Amylcure - 1 tab in a day before food. Cap. Amylcure makes the liver and spleen regulation.

**Discussion:**

India has wide scope for splenomegaly, especially in forest areas where malaria is prevalent. In US, splenomegaly is listed as a "rare disease" by the Office of Rare Diseases (ORD) of the National Institutes of Health (NIH) [1]. In a study conducted in South India, about 25-40%, where cause of splenomegaly is not identified on usual evaluation that is labeled as indeterminate group. Malaria was the commonest cause of splenomegaly, observed in 22 patients. Other causes, in order of importance, were chronic myeloid

**Table-1 ::** Showing the objective & subjective parameters of Before & After treatment

| SNo | Investigation (Normal range) | Before (30th May 2013) | After (22nd June 2013) | Difference | Remarks |
|---|---|---|---|---|---|
| | **Objective Parameters** | | | | |
| 1 | Hemoglobin (13 -18gms %) | 13.8 gms | 16.0 gms% | + 2.2 | Brought to the high normal |
| 2 | Platelet count (1.40 to 4.40 lakc/cu.mm) | 1.77 lack/cu.mm | 1.76 lack/cu.mm | - 0.01 | WNL |
| 3 | Serum Bilirubin Total (0.2 to 1.0 mg/dl) | 0.58 mg/dl | 0.61 mg/dl | + 0.03 | WNL |
| 4 | SGOT (5 to 40 U/L) | 101.0 U/L | 30.0 U/L | - 71.0 | Brought to the normal range |
| 5 | SGPT (5 to 35 U/L) | 95.0 U/L | 26.0 U/L | - 69.0 | Brought to the normal range |
| 6 | Urine Ca.Ox. | 2 + | Absent | - 2+ | Brought to the normal range |
| 7 | Urine Albumin | 1 + | Absent | - 1+ | Brought to the normal range |
| 8 | Urine Sp.Gr. | 1015 | 1010 | - 5 | Brought to the normal range |
| 9 | Weight (BMI) | 52 Kgs (21.0) | 54 Kg (21.8) | + 2 | Weight gain |
| 10 | Spleen | Palpable – 1+ | Not Palpable | - 1 | Brought to the normal |
| | **Subjective Parameters** | | | | |
| 11 | Icterus | 2+ of 5 | Absent | - 2 | Brought to the normal |
| 12 | Burning sensation | 4+ of 5 | Normal | - 4 | Brought to the normal |
| 13 | Loss of appetite (Indigestion) | 4+ of 5 | Normal | - 4 | Brought to the normal |

leukaemia (n=11), non-cirrhotic portal fibrosis (n=9), enteric fever (n=9), cirrhosis of liver (n=8) and hyper-reactive malarial splenomegaly also called as tropical splenomegaly syndrome (n=7) and so on [2].

The spleen is the largest lymphoid organ in the body. The spleen and the lymph nodes are the major components of the mononuclear-phagocyte system (MPS). They serve as filters that remove damaged cells, microorganisms, and particulate matter and deliver antigens to the immune system.

The MPS, originally called the reticuloendothelial system, consists of fixed phagocytic cells in different organs [3]. One of the primary functions of the spleen is the filtration of defective cells. The spleen is also critical for clearing circulating, particularly encapsulated, bacteria. In splenomegaly Bone pain, fever, malaise, lethargy, or bruising, Weight loss, fevers, night sweats and Jaundice are common [4]. Portal hypertension usually increases flow through minor collateral vessels between the portal circulation and the systemic circulation [5].

The Udara is Ayurveda develops with the obstruction phenomenon in sweat and water metabolism. It vitiates the Pranavata, Apanavata and Jatharagni (Digestion) [6]. The common symptoms narrated are – weakness to walk, indigestion, emaciation of the limbs, weight loss, burning sensation or fever with malaise and constipation [7]. The specific symptoms developed for "Yakrut-Pleehodara is enlargement of liver and spleen [8]. The Dosha predominance is noticed with the symptoms associated with in. If bloating abdomen is noticed the involvement of Vata, associated with fever – it is Pitta association, and the anorexia and nausea conforms the association of Kapha. The mixed symptoms instigate dual or all Dosha involvements.

Charaka affirms that the pleehodara is produced because of Agni vitiation [9]. The Agni in terms of Pachaka Pitta & Ranjaka Pitta from stomach under goes provocation and disturbs the seats of Pitta and Rakta i.e. the Liver and Spleen. There by the either of these organs undergoes the megaly. At the extreme organomegaly, it is observed with Neela Rāji (spider nevus) on abdominal wall [10].

Susruta introduces the Shira Vyadha (Vein Puncture) of Left radial artery at cubital fossa. He explains the procedure in sequence of 1) Food intake – 2) vein puncture – 3) squeezing the spleen. After the completion of procedure the Kshara Jala (Alkaline water) is given. This procedure pacifies the splenomegaly [11]. The medicines given have the following combination and proportions shown in table-2.

**Table-2 ::** Composition of Yakrut-Pleehari Loha: [12]

| SNo | Sanskrit Name | Proportion |
|---|---|---|
| 1 | Hingulotha Pārada | 1 Part |
| 2 | Gandhaka suddha | 1 Part |
| 3 | Lauha bhasma | 1 Part |
| 4 | Abhrak bhasma | 1 Part |
| 5 | Tāmra bhasma | 2 Part |
| 6 | Manashila suddha | 2 Part |
| 7 | Haridra | 2 Part |
| 8 | Jayapāla | 2 Part |
| 9 | Tankana bhasma | 2 Part |
| 10 | Shilājitu | 2 Part |
| | Yakrut-Pleehari Loha Bhavana Dravya | |
| 1 | Danti swaras | (Q. S.) |
| 2 | Trivrut swaras | (Q. S.) |
| 3 | Chitraka swaras | (Q. S.) |
| 4 | Nirgundi swaras | (Q. S.) |
| 5 | Triushana (Sunthi, Pipplai, Maricha) | |
| | kwatha | (Q. S.) |
| 6 | Ardraka swaras | (Q. S.) |
| 7 | Bhringaraj swaras | (Q. S.) |

The disease pacified with Yakrut-Pleehari Loha are - Udararoga (Ascites), Ānāha (Distension of abdomen due to obstruction to passage of urine and stools), Jvara (Fever), Pāndu (Anaemia), Kāmala (Jaundice), Śotha (Inflammation), Halîmaka (Chronic obstructive Jaundice/ Chlorosis/ Advanced stage of Jaundice), Manāgni (Impaired digestive fire), Aruchi (Tastelessness), and Yakṛtplîhāroga (Disorder of Liver and Spleen) .

