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सम्पादक मण्डल के सभी सदस्य मानद एवं अवैतनिक हैं। पत्रिका के लेखों में व्यक्ति विचार लेखकों के हैं। सम्पादक एवं प्रकाशक का उससे सहमत होना आवश्यक नहीं है। आपके सुझावों का सदैव स्वागत है।

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सम्पादकीय

समस्त संसार को अज्ञान के अंधकार से ज्ञान के प्रकाश तक पहुँचाने का कार्य सदैव भारत ने ही किया है, चाहे वो गणित, विज्ञान, भौतिक शास्त्र, अर्थशास्त्र, ज्योतिष शास्त्र, धर्म अथवा संस्कृति से जुड़े क्षेत्र रहे हों या फिर आयुर्विज्ञान (चिकित्साशास्त्र) जैसे विषय ही क्यों न हों? आज वैश्विक स्तर पर मनुष्य अनेक गंभीर व्याधियों से जूझ रहा है जिनका निदान आधुनिक चिकित्सा विज्ञान के पास भी पूर्ण रूप से नहीं है। ऐसे में जनसामान्य आयुर्वेद की तरफ जिज्ञासा भरी नजरों से देख रहा है। यही वजह है कि आयुर्वेद पद्धति की चर्चा एवं स्वीकार्यता सम्पूर्ण विश्व में बढ़ी है। परन्तु क्या भारत वर्ष में आयुर्वेद की स्थिति बहुत अच्छी है? शायद नहीं। इसके कई कारण गिनाये जा सकते हैं। जिसमें मेरे दृष्टि में प्रमुख रूप से शिक्षा के व्यवसायीकरण के उद्देश्य से निजी क्षेत्र के कालेजों की प्रतिवर्ष बढ़ती संख्या तथा उनमें गुणवत्ता का अभाव तथा शिक्षा प्राप्त करने के पश्चात् अन्य विधाओं की तुलना में रोजगार के कम अवसर उपलब्ध होना युवा छात्रों के मन में आयुर्वेद से जुड़ने को लेकर संशय की स्थिति बनी रहती है। आयुर्वेद की शिक्षा एवं प्रचार प्रसार का उत्तरदायित्व केन्द्रीय भारतीय चिकित्सा परिषद, नई दिल्ली के अर्न्तगत आता है। जिसका गठन प्रत्येक पाँच वर्ष के लिए कुछ चुने हुए एवं कुछ मनोनीत सदस्यों द्वारा होता है, अपनी स्थापना के बाद से अब तक लगातार सी0सी0आई0एम0 अपने उद्देश्य की ओर अग्रसर है। परन्तु फिर भी क्या आज आयुर्वेद एवं आयुर्वेदविदों का समाज में वह स्थान है, जैसा पहले कभी रहा था? भारत में विगत दस वर्षों में आयुर्वेद की वस्तु स्थिति में जितना पतन देखने को मिला है, वैसा शायद पूर्व में कभी नहीं रहा। आवश्यक संसाधनों/मानकों में इस स्तर तक शिथिलता बरती गई है कि जिसको देखो एक नया आयुर्वेदिक कालेज प्रारम्भ करने के विषय में सोचने लगा है। इस पर गहनता पूर्वक विचार करने पर हम कह सकते हैं कि न्यूनतम मानक स्तर (एम0 एस0 आर0) एवं पाठ्यक्रम में बार-बार पक्षपात पूर्ण तरीके से बदलाव करना, बिना किसी ठोस आधार के कतिपय विषयों से प्रायोगिक परीक्षा को हटाना, शिक्षकों की न्यूनतम संख्या में कमी करते जाना, बगैर किसी तारतम्य के विषयों को एक दूसरे से सम्बद्ध करना जैसे शल्य तन्त्र को शरीर रचना। इसके अतिरिक्त तीन व्यावसायिक (सैद्धान्तिक- प्रीक्लीनिकल-क्लीनिकल) में बंटे तथा सफलता पूर्वक चल रहे पाठ्यक्रम को वार्षिक आधार पर करना इसे अव्यहारिक बना रहा है। नीति निर्धारक-शिक्षक-छात्र-चिकित्सक रुपी चतुष्पाद आयुर्वेद/आयुष पद्धतियों के विकास के लिए आवश्यक स्तम्भ माना जा सकता है। वर्तमान में इनका अन्योन्याश्रय सम्बन्ध तो है, किन्तु दिशाविहीन। इन परिस्थितियों में आयुष पद्धतियों को श्रेष्ठ एवं निरापद विधा के रूप में पुनर्स्थापित करने की राह में कई चुनौतियां हैं जैसे- वर्तमान पाठ्यक्रम कुशल एवं सुयोग्य चिकित्सकों के निर्माण हेतु नाकाफी है, इसमें बदलाव एवं विस्तार की आवश्यकता है ताकि इसे और व्यवहारिक स्वरूप दिया जा सके। आयुर्वेद का पाठ्यक्रम एक समान होना चाहिए तथा सभी महाविद्यालयों में समान रूप से लागू होना चाहिये। आयुर्वेद के दार्शनिक विषयों की आध्यात्मिकता के महत्व तथा संस्कृत भाषा की प्रासंगिकता को योग्य शिक्षकों के माध्यम से छात्रों को समझना होगा। सिर्फ रोगमुक्ति ही नहीं, सम्पूर्ण स्वास्थ्य के महत्व को शिक्षण के समय छात्रों को समझाना होगा, जिससे भविष्य में आयुर्वेदोक्त स्वस्थ पुरुष की अवधारणा को समाज में मूर्त रूप दिया जा सके। यह तभी सम्भव होगा जब आयुर्वेद के मूलभूत सिद्धान्तों त्रिदोष, पंचमहाभूत, दिनचर्या, ऋतुचर्या, सद्वृत्त, आदि विषयों को प्राथमिक कक्षाओं के पाठ्यक्रम में ही स्थान दिया जाए। वर्तमान सरकार द्वारा पहली बार स्वतन्त्र रूप में आयुष मंत्रालय के गठन के पश्चात् एवं माननीय प्रधानमंत्री द्वारा आयुर्वेद एवं योग में दिखाई गई दिलचस्पी से कुछ उम्मीद तो जगती है, परन्तु आयुर्वेद चिकित्सा पद्धति का उन्नति तभी सम्भव है जब सभी एक साथ बैठकर जन सामान्य के हितों पर विचार विमर्श करें तथा एक साथ कार्य करें जिससे देश में चिकित्सा व्यवस्था को एक नया आयाम दिया जा सके। देश की चिकित्सा सुविधा के विकास के लिए आयुर्वेद के क्षेत्र में कौशल सुधार को बल देने एवं इसे राष्ट्रीय ध्येय मानते हुए आयुर्वेद चिकित्सकों को भी आगे आना समय की मांग है।

— डॉ० मनीष मिश्र

सह सम्पादक



ROGI ROGA PARIKSHA : THE HOLISTIC WAY OF EXAMINING PATIENT

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ABSTRACT :

In the practice of medicine either it is Ayurvedic or Modern, Clinical examination of patient has great importance along with history taking. There are so many ways of examining patients clinically in all systems of medicines, but the goal of every system is to ultimately diagnose the disease perfectly so that patient can be treated properly. If we see the modern system of clinical examination of patients, then we find that it is well known, well accepted, very fast and mainly disease oriented. In nut shell the whole system consists of history taking, examination, investigation, provisional diagnosis and ultimately the final diagnosis. Whereas the Ayurvedic concepts regarding this are complete, that cover all aspects of life, these are more subjective, more practical easy to perform, there is no chances of error and very important they are not expensive. It is not only disease oriented but also focuses on the physiological, pathological and psychological status of the diseased, habitat etc. So in this paper we have tried to present the holistic approach of examination from Ayurvedic point of view.

Keywords : History taking, Examination, Investigations, Diagnosis.

INTRODUCTION :

Whenever we talk about treating a patient, it sum up all the knowledge gathered by a physician in his entire life. The process of treatment starts

with the first step of the patient as he enters. Ultimate goal of every system of medicine is to diagnose the disease and provide a healthy, disease free life to the sufferer. Modern systems of examination mainly focus on the disease during examination. Starting from history taking it goes through the past history, general and systemic examination, investigation, provisional diagnosis and then finally to diagnosis and treatment. While on the other hand Ayurveda focus both on patient and the disease. Ayurvedic system of examination not only aims at diagnosing the nature of the disease but also focus on the basic nature of the diseased being it either the sharirika or manasika prakruti of the patient. Different acharyas have mentioned different pariksha i.e. trividha, shadvidha, ashtavidha and dashvidha pariksha. In this way we'll be discussing about the difference between the modern and ayurvedic system of examination and how the ayurvedic approach towards a disease and the patient is complete.

Modern System of Examination :

In this first step was the History taking then the four basic steps are followed including inspection, palpation, percussion and last auscultation.

Suggested Scheme for Basic History Taking :¹

- ♦ Name, age, occupation, country of birth, other clarification of identity.
- ♦ Main presenting problem or chief complaints

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- ♦ Past medical history
- ♦ Specific past medical history i.e. Diabetes, jaundice, heart disease, high blood pressure, rheumatic fever, fever, epilepsy.
- ♦ History of main presenting problem
- ♦ Family history
- ♦ Occupational history
- ♦ Smoking, alcohol, allergies
- ♦ Drug and other treatment history
- ♦ Direct questions about bodily systems not covered by the presenting complaint.

Physical Examination : ²

The physical examination is a time-honoured in medical practice. For example, methods of medical examination are described in Egyptian papyri, in the classical world of ancient Greece and Rome, and in Vedic medicine in India. The physical examination, as currently used, was developed in the early 19th century as a method to evaluate symptoms in relation to recognized pathologies, in order to facilitate diagnosis and treatment. General physical examination includes:

- ♦ Mental and emotional state
- ♦ Physical attitude
- ♦ Gait
- ♦ Physique
- ♦ Face
- ♦ Skin
- ♦ Hands
- ♦ Feet
- ♦ Neck
 - lymphatic and salivary glands
 - thyroid gland
 - pulsation

- ♦ Breasts
- ♦ Axillae
- ♦ Temperature
- ♦ Pulse
 - Rate, rhythm, character, and symmetry
- ♦ Respiration
- ♦ Others.

Inspection :

It includes appearance, movement and any other changes in normal view of the body. First, are there any lumps visible beneath the skin or any lesions on the skin itself, like changes in eye appearance or kyphosis or scoliosis in chest and changes in umbilicus etc. Like this other part of the body should be examined.

Palpation :

As palpation is the most important part of the abdominal examination, it was also useful in other regions of the body. Like in skin examination of the body pass the hand gently over the part pinching up between the forefinger and the thumb and note the changes in smooth or rough, thin or thick, dry or moist or other changes. In abdomen it helps in examination of intra-abdominal structures because it is unusual for structures to be very easily palpable. So it was helpful in diagnosing of diseases and other malfunctions.

Percussion :

The technique of percussion was probably developed as a way of ascertaining how much fluid remained in barrels of wine or other liquids. Auenbrugger applied percussion to the chest having learned this method in his father's wine cellar. Points to note on percussion of the chest are resonance, dullness, pain and tenderness. This was helpful in detecting chest and abdominal diseases like pleural effusion, ascitis and others.



Auscultation :

This will be done with the help of stethoscope, the diaphragm and bell of the stethoscope permit appreciation of high and low-pitched auscultatory events, respectively. The changes in bronchial, heart and bowel sounds are examined like added sounds, murmurs, bowel sound and vascular bruits, etc.

After the systemic examination with the help of these four, some direct questions are also described according bodily systems because many disease processes have features that occur in several bodily system that at first may not seem to be related to the patient's main complaint. If the specific questions have been covered by the history of the presenting problem they do not need to be included again.

Main theories of examining patients in Ayurveda are:-

- 1) Dashvidh Pariksha
- 2) Ashtavidh Pariksha
- 3) Shadvidh Pariksha
- 4) Trividh Pariksha
- 5) Panch Nidan

Here some theories from ayurvedic texts are elaborated which are given by the acharayas for the rog rogi pariksha or you can say examination. From the ancient time till now the diagnosis of disease is the first and the most important step in the treatment of any disease because after knowing that we can prescribe the accurate treatment for the particular disease which cure the patient easily and in less time, for this here we categorized these theories in three aspects they are

How to examine?

What to examine?

Where to examine?

The theory shadvidh pariksha and trividh pariksha helps us to tell how we examine the patient whereas Dashvidh pariksha and Panch nidan helps us to tell what to examine and last Ashtavidhpariksha tells us where we have to examine the patient. Briefly we describe these theories here:

Dashvidh Pariksha :

This is consists of ten points to examine the patients. These are Prakruti, Vikruti, Sar, Samhanan, Praman, Satmya, Satva, Aahar shakti, Vyayam shakti and Vaya. These are the things to which we can examine about the patients or we can say that on the basis of keeping these things in mind, we shall examine the patients.

If we analyze in detail, these ten points are found to be observation based. By these we don't examine only patients but their whole life style, biological status, total body configuration and physiology also. Similar to modern method this covers all aspects of history process. In view of some authors, by these points we can find the health amount being present in patient, to which we can promote to help in the healing of unhealthy part of body.

