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"A Clinical Study to Evaluate the Efficacy of Vasti karma in Management of Grahani Roga"

Thesis submitted for partial fulfillment of the requirement for the degree of

M.D. (Ay.) PANCHAKARMA

By

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CERTIFICATE

This is to certify that the present thesis entitled "*A Clinical Study to Evaluate the Efficacy of Vasti Karma in the Management of Grahani Roga*" has been completed by the candidate under our close supervision and guidance. All the findings reported in this thesis have been checked by us from time to time. This is an original contribution and is a definite advancement over the existing knowledge on the subject.

We are fully satisfied with the work of *Dr. Suneeta Singh*, which is being submitted by her as a partial fulfillment for the degree of **DOCTOR OF MEDICINE (Ay.)** in **Panchakarma.**

We recommend this thesis to be submitted to the adjudicator.

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ABBREVIATIONS

A. H.	- Astanga Hridaya
A. H. Ni.	- Astanga Hridaya Nidanasthana
A. H. Su.	- Astanga Hridaya Sutrasthana
A. H. U.	- Astanga Hridaya Uttartantra
A. Sm.	- Astanga Samgraha
A. Sm. Su.	- Astanga Samgraha Sutrasthana
A. Sm. U.	- Astanga Samgraha Uttartantra
B. R.	- Bhaishajya Ratnavali
Bh. Pr.	- Bhava Prakasha
Ch. Chi.	- Charaka Samhita Chikitsasthana
Ch. Sha.	- Charaka Samhita Sharirasthana
Ch. Sid.	- Charaka Samhita Siddhisthana
Ch. Su.	- Charaka Samhita Sutrasthana
Ch. Vi.	- Charaka Samhita Vimanasthana
Ha. Sm.	- Harita Samhita
Su. Kal.	- Sushruta Samhita Kalpasthana
Su. Sha.	- Sushruta Samhita Sharirasthana
Su. Su.	- Sushruta Samhita Sutrasthana
Su. U.	- Sushruta Samhita Uttaratantra
Y. R.	- Yoga Ratnakara

Introduction

Nobody can go back and start a new beginning, but anyone can start today and make a new ending.
(Maria Robinson)

INTRODUCTION

In modern era the life style disorders are increasing day by day. Due to vitiated and irregular consumption of food, gastro-intestinal problems are most common in society. Ayurveda

considers that the dysfunction of Agni is responsible for undigested food which is responsible for various functional and structural defects in the gastro-intestinal tract. By taking a look on the sign and symptom of Grahani, somehow it resembles to I.B.S, colitis, Crohn's disease etc.

In Grahani Roga, due to *Dushit jathragni* the digestions of food do not occur properly. Undigested food forms a vitiated material called *"Ama*", which is responsible for producing various disorders. This disturbs the normal flora of GI tract and weakens the muscles and acid fluid configuration of GI tract. So *Prasad bhaga* of food is not form properly so nourishment of whole body does not occur.

In today's practice, one can come across good number of patients suffering from the complaints related to G.I.T. These complaints vary from loss of appetite to chronic abdominal pain, irregular bowel habit, incomplete evacuation, chronic flatulence, Constipation, diarrheas and Failure to thrive etc. These factors affecting peoples will not only disturb the growth & development of physical health of it but its activities, social behavior, immunity & concentration power too. If above mentioned problems are remain untreated or unnoticed, they may turn in to its related complications, According to the survey conducted by UN almost 500 million people in this world are suffering from G.I. disorders. According to the available evidence the condition is even worst in India.

A lot of research works have covered the diseases of *Annavaha srotas* like that of *Pravahika, Chardi, Krimi, Atisara* etc.; but no consideration was given to the aspect of such problems in a chronic stage or such complaints with nature of reoccurrence. This has very high percentage of patients visiting O.P.D. now days. So, considering all the above mentioned factors, it is thought to be the need of an hour to work in this regard. For this what has to be done, is to go back to the basics. Concentrating on the basic principles, few scattered references and physiology of digestion, a concept can be formulated covering all above points under heading of Grahani Roga. This is accepted and well supported by classics too.