The Sahapana medicine Kumāryāsava chief ingredients [13] are – Kumāri, Guda (Jaggary) and Haritaki. The other additives are – Dhataki, Jayapatri, Kāntaloha, Lavanga, Jatiphala, Chavya, Jatamamsi, Chitraka, Karkata, Vibhitaki, Pushkara Moola, Tamra Bhasma and Loha Bhasma.

The action of Kumāryāsava emphasized as - Gulma (Abdominal lump), Kāsa (Cough), Svāsa (Dyspnoea/Asthma), Arsha (Haemorrhoids), Vāta Vyādhi (Disease due to Vāta dosha), Apasmāra (Epilepsy), Kshaya (Pthisis), Udara (Diseases of abdomen / enlargement of abdomen), Manyāroga (Diseases of Neck), Agnimāndya

(Digestive impairment), Koshtashoola (Pain in abdomen), Nashta Pushpa (Amenorrhoea), etc.

The drug action is chiefly attributed to the elimination of the Pitta from the Koshta i.e. alimentary canal. By definition the Kosta includes the liver and spleen too. The excess produced biological waste and pathogenic biochemicals of these are brought to the alimentary canal and from there they are purged out. There by the body functions are regularized.

**Conclusion:**

When any pathological condition exhibits its bursting symptoms either in full-fledged as a disease or a pre pathological profile (Poorvaroopa), the state should not be neglected as if it is not capable of liable to any damage [14].

With the above cited subjective and objective parameters for Hepato- Splenomegaly of pre and post test we understand that the time tested medication provided in accordance with Ayurvedic parameters is effective. The Yakritpleehari Loha with Kumaryasava is a successful economic safe practice.

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# Chronic Non-Healing Diabetic Foot Ulcer treated by Indigenous Drugs

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## Abstract

A chronic wound management is a very challenging problem inspite of all modern tools in our hand. Many factors are responsible for non-healing like Diabetes, Hypo-proteinaemia, Deficiency of Vitamins, minerals and other immune-compromising conditions. In Ayurveda, Madhumeha, Kushta, Kshaya, Vishjushti and repeated trauma are the factors which retard the healing of wound. Sushruta also mentioned these non-healing ulcers with the name of "Dushta Vrana". He mentioned that a wound having black/red/yellow/white colour, full of slough of necrosed muscles, vessels, tendons etc. having multiple tracts or pockets, unpleasant look and odour with severe pain, burning, suppuration, redness, itching, oedema, complicated with resides all around discharge of vitiated blood in it and the vrana is of very chronic nature. Leech application and Aloe vera with Apamarg Kshar for local application provide encouraging results in the management of chronic ulcer.

**Keywords**—Dushta vrana, Leech, Aloe vera, Apamarg Kshar, wound healing, chronic wound.

### Introduction

Diabetes mellitus is recognized as an epidemic in the Asian sub-continent affecting nearly 25 million in India alone. Approximately 20% of patients with Diabetes will develop foot ulceration in their life time. Diabetic foot ulceration represents a major problem that can significantly impair the patient's quality of life, require prolonged hospitalization and may involve infection, gangrene and amputation. Diabetic foot ulcers are a leading cause of amputation nearly 15% of people [1] and precede 84% of all Diabetes related lower leg amputation [2]. In India, there were more than 40 thousand amputations per year. Centers of Disease control and Prevention [3] projected that in 2002 alone 82,000 lower limb amputations were performed in persons with Diabetes in USA. Diabetes affects approximately 170 million people worldwide, including 20.8 million people in USA (National Diabetes information House) and by 2030 these numbers are projected to double [4].

Ancient management of chronic wound may provide scope to cure these chronic non-healing ulcers. Leech applications in the management of chronic wound have been reported efficacious by some workers as reported by Chaukhande et. al., 1997 and Ujma Fatmi et.al.,2012. Similarly Kshar application has been mentioned in Sushruta samhita as an ideal remedy for debridement[5]. Aloe vera fresh pulp also reported a good healing property in burn wound.[6]

### Case History

Patient: 67years, Male of Salod, Wardha.

Attended Shalya OPD- on 22.10.2012

Presenting complaints- Ulcer on left ankle since 15 years.

Past complaints- He took treatment outside for Ulcer but not cured. So he came to M.G.A.C & RC, Salod.

H/O- Diabetes mellitus, Hypertension since 15 years using medicines- Gliride-2, Anwas, Morphin, Amlodepin and controlled.

**O/E-**

Inspection- Wound Size- 1"x1"

Shape- Oval

Position- ulcer present on outer aspect of left ankle

Floor-covered with slough

Margins- oedematous

Discharge- serous with foul smell

Surrounding skin- eczematous, ankle was swollen.

Palpation- Lymph glands not enlarged in groin

Dorasalis pedis arterial pulsations normal

Not tender and temperature of surrounding skin was not raised.

**Investigation:**

Hb%-10.3gm%

TLC-11100/cmm

DLC- P-56%

L- 39%

E-03%

M-02%

Random Blood sugar- 79 mg%

Fasting Blood sugar - 93 mg%

Post-prandial-98 mg%

Urine- Routine- Sugar, Albumin- absent

Microscopic- Pus cells-1-2/hpf

Epithelial cells-1-2/hpf

ECG-WNL

X-ray-left foot (ankle joint) AP & Lateral view- does not show any bony abnormality.

Diagnosis- Diabetic foot ulcer(left ankle).

**Treatment**

Anti-Hypertensive and Anti-Diabetic drugs were continued and he was kept on Ayurveda line of management for Diabetic Foot Ulcer.

1. Leech application weekly once.
2. Antiseptic dressing with Aloe Vera fresh pulp and Apamarga Kshar.
- Leech application was stopped after 3 sittings because of low Haemoglobin level and continued antiseptic dressing with above mentioned drugs.

**Observation**

1 Colour of wound changed after 3 days.

2 Discharge reduced after 15 days.

3 Slough was reduced gradually.

4 Surface area, foul smell was reduced.

5 Ulcer healing started gradually and completely healed in 3 months.

**Discussion**

Diabetic Foot Ulcer patient is still very challenging problem because many cases has to go for amputation. Present work is an integrated approach in a case of chronic diabetic ulcer whose diabetes was controlled by modern drug i.e.Gliride-2. He was also hypertensive and was taking medicines – Anwas, Morphin, Amlodepin. For local application, he was using some antiseptic cream but his ulcer was not healing since 15 years. So he was kept on Leech Therapy along with Apamarg Kshar with Aloe vera pulp for dressing as has been reported in Ayurvedic literature and some workers.

Leech application increases blood circulation in that area so oxygen supply of local area increases and helps in formation of healthy collagen tissue. Apamarg kshar and Aloe vera pulp help in debridement (Lekhan) property which help in removing slough from the wound and provide healthy atmosphere for healing.