Actually these considerable ten points not only helps in diagnosing the disease, but some of them are also helpful in treating the patients. Such as by knowing the prakruti of patients we can decide more appropriate drugs that is suitable for him and similarly the vikruti also. The prakruti also helps us to observe the unwanted effects of drugs if any, so that by deciding these we can avoid the particular drug in particular type of prakruti people.

Then the consideration of Praman and Vaya pariksha in patients can be helpful in deciding dose of drugs because the dose may differ in different body weights and age groups. Besides



prescribing medicine to patients planning of Pathya apathya is also important, that can be framed according to Satmya and Aahar shakti pariksha. The Satva pariksha is highly helpful in interpretation of symptoms as well as observing the adverse effects of drugs also. And the Vyayam shakti pariksha is very much useful in advising exercise tolerance in some specific conditions.³

1. Prakruti -

In this pariksha two aspects are given i.e. Deha and Manas, whereas Prakruti also have two types of constitution named Genetic & Acquired constitution. For Genetic constitution Sushruta said in sharir sthan-4.⁴

Deha prakruti is divided in 7 types according of dosha predominance

Vata, Pitta, Kapha, Vata-pitta, Vata-kapha, Pitta-kapha, Samdhatu prakruti.

In aspect of Manas characteristics it was divided in 3-Satvik, Rajsik and Tamsik.

Dosaja Prakruti have specific Lakshana (symptoms) in the person which are helpful in analysis of prakruti. It was described on the basis of bodily structure, skin, hair, head, netra, nasa, danta, jihva, talu nakha, etc.

Like this Mansika prakruti are also described on the basis of Mental Temperaments and behavior.

2. Vikruti -

It refers to morbidity. Acharya Charaka has stated that Vikruti is examined with reference to the specific causative factors.

3. Sara -

Dhatus forming body are known as Sara. This pariksha is done to know Bala, for that 8 types of sara are described i.e. Twak, Rakta, Mansa, Meda, Ashthi, Majja, Shukra, Satva.

All have particular characteristics for that we access the bala of person.

4. Samhanan -

This pariksha is given to know compactness of body.

5. Pramana -

This pariksha is given to know the various dimensions of the body and bodily structure by that we know access the Sampramana person are more healthier than others.

6. Satmya-

Those Aahar-vihar and Aushadha which are in accordance to Sharir-manas are known as Satmya. This pariksha are done on two aspects:

- According to Rasa
- According to Snigdha-Rukshadi

7. Satva -

For Mental power or to know patience in person we access the Satva pariksha.

8. Aahar shakti-

It was also divided in

- Abhyavaharan shakti (Power of ingestion)
- Jaran shakti (Digestive power)

This examination reflects the Agnibala of the individual. So it was very useful in managing a patient's diet and nutritional therapy.

9. Vyayam shakti-

It can be correlated with physical exercises which gives us idea about the fitness and strength of the body.

10. Vaya-

Here patient was examined in reference to his age which represent the state of his body⁵. Different Acharya classify in the different way but Acharya Sharangdhar state different concept



of vaya where he said that in every ten years particular characters disappear from the body.⁶

Shadvidh Pariksha :

This consists of six fold examination, which are Darshan, Sparshan, Gandhan, Shravan, Rasan and Prasna. These are mainly performed by Gyanendriya and indicates how we should examine the patients? This is much more than modern techniques of examination i.e. inspection, palpation, percussion, and auscultation. As here we also examine by means of smelling and taste or flavor of patient. These examinations are active type of examination so here perfect skill is required, so that proper interpretation or inference can be made. Sometimes they also works like pathological investigations as the smell taste and color of matters can be considered as tools to examine.⁷

Ashtavidh Pariksha :

This is very important type of pariksha, where we find the sites or things of patients to which we can examine. And consists of eight things i.e. Nadi, Mutra, Mala, Jihva, Shabda, Sparsha, Netra and Aakruti. These are actually external entities to which we can use to assess the status of vitals of body. They are more objective examination and may again be utilized for laboratory investigations.⁸

Regarding these many specific and authentic descriptions are available. Among them we can discuss important ones.

Nadi Pariksha :

Regarding this very practical description is given by acharya Sharangdhar. According to which Nadi of people whose Jathragni is pradipta is laghu and vegavati, of hungry it is chanchal, in satisfied person sthir and in healthy person it is sthir and balwan. These are the different stages of normal person not of patients.

In cases of dosha-prakopa some specific presentations of nadi can be observed. These are compared with movement style of some animals. Such as in vata prakopa it is like snake in pitta prakopa frog like, in kapha prakopa it is swan like where as in dvidoshaja prakopa it is sometimes slow or sometimes rapid and in sannipataja conditions it is like bater or titar like animals.

In some other conditions it is described as in Jwar rapidly moving and ushnata yukta, in manas vyadhis it is rapid or ksheena, in mandagni and dhatu kshaya conditions it is slightly slow whereas interrupted type of nadi is indicative of losing prana. In Raktaj vyadhis it is ushana and guru and in Amaj vyadhis sheetal and heavy.⁹

Mutra Pariksha :

This is another important thing to be examined carefully. In some classics its appearance is correlated with particular dosha-pariksha. For example in vata prakopa it is yellowish in color, in pitta prakopa dark yellow and blue, in kapha prakopa white and frothy where as in Rakta dushti it is red. In this way we can make approach to involvement of dosha in any disease¹⁰. In Mutra pariksha Yogratnakar said that when a drop of tila taila is poured over the urine then its spreading change indicates the good and bad prognosis of the disease.

Different directions, shape, & structures resembling shape over the urine by drop of tila taila tells about the prognosis of disease.¹¹

Jihva Pariksha :

Similar to mutra examination and interpretation tongue can also be observed and considered. As in cases of vata prakopa it is ruksha, fissured and brownish, in pitta prakopa red and black color, in kapha prakopa white, moist and sticky, where as in dvidoshaja prakopa it is



presented as mixer of two doshaj and in tridoshaj prakopa it is of burned appearance, black and rough in touch.¹²

Netra Pariksha :

Eye examination is very much important by the point of view of modern aspect also. Here we can not only get findings suggestive of ophthalmological diseases but also of other systemic diseases as anaemia, jaundice, worm infestations, vitamin deficiency diseases etc. Just to detect doshik involvement in diseases, particular description is given by some authors. And it is ruksha, brownish, slightly reddish, stabdhata in drashti patal in Vatik diseases. In cases of Paittik diseases it is yellow like haridra, red or green in color, along with burning feeling and patient hates to any light source. In Kaphaj prakopa these are white and moistness and smoothness appears on exertion, there is purulent discharge in angles and may be loss of vision.¹³

Trividh Pariksha :

This is another mode of examining patients where we utilize the Pramanas i.e. Aptopadesh, Pratyaksha and Anuman. These are mainly to interpreting the observation and discussing the problems.¹⁴

Aptopadesh : Expert instruction means the teaching imparted by the experts. Experts again are those who possess unequivocal knowledge, memory, the science of classification & where observation are not affected by favour. Their testimony, by reason of their being endowed with these qualities, is authoritative, while that coming from insane, stupid is unauthoritative.¹⁵

In aptopadesh the knowledge we gain from ancient text book or our ancestors, teachers who taught the fundamentals of ayurveda and the persons who done special work on particular topic are also included.

Pratyaksha : Direct observation which is observed by one's own senses and the mind.¹⁶

Also defined as perception or observation is defined as the cognition, definite and immediate arising from the conjunction of the soul, the senses, the mind and the sense object.¹⁷

Anuman : Inference is reason working on given premises.¹⁸

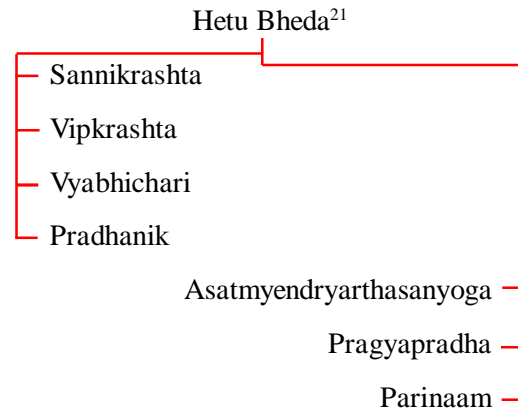
Also inference is that which having its bases in observation enables one to conclude in three several ways and with reference to all the three division of time. Thus we infer the unseen fire from the observed smoke as also mating from the sign of pregnancy. In this manner the wise can infer the past from the present, the unborn fruit from the seed, having observed the fact that fruit is like into the seed.¹⁹

Panch Nidan :

This is the another theory of examination especially given for rog pariksha. It includes Nidan, Purvarupa, Rup, Upshaya and Samprapti. With the help of these five we not only diagnose the disease also we conclude about the prognosis of the disease.²⁰

Nidan (Aetiological factors) : The synonyms of nidana are said to be nimitta, hetu, ayatana, pratyaya, utthana and karana.

Nidan words consider all the possible factors or causes those are responsible for the emergence of any diseases. It may divided as.





Sannikrashta: These are the causes which produce disease immediately like diurnal variation of doshas takes place routinely in day, night or during digestion. For this accumulation of dosha is not essential, they manifests naturally.

Vipkrashta: These are the distant cause for the production of disease. Here accumulation of dosha is essential like seasonal variations.

Vyabhichari: They are the weak or the causes which are unable to produce the disease but when their favorable condition arises they cause the disease. They act as a carrier for the production of the disease.

Pradhanik: These are the powerful causes which produce diseases instantaneously like poison. Sudden manifestations of the symptom occur so accumulation of doshas is not necessary.

Asatmyendryathasanyoga: Excessive or no or improper utilizations of the five zendrya like chakshu, Sravan, Ghran, Rasan and Sparshendrya. Their improper use cause several diseases.

Pragyapradha: Here improper or wrong utilization of speech, body and mind are the responsible for the generation of the diseases.

Parinaam: This is stands for the role of kala in manifestation of disease where seasonal variations and their excessive, lesser and improper characters cause the generation of disease.

Purvarupa (Prodromal features/Premonitory signs & symptoms) : The prodromal features are those which appear before the onset of the disease, that is before the involvement of the specific doshas. The clinical features manifested incompletely due to the pathogenic process being minimal should be taken as the specific prodromal features of the diseases.

Purvarupa is of two types :-

- ♦ Samanya purvarupa(General symptoms): In this, symptoms of the disease manifest first before the manifestations of the disease so doesn't specify the involvement of doshas.
- ♦ Vishista purvarupa(Specific symptoms): Here appearance of the specific symptoms arises which specify for the particular doshas like yawning in vataja jwara or burning sensation in pittaja jwara.

Rupa (Clinical feature/sign & symptom): When the same prodromal features reaches the stage of manifestations they are called rupa, sanasthana, linga, lakshana, chihna and akriti (are the synonyms)

Upshaya (Therapeutic test): The trial with drugs, diet and daily regimen having specific beneficial effects by acting directly or indirectly against the causative factors, the disease process or both, is known as Upshaya, the same is also called satmya.

Samprapti (Pathogenesis): The process of the production of the disease by the spreading vitiated doshas is called Samprapti or gati (genesis) or agati (onset).

That is discussed on the basis of number, specificity, predominance, severity and time :-

- ♦ For instance, (as an example of sankhya samprapti or number) fever is said to be of eight types.
- ♦ Qualitative and quantitative analysis of the involved doshas is called a vikalpa samprapti(specificity).
- ♦ Consideration of the primary and secondary involvements in the disease process is known as pradhanya samprapti(predominance).
- ♦ Consideration of the severity or otherwise of the disease on the basis of the presence of all



or some of the etiological factors etc. is known as bala samprapti(severity).

- ♦ Consideration of the disease and the involved doshas in relation to the nocturnal, diurnal, seasonal, and dietary variations is known as the kala samprapti(time factor).²²

CONCLUSION :

On above descriptions we can conclude that:-

- First of all we should detect prakriti of patient and type of prakriti.
- Utilizing the Ayurvedic tools of nadi, mutra, jihva and netra, doshik involvement should be confirmed for better management.
- In addition to nadi, mutra, jihva and netra other points should also be explored and elaborated.
- Regarding some examinations experience and sufficient observations is needed. For this Aptopadesh, Pratyaksha and Anuman pramanas are great importance.
- I don't think there is any deficit in our history taking and examining system. So we can call it Holistic system.
- I suggest by using this technique we should replace the theory of modern parameters and adopt our own methods.
- Avoid the concept of “modern diagnosis ancient treatment” and replace it with “Ayurvedic Diagnosis Ayurvedic Treatment”.

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3. Sri Kashinath shastri and Gorakhnath shastri, Charak Samhita Viman sthan, Chaukhambha Bharati Academy, Varanasi 2015.CH. 8/13-14.Pg no.771 आतुरस्तु खलु कार्यदेशः । तस्य परीक्षा आयुषः प्रमाणज्ञानहेतोर्वा स्यात्, बलदोषप्रमाणज्ञानहेतोर्वा । तत्र तावदिय बलदोषप्रमाणज्ञानहेतोः दोष प्रमाणनुरूपो हि भेषजप्रमाणविकल्पो बलप्रमाणविषेशापेक्षो भवति । सहसा ह्याति बलमौ षधामपरीक्षाक प्रयुक्तमल्पबलमातुरमतिपातयेत् । तस्मादातुरं परीजेत प्रकृतितश्च, विकृतितश्च, सारतश्च, सहनंनतृच प्रमाणतश्च, सात्म्यतयच, सत्त्वतश्च, आहारशक्तितश्च, व्यायामशक्तितश्च, वयस्तश्चेति बल प्रमाण विशेष ग्रहण हेतोः । (च०वि० ८/१३-१४)
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EFFICACY OF LILAVILASA RASA AND VIRECHANA IN AMLAPITTA : AN OBSERVATIONAL STUDY

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ABSTRACT :

For a long time infectious diseases were the biggest killer diseases globally but now the trend is changing towards increased prevalence of chronic diseases with causative factors mostly related to diet and lifestyle. Ayurveda gives prime supremacy to agni due to its immense importance in therapeutic, diagnostic and other aspects. Amlapitta, a functional disease of annavaha srotas caused due to improper dietary habits and stress is prevalent all over the world. Rapid lifestyle provokes people to run behind a busy, stressful life with least concern to proper diets.

The present study was intended to find safe and effective treatment of Amlapitta. 45 patients of either sex between 30 – 65 years were randomly selected for the study. In Group A patients were treated with lilavilasa rasa for 30 days. In group B patients were treated with Virechana with Trivrit avaleha and in group C both the therapies were given. The results in group C were highly significant as compared to the other two groups. Thus it can be concluded that lilavilasa rasa provides soothing effect and virechana with trivrit avaleha due to its kaphapittahara property relieves amlapitta.

Key Words : Amlapitta, Virechana, Annavaha srotas, Lilavilasa Rasa.

INTRODUCTION :

Since the time immemorial, Ayurveda is used as a measure of healthy and happy life. Agni refers

to fire like activity in the alimentary canal responsible for the digestion of food which is influenced by the status of dosas. When samana vayu associates with kapha it produces weak digestive power (agnimandya). Food is one of the responsible factor for our existence. Consuming food against code of dietetics leads to a number of diseases related with food. According to the theories of Ayurveda, all diseases are due to hypo-functioning of agni. As per Acharya Susruta, improperly digested food becomes poisonous or toxic (shukta / amavisa) which combines with pachaka pitta and creates a variety of pitta predominant diseases. Amlapitta is one of them. Amlapitta, a commonly encountered disease of annavaha srotas literally means a condition in which sourness of pitta gets increased and is characterized by cardinal features like avipaka (indigestion), klama (tiredness), utklesa (nausea), Tikta amlodgaara (sour and bitter belching), gauravata (heaviness), Hrit – kantha daha (burning sensation of heart and throat) and aruchi (anorexia). Excess formation of vitiated pitta which occurs due to improper dietary habits is the main pathological mechanism behind the manifestation of this disease.

AIMS AND OBJECTIVES

1. A critical study on amlapitta.
2. Evaluation of the efficacy of lilavilasa rasa and virechana in amlapitta.
3. To compare the effect of both the therapies clinically.

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MATERIALS AND METHODS

The present study was a single blinded trial. Patients attending the O.P.D. of I.P.G.A.E&R at S.V.S.P, Kolkata, with clinical symptoms of amlapitta were included in the study. A total of 45 patients in the age between 30 – 65 years of either sex satisfying the inclusion criteria were finally enrolled in the study after baseline screening and after taking written informed consent from the patient. The literary data was taken from various Ayurveda Samhitas, text books, magazine articles etc.

Inclusion Criteria

Patient of both sexes aged between 30 – 65 years presenting with the cardinal features of amlapitta like avipaka (indigestion), klama (tiredness), utklesa (nausea), hrit – kantha daha (burning sensation of heart and throat), tikta amlodgara (sour and bitter belching), gauravata (heaviness), aruchi (anorexia) and those who were willing to give written informed consent to participate in the study.

Exclusion Criteria

Patients who are malnourished and debilitated suffering from uncontrolled diabetes mellitus, essential hypertension, Peptic Ulcer Syndrome with malignancy and associated with any other serious systemic complications.

Grouping of Patients

Selected patients for the study were randomly divided into three groups with 15 patients in each groups with different level of age, sex, and socio-economic status.

Group A – Patients were treated with Lilavilasa rasa 500mg BD with lukewarm water for 28 days.

Group B – Patients were treated with Virechana with trivrit avaleha.

Group C – Patients were treated with both lilavilasa rasa and virechana.

Duration of Treatment : 28 days (4 weeks).

Follow up Schedule : Assessment was done in every 15 days intervals.

Assessment Parameter :

Subjective Parameter

As per the classical clinical features.

Objective Parameter

1. Haematological – Blood for Hb%, TC, DC, ESR.
2. Biochemical – Blood for FBS, PPBS.

Statistical Analysis

All the observations were compared and grouping was analyzed statistically in terms of mean, Standard Deviation (S.D.), Standard Error (S.E.). The paired 't' test was carried out and the information thus collected were interpreted in terms of level of significance (P value) [$p < 0.05$].

OBSERVATION AND RESULT

In the present study it was observed that out of total 45 patients, 35 patients (75.22%) were male and 10 patients (24.78%) were female. Age wise study reveals 15 patients (32.35 %) in age group 30 – 35 years, 11 patients (24.44 %) in 36 – 40 years age, 7 patients (15.55 %) in 41 – 45 years age, 6 patients (13.33 %) in 46 – 50 years age, 3 patients (6.67 %) in 51 – 55 years age, 2 patients (4.45 %) in 56 – 60 years age and 1 patient (2.23 %) between 61 – 65 years age. Occupation wise study reveals 20 patients (44.45 %) were field workers, 14 patients (31.11%) worked in offices, 7 patients (15.55%) were teachers and 4 patients (8.89 %) were students.



Pattern of Nidana sevana in patients of amlapitta

Sl. No.	Nidana (Causative factor)	Number of patients	Percentage
1	Ati Lavana - Amla - Tikta ahara sevana	26	57.78 %
2	Atiushna bhojana	13	28.89 %
3	Adhyasana	17	37.78 %
4	Diwaswapna	15	33.34 %
5	Ratrijagarana	14	31.11%
6	Vegadharana	12	26.67 %
7	Irregular diet	19	42.23 %
8	Addiction of tea	31	68.89 %
9	Addiction of smoking	24	53.34 %
10	Addiction of tobacco chewing	20	44.45 %

Cardinal Features of Amlapitta observed during Baseline Evaluation (N = 45)

Sl. No.	Clinical Features	Total number of patients	Percentage
1	Hrit – Kantha Daha	45	100 %
2	Tikta amlodgara	39	86.67 %
3	Aruchi	33	73.34 %
4	Utklesa	16	35.56 %
5	Avipaka	21	46.66 %
6	Gauravata	29	64.45 %
7	Klama	20	44.45 %

Group - A

Sl. No.	Lakshana (Clinical Features)	Mean Score BT	Mean Score A T	S.D	S.E	't' test	P Value
1	Hrit – Kantha Daha	13.5	12.0	3.27	18.18	2.75	< 0.01
2	Tikta amlodgara	11.6	10.5	2.86	16.06	2.49	< 0.02
3	Utklesa	13.6	12.2	2.72	15.38	2.60	< 0.01
4	Gauravata	15.2	13.3	1.90	10.73	3.29	< 0.001
5	Klama	14.6	13.1	2.58	14.61	2.60	< 0.01
6	Aruchi	13.2	12.1	2.92	16.52	2.42	< 0.02
7	Avipaka	15.3	13.3	1.90	10.73	3.29	< 0.001



Group - B

Sl. No	Lakshana (Clinical Features)	Mean Score BT	Mean Score AT	S.D	S.E	't' test	P Value
1	Hrit – Kantha Daha	12.6	11.0	3.121	17.48	2.86	< 0.001
2	Tikta amlodgara	14.3	12.6	2.75	15.32	2.74	< 0.01
3	Utklesa	13.1	11.6	2.48	14.02	3.21	< 0.001
4	Gauravata	12.3	10.4	1.79	10.11	3.46	< 0.001
5	Klama	13.6	12.3	2.43	13.76	2.76	< 0.01
6	Aruchi	12.1	9.6	2.12	15.32	2.61	< 0.01
7	Avipaka	13.1	11.6	2.48	14.02	3.21	< 0.001

Group - C

Sl. No	Lakshana (Clinical Features)	Mean Score BT	Mean Score AT	S.D	S.E	't' test	P Value
1	Hrit – Kantha Daha	13.6	11.1	2.45	13.69	3.66	< 0.001
2	Tikta amlodgara	12.9	10.2	2.44	13.80	3.26	< 0.001
3	Utklesa	14.2	12.3	1.76	10.0	4.20	< 0.001
4	Gauravata	15.1	12.9	1.56	8.73	4.12	< 0.001
5	Klama	12.8	10.8	1.63	9.23	3.90	< 0.001
6	Aruchi	13.1	11.6	2.48	14.02	3.21	< 0.001
7	Avipaka	15.2	13.3	1.90	10.73	3.39	< 0.001

After 4 weeks of treatment, statistically significant improvement were observed in overall all the features of amlapitta. No significant difference was observed in the change of haematological and biochemical parameter after the administration of drugs

DISCUSSION :

Amlapitta is a common gastric problem usually related with food habits and lifestyle. In the present study there were 35 males and 10 females. As per age wise distribution it was observed that maximum patients belonged to age group between 30 – 35 years. As madhyamavastha is considered as pitta prakopa vaya this age group is more prone to suffer from pitta predominant diseases. Regarding occupation wise distribution it was observed that out of 45 patients majority of patients were

involved in field works. On analyzing the symptomatology of amlapitta, hrit – kantha daha was found to be present in all the cases while tikta amlodgara in 39 patients (92.92 %), aruchi in 33 patients (77.88 %), avipaka in 31 patients (63.72 %), utklesa in 16 patients (41.59 %), gauravata in 29 patients (62.83 %), klama in 20 patients (44.25 %). In group analysis Group – C was seen to be highly significant in alleviating the symptoms of amlapitta. Significant improvement was observed in all the assessment parameters of amlapitta following 28 days of drug administration. Lilavilas rasa has eight



ingredients and is indicated in sula, vama, hridaha etc..Lilavilas rasa gives soothing effect and virechana with trivrit avaleha by its saraka guna normalizes the vitiated pitta and eliminates the excess pitta from the body by its laxative action. In initial stages of amlapitta vitiated pitta leads to vidagdhajirna thereby causing inflammation and corrosion of slesmadhara kala of amasaya i.e. mucus membrane of stomach and duodenum.

CONCLUSION :

Amlapitta is a chronic recurring condition of gastrointestinal system affecting the quality of life of patients and is caused by faulty lifestyle habits which causes vitiation of pitta dosa in the body and leads to the occurrence of disease amlapitta. Middle aged people are more prone to suffer from this disease as is evident in the present study. Addictions like tea, smoking, tobacco chewing plays a significant role in aggravating the disease. On the basis of result and statistical datas obtained it can be said that Group C was highly significant in curing the disease as compared to the other two groups and hence it can be concluded that both the therapies were effective in alleviating the symptoms of the disease. Appropriate quantity and quality of food consumed helps to prevent and control amlapitta. One should also take food considering one's own capacity of digestion.

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A CASE STUDY- EFFICACY OF KAMPILLKAADI LEPA AND JATAYADI TAILA IN THE TRAUMATIC WOUND HEALING

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ABSTRACT :

Acharya Sushruta, being the father of surgen has explained in detail about wound healing. Healing is a natural and spontaneous phenomenon which occurs irrespective of (and sometimes despite) the surgeon. Although the basic events have been observed for many years, the factors which initiate and control the process remain incompletely understood. Ayurveda is the complete science of life. Ayurveda takes whole man physically as well as mentally into account while describing the principle of treatment. Wound healing has been the burning problem in a surgical practice. Concept of wound care and wound cicatrization is very well explained in Ayurvedic text books .The pattern of wound healing may be affected by cytokine, endocrine or pharmacological manipulation of the wound's environment.

INTRODUCTION :

The destruction of body tissue/part of body, is called "Vrana". Inspection often allows wounds to be described, helping to determine the mechanism of trauma (blunt or sharp injury) and hence the risk of associated injuries by a sharp or blunt instrument. If in doubt, avoid any descriptive term and simply call it a wound. This avoids inaccuracy and courtroom embarrassment!

According to sushruta samhita,three dosha (vata,pitta, Kapha) are responsible for the symptoms of wounds.

Vata– leading to pain, swelling.

Pitta– leading to burning sensation, infection (dooshana) of blood and ulcer wound

Kapha – accumulation and vitiation of fluids,itching.

Key words- wound,healing, itching

Stages of healing

In any type of open wound, three stages or phases are mandatory in healing process. They are as follows.