**Conclusion**

Leech application along with Aloe vera pulp and Kshar application can be used in the management of diabetic foot ulcers. So many amputations of leg can be prevented by integrated approach. It is not a very costly treatment which can be included in Rural Health programme.

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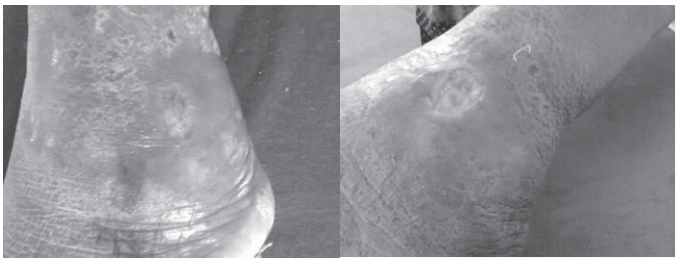

**Image-1:** Diabetic Foot Ulcer Left Ankle Joint (Before -22/10/12)

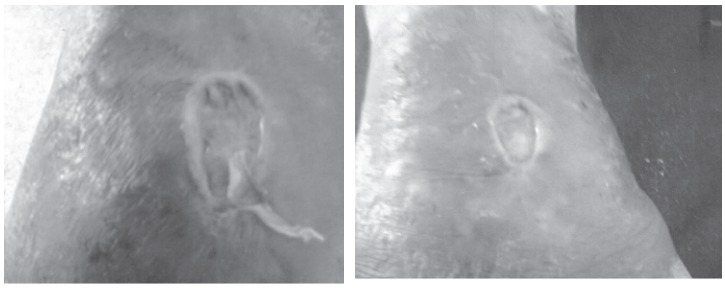

**Image-2:** Diabetic Foot Ulcer Left Ankle Joint Dated -27/11/12 (after 1 month)

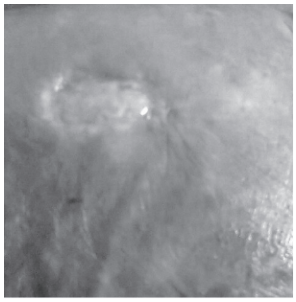

**Image-3:** Diabetic Foot Ulcer Left Ankle Joint Dated -28/12/12 (after 2 months)

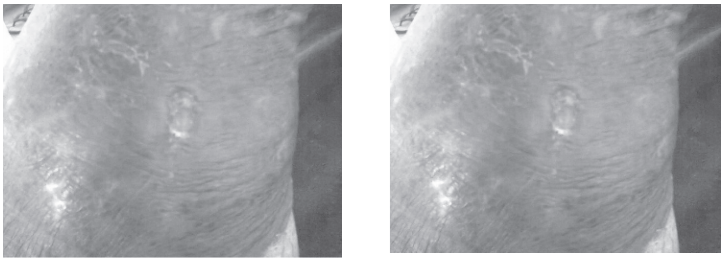

**Image-4:** Diabetic Foot Ulcer Left Ankle Joint Dated -28/1/13 (after 3 months)

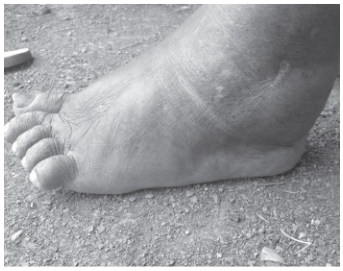

**Image-5:** Diabetic Foot Ulcer Left Ankle Joint Dated Complete Recovery

# Therapeutic emesis (Vamana) – Management of Shētapitta – A case study

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## Abstract:

45 years aged male with round erythematous itching patches diagnosed as "Sheetapitta" (Urticaria) and treated with Sadyah snehana and Mdanaphala Vamana Karma after conducting pre procedures of Vamana. The patient vomited 6 times a total content of 3800ml against 2500ml of input. At the end of the Vamana, Pitta is vomited. After an hour the Vamana karma patient got relived of presenting complaints. The erythematous itching patches are disappeared and patient is comfortable. The Madanaphala therapeutic emesis (Vamana Karma) is a safe Ayurveda Panchakarma protocol to eliminate kapha accumulated either by pathological condition or dietetic mismanagement from stomach.

**Key Words:** Sheetapitta, Vamana, Sadyasnehana,

**Introduction-**

'Nettle rash' or 'Hives' is termed as Sheeta Pitta in Ayurveda. The condition is with eruptions all over the body, with elevated red patches occasionally with white margins. It looks as patches with circumscribed whitish with red margins. Patient complains raised temperature, redness, and swelling, restlessness, being aggravated by exposure to cold, heat or even moist winds. Perspiration and irritations are dominant. "Purities" is as severe as the patient is driven to frantic scratching.

Latest medical opinion veers to thermo-conditions, food uptakes, viz. cool drinks, spices, condiments, oils, vegetables, fruits, milk and its byproducts, fish or meat, oils, scents, odors, chemicals, gases etc. To sum up any thing existing under the sun could cause allergy, with resultant onset and appearance of urticarial eruptions [1].

Ayurveda affirms that the vitiated dosha cause sheetapitta (urticaria) either with situations of cold driving activity or infestation with some parasite (krimi). Panchakarma, the unique eliminative therapeutics of Ayurveda, treat such disorders with therapeutic emesis (vamana). With increased of awareness and global acceptance of Panchakarma, even though vamana looks primitive activity, it is the need of the hour to practice and pacify such allergic disorders in a scientific way [2].

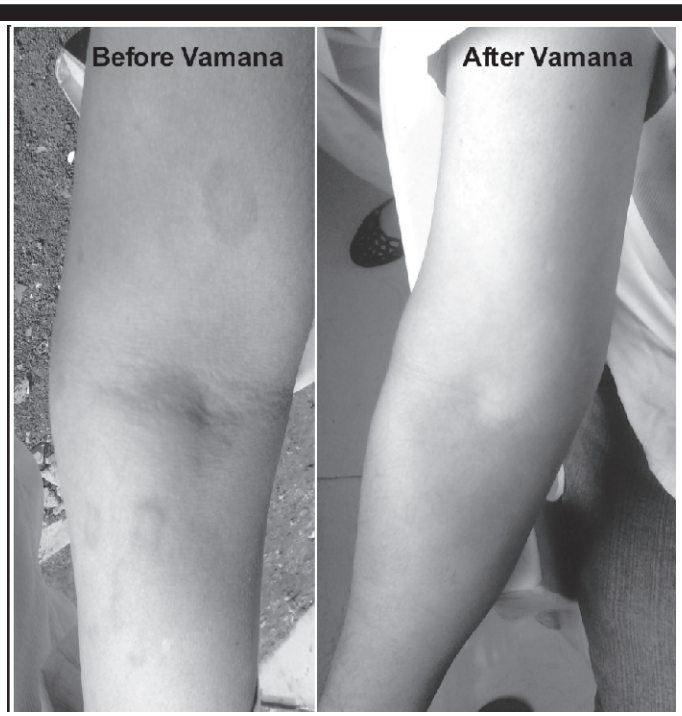
Case Study

45 years aged male from Chandrapur complains of round erythematous itching patches (reddish elevated patches) develops periodically that resembles to wasp sting (varati damshtra sansthanah shōtha). At the time of episodes the patient presents the complaints of red patches (mandala) with itching, pricking pain, and burning sensation. The conservative treatments could not solve the problem. As the patient visited OPD, suggested admission for vamana management as the condition is diagnosed as "Sheetapitta".