- ♦ Inflammatory phase
- ♦ Collagen phase or Proliferative phase
- ♦ Maturation phase or regeneration phase/ remodeling phase

Immediately following an injury, the healing process begins. A torn ligament or muscle is repaired, wounds heal, and bones mend. The healing process first involves getting rid of damaged tissue, then rebuilding healthy connective tissue in a step-by-step manner. The redness, swelling, heat and pain of inflammation are a natural part of the healing process.

Case report

A child patient about 11 years came with his father and he was attended the o/d of shalya tantra at Ashtang ayurveda college hospital indore with the complain of crushed upper part of hand by a sugarcane machine with watery discharges, hyper bleeding, severe pain. Pt. was is almost semi conscious. Wound was traumatic.

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Patient was fully examined by me. He was treated with some analgesics. Some parts of wound were stitched to stop the bleeding & bandaging. Patient was stable & discharged from hospital.

After 7 days stitch were removed. It was a big wound about 10 cm. 27cm broad long and a big challenge for me & Ayurveda also. As soon as patient visited OPD, he was carefully examined and advised the part to be x-ray to rule out any chance in bony part. But x-ray revealed no abnormality in the bone. After performing required investigation we decided tr. application of Jatayadi taila and Kampillakadi lepa for healing the wound.

Clinical study of chronic wound patient

An male patient 11 yr. came to the O.P.D. of shalya tantra deptt, pt. complained

O/C – Traumatic wound in left hand-
watery discharges, hyper bleeding, severe pain

O/E- A wound about 10 cm. long in the left hand having, watery discharges, hyper bleeding, severe pain I examined the wound, the wound was deep.

1st day – in morning, the wound was cleaned by apamarga kshara. All the unhealthy tissue were scrapped & wound become cleaned.

2nd day- pt. was examined in the morning, some bite of pseudoepithilium & pus is coming out from the wound. Now again the wound was cleaned by cotton, applied Kampillkadi lepa in the morning and bandaged and in the evening bandage was done by jatayadi taila.

The bandage of Kampillkaadi lepa in the morning and and bandage of jatayadi taila in the evening was continued next 15 days. both

medicines prepared in the hospital. Kampillkaadi lepa was prepared daily.

After seven days wound was better & healthy stage. There is no complain of pain,swelling,tenderness & pus discharge . The patient was waking easily and having not any complain.

The follow up was one months.

PREPARATION OF KAMPILLKAADI LEPA





Before Treatm





Ingredient of jatayadi taila :

जातीनिम्ब पटोलानां नक्तमालस्य पल्लवाः । सिक्थं



मंजिष्ठा पद्यके लोध्रमभया नीलमुत्पलम् । तुत्थकं
सारिवा बीजंनक्तमालस्य दापयेत् ॥

एतानि समभागानि पिष्ट्वा तैलं विपाचये नाडीव्रणे
समुत्पन्ने स्फोटके कच्छू रोगीशु ॥ (षा.सं.म.खं. 9)

1. Jati
2. Nimba
3. Patola
4. Karanja
5. Yastimadhu
6. Kushtha
7. Haridra
8. Daruharidra
9. Kathuka
10. Manjistha
11. Padmaka

12. Lodthra
13. Haritaki
14. Kamala
15. Sariva
16. Sikhtha
17. Tuthaka
18. Tila taila.

Ingredient of lepa: It is explained by Acharya
Charak in chikitsaa sthana for wound healing

कम्पिल्लकादि लेप

कम्पिल्लकं विडंडानि वत्सकं त्रिफला बलाम् ।

पटोलं पिचुमर्दं च लोध्रं मुस्तं प्रियङ्गुकम् ॥ 25/90

खदिरं धातकी सर्जमेलामगुरुचन्दने ।

पिष्ट्वा साध्यं भवेत् तैलं तत् पदं व्रणरोपणम् ॥

25/91



कबीला, वायविडंग, कुटज छाल, हरड, बहेडा, ऑवला, बला मूल, परवल की पत्ती, नीम की पत्ती, पठानी लोघ्न, नागरमोथा, फूलप्रियंगु, खदिरसार, धाय का फूल, सर्ज (राल) छोटी इलाइची, काला अगरू, चन्दन, इन सबको पीसकर कल्क तैयार किया। इस कल्क के द्वारा लेप विधि से लेप तैयार किया गया।

कम्पिल्लक – यह कफवात शोधक है एवं कृमि नाशक है। इसका प्रयोग कृमि, गुल्म तथा व्रण और क्षतो में बाह्यरूप से किया जाता है इसके रज में दो सक्रिय तत्व रोटेलेरिन एवं आईसो रोटेलेरिन होते हैं। इसके मूल, काण्ड एवं पत्र में एच.सी.एन एसिड होता है। बीजों में एक विषाक्त, ग्लाइकोसाइड पाया जाता है।

व्रणों के लिए कृमि शोध शामक एवं वेदनाहर का कार्य करता है।

विडंग – इसके इम्बेलिन एक उडनशील तैल पाया जाता है, जो कृमिघ्न का कार्य करता है। आचार्य चरक में इसे कृमिघ्न गण में स्थान दिया है।

वत्सक (कुटज)

आचार्य चरक ने इसे कण्डुघ्न गण में स्थान दिया है इसकी छाल में कन्सेप्शन नामक क्षाराभ पाया जाता है। आचार्य भावप्रकाश ने इसके कृमिनाशक बताया है।

त्रिफला – (हरड, बहेडा, ऑवला) – त्रिफला का बाह्य प्रयोग वेदनाशामक, शोध शामक एवं कृमिघ्न है।

बला – इसका विपाक रस मधुर एवं वीर्य षीत होने से यह वेदनास्थापन एवं शोथहर है। इसमें मुख्य क्षाराभ द्रव्य इपेहड्राईन पाया जाता है।

पटोल – पटोल तिक्त रस प्रधान, वीर्य उष्ण होने से कफ, कृमि का नाश करता है एवं वेदना शामक है।

खदिर – आचार्य चरक ने इस को कुष्ठघ्न महाकषाय में रखा है इसका रसतिक्त कषाय होने से पित्त का नाश करके व्रण शोथ का शमन करता है, खदिर के सार भाग में केटेचिन तथा केटेचियू टेनिक एसिड पाये जाते हैं। तिक्त रस होने से यह रक्तस्तम्भक का कार्य करता है।

Discussion on selection of Jayadi Taila:

Jatyadi taila was selected for present study because Bhaisajya Ratnavali and Sharangdhara Samhita advocate it for nadi-vrana & itching (Kandu).

1- Effect of Jatyadi Taila in pain - Ingredient of Jatyadi taila like Jati, Nimba, Patola, Karanja, Yastimadhu, Kustha, Padmak, Sariva all these drug shows vedanasthapana property. (Bhavprakash Nighantu)

- Alcoholic extract of Nimba shows analgesic property (Fitoterapia).

- Patola shows vedna-sthapana property. (Ancient science life, B.P.Ci. 60/45).

- Yastimadhu help in healing (S.S.Ci. 8/18).

- Daruharidra shows analgesic (Ind. Journal of Med. 1969).

- Above all drug shows an analgesic action which helps to relief from pain.

2- Effect of Jatyadi Taila in Daha -

- Katuki has Daha-nashak karma.(B.P.Ni 152 Haritkyadi verga)

- Sariva having pitta-nasan karma.(Dh.Ni.)

- Kamal works as pitta-prashmana (Ch.su.25/33)

3- Effect of Jatyadi Taila in Itching - Jati, Karanja, Yastimadhu, Padmaka shows Kandughna -property Kandughna karma of the drug was helpful to relieve the itching.(B.P.Ni)

- Haritaki having Kandughna effect.(B.P.21 Haritakyadi verega)

- Karanj, Nimbre mentioned in Kandughna Mahakasaya(Ch.su 4/14)



4- Effect of Jatyadi Taila in discharge -

- Jatyadi taila contents shows strotovishodhana & soshana property because all of the contents having Kasaya & Tikta rasa.
- Nimba has Krimi-nashan effect(Su.su.45)

Effect of Kampillkaadi lepa- All Ingredients of lepa are very effective in healing. It is described by Acharya Charak for wound healing.

DISCUSSION-

Application of Jatyadi taila and Kampillkadi lepa both are very beneficial for healing of the wound.

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COMPREHENSIVE APPROACH OF AYUEVEDA IN GLOBAL HEALTH PROBLEMS

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ABSTRACT :

Ayurveda, a system of indian medicine is resting upon proven theories as well as documented clinical observations. Ayurveda has unique concepts and methodologies to address health care throughout the course of life, from pregnancy and infant care to geriatric disorders. Common herbs are utilized as herbal mixtures and special preparations. Fivefold Purification procedures known as panchkarma remove toxins from the body. Numbers of disorders are emerging as a result of changing lifestyle. Basic cause among those disorders is accumulation of toxins in the body. Those inorganic toxins harm body tissue and basic metabolism in the body which results in chronic life style disorders.

Among all systems of medicine Ayurveda is a only system which focus on purification and rejuvenation. Rather than Ayurveda other systems only focus on disease and associated symptoms. The vary core of Ayurveda is formed from some very basic concepts e.g. panchabhautic theory, the prakriti concept predisposition to and prognosis of disease. Imbalance of three dosha (vata, pitta and kapha) in the development of disease, interestingly, Ayurveda further expands on these theories to plan interventions that would correct the imbalance of dosha, dhatu & mala. The actions of medicine are described through their various properties (like rasa, guna, veerya, vipaka and prabhava) based inherently on their elemental composition. It is the need of the time

to use modern technology to explore the relevance of those concepts for current established scientific base.

Key Words- Ayurveda, Global health problems, Concepts

INTRODUCTION :

Ayurveda is the mother pathy of all the medical systems of the world. There is a profound understanding of human body & mind and unique concepts of maintaining and rejuvenating the body. Ayurveda emphasizes that our first duty (dharma) is to take care of our body and manage it. Each persons has a particular combination of physical, mental and emotional characteristics known as Vata, Pitta and Kapha. Physical and mental health is achieved by balancing diet, exercise, sleep and Brahmacharya. The definition of Health has been given as follows- "Equilibrium of the actions of dosha, tissues, channels, waste products and digestive fire, accompanied by a sensation of well being, mental tranquillity and all sense organs working properly is known as Health"¹. It is interesting to note that no other medical science in the world has defined health in such a lucid manner.

Ayurveda, the science of life, is undoubtedly world's oldest system of treatment. With the help of various indigenous methods a systematic treatment of the patient is done in this science. Ayurvedic medicine has attracted renewed interest of medical profession at large all over

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the world because of its holistic approach, safe medications and range of unique therapeutic modalities. Ayurveda is a living system of Medicine. There has been amazing resurgence of interest about Ayurveda throughout the world and gradually Ayurveda is becoming a global scientific discipline. Ayurveda makes an unique approach to cure diseases. The Ayurvedic cure is a twofold strategy comprising of Sansodhana or biopurification by Panchakarma and related measures, Sanshamana or Palliation of imbalances by appropriately planned diet, drug and life style interventions. The Ayurvedic classics describe the full range of therapeutics through Sadupakramas consisting of Langhana-Brimhana, Rukshana- Snehana, Swedana-Stambhana².

While treating a disease on ayurvedic principles, it involves a number of factors like- Dosa, Dushya, Dhatu, Mala, Desha, Bala, Kala, Agni, Prakrti, Vaya, Satva, Satmya, Ahara, Pancamahabhuta, Vyadhi, Kriyakala and the therapy to be employed, is an essential part of the Ayurvedic management of a disease.

Comprehensive Approach of Ayurveda

Ayurveda has never tried to resolve human health problems from isolated point of view, by putting aside those essentials of life which are not directly associated with physical well being of an individual, although immensely related to him .So the synthetic and wholesome approach of Ayurveda in respect of life, human constitution and mental health deserves due consideration. Besides this scientific approach of Ayurveda, the problem of life, health and disease have been multifariously and multi dimensionally approached. Basic approaches of Ayurveda include³-

1. Maintenance of positive health of healthy individual
2. To cure the disease of diseased ones.

Several classifications of treatment of a disease, or preventive methods for preservation of positive health are described in Ayurveda. These approaches can be categorised broadly in two groups⁴:

1. Shodhana Therapy
2. Shamana Therapy

With the administration of Shodhana therapy attempts are made to purify or cleanse all the body tissues and to bring about the harmony of Tridosa i.e. Vata, Pitta, Kapha and Manasa Doshas in such a way that vitiated Doshas are removed from the body and long lasting beneficial effects of long duration are produced in the body. On the other hand Shamana therapy is basically palliative in nature. In this therapy also efforts are made also by the physician to bring Tridosa and Manasa Dosha in a perfect state of equilibrium with the judicious use of Ahara, Vihara and Aushadhi.

There are some principal therapies which have been there in Ayurveda directly or indirectly associated with life and health.

1) Pancakarma Therapy- Pancakarma therapy has been recognised as a therapeutic procedure of great importance in Ayurveda. It is a systemic and scientific procedure. There is growing awareness among masses about the beneficial effects of this miraculous therapy not only in India but all over the world. Pancakarma therapy include following karmas⁵

1. Vamana (Therapeutic Emesis)
2. Virechana (Therapeutic Purgation)
3. Vasti (Therapeutic Enema)



4.Nasya (Errhines)

5.Rakta Moksana (Blood letting)

Pancakarma therapy is used mainly with following objectives-

- a) Preventive
- b) Rejuvenation
- c) Curative

a.) Preventive-

Pancakarma is recommended in healthy individuals for preservation and maintainance of their positive health as a preventive therapy.

b) Rejuvenation-

Pancakarma is indicated as a pre-requisite in individuals where Rasayana therapy is recommended⁶

c) Curative-

Another very important indication of Pancakarma therapy is in the form of curative therapy for various diseases like Cervical spondylosis, Chronic colitis, Sleeplessness, Menstrual problems, Skin disorders, Arthritis, Slip-disc, Sciatica, Mental disorders, life style disorders and chronic endocrine disorders etc. Specific Pancakarma is indicated in the management of a specific disease.

S.N.	Karma	Indicated disease
1.	<i>Vamana karma</i>	Cough,cold,bronchial asthma, loss of appetite,etc ⁷ .
2.	<i>Virechana karma</i>	Skin diseases, diabetes, Disorders of Gastro Intestinal Tract, Piles etc ⁸ .
3.	<i>Anuvasana Basti</i>	Excessive appetite,Excessive dryness in body ⁹
4.	<i>Niruha Basti</i>	Disorders of Nervous system,Heart disease, Menorrhagia,Urinary calculi etc ¹⁰ .
5.	<i>Nasaya karma</i>	ENT diseases, diseases of head and teethFacial Palsy and glandular enlargement of the neck ¹¹ .

Beneficial effects of Pancakarma therapy:

Pancakarma presents the unique approach of Ayurvedic system of medicine. It's believed that disease treated by drug therapy may recur or relapse where as the diseases treated with Sansodhana therapy never relapse and are eradicated forever.¹²

The basic contribution of Pancakarma therapy is that it removes the vitiated Doshas from the body and provides purification of body at two levels-

1. Gross level- Various organ and systems of the body are thoroughly cleansed e.g. C.V.S, G.I.T,etc.
2. Cellular level-i.e. Purification of body is produced at the level of cells,cell membranes and molecules.

Other beneficial effects of Pancakarma therapy includes¹³:

- Biological system of the whole body return to normal.



- There is rejuvenation and revitalization of all body tissues and Dhatus.
- It potentiates the pharmacological actions of various medicines administered afterwards.
- Normal physiological functions of all the body systems are potentiated.
- The prognoses of various diseases which are difficult to treat with simple administration of medicines become significantly improved after administration of Pancakarma therapy.
- After Pancakarma therapy diseases are cured and normal health is restored. The mental faculties, mind, intelligence and complexion of the patient improve.
- Individual gains strength, plumpness and offspring after Pancakarma therapy. The individual will not be affected by premature ageing and lives long with a sound health.

2) Snehana Karma (Oleation Therapy)

Snehana Karma is one of the main procedures of Purva Karma. The literally the term Snehana means anointing, lubricating, rubbing or smearing with oil or producing unctuousness in the body.

Definition of Snehana: Any procedure or substance which produces lubrication in the body externally or internally is called Snehana. It is used as an independent therapeutic procedure as well as preparatory procedure for Pancakarma therapy. Various type of Sneha to be used in various diseases through various methods (Pariseka, Mardana, Sanvahana, Gandusa and Kavala Murdha Taila, Aksi Tarpana etc.) e.g. Vasa Ghrta in Bronchial Asthama, Eranda Taila in Osteoarthritis and Rheumatic Arthritis etc. Snehana Karma is used in many diseases like Epilepsy, Psychosis, Diabetes, Hepatic billiary disorders, I.B.S., etc.

Beneficial effects of Snehana Karma¹⁴

- Delays ageing process.
- Snehana karma is effective in headache, migraine

- Induces sound sleep in Insomniac patient.
- Improves the quality, lusture and texture of skin in many skin disorders.
- Improves Eye sight/vision by Aksi Tarpana.
- Snehana Karma plays a important role in treatment of Neuritis Myalgia, Neurological disorders, Obesity Allergic disorders..

3) Svedana Karma (Sudation/Fomentation Therapy):

Swedana Karma is the next important Purva Karma of Pancakarma-therapy. Svedana Karma is defined as the process by which the sweat or perspiration is produced in the body by using various methods. Svedana is the specific treatment for a number of disorders especially in Vata dominant disorders.

Indication of Svedana Karma¹⁵

- According to Acarya Caraka persons who are suffering from Neurological disorders like Facial Paralysis, Hemiplegia Paraplegia, Otagia, Sciatica, Spondylsysis, Numbness and Cramps are suitable for Svedana.
- Persons who are suffering from Joint disorders like Osteoarthritis, Stiffness of joints, Contracture in joints are suitable for Svedana.
- Other disorders where Svedana Karma is indicated include-Genitourinary disorders-like Suppression of urine, Dysuria, enlargement of scrotum, suppression of semen etc .G.I.T. disorders like Constipation & stiffness of abdomen etc. Respiratory disorders like coryza, cough, hiccough, dyspnoea, asthma etc.

4) Rasayana Therapy:

Literally the word Rasayana refers as the means of obtaining optimum standard of Rasa-Dhatu. Thus Rasayana is that process by which all the body tissues are nourished¹⁶. Consequently Rasayana helps in regeneration, revival and revitalisation of all body. Rasayana as a measure



which may cure or prevent the disease and ageing. Today people lead their lives in a more sophisticated way. Improper food habits, altered life styles, persistent stress, water and air pollution etc and so many executing serious dangerous condition affects on human life. To prevent and get rid of these harmful effects people are to be administered Rasayana for improving their body resistance. Newer discipline of modern medicine states that ageing occurs due to malfunction of DNA-repair mechanism and if it could be reversed it would slow down the process of ageing. Aging like cancer and so many genetic neurological disorders, occurs due to DNA damage. Free radicals may also damage DNA. There are evidences that various exogenous and endogenous antioxidants are capable of inhibiting, free radical formation. Free radicals are atoms or group of atoms that can cause damage to cells by a process called oxidation which impairs the immune system and leads to infection and degenerative diseases. Antioxidants play a major role to retard this process. The probable mode of action of Rasayana drugs could be through chelation of free radicals and also as a chain breaker. It has been reported by scientific studies that Rasayana drugs are potent antioxidant drugs. So antioxidant therapy seems to be very important as a preventive measure. It has been proved scientifically that various Medhya Rasayana drugs have potent Psychotropic effects. They can be used effectively in the management of various stress induced disorders. Naimittika Rasayana drugs are used with great success in specific inhibition of a particular disease.

Ayurvedic Rasayana therapy is useful in immune deficiency states, caused by AIDS (HIV) virus also. Rasayana drugs which act as antioxidants as well as immunomodulators is also act as anticancerous like Brahmi, Mandukapaaerni, Aswgandha etc. It is well known saying that prevention is better than the cure. This objective could easily be achieved with the help of Rasayana Therapy.

5) Blood Letting (Rakta-Moksha):

Raktamoksana means the procedure of blood Letting for the therapeutic purposes for removing morbid Dosas with blood. Raktamoksana is practiced in blood born diseases, in Pitta predominant diseases and also in a few Vata disorders. Raktamoksana is the fifth main Karma of Pancha Karma therapy and has been listed by Sushruta and Vagabhatta. Charaka has not included Raktamoksana into Panca Karma. RaktaMoksana is of two types¹⁷-

1. Sastra Visravana (Blood letting with metallic Instruments)-It is of two types-a) Incisions b) Venepuncture (SiraVyadha)
2. Anu Sastra Visravana (Blood letting without any metallic Instruments)-It is of four types-a) Application of Leech (Jalaukavacarana) b) Application of Sringa (Sringavacarana) c) Application of Alabu (Alabuavacarana) d) Ghata Yantra (Coupling Glass Application)

Toxins that are absorbed into the blood stream through the gastrointestinal tract circulate throughout the body. They may manifest under the skin or in the joint spaces, creating disease. In such cases elimination of the blood is necessary. For repeated attacks of skin disorders such as urticaria, eczema, acne, scabies, lucederma, chronic itching and Haematuria, alopecia, Neuraesthesia blood Letting is indicated. It is also effective in cases of enlarged liver and spleen and for gout. Blood Letting also stimulates antitoxic substances in the blood stream which helps to develop the immune mechanism in the blood system. Thus the toxins are neutralized enabling radical cures of many blood and bone disorders. When the blood is purified, the colour of the individual will be bright and shining and his sense organs will act powerfully and quickly. Thus mind will be full of continents and the body will get strength & happiness. Those undergoing Blood Letting from time to time never suffer from skin diseases, cysts, inflammatory and blood disorders.



6) Marma Therapy:

Marma therapy is an important adjunct to be applied along with other Ayurvedic therapies, diet and life style modifications. We can use specific marmas to treat headache, digestive problems, insomnia and many other conditions that people may be suffering from now a days. The condition of marma is an important diagnostic tool in Ayurveda. At Marma sites toxins, stress and negative emotions get lodged and are held sometimes for years. Disease is reflected in pain, blockage or swelling in these areas. Marma therapy can be used along with all Ayurvedic therapies from detoxification to tonification and rejuvenation. The science of marma vidya is another extraordinary and dynamic Ayurvedic therapy that has tremendous value in health, disease, everyday living and in spiritual practice. Marma therapy is an important method of Ayurvedic treatment for the entire spectrum of health complaints major and minor.

7.) Vajikarana :

Vajikarana is almost necessary for the purpose of family welfare and a healthy social set up. Research has proved that the antidepressant effects of vajikarana drugs like mucuna pruriens, withania somnifera etc. are quite essential for a sound mental health on this background. The Ayurvedic concept of vajikarana bears much importance in family welfare.

In the modern stress-age human life is so much disturbed. The sad outcome is the infertility, S.T.D. or the dreadful infectious disease like AIDS. In this distressing situation ancient Indian Medical Science Ayurveda definitely gives a helping hand through its scientific approach.

8) Yoga therapy & Exercise:

Yoga is one of the major themes of Indian philosophy. The contents of the science of yoga appear to have been extensively dealt within Upanishads with further systematization in yoga-sutra of Patanjali, Bhagavat Gita and Yogavasistha. Ayurveda too accepts this view.

Ayurveda evolved as an empirical science and became a classical science with the introduction of more philosophical ideas and interpretations into it.

In the Modern stress age human life is full of various mental stress and strains. The end result is the increasing mental ill-health and psychosomatic disorders in the civilised world. In many disorders like coronary thrombosis, hypertension etc. mental stress is one of the main predisposing cause. Hence mental health care is a watchword of the modern world. And now after realizing the persistent and markedly increasing percentage of psychosomatic disorders. An integrated approach to the management of stress and stress induced disease on the basis of yoga therapy. Since last century yoga is emerging as a health care system too. Many yoga centres around the world the world are now offering treatment for various ailments, Government of India has officially declared 21 of June as a yoga day and included yoga as one of the indigenous system of medicine under the department of AYUSH. Ayurveda describes the role of yoga in the management of Manodosa i.e rajas and tamas. Yogavasistha has adequately explained the concept of health and disease. Concept of health according to yoga is framed as a holistic view of human existence.

Exercise: Although exercise alone is only moderately effective for weight loss¹⁸, the combination of dietary modification and exercise is the most effective approach for the treatment. Regular light exercise help the body to shape up, increase muscle strength, improve appetite and maintains health. It gives the body the ability to withstand exertion, fatigue and change in the climate such as fluctuations in temperature. It helps one relax and have sound sleep, and improves digestion.

9) Diet Therapy (Ahara)

Diet is given maximum importance in healthy as well as in diseased status. It is said in ancient



Indian literature that if dietetics is followed, medicine is not needed and if dietetics is not observed, even medicines are not useful. Hitahara is responsible for the happiness and formation of the body. As per Ayurveda food affects the mind also by causing either an increase or decrease in the three qualities of mind i.e. Satvaguna, Rajoguna and Tamoguna. Acharya Charaka emphasises on food which are wholesome to the body like Shaali, Mudga, Saindhava, Jangala Mamsa etc. They should be consumed regularly for the health maintenance¹⁹.

Thus the primary focus of diet therapy is to reduce overall calorie consumption. Examples include choosing smaller portion sizes, eating more fruits and vegetables, consuming more whole-grain cereals, selecting leaner cuts of meat and skimmed dairy products, reducing fried foods and other added fats and oils and drinking water instead of caloric beverages. Each individual is recommended to follow specific diet & activities based on his Prakriti, as Prakriti determines predisposition to diseases.

10) Drug therapy (Ausadhi)

In Ayurveda various plant based drugs are advocated for the prevention and management of obesity, diabetes and dyslipidemia, cancer, hypertension etc.