**Plan of schedule:**

Treatment planed as Sadyah Snehana (Instant Unction) along with Sadyah Vamana (Instant Therapeutic Emesis). The instant unction is made to facilitate the alleviation of Kapha, a factor (humor) precipitating disease to evacuate and restore to normal functions. On the day of admission at evening 5 PM, Panchatikata Guggulu Ghrita 50gms administered with 10gms of Saindhava Lavana. Later patient is asked to consume the Kapha making foods, viz. Curd, Ice cream, etc. along with the foods which he is known allergic. This process activates and triggers the mechanism of disease and facilitates the proper elimination by evacuating the Kapha and Pitta from Amashaya (Stomach).

Next day early morning patient is subjected to full body Abhyanga (Massage) with Marichadi taila and exposed to Svedana (sudation) at 4 AM i.e. "Brahmi Muhurtha". After completion of the pre vamana schedule of massage and sudation, patient is asked to rest a while and vamana protocol is initiated.




Vamana is therapeutic vomiting, which is a medicated emesis therapy. The malaroopa kapha (toxic waste) accumulated in the body is effectively removed by Vamana, one of the five therapies of Panchakarma in Ayurveda. In Vamana waste products (vitiated dosha) are eliminated through the upper gastrointestinal tract. Vamana Therapy is suitable for treating a number of diseases including anemia, indigestion, nasal sinus, skin problems and even cold. Certain chronic diseases like asthma, psoriasis, edema, epilepsy, skin diseases, fever, loss of appetite and lymphatic obstruction etc., can be treated by this therapy. Patients with high vitiated Kapha are treated to loosen and mobilize the toxins and to eliminate them permanently from the body. Madana phala is said to be the best therapeutic emetic agent. Milk is used as a medium (vamanopaga), which facilitates the Vamana [3].

**Vamana Management:**

After Abhyanga (external embrocating) and sudation, patient asked to drink milk till he feels the regurgitation. Patient consumed 2500ml of milk at the first instance. Madana phala yoga (Madana Phala 10gms + Sandhava lavana 10gms + Honey 50 gms) was administered subsequent to Milk uptake. After administering emetic drug waited for 15 minutes for the self induction of the dosha elimination by vamana. This duration is for facilitating the dosha movement. The onset of perspiration on forehead indicates liquefaction of dosha and the horripilation (romaharsha) indicates that the dosha are dislodging from their seat of stagnation [4]. Abdominal distension indicates that the dosha have reached the stomach. This act is followed by nauseating and salivation that conforms the upward movement of dosha. At the end of the procedure, it is observed that the bile is vomited (Pittanta Vamana) [5].

**Inference / Observations:**

The Antiki, Vaigiki, Maniki , Laingiki purification are as follows.

| **Procedural summary** | | **Measures** |
|---|---|---|
| Maniki (measurement) | Input | 2500 ml |
| | Output | 3800ml |
| Antiki (procedural Inference) | | Pittantik Vaman |
| Vegiki (number of emetics) | | 6 |
| Laingiki (symptoms) | | Kapha chadrika |
| | | present in vomitus & no bleeding was observed |

Patient given an output of 3800ml of content in 6 emetics (vegas) expresses the "Madhyama shuddhi" i.e. medium cleansing of dosha (Kapha). Patient passed 2 loose motions after completion of the Vamana schedule. The entire process of Vamana is completed in duration 65 minutes. Patient felt relaxed, lightness in the heart and chest. Head and body become light and the reddish round erythematous itching patches have disappeared as shown in the fig-2 (compared to the fig-1 of before treatment). As the patient is self expressive of the diminishing of emesis, the Dhuma pana (therapeutic smoke inhalation) was given.

**Discussion**

The pre procedural unction and sudation makes the mobilization of vitiated Doshas from Shakha (tissues) to koshtha (central lumen). Emetic drug i.e. Madanphala has Ushna, Tikshna, Sukshma, Vyavayi, Vikasi gunas and it reaches the target immediately. Madanphala further liquefies the dosha and the liquid accumulated in stomach is spewed from oral route to complete the dosha elimination [6]. Here in the presented case of "Sheetapitta", assumed that the madanphala for vamana with a milk medium is effective to eliminate the kapha dosha in terms of inducing the antihistaminic effect [7]. The salient features of this procedure is understood as -

- The Vamana medicine induces excessive salivation, sweating in the body and excessive accumulation of mucous in the Alimentary tract.
- It increases the body metabolism and Pulse rate, Respiratory rate, Heart rate, and Blood pressure are

increased during emesis. All these functions gradually return to normal as the procedure of emesis is completed.

- At the beginning of the Vamana the cardiac end of the stomach is opened & pyloric sphincter is closed, to allow unidirectional flow of the contents by reverse peristalsis.
- Diaphragm & abdominal muscles are contracted to facilitate the process of emesis and the expulsion of gastric (dosha) contents.
- Therapeutic Emesis is regulated by the vomiting centre situated in the 4th ventricle of medulla oblongata. According to their modes of actions, emetics are described to be of two types - (1) Local emetics or Reflex emetics or Gastric emetics. (2) Central Emetics.
- Emetic (Madanaphala) drug on reaching stomach stimulates the gastric mucosa along with stimulation of Vegus nerve & Sympathetic nerve fibers. These nerves carry the reflex of stimulation to the vomiting centre in the brain. This process is completed when the Vamana medicine reaches pyloric end of stomach and digested to induce the purgation to evacuate the remnant of Dosha [8].

**Conclusion:**

The Madanaphala therapeutic emesis (Vamana Karma) is a safe Ayurveda Panchakarma protocol to eliminate kapha accumulated either by pathological condition or dietetic mismanagement from stomach. The "Sheetapitta" considered as allergic Urticaria i.e. an itchy skin eruption characterized by weals with pale interiors and well-defined red margins; usually the result of an allergic response to insect bites or food or drugs are well treated with Vamana karma instantaneously.

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# Keraleeya Panchakarma

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**Abstract:**

Ayurveda is the ancient Indian way of healing, originated in India sub continent and in practice for more than 5,000 years. Kerala, from west cost of Indian peninsula is the place where Ayurvedic treatment is with profound acceptance from public and Kings practiced innovative and traditional way. The methodologies adopted by Kerala Ayurveda treatments include localization, target oriented external applications.

Kerala Ayurvedic treatment not only heals but also rejuvenates (Rasayana) by natural way to refresh the patient. Kerala Government included Ayurveda in Health tourism, which helps in strengthening Ayurveda system and in developing need oriented preventing and curative management modalities.

**Keywords:** panchakarma, Santarpana , Apatarana, Health tourism, rasayana

## Introduction

Ayurveda and Indian Systems of medicines have the promotive, preventive, corrective and curative approach in health care. The ancient treatise of Ayurveda had organized, codified and synthesized the medical wisdom with sophisticated theoretical foundation and philosophical explanations [1]. Kerala is the popular for Ayurveda by name "Deva kerala Ayurveda" and its brand is spread all over world. Ayurveda is embedded in the common man's lifestyle that healed the rural folk of Kerala for centuries [2].

## Concept

The concept of Keraliya Ayurveda Panchakarma in healing ailed is simply understood as the process by which the body and soul is treated to eliminate toxins. It is done in two sets, viz. folk and classical stream Ayurveda.

Folk stream: These Vaidyas comprising of mostly the traditions practiced from families by the rural populations. Most of these formulations and herbs are unknown and the carriers of these traditions have many such combinations. They include, traditional birth attendants, bone setters, village practitioners skilled in acupressure, eye treatments, treatment of snake bites etc. These streams of inherited traditions are together known as local health traditions. It is still alive and runs parallel and to the present day medical service.

**Classical stream –** This stream comprises of the codified and organized medicinal wisdom brought out from Brihatrayee and Laghutrayee, with sophisticated theoretical foundations and philosophical explanations expressed in Ayurveda with eight branches [3]. Most of the Ayurveda concepts are based upon the depleted to nourish with Santharpana and the increased to reduce by Apatharpana [4]. The pre procedures (poorvakarmas) of eliminative procedures (shodhana karmas) are considered and practiced by keraleya panchakarma as the main procedures, such as deepana, pachana, rukshna, etc. These procedures are mainly aimed to improve the bioavailability of the herbs in healing [5]. Panchakarma deals mainly with the removal of toxins and waste materials from the body to purify the biological system from gross channels to eradicate the disease completely. Generally along with internal medications in Keraleeya chikithsa krama, more emphasis is given to external forms of unique treatment methods Viz. , Navarakizhi (Pinda Swedha, Elakizhi (Snigdha patra sweda), Narangakizhi (Jambera pinda sweda), Podikizhi (Churna kizhi, Pizhichil (Sarvanga dhara), Talapothichil (Thaladhara), Chavuti thirumal (Padhaghata) [6] Navaratepu (Anna lepana) [7], etc.

**Kerala Ayurveda strength is with …**

- ? Huge acceptability for Ayurveda among people of Kerala
- ? Treatments are administered more in rainy season
- ? Availability of Medicinal Plants
- ? Traditions of Ayurveda–thousands of years of history
- ? Manuscripts and records
- ? Formulated from the principles of Ayurveda
- ? Huge infrastructure created in Ayurveda
- ? Large manpower available –skilled & unskilled Kerala's treatment procedure

? Influence of regional suitability is seen throughout

**Conclusion**

Attaining and maintaining a healthy body and calm mind is the aim of all medical systems. Ayurveda has some special procedures to achieve his target. Although Ayurveda and Panchakarma are famous throughout the world, the traditional physicians of Kerala developed certain unique management modalities. These modalities "chikithsa kramas" are basically the Sneha and Swedhana karmas.

The exclusive way of practice of keraliya Ayurveda chikithsa kramas are now popularly thorough its efficacy and value added Ayurveda management modalities with profound use of natural herbal remedies.

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**A Comparison of Classical Panchakarma & Keraleya Panchakarmais made here under.**

| Sl. | Classical Panchakarma | Keraleya Panchakarma |
|---|---|---|
| 1. | Essentially a Samshodana procedure. | Essentially a Samshamana procedure. |
| 2. | Except Anuvasana vasti all procedures cause Langhana. | All procedures are mainly of bhramana |
| 3. | Snehana and Swedana are used as poorvakarma. | Snehana and Swedana are mainly used as pradhanakarma. |
| 4. | Medicaments are administered internaly and dosha's are expelled out. | Medicaments are essentially directed from exterior to interior. |
| 5. | Procedures essentially of dosha prathyaneka. Eg; virechana in pitta. | Procedures essentially of vyadhi prathyaneka. Eg; pinda swedha in joint diseases. |
| 6. | Snehana and Swedhana as a poorvakarma. | Deepana, pachana and laghu ahara as a poorvakarma. |
| 7. | Vivid discription of athi,heena and samyak yoga are followed in practice. | Therapist uses his own experience to administer a procedure. |
| 8. | They are 5 fixed procedures. | More than 5 are in practice, here "panchakarma" only in symbolic sense.[8] |

# Ageless Health & Ageless Beauty With Jalokavcharan

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## Abstract

Jalokavcharana is one of the Raktamokshana types, out of Shodhana Panchakarma prescribed in Ayurveda from ages till today using leech (Jaluka). Now a day the experiences of using leeches in various medical and surgical conditions are increasing. Looking at the surprising results of various complex and complicated conditions, leach therapy attracted the world attention, especially in western hemisphere. It is not only used in maintaining good health but also in beauty care by applying the leeches.

**Key words-** Jalaukaavcharan, Leech, Panchakarma

### Introduction

According to Sushruta the word Jalauka means- i.e. one that lives in water. They live just about anywhere in marshy place. Leeches are 'worms' with suckers on each end. Leeches can range in size from a half of inch to ten inches long. They are brown or black in color. Some feed on decaying plant material. Others are parasites, feeding on blood and tissue of other animals. Blood-sucking leeches suck your blood using two ways: they use a proboscis to puncture your skin, or they use their three jaws and the study of what exactly is the mechanism behind results is still a million dollar question. The recent concept developed says that there are about 18 plus alkaloids.