11) Kshara Karma (Caustic therapy):

Kshara is a caustic chemical, alkaline in nature obtained from the ashes of medicinal plants. Kshara is described as one among the Anushastrs or Upayantras²⁰. It is the superior most among the sharp and subsidiary instruments. It is versatile, because even such places that are difficult in approach by ordinary measures can be treated by Kshara karma. Kshara karma is more effective than the other modalities of treatment, because they can be administered both internally and externally. Kshara karma is useful as the substitute of surgical instruments, because they can be used safely on the patients who are afraid of surgery.

Kshara Sutra: The Kshara sutra is a parasurgical measure capable to perform excision slowly by virtue of its mechanical pressure and chemical action. Acharya Sushruta advised Kshara sutra in Nadivrana and Bhagandara.

Kshara sutra by its action i.e. chemical cauterization and mechanical strangulation of the blood vessel causes local gangrene of the pile mass tissue and ultimately resulting in falling out of the mass within 5-7 days. The healing of the resulting wound takes 10-15 days. It is very simple, safe and OPD procedure. There is no chance of recurrence and no surgical complications like stenosis, stricture or incontinence.

CONCLUSION:

Ayurveda is traditional healing system, it is profound system of mind-body medicine, natural living and yogic health. Ayurveda was the dominant medical paradigm in the Indian subcontinent until modern times and is still widely practiced throughout the world. It is necessary to have basic conceptions pertaining to Ayurveda and its approach for attaining health. There are definite reasons to believe that by understanding concepts of above all therapies of Ayurveda a new direction can be squeezed in the field of medical science.

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CONCEPT OF HRICCHULA AND ITS MANAGEMENT

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ABSTRACT :

Ayurveda, the Indian system of medicine, practiced with an aim of preservation and promotion of health and alleviation of diseases. Ayurveda has described Hricchula which is very common manifestation in present scenario. Sushruta has mentioned the Hricchula as a separate clinical entity in Gulma-pratishedha adhyaya. Almost all the Ayurvedic classics have explained the aetiological factor, pathogenesis, types and symptomatology of Hridaya roga. Hricchula is one of the most important feature of Vataja Hridaya roga. The several etiological factors are responsible for origin of Hricchula. In the pathogenesis of Hricchula, the major factor is vitiation of Vata dosha and rasa dhatu by various etiological factors. After obstructed by Rasa, Kapha and Pitta dosha, vitiated Vata dosha causes Hricchula of different nature and different intensity. The concept of Hricchula described in Ayurveda is very similar to Angina pectoris of modern medical science. In modern medicine Angina pectoris is described as a symptom complex rather than a disease and is an important manifestation of Coronary heart disease (CHD). The atheroma of coronary arteries is by far the most common cause of Angina pectoris. Hypertension, diabetes mellitus, hyperlipidemia, obesity, smoking are major risk factor for angina. The management of Hricchula (Angina pectoris) needs multi-dimensional approach as regimen of diet, exercise, smoking cessation, prevention of risk factor and drugs.

Key words: Hricchula, Hridaya roga, Angina pectoris, Coronary heart disease

INTRODUCTION:

Angina pectoris is a very serious condition that develops in people as they progress in age. It is the most common, chronic and life threatening illness all over world. In United state, where >12 million people have ischemic heart disease, >6 million persons have angina pectoris¹. A high fat and energy rich diet, smoking, sedentary life style and excessive stress are associated with the emergence of this disease. Due to urbanization and modernization in developing country, the prevalence of risk factors for angina pectoris is increasing very rapidly. Large increase in angina pectoris are projected worldwide and it is likely to become one of the most common cause of death throughout world in future.

Concept of Hricchula:

Acharya Sushruta has mentioned the Hricchula as a separate clinical entity in the chapter of Gulma-pratishedha². He has explained that Hricchula (cardiac pain) may be of two types, the one as a part of clinical symptomatology of Gulma and the other without that. In Hricchula, the bodily Vayu gets aggravated through the action of the deranged Pitta and Kapha doshas. This aggravated Vayu, combining with Rasa dhatu localised in the region of the heart which ultimately produce Shoola in the heart and give rise to difficulty in respiration (Shwasa)³. Charaka and Vagbhata has not described

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Hricchula separately, it suggests that they might have included it under Vataja Hridaya roga.

According to Sushruta, Hricchula (Cardiac pain) is the predominant feature of Vataja Hridroga³. Hricchula of different nature and different intensity have been mentioned in various ancient classics such as Ayamyate (drawing pain), Tudyate (pricking pain), Nirmathyate (churning pain), Diryate (tearing pain), Sphotayate (bursting pain), Patyate (splitting pain), Shulyate atyartha (severe pricking pain), Bhidyate (stabbing pain), Veshtanam (cardiac spasm), Uttam rujam (severe heart pain). Vagbhatta has incorporated the acute type of pain (Hricchula) in addition to other symptoms in Vataja hridaya roga⁴.

Etiology of Hricchula:

There is no description of etiology of Hricchula separately in ancient classics. The etiological factors of Hridaya roga can be considered as etiology of Hricchula also. The etiological factors of Hridroga, which are described in Ayurvedic classics are as follow^{4,5,6}:

- Excessive ingestion of food articles which are ushna, ruksha, tikshna, guru
- Intake of Viruddha ahara, adhyashana, ajirna, asatmya ahara
- Intake of food responsible for emaciation.
- Excessive intake of kashaya, tikta food articles,
- Suppression of the natural urges
- Excessive Vyayama, Vamana
- Excess of Virechana and Vasti
- Abhighata, Gadatichara
- Excessive Chinta, Bhaya, Trasa

Pathogenesis and features of Hricchula:

Sushruta has explained that Vata dosha getting obstructed by Kapha and Pitta present in the Hridaya and combining by Rasa dhatu gets localized in the Hridaya pradesha and produces severe pain which causes great difficulty in respiration. This condition is known as Hricchula and is caused due to Vata and Rasa.

Samprapti Ghataka⁷:

- Dosha : Tridosha, mainly Vata
- Dushya : Rasa
- Adhishtana : Hridaya
- Srotasa : Rasavaha, Pranavaha
- Srotodushti : Sanga

Angina Pectoris:

Angina Pectoris is the symptoms complex caused by transient myocardial ischemia and constitutes a clinical syndrome rather than a disease⁸. It may occur whenever there is an imbalance between myocardial oxygen supply and demand. This episodic clinical syndrome is due to transient myocardial ischemia. Coronary atheroma is the most common cause of angina pectoris, although the symptom may be a manifestation of other form of heart disease mainly aortic valve disease and hypertrophic cardiomyopathy. Factors influencing the myocardial oxygen supply and demand are heart rate, blood pressure, myocardial contractility, left ventricular hypertrophy, duration of diastole, coronary vasomotor tone, oxygenation⁸ etc.

In United state, where >12 million people have ischemic heart disease, >6 million persons have angina pectoris. Males constitute ~70% of all patients with angina pectoris and an even greater fraction of those less than 50 years of age. The typical patient with angina is a man older than 50 years or a woman older than 60 years of age.



Risk Factors for coronary heart disease⁹:

- Sex: male
- Family history of IHD
- Tobacco smoking
- Hyperlipidemia
- Diabetes mellitus
- Hypertension
- Obesity
- Physical inactivity
- Excessive stress
- Hypercalcemia, homocystenemia
- Cardiac transplantation
- Excessive alcohol, coffee

Type of Angina pectoris:

There are three types of clinical patterns of angina pectoris having some differences in their pathogenesis i.e.-

Stable or typical angina:

Stable angina is the most common pattern. It is characterized by attacks of chest pain following physical exertion or emotional excitement and is relieved by rest¹⁰. Stable angina symptoms usually last less than five minutes. Persons with stable angina usually have symptoms on a regular basis. The episodes occur in a pattern and are predictable. The pathogenesis is severe arteriosclerosis of coronary arteries which run epicardially to supply the myocardium. There is depression of ST segment in the ECG during the attack but there is no elevation of enzymes in the blood as there is no irreversible myocardial injury.

Prinzmetal's variant angina:

This type of angina is characterised by pain at rest and has no relationship with physical activity. The accurate pathogenesis of Prinzmetal's angina is unknown. It may occur due to sudden vasospasm of coronary artery

induced by coronary atherosclerosis or may be due to release of humoral vasoconstrictors. There is ST segment elevation in ECG.

Unstable or crescendo angina :

Unstable angina is most serious pattern of angina and its symptoms are unpredictable and often occur at rest. It is characterised by more frequent onset of pain of prolonged duration. So it is indicative of an impending myocardial infarction. In its pathogenesis multiple factors are involved which are: stenosing coronary atherosclerosis, complicated coronary plaques, platelet thrombi over atherosclerotic plaques and coronary vasospasm.

Clinical features:

The typical patient with angina complains of chest discomfort, usually described as heaviness, pressure, squeezing, smothering, or choking, and only rarely as frank pain. Angina, typically lasts 2–5 min, and can radiate to left shoulder and to both arms. It can also radiate to the back, interscapular region, root of the neck, jaw, teeth, and epigastrium. The episodes of angina are typically caused by exertion or emotion and are promptly relieved by rest. It may also occur at rest (unstable angina) and at night while patient is recumbent. The patient may be awakened at night due to typical chest discomfort and dyspnoea.

Physical Examination is often normal in patients with stable angina when they are asymptomatic, but it may reveal evidence of atherosclerotic disease at other sites. There may also be signs of anemia, thyroid disease and cigarette smoking. Palpation may reveal cardiac enlargement.

Investigations:

- ♦ ECG
- ♦ Stress testing



- ♦ Echocardiography
- ♦ Coronary arteriography

Treatment of Hricchula (Angina Pectoris)

Ayurvedic Management: Sushruta has mentioned that the therapeutic measures as described for the Hridaya roga should be carried out in this condition (Hricchula) also. Nidanaparivarjan i.e. elimination of the etiological factors which are responsible for the disease production, is the sole principle of treatment of any disease (S. U. 1/125). In Hricchula if the etiological factors are eliminated disease can be cured or controlled to an extent.

In Hridaya roga, Langhana is indicated by Pachan. Hridaya is considered as Kaphasthana, so Vamanakarma may be advice in Hridaya roga very carefully. Satvavajaya chikitsa (Psychotherapy) is very usefull in this condition.

The non-pharmacological measures such as proper diet regimen, physical exercise, practices of yoga (relaxative asana, pranayama, meditation), Achara Rasayana etc are helpful in management of Hridaya roga.

Drugs for Hridaya roga¹¹:

- a) Rasaushadhi: Hridyarnava rasa, Chintamani rasa, Nagarjunabhra rasa, Hridyeshvara rasa, Vishveshvara rasa, Jawaharamohara, Kasturi bhairava rasa, Shringa bhasma, Akika bhasma, Mukta pishti etc.
- b) Vati: Prabhakara vati, Hridroga vati, Shankara vati, Navaka Guggulu etc.
- c) Churna: Pushkarmula churna, Haritkyadi churna, Pippali churna, Pathadya churna etc.
- d) Kwatha: Pushkarmuladi kwatha, Haritkyadi kwatha, Katphaladi kwatha etc.
- e) Ghrita/Tail: Arjuna ghrita, Haritakyadi ghrita, Trayushanadi ghrita, Baladi ghrita,

Punarnavadi tail, Bilvadi tail, Mastusauviraka tail etc.

- f) Arishta: Arjunarishta, Parthadyarishta etc.
- g) Paka: Arjunakshira paka, Lashuna paka, Shalaparni paka etc.
- h) Single drugs: Arjuna, Rasona, Karveera, Guggulu, Ashvagandha, Pushkaramula, Mrigasringa, Brahmi, Hridya dashemani drugs (i.e. Amra, Amrataka, Lakucha, Karmarda, Vrikshamla, Amlavetasa, Kuvala, Badara, Dadima, Matulunga).

Modern Management: The main goals of treatment in angina pectoris should be treatment of risk factors, treatment of the symptoms, and lessen the possibility of future events, especially myocardial infarction. Hypertension, diabetes and hyperlipidemia must be treated with drugs if required. Obese patient must be asked to reduce weight. Regular exercise, low fat diet, smoking cessation is necessary.

Drug therapy for angina¹²:

- a) Nitrates: Glycerine trinitrate (GTN), Isosorbide dinitrate, Isosorbide mononitrate, Erythrityl tetranitrate, Pentaerythritol tetranitrate.
- b) Blockers : Propranolol, Metoprolol, Atenolol etc.
- c) Calcium channel blocker:
Phenyl alkylamine : Verapamil,
Benzothiazepine : Diltiazem
Dihydropyridines : Nifedipine, Felodipine, Amlodipine, Nitrendipine, Nimodipine, Lacidipine, Lercanidipine, Benidipine etc.
- d) Potassium channel opener: Nicorandil
- e) Others: Dipyridamol, Trimetazidine, Ranolazine, Oxyphedrine



f) Antiplatelet drugs: Aspirin, Clopidogrel etc.