### Bioactive Substances of the Medicinal Leeches:

- Hirudin
- Hyaluronidase
- Pseudohirudin
- Destabilase
- Apyrase
- Bdellines
- Eglines
- Kininases
- Histamine-like substances
- Collagenase
- Leech prostanoids
- Inhibitor of kallikrein of the blood plasma
- Proteases
- Lipolytic enzymes
- Intibitor of Xa factor of the blood coagulation
- Triglyceridase
- Cholesterol esterase
- Lipase

Thus, a medicinal leech is a small “factory” manufacturing biologically active substances. The results of action of biologically active substances on an organism living are:

- Normalization And Improvement Of Capillary Circulation;
- Expressed Ant Inflammation Effect;
- Anti Stressful And Adaptogenic Effects
- Immune-Stimulating And Immune-Modulating Effects;
- Anesthesia;
- Anticoagulation;
- Antibacterial Effect;

Improvement of an Endocellular Exchange and the realization of these mechanisms have both local and general character. In Sushruta Samhita there are six types of Leeches found in poisonous & non- poisonous category.

**Non poisonous**

- Krishna
- Karbura
- Alagarda
- Saamudrika
- Indra- yudha
- Go chandana

**Poisonous**

- Kapila

- Pingala
- Shankhamukhi
- Mushika
- Pundarikmukhi
- Saavarika

Thus for clinical purpose it is advisable to identify such poisonous leeches & its use should be avoided.

**Method:**

In this method, Raktamokshana is done with the help of 'Leeches' i.e. Leeches are applied on the desired site for bloodletting. It is considered most unique & most effective method of bloodletting. Here, the vitiated 'Doshas' are removed from the body without using any cutting instruments; hence Raktamokshan by means of 'Leech' comes under 'Ashastra' category. In Asthang Hridaya mentioned that - The jaloka karma is healing method which is over 2500 years old, again, became an approach toward natural healing and natural beauty without any side-effects, without any drugs and chemicals involved. The methods of slowing the skin aging with leeches' application have been known since ancient times. Japanese Geishas, famous for their beauty, with a smooth alabaster skin tone, was treated with face and body masks -- sophisticated most organic jaloka mask (HIRUDO-MASK) was applied for extraordinary results!

In the XIX Century France using leeches for a healthy looking skin and blushing cheeks was "a must" routine for women! For an immediate blood flow into cheeks leeches were placed behind the ears, the area that the post-leeching marks were unnoticeable and hidden under the hair.

**Results:** The Miracle of Medicinal Leeches' Salivary Glands: In nowadays Leech Therapy is not only a venue in holistic healing of all our body systems. Through the body detoxification, blood purification and oxygenation, jalokavcharan has Rejuve-nating effect on the entire body, as well. Medicinal leeches' salivary glands contain Lipids along with Hirudin, Proteins, Serotonin, Hyaluronidase, Collagenase, Elastase which,are active/essential ingredients in the Skin care (reconstruction of the cell membranes, skin cells and tissue). Lipids represent about 20% of the total weight of the salivary glands. Together with lipids are natural steroid hormones suchas cortisol,dehydroepiandrosterone (androstenolone), testosterone, progesterone and estradiol.

The other largest group of compounds in the salivary glands is formed by phosphatidic acids and free fatty acids (important source of energy).

**Discussion:**

Leech therapy brings healthy look and glow on a face, improves skin elasticity, stops hair loss, significantly reduces cellulites, dissolves scar tissue & visibly diminished scars, eliminates spider veins, improves blood circulation - no more "cold hands and feet"! There is also a “secret application” for non-invasive face liftImagine -- Lifting of the eyelids done without of surgery! No more bold spots on the scalp; No acne; No embarrassing skin condition known as a rosacea; No laser or surgery for varicose veins! You can improve a micro-circulation natural way: Leech-Way! After leech treatment the healthy body shows better attitude of the feeling of well-being has been influenced by Endorphins! There are plenty of these enzymes in leech's salivary glands which are spread throughout the body during and after the leeches' application!

Altogether, Jalokavcharan (leech treatments) and cosmetic sessions will take you on a life-journey towards homeostasis - with ageless health and ageless beauty!

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# Healing Heart with Mind

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## Abstract:

Attaining and sustaining good mental health is just as vital as other factors, such as exercise and diet, in the prevention of cardiovascular disease, the relationship of our emotions and psyche to heart disease is intriguing. Ayurveda is not simply only a healthcare system but a form of lifestyle adopted to maintain perfect balance and harmony within human existence. The Ayurvedic approach to life requires listening to and addressing the unique needs of our body, recognizing and balancing our mental and emotional states and deepening our connection with our spirituality that are linked to prevent heart diseases. Ayurveda aims at striking at the very root cause of the disease. In this article, an attempt is made to review the Ayurvedic approach of preventive measures to control cardiac disorders by modifying emotional and mental status.

**Key words:** Hridaya; Manas; Yog.

### Introduction:

Ayurveda is one of the ancient systems of medicine in the world, which essentially is a science of life, health and cure based on the eternal laws of nature. Ayurveda conceives ayu as the life as a four dimensional entity i.e. Sharira (Physical Body), Indriya (Sense Organs), Sattva (Mind or Psyche) & Atma (Soul) [1]. Similarly it propounds an equally comprehensive four dimensional concept of swasthya or health. Thus, Ayurveda lays emphasis on total health that is state of physical, sensorial, mental & spiritual well being [2].

The definition of Health given by Ayurveda thousand years before stands superior even to the latest definition of health proposed by W.H.O just few decades ago. Ayurveda has dealt with the subjects of mental health in detail considering the importance of mind in the maintenance of physical as well as mental health. The Mana Swasthya essentially means a healthy mind with emotional well being logical behavior, cordial relationship with environmental and appropriate thinking.

### Review of Literature:

There is a difference of opinion regarding the seat of Mana in the body though it is widely accepted in Vedas and Upanishada that Mana is located in the Hridya.

Charaka believes that Manas resides in the hridaya, which is Moola sthana of Manovahasrotas [3]. Similarly Sushrut considered Hridaya as the seat of Chetana [4]. Vaghbhata has propounded hridaya as the seat of three psychic qualities Sattva, Rajasa and Tamasa [mana]. Its seat has been clearly demarcated in the thoracic cavity i.e. between Stanorah and Koshtha [5].