Coronary revascularization

- Percutaneous coronary intervention
- Coronary artery bypass grafting

CONCLUSION:

Sushruta has mentioned the Hricchula as a separate clinical entity in the chapter of Gulma-pratishedha. In Hricchula, Vata dosha getting obstructed by Kapha and Pitta dosha and combining by Rasa dhatu gets localized in the Hridaya pradesha and produces severe pain. The treatment plan of Hricchula includes nidanaparivarjan, satvavajaya chikitsa, pathya ahara-vihara, practices of yoga (relaxative asana, pranayama, meditation), achara rasayana, hridya aushadhi etc. The concept of Hricchula described in Ayurveda is very similar to Angina pectoris of modern medical science. Treatment of risk factors related to angina such as hypertension, obesity, diabetes, dyslipidemia along with regular exercise, low fat diet, smoking cessation can prevent the occurrence of adverse coronary events. In addition drug therapy for angina and mechanical coronary revascularization are important treatment plan for the management of angina pectoris.

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A REVIEW ON IMPACT OF SOME MEDICINAL PLANTS USEFUL IN MANAGEMENT OF EKKUSHTHA W.S.R. TO PSORIASIS

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ABSTRACT :

Ekkushtha is a skin disorder described in Ayurveda. It has maximum resemblance with Psoriasis which is an autoimmune, genetically determined disorder, affecting about 1-2% of general population. It is a one of the most common dermatological problems of unknown etiology. It is a non infectious, chronic inflammatory disease of skin characterized by well defined erythematous plaques with silvery scales having chronic fluctuatory course affecting both the sex and the different age groups. In Ayurveda, the medicinal plants are the biggest source of medicines and these can cure as well as prevent every type of diseases. The plants used for control and care of psoriasis include Aloe vera, Capsicum annum, Cassia tora, Centella asiatica, Nigella sativa, Wrightia tinctoria, Psoralea corylifolia, Acacia catechu, Achyranthus aspera, Moringa oleifera and a lot more.

Key Words: Ekkushtha, Psoriasis, Skin disorder, Aloe vera, Cassia tora

INTRODUCTION :

Ayurveda is a holistic system that uses a constitutional model. Its aim is to provide guidance regarding food and life style so that healthy people can stay healthy and those with health challenges can improve their health. Ayurveda is mainly a bio-energetic and bio-spiritual system. Ayurveda has dealt with the disease in all its aspects elaborately.

In Ayurveda, all skin diseases have been described under the umbrella of kushtha. They are further classified into Mahakushtha and Kshudra kushtha. Acharyas have described that all Kushthas have Tridoshic involvement but the type of Kushtha depends on the predominance of particular doshas. Acharya Charak has described the involvement of Vata-Kapha in Ekkushtha. In this review, Ekkushtha is compared with psoriasis due to its maximum resemblance with it.

The disease is described in Charak Samhita after Prameha which indicates that Kushtha is a Santarpanajanya Vyadhi. It is also said that – "Kushtha Dirgharoganam" which clearly shows the chronic nature of the disease¹.

Kushtha is produced invariably by the vitiation of the seven factors i.e. 3 Doshas and 4 Dushyas. But different types of pain, colour, shape, specific manifestation etc. are found in Kushtha because of Anshanshakalpana of the Doshas. According to Charaka, Kushthas are in fact of innumerable types, but for systemic study they are classified into two major groups 7 Maha Kushtha and 11 Kshudra Kushtha.

In Ayurveda, Ekkushtha is characterized by absence of perspiration in the affected skin, engagement of larger areas and its resemblance with the skin of fish². The Psoriasis of modern time is one of the most intriguing and perplexing disorder of skin. It is a chronic relapsing diseases

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of unknown etiology characterized by sharply defined dry scaling erythematous patches, covered with adherent silvery white scales. The eruption is usually symmetrical and most commonly affects elbows, knees, scalp, nails and the sacral regions³. The exact etiology of this disease is still unknown. It tends to run in families and is precipitated by climate, Streptococcal infections etc. Psoriasis appears to be largely a disorder of keratinisation. Males and females are equally predisposed and all age groups are affected. Psychological stress is emphasized as one of the major triggering factor in the exacerbation of the disease⁴. Remissions and exacerbations are the rule in most of the psoriatic cases but some patient remains relatively unchanged for years after the onset of the disease.

Impact of Ayurvedic medicinal plants

Psoriasis is incurable in modern system of medicines. Hence it is the need of time to find out safe and effective medicine for Psoriasis and here the role of Ayurveda comes. There are many research works have been done to re-establish and prove the treatment described in Ayurvedic texts in different directions. The unique treatment modality of Ayurveda provides long lasting results and a better life to patients through its three basic principles of treatment i.e. Shodhana, Shamana and Nidana parivarjana⁵. Ayurveda, the science of life is time tested science. It's all principles are universally applicable to each individual to have a long healthy life. In this connection, the light on some particular medicinal plants has been thrown to remark their usefulness in this disorder. These are

Aloe vera

Its active agents have shown considerable analgesic, antipruritic, wound healing and anti-inflammatory properties, thus justifying

consideration of Aloe vera as an effective remedy for the treatment of psoriasis. It is a popular plant used in cosmetic care and first aid products in case of thermal injuries. Aloe contains anthraquinones, steroids, saponins, mucopolysaccharides and salicylic acid. Syed and colleagues (1996) conducted a double - blind, placebo – controlled study on 60 patients with slight to moderate plaque type psoriasis having average 8.5 year duration of their disease. Patients were administered topical Aloe vera extract cream or vehicle placebo three times a day without occlusion for 4 weeks to their psoriatic plaques. The aloe group showed significantly higher rates of clearing the psoriatic plaques in almost all the patients. Anthraquinone and acemannan, the main active compounds in Aloe vera, have antibacterial activity against Staphylococcus and Streptococcus species and may provide a rationale for their therapeutic efficacy in psoriasis. In addition, salicylic acid, a component of Aloe vera, is a keratolytic and would contribute to its reported efficacy in the desquamation of psoriatic plaques⁶⁻¹¹.

Cassia tora

It has been traditionally used for the treatment of psoriasis and other skin diseases^{12,13}. Cassia tora leaves are enriched in glycosides and also contain aloemodin, which may be beneficial for the skin diseases¹⁴⁻¹⁷.

Centella asiatica

It is effective in improving treatment of small wounds, hypertrophic wounds as well as burns, psoriasis and scleroderma¹⁸⁻²⁰.

Capsicum annum

The herb contains a substance known as capsaicin, which relieves pain and itching associated with psoriasis. Paste of dry leaves applied externally effective in plaque Psoriasis²¹⁻²³.



Annona squamosa

Chanachai et al (2009) reported the plant *Annona squamosa*, *Alpinia galanga* and *Curcuma longa* for their anti-psoriatic effect²⁴.

Nigella sativa

Its seeds (commonly called black cumin) are used traditionally for psoriasis tropicus with general pain and eruption of patches²⁵.

Crotalaria juncea

It is popularly known as sunn hemp and is used for its food, fibre and medicinal values by the ethnic communities. *C. juncea* is used as blood purifier, abortifacient, astringent, demulcent, emetic, purgative and in the treatment of anaemia, impetigo, menorrhagia and psoriasis²⁶.

Wrightia tinctoria

Dhanabal et al., (2012) reported the hydroalcoholic extract of *Wrightia tinctoria* leaves showed significant antipsoriatic effect on mouse tail test model, as compared to isotretinoin acid as standard. They found the extract to produce significant orthokeratosis, prominent antioxidant activity in DPPH, Nitric oxide and hydrogen peroxide scavenging assay²⁷.

Smilax china

Vijaylakshmi et al (2012) reported the anti-psoriatic activity of *Smilax china*. They isolated the flavonoid quercetin from the methanolic extract of the rhizome. They performed anti-psoriatic effect on HaCaT cell lines. They reported a significant reduction of epidermal thickness, with reduction of leucocyte migration. This was the first report of flavonoid quercetin to have an anti-psoriatic activity²⁸.

Urginea indica

It has also been used for treating psoriasis²⁹.

Some other plants having anti-psoriatic activity

Acharya Charak has mentioned Chitraka (*Plumbago zeylanica* Linn), Punarnava (*Boerhaavia diffusa* Linn), Apamarga (*Achyranthes aspera* Linn), Shobhanjana (*Moringa oleifera* Linn), Guduchi (*Tinospora cordifolia* (Willd.) Miers), Devdaaru (*Cedrus deodara* (Roxb.) Loud), Khadir (*Acacia catechu* (Linn.f.) Willd), Flower of Dhav (*Anogeissus latifolia* Wall), Trivrit (*Operculina turpethum* Silva Manso), Danti (*Baliospermum montanum* Muell.-Arg.), Brihat Ela (*Amomum subulatum* Roxb.), Daruharidra (*Berberis aristata* DC) etc. which are useful in cases of psoriasis³⁰. Subbaiah et al 2012 reported some traditional local medicinal plants of Kurnool district of Andhra Pradesh (India) for their potential anti-psoriatic affect. The documented plants include *Olas scandens*, *Pedalium murex*, *Phyllanthus reticulatus*, *Rhinacanthus nasutus*, *Rhus mysorensis*, *Solanum pubescens*, *Camptotheca accuminata*, *Indigo naturalis* etc. These plants need more focus for investigations of their Anti-psoriatic activity.

CONCLUSION :

Looking at the impact of psoriasis in society, it is necessary to find out effective, safe and cheap medication in Ayurveda. The medicines derived from herbal sources are currently getting more reliability due to their safety and easy availability. The synthetic drugs used to treat psoriasis have side effects and it has been seen that some of the synthetic drugs have psoriasis as a side effect. In that case, the herbal natural remedy is the obvious alternative, which is safe and equally effective as the synthetic drug. Several medicinal plants have been highlighted for this purpose in this article on the basis of traditional knowledge and reports of different researchers. Thousands of texts and monograph on herbal remedies exists. But most of the information are outside current



databases and remains unavailable. An attempt must be made to incorporate chemical constituents isolated from different plants responsible for anti-psoriatic activity and their possible mechanism of actions. The scientific validation is good and the history of clinical use is even better. The basic research into characterizing these plant products and compounds in terms of standardized content and potential toxicity is needed to allow safe and replicable research to document clinical efficacy. Preliminary anti-psoriatic activity studies should be carried out on crude extracts of traditionally used and medicinally promising plants.

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APPLIED ASPECTS OF PRANAVAHA SROTAS-A REVIEW

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ABSTRACT :

Background: The act of respiration is the physiological function of prana vata. The word pranavaha srotas means a channel or path through which the external air enters into the body to sustain life. Right from birth to death swasochhvasa kriya is the sign of life.

Aim and Object: To study the applied aspect of pranavaha srotas.

Material and method: Detail description regarding pranavaha srotas from ancient ayurvedic literatures has been taken into consideration. Ayurvedic descriptions have been correlated with modern medicine and physiology.

Result and Discussion: Srotas is the path which helps in transportation of substances in body. Acharya Charaka has said that channels carry the transformed dhatus to different destinations through their network to nourish the cells and tissues. According to Charaka and Bhavaprakas the srotasas are innumerable. (Ch.Vi. 5/3, B.P. Pu.3/272). Acharya Charak has described hridaya and mahasrotas where as Acharya Sushruta stated hridaya and rasavahi dhamani as mool(root) of pranavaha srotas and pranavaha srotas is described first among srotasas. (Ch.Vi.5/7, Su.Sha.9/12) Improper dietetics and activities aggravate doshas and vitiate dhatus and causes pranavaha srotodushti and produces symptoms like prolonged, obstructed, agitated, frequent respiration and respiration associated with sound and pain.(Ch.Vi. 5/23,7)

Conclusion: Prana vaha srotas is a very important srotas in the human body as it is in charge of taking prana (the breath or life-force) into the body. The functions of pranavaha srotas can mostly be correlated with the respiratory system and also with other systems like cardiovascular system (transportation of pran Vayu i.e. O₂) and nervous system (regulation of respiration).

Background: In Ayurveda, the concept of srotas has been mentioned very specifically. The word srotas derived from 'sru' gatau dhatu, which means movement. Body is composed of numerous srotas, which have a significant role in the maintenance of the equilibrium of body elements. Their continuous and proper functioning is the factual cause for healthy state of the body; therefore, any obstruction in this process leads to disease. The act of respiration is the physiological function of prana vata. According to Acharya Sharangadhara prana vata is important for providing ambara piyusha (oxygen) to body.¹ The word pranavaha srotas means a channel or path through which the external air enters into the body to sustain life. Right from birth to death swasochhvasa kriya is the sign of life. The prana vayu is inspired through pranavaha srotas during inspiration. The inhaled Prana Vayu carries out the function like Prinana, Jivana and stimulates jatharanala (stimulation of digestive fire and oxidation process).² Air, water and food are nutrients present in external environment with which human body try to

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maintain homeostasis. Oxygen from air is inhaled in lungs and carbon dioxide is exhaled out which is called as respiration or shwasan. Process of respiration is defined by Hemadri (commentator of Ashtanga Hridaya) very precisely. According to Ayurveda respiration is composed of nishwas and uchshwas (inspiration and expiration respectively)

Aim and Object:

To study the applied aspect of pranavaha srotas and analytical study of pranavaha srotas as described by various literatures of ayurveda and its comparative study with respiratory system and cardiovascular system as described in modern medical literatures.