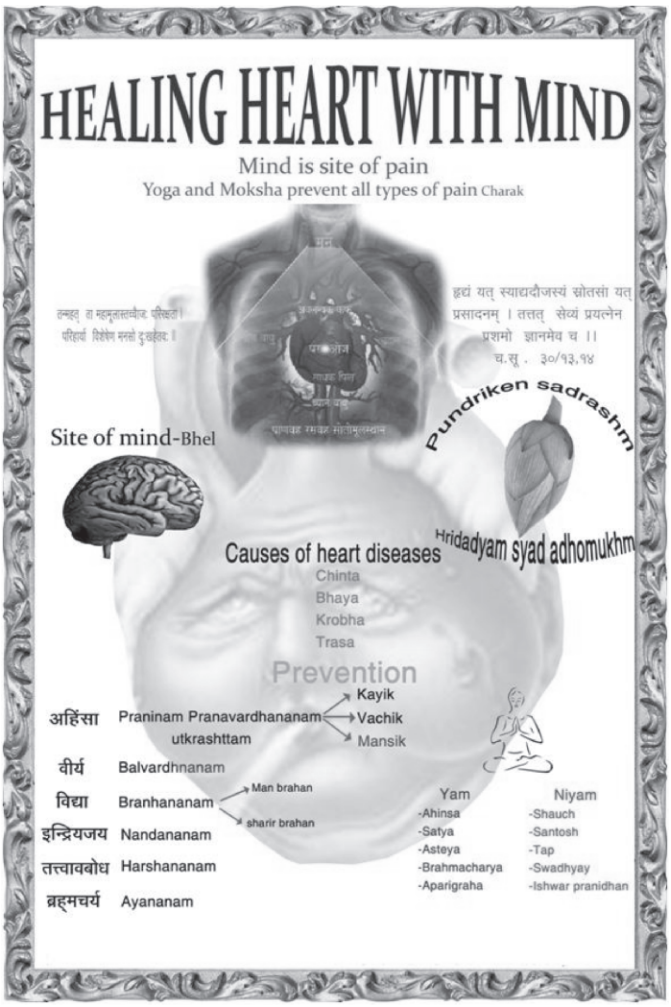
Modern literature and western psychotherapist proposed significant evidence which has accumulated that psychosocial stress contributes to the etiology and pathogenesis of coronary artery disease. In addition to direct influences through the nervous, endocrine, and immune systems, stress reduces the adoption and maintenance of a healthy lifestyle and adherence to medical care [6]. Epidemiological evidence is compelling; several large and international studies have shown that individuals reporting high levels of psychosocial stress have significantly elevated risk of cardiovascular diseases. Most notably, the inter-heart study demonstrated that among more than 30,000 individuals, those who reported elevated stress had odds ratios for myocardial infarction of 2.5 [7]. High work demands and daily stress have also been associated with coronary heart disease (CHD) morbidity and mortality, with carotid artery intima-media thickness progression, and with recurrent events.

### Discussion:

The great scientists of yesteryears of India were having

highly developed wisdom in terms of science, philosophy; spirituality. The medical science is developing hand in hand with the same purpose. In modern era life has become more stressful due to life style and over ambitiousness resulting in manifestation of psychological disturbances and mental disorders, which have come into existence like forest fire.

In modern system of medicine, continuous and prolonged use of sedatives, tranquilizers, anxiolytics and hypnotics for treating these mental ailments has resulted in rebound phenomenon and drug dependence causing further frustration and decline in mental health status. Serious attempts have been made in modern medical world to solve these problems but no proper solution could be found. It is thus a need of time to thrust upon the principles of Dinacharya, Ritucharya And Sadavutta as laid by all compendia, which was designed with a view to cultivate a disease free society with a tinge of good moral and ethics




making this world a conducive place of living for all. The universal thinking of our masters/mentor is par excellence as they gave the world a direction so that the Chaturvidh Purusartha could be achieved.

Charaka enumerated following psychiatric symptoms caused by Rajas and Tamas - Kama (Desire), Krodha (Anger), Lobha (Greed), Moha (Delusion), Irshya (Jealous), Mana (Pride), Mada (Neurosis), Shoka (Grief), Chinta (Depression), Chitodvega (Anxiety), Harsha (Exhilaration) and Bhaya (Fear or Phobia) [8].

The Sattvavajaya Chikitsa aims at controlling the Mana or restraining of mana from disagreeable activities [9]. The best method to protect our self from heart disease is to avoid all factors which bring Agony, Frustration, Anger, and Fear in an individual. Maharishi Patanjali has proposed a fundamental concept of ashtanga yoga which gives us the subtle glimpses of Sattvavajaya Chikitsa. Yama means self-restraint, self-control and discipline. The Yamas comprise the "shall-not" in our dealings with the external world as the Niyamas comprise the "shall-do" in our dealings with the inner world. Niyama means "restraint", "observance", "rule", "restriction", generally denotes a duty or obligation adopted by a spiritual aspirant, or prescribed by a guru or by scripture.

The practices described for promotions of mental health i.e. purity of mana and its activity in Ayurvedic texts include:

1. Sadvritta Palan
2. Aachar Rasayan Sevan
3. Dharniya Vega Vidharan
4. Medhya and Divya Rasayan Sevan
5. Yoga Sadhana
6. Naishtiki Chikitsa

In a simple statement one of the key to good health is a positive mental health.

**Conclusion:**

With regards to Ayurvedic concept of mind , body (heart) and medicine it can be concluded that there is substantial scope to develop a non-pharmacological approach like Sattvavajaya equivalent to conventional cardiovascular therapeutic techniques of modern medicine in the management of stress induced cardiovascular diseases. More interventional and randomized control studies are still required to prove the concept of treating and healing heart with mind.

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. . . It's a matter of pleasure to see the first issue of Journal of Indian System of Medicine. Ayurvedic fraternity is lacking with quality journals, and we hope your initiation will encourage young writers to communicate their researchers at right platform. We congratulate your initiation and eagerly look forward for enlightening issues.

**Dr Galib,**

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. . . Congratulations for the successful publication of 1st Issue of JISM. It is need of the hour to hoist the awareness of the importance in research of medicine especially in the field of Ayurveda. Every scientist, and anyone else who cares about future prosperity and quality of life, must contemplate this divine science of life. But it's a misfortune that scholars of Ayurveda are still craving for exceptional quality scientific journal to convey their thoughts and researches to the world. . . . This journal can undeniably become a strapping platform for the research scholars of Ayurveda throughout India to publish their works positively. I hope next issue of JISM will be explicit bliss of knowledge to the readers and scholars of Ayurveda.

**Dr. Sandeep V. Binorkar**

Asst. Professor, Dept. of Agadatantra & Vyavahara Ayurveda, GAC, Vazirabad, Nanded

(Faculty & Editorial Board Member-WebMed Central-UK, JICE-Turkey, IAMJ, JBSO, Ayurlog, IJAMY)

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. . . The concept of scientific journal is a rare and valuable gift that ancient Indian Ayurveda has offered to help development of modern civilization. The traditional systems of medicine have deep roots in Indian medical practice. This journal gives scientific evidences & competency of Ayurveda, which is rapidly gaining acceptance and popularity of the "Evidence Based Scientific Ayurveda". I am confident that scientific deliberation through this journal will culminate in better of understanding our ancient knowledge on these areas for achieving better health.