Material and method:

Detail description regarding pranavaha srotas from ancient ayurvedic literatures has been taken into consideration. Ayurvedic descriptions have been correlated with modern medicine and physiology.

Result and Discussion:

Srotas are described by Maharshi Charaka and Sushruta elaborately. Srotas is the path which helps in transportation of substances in body. The srotas may be defined as pathways, transmission and transportation system existing at the gross and cellular levels. Acharya Charaka has said that channels carry the transformed dhatus to different destinations through their network to nourish the cells and tissues.³ According to Sushruta eleven pairs and according to Charak thirteen srotas are present in human body⁴, out of which the pranavaha srotas is described by both the acharyas. Again According to Charaka and Bhavaprakas the srotas are innumerable.⁵ Vata, pitta and kapha moves inside the srotas to perform their normal functions at different places. Similarly things which are beyond perception of

sensory organs like mind etc, moves inside the srotas. Srotas is named according to its main content and the substance it carries and not according to its functions of organs. Pranavaha srotas carries mainly prana vayu. Almost all the ancient authorities opines that the head or moordha being the main seat of prana. In case of pranavaha srotas there is differences of opinion regarding moolasthanas. Acharya Charak has described hridaya and mahasrotas where as Acharya Sushruta stated hridaya and rasavahi dhamani as mool (root) of pranavaha srotas and pranavaha srotas is described first among srotas.⁶ The pranavaha srotas described in Sushrut Samhita is found to be appropriate because heart and lungs are inter connected by blood vessels (rasavahi dhamani) and influence each other in term of anatomy, physiology and pathology. As the moolasthanas is, the important area for the functioning of any srotas, by treating the moolasthanas the disease related to this specific Srotas will be cured. The cardiac cycle of heart and respiratory centre of brain ultimately governs the process of respiration. In case of pranavaha srotas, moolasthanas is the place from where it is being distributed and regulated. In a human body, nasa or nose is said to be the gateway of head and as such, it can be assumed that pranavaha srotas is a structure made up by various organs right from the tip of nasa up to the mahasrotas. The mahasrotas is associated with puppusa (lung) the trachea, its two branches, bronchi and their further branching into bronchioles to the alveoli; all these structures can included under mahasrotas.

The description of respiratory problems are mentioned in abnormalities of pranavaha srotas. So, in order to understand the complete respiratory system physiology one should also get through the description regarding the function



of prana vata and pranavaha srotas. Healthy srotas perform their normal functions as a result body is free from diseases and unhealthy srotas become root cause for the development of pathogenesis.⁷ Improper dietetics and activities aggravate doshas and vitiate dhatus and causes pranavaha srotodushti. Depletion of dhatus, suppression of natural urges, intake of rukshadi ahara and vihara, heavy exercises during hunger and other factors causes vitiation of pranavaha srotas.⁸ The environmental pollutions and food habits disturbs the swasochhvasa kriya, that may lead to various diseases like swasa, kasa etc. Pranavaha srotodushti produces symptoms like prolonged, obstructed, agitated, frequent respiration and respiration associated with sound and pain.⁹ These are the clinical features of various respiratory diseases like as shwasa, kasa, hikka, rajayakshma etc. Acarya Charaka while explaining pranavaha srotodushti lakshanas, all lakshanas clearly shows the functions of lung, hence indirect reference to involvement of lung in the pranavaha srotas is there. Further, he told that pranavaha sroto vyadhis should be treated similar to swasa roga.¹⁰ Most of the recent authors have correlated respiratory system with pranavaha srotas on the basis of features of pranavaha srotodushti with the features of respiratory system diseases. Respiration and circulation are interdependent phenomenon and there is deep relation of respiratory system with cardiovascular system. In many of the cardiac diseases it is observed that swasa and kasa are common cardinal features, which can be regarded as paratantra swasa or kasa. There are many of cardiac disorders resulting from pranavaha sroto vyadhis which are placed under swasa particularly mahaswasa, urdwaswasa and chhinnaswasa. Two facts are very clear about pranavaha srotas in ayurveda. The first and

foremost fact that all the scholars accepted the heart as a root of pranavaha srotas. The second important fact that symptoms mentioned in vitiation of this srotas are related to different types of breathing disorders which shows that it is related with vital breath and can be accepted as respiratory system. There are ten pranayatanas are described in Ayurveda¹¹, out of which blood is of greater significance. Prana vayu (i.e. O₂) and nutrients are carried by blood and supply to all body tissues. Vital breath and blood circulation are complementary to each other and heart plays significant role in both the functions either directly or indirectly.

CONCLUSION:

The functions of pranavaha srotas can mostly be correlated with the respiratory system and also with other systems like cardiovascular system (for transportation of pran vayu i.e. O₂) and nervous system (for regulation of respiration). While describing the pranavaha srotas acharya Charaka mainly emphasizes respiratory system whereas maharshi Sushruta emphasizes cardio-respiratory system. Regarding moolsthana of pranavaha srotas both the view of Charaka and Sushruta are complementary to each other as Charaka described it mainly in medicinal concept and Sushruta described it mainly in surgical aspect. Prana vaha srotas is a very important srotas in the human body as it is in charge of taking prana (the breath or life-force) into the body, therefore, pranavaha srotas is the most important factor for the longevity.

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PHYSICO-MECHANICAL PROPERTIES OF GB STONE

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ABSTRACT :

Ayurveda has considered the man as a part of a much larger universe in which he lives. As rocks mechanic and behaviour are studied by scholars of IT, here we planned with the help of engineering team to assess the physico-mechanical properties of gall stones using some modification and applying newer technology for better understanding of the nucleation process of Cholelithiasis.

Key Words : Streak, Mohr's hardness scale, Cleavage, Cholelithiasis.

Ayurveda has considered the man as a part of a much larger universe in which he lives, in fact he has been described as an epitome of the much larger universe. In the research work it was thought as concept of rock formation in the nature, so is the mutrashmari formed in mutrashaya and similarly pittashmari is formed in pittashaya.

Aim -Estimation of physico-mechanical characteristics of gallstones.

Method- Total fifteen samples of GB stones were collected randomly from different patients of each of three groups. The collection of the GB stones for this study was done during Cholecystectomy in Shalya OT of IMS, BHU and all the tests were carried out at the Center of Advanced study on Rock Mechanics and Ground control and Geo environment, Dept. of Mining Engineering, Institute of Technology, Banaras Hindu University.

The collected stones were classified on the basis of their following physical and mechanical characteristics.

1. Colour – Gall stones show a great variety of colours. The colour of a substance is the appearance in light and depends on the composition and structure of the substance. In Gall stone the colour may be either white, yellowish, greyish, brownish, black, blackish etc. The colour was as observed by naked eye appearance.
2. Lustre – It is the way in which the gall stone reflects light from its surface and may be called the shine of the material. It varies with composition and reflecting power of the material. It varies with composition and reflecting power of the mineral surface, e.g. pearly, earthy etc.
3. Streak - It is defined as the color of the powder of the mineral. It was found to be significantly constant for any given stone and forms the important distinguishing property. Streak was obtained by rubbing the stone on porcelain plate and the powder generated due to rubbing was observed.
4. Hardness – It is defined as the resistance which a gallstone offers to scratching, abrasion or indentation and is an indication of the chemical composition and structural constitution of the gall stone. Hardness of a gallstone may be determined differently by noting the principles of scratching or

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indentation. The Mohr's scale of hardness determination is based on the first principle and is widely used. The scale comprising ten minerals is arranged in the order of ascending hardness. The softest is assigned a value of 1 and the hardest a value of 10. Hardness of

any stone is between these two limits. The hardness of the unknown mineral is lower than the number which scratches it and higher than the immediately preceding number which does not scratch it.

Table below showing Mohr's hardness scale

S.No	Name of minerals	Chemical	Hardness
1.	Talc	Hydrous Silicate	1
2.	Gypsum	CaSO ₄ (H ₂ O)	2
3.	Calcite	CaCO ₃	3
4.	Flourite	CaF ₂	4
5.	Apatite	Ca ₅ [PO ₄] ₃ F	5
6.	Feldspar	KAlSi ₃ O ₈	6
7.	Quartz	SiO ₂	7
8.	Topaz	Al ₂ [SiO ₄](F,OH) ₂	8
9.	Corandum	Al ₂ O ₃	9
10.	Diamond	C	10

5. Cleavage – It is defined as the tendency of a crystallized stone to break along certain definite planes yielding more or less smooth surfaces. In other words, cleavage planes are the plane of easiest fracture and hence minimum cohesion in the mineral as stone. It is related to the inherent nature of the stone. Some minerals break only in one direction other breaks in two or more directions. Cleavage can be quantified by the numerical values 1,2,3 etc.
6. Fracture – The appearance of the broken surface of a stone is expressed by the term fracture or in other words, how the mineral breaks. It is essential that fracture is studied in a direction other than that of cleavage.

Common type of fractures are even, uneven, conchoidal, sub- conchoidal, brittle, granular, unknown or none etc.

7. Structures – The stone may sometime show a definite and characteristic arrangement in its outer appearance or physical look. The structures observed in the gallbladder stone were generally rectangular, rounded, triangular etc.
8. Form – Minerals often occurs in characteristic body forms or specific physical shapes. The physical make up of a mineral is expressed by the term form and is often helpful in identifying a particular mineral. Forms may be of specific shapes like hexagonal or shapeless lumps like massive.



9. Density – The density of a substance is a fundamental property of great significance and is defined as the mass per unit volume of the substance. It is expressed in gm/cc. The

density of material depend primarily on composition and atomic radii.

10. Margin – These are edges or border of a gall stone. It is described as sharp, smooth etc.

Table : Showing physico-mechanical characteristics of gall stones

S. No.	Properties									
	Colour	Streak	Luster	Hardness	Cleavage	Fracture	Structure	Form	Density (gm/cc)	Margin
1	Yellowish white	White	Earthy	1	Nil	Uneven	Rectangular	Massive	0.875	Smooth
2	Yellowish black	Yellow	Earthy	2	Nil	Uneven	Triangular	Massive	0.863	Smooth
3	Blackish Yellow	Yellow	Earthy	2	Nil	Uneven	Pyramidal	Massive	0.866	Smooth
4	Yellow	Yellow	Pearly	1	Nil	Even	Quadrangular	Massive	0.9	Sharp
5	Yellowish white	White	Earthy	1	Nil	Uneven	Rounded	Massive	1.05	Smooth
6	Brownish yellow	Yellow	Earthy	2	Nil	Uneven	Rounded	Massive	1.26	Smooth
7	Yellow	Yellow	Pearly	2	Nil	Even	Triangular	Massive	1.10	Sharp
8	Brownish Yellow	Yellow	Earthy	2	Nil	Uneven	Pyramidal	Massive	0.91	Smooth
9	Yellowish black	Yellow	Earthy	2	Nil	Uneven	Triangular	Massive	0.862	Smooth
10	Yellowish White	White	Pearly	1	Nil	Even	Rounded	Massive	1.03	Sharp
11	Yellowish brown	Brown	Earthy	2	Nil	Uneven	Pyramidal	Massive	1.18	Smooth
12	Brownish Yellow	Brown	Earthy	2	Nil	Uneven	Quadrangular	Massive	0.877	Smooth
13	Blackish brown	Black	Earthy	2	Nil	Uneven	Triangular	Massive	0.878	Smooth
14	Yellow	Yellow	Pearly	1	Nil	Uneven	Rounded	Massive	1.10	Sharp
15	Yellowish white	Yellow	Pearly	1	Nil	Even	Rounded	Massive	1.09	Sharp

S. No. = Sample Number



Colour- The colour of GB stones were ranging from yellowish white in 4, yellowish black in 2, blackish yellow in 1, yellow in 3, blackish yellow in 1, brownish yellow in 3, blackish brown in 1 sample.

Streak- It was yellow in 9 stones, brown in 2, black in 1 and white in 3 specimens.

Luster – It was earthy in 10 whereas pearly in 5 gall stone samples.

Hardness – The hardness was ranging between 1 to 2 in all the samples.

Cleavage- This was nil in all the samples.

Fracture – The fracture was uneven in the 11 and even in 4 specimens.

Structure – The samples showed various structures like rectangular, triangular, rounded etc.

Form – All the samples were of massive forms.

Density- This varied between 0.862 to 1.26 gm/cc in the samples.

Margin - Margins were sharp in 5 and smooth in 10 gallstones.

CONCLUSION –

The bio- physical parameters of GB stone were analyzed for the physical properties like colour, streak, luster, density etc. to understand strength of stones as well as to know about its compactness, the density of the GB stone usually varied between 0.862 to 1.26 gm/cc whereas hardness between 1-2 in Mohr's scale and cleavage was nil in all the samples, by knowing these values it would be helpful to recognize the strength of lithotriptic factors which will dissolve these stones or could break nucleating chains by interrupting in between the process of lithiasis. Thus, these physico-mechanical characteristics of gallstones helped in better understanding of mechanism of cholelithiasis.

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