**Dr. Milind A. Nisargandha**

Asso. Prof. Department of Physiology, Jawaharlal Nehru Medical College,

Sawangi (Meghe), drshwetaparve@gmail.com


The journal is quite informative. It included the topics like Yoga & Panchakarma as well as the current topics like Awareness about Information Technology. I request you to include Health Tips related to a particular disease. The new drug research should also be included.

**Dr. Archana Belge**

Professor, Dept. of Swasthavritta,

Shree Saptashrungi Ayurvedic Mahavidyalaya, Nashik

---

I am very delighted to read such a scientific journal, published by your Institute. The current themes in Research will help us keep updated in this scientific era.

**Dr. Raman Belge**

Professor, Dept. of Rasshastra & Bhaishaajya Kalpana,

Shree Saptashrungi Ayurvedic Mahavidyalaya, Nashik

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**A Nature's Blight**

The misfortune of Uttarakhand has put forth many questions in the minds of an individual as why such natural calamities are on rise. To cite what happened in Uttarakhand was really unfortunate as many devotees lost their life. Nature has started its furious activities even at shrine places which are imposing question on his existence of Almighty.

The answer is simple nature is overloaded with many things as said above, as this limit is crossed nature is trying to reduce it by means of such violent reactions. The rationality of this is increasing corruption, behavior, violence, ill developed inter personal relationship, non-belief, atheist attitude, monetary approach, rash driving, sexual inflicts, robbery, tendency to grow within short span of time , act of parasitism, no ethics in practice. The answer is simple the spirituality is on decline which is imposing such behavior in the society which is uprooting the social considerations and hence low self-esteem, ignorance , the I pattern has resulted in the gross

destruction of masses.

Ayurveda is considered as an organization of life and not merely a system of medicine. It has three fold perception in framing its Prameya (basic principles) i.e. vijyan (science), tatvagyan (philosophy), and adhyatmagyan (spirituality). Ayurveda believes that every individual born should have four facets of his life i.e. Dharma, Artha, Kama and Moksha. Dharma constitutes the prime factor which contemplates doing right thing (kartavya), at right time in right way. It changes with the time. Artha is the fruit obtained in terms of the things performed. It can be achieved through ethical and unethical ways. It ultimately leads to the satisfaction of desire which generally in today's scenario is ever growing. Regrettably it is seldom to hear about the sense of attaining moksha.

The perfect health as propounded by Ayurveda deals with Physical, Psychological, Social and Spiritual aspects of an individual. However in today's setup we are losing this consideration because of narcissism, self-worth, which has directed an individual to consider himself as important. Ayurveda has advocated this mechanism very effectively by means of kramik dharma hrasa. The initiator 'greed' is the root cause of this ill development which has led to several changes in behavior of an individual and ultimately there is complete destruction of ethics and morality.

The rishi munis of yesteryears were very eco-friendly as they adopted every measure to keep the environment clean and balanced by performing various rituals. For them nature was considered as mother. Now we have no considerations for our own mother then question of Mother Nature is a million dollar question. But today we talk very much about the environment but we miserably fail in our commitment towards the nature.

**Bharat Chouragade**

Professor, Samhita Siddhanta, MGACH&RC, Salod (H), Wardha

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| Date of event | Theme | Level / Venue | Contact |
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| 27-28th September 2013 | Aakruti-2013: Recent Advances in Embalming and Museum development Techniques | SDM College of Ayurveda & Hospita;, Hassan, Karnataka | Dr. Giridhar M Kanthi<br>rachanamuseumtech@gmail.com<br>sdmcah@gmail.com<br>09538019348, 0996637292.<br>Website:<br>www.sdmcahhassan.org |
| 28th September 2013 | Concept of food toxicity as per Ayurveda & Modern science | State level Seminar<br>MGACH&RC, Salod (H), Wardha | Dr. Sonali Chalakh<br>Mobile: 09850366073<br>m: spchalakh@gmail.com |
| 30th September 1st October 2013 | HEALTHY AGEING IN THE CHANGING WORLD – 2013 | 2nd International Conference,<br>JN Tata Auditorium, Indian Institute of Sciences, Bengaluru, Karnataka, India<br>**Bengaluru:**<br>IInd Floor, II.No. 362, 11th Cross, 4th Main, 2nd Block, Behind B.D.A. Shopping Complex,<br>R.T. Nagar, Bengaluru – 560 032.<br>T : +91 80 6533 5515<br>Contact Person: Mrs. Radhika - 9886327807 | Contact:<br>**Hyderabad:**<br>#151, Motilal Nehru Nagar, Begumpet,<br>Hyderabad - 500 016.<br>Andhra Pradesh, INDIA.<br>T : + 91 99482 92492<br>Contact Person:<br>Ms. Anu - 9948292492<br>: info@geriatricsconference.com<br>Website:<br>http://www.geriatricsconference.com/ |
| 26th October 2013 | The role of Rasayana Chikitsa in prevention of aging process | State level CME<br>MGACH&RC, Salod (H), Wardha | Dr. Pradnya Dandekar<br>Mobile: 09403338656<br>drpddandekar@rediffmail.com |
| 16th November 2013 | Clinical Workshop on Musculoskeletal disorders | State level Workshop<br>MGACH&RC, Salod (II), Wardha | Dr. Vaishali Kuchewar<br>Mobile: 09420998747<br>m: vkuchewar@gmail.com |
| 29th to 30th November 2013 | Rasaushadhi Nirmana | State level Workshop<br>MGACH&RC, Salod (H), Wardha | Dr. Bharat Rathi<br>Mobile: 09011058301<br>m: bharatrathi174@gmail.com |
| 6th to 7th December 2013 | Disaster Management | State level Workshop<br>MGACH&RC, Salod (H), Wardha | Dr. Premkumar Badwaik<br>Mobile: 09822253328<br>m: badwaik.prem@gmail.com |
| 21st December 2013 | Traditional Ayurved Practitioner of Remote area in Maharashtra | State level Conference<br>MGACH&RC, Salod (H), Wardha | Dr. Pramod Khobragade<br>Mobile: 09552545347<br>m: pd_khobra@yahoo.co.in |

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? All Ayurveda terms should be in italics.

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**There is no substance is with out any medicinal values as the substance is with the involvement of five basic elements (*Panchamaha Bhuta*). If the connectivity / logic/ application (*Yukti*) is known to a person, he can utilize the substance for the best results.**

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**Printed by – Tirupati Printers & Stationeries, Nagpur**