In Ayurveda, Acharya Charaka has given a vivid description about Grahani Roga which is described later in relevant contexts. Acharya Sushruta and Vagbhata, also has thrown a very good light on Grahani Roga. *Grahani* is considered under *Ashta Maharoga*- very difficult to treat.

In Grahani Roga, although *Rogadhisthan* is Grahani but dysfunction occurs in whole G.I. tract. In Grahani Roga, due to vitiated *Samana Vayu, Kledaka Kapha and Dushit jathragni* the digestion of food not occur properly, so form undigested materials, which occur like toxins for whole body. These materials also distorted the normal flora of GI tract. So we need such a therapy which provides not only purificatory effect but therapeutic and healing process also, for treatment of Grahani Roga. *Vasti karma* is indicated in the management of *Grahan*i. It helps in improving the function of gut and also heals it. Disorders like I.B.S. colitis, Crohn's disease somehow resemble the symptoms of *Grahani*. So keeping this view in mind the work has been taken to evaluate the effect of *Vasti karma* in respect of the treatment of Grahani Roga. In Ayurveda, there are much mare curative and preventive measures, by which one can get rid of itself and its hazardous effect. *Vasti Karma* is the one of these Ayurvedic measures.

In Ayurveda chikitsa, the role of *Panchakarma* and especially *Vasti* is having very important place in the treatment of many disorders.

तस्माच्चिकित्सार्धमिति ब्रुवन्ति सर्वां चिकित्सामपि वस्तिमके (Ch.sidh.1/39).

Vasti has multidimensional utility; it can fulfil the purpose of elimination, palliation, nourishment and rejuvenation. *Vasti* fulfil all the purposes which are wanted in Grahani Roga, but previously very few works on *Vasti karma* (most commonly pichcha vasti) have been done in management of Grahani Roga, so there is need to do more research in respect of Panchakarma *therapy* in different directions. No work has been done to evaluate the efficacy of *Vasti* Karma (*Vidangadi Taila Dhanyapanchak Kwatha Vasti*) in management of this disease.

These are the reasons that, we have chosen the entire way of Ayurvedic treatment in the present study regarding Grahani Roga.

The previous works done on Vasti Chikitsa in Grahani Raga:

1. A study of role of Vasti chikitsa in Vatika Grahani. Ediriveera ERHS, 1993, Banaras Hindu University, Varanasi.
2. Studies on Vataja Grahani & its management with Pichchha-Vasti. Gudadhe Sonal, 2000.
3. A Clinical evaluation of Abhayadi choorna with Sanshodhana karma (Sneh-Vasti) in cases of Grahani Roga. Singh V.K., 2002,
4. Clinical Study on Grahani Roga w.s.r. to its management with Panchamrit parpati and Vasti. Patil Rajendra 2003

AIM AND OBJECTIVES:

- To evaluate the effect of Vasti karma in management of Grahani Roga.
- To study Grahani Roga with reference to I.B.S. and other disorders from Ayurveda and Modern System of medicine.

MATERIALS AND METHOD-

For present study 30 cases of Grahani Roga, after a detailed preliminary screening, are selected for present work. The patients are administered with *Yoga Vasti* prepared with *Dhanyapanchak kwath as Nirooh Vasti & Vidangadi tail as Anuvasana Vasti*, so that we can contribute a safe and effective ayurvedic management for Grahani Roga.

The patients are selected randomly from O.P.D. of Rishikul Govt. P.G. Ayurvedic College & Hospital, Haridwar (U.K.). A 32 days complete course of Vasti karma is consist 8 days *Vasti karma* and after 16 days interval the next course of 8 days of Vasti is performed–

Day 1 to 8 - Vasti

Day 9 to 24 - Parihaar kaal

Day 25 to 32 – Vasti

The follow ups and assessment of the patients are done on 30days and 60 days after the complete *Vasti karma*.

DESIGN OF THE STUDY: To study in detail and for the purpose of convenience the plan of study was divided into following sections:

1. The first part – (Conceptual study)-:

Various Ayurvedic and Modern textbooks, journals, previous and ongoing research works related with the subject are thoroughly screened analyzed, summarized and referred for this part. Conceptual study is mainly divided into following parts.

(1) Anatomical and Physiological review of Grahani

(2) Disease Review of Grahani Roga

- **Ayurvedic Review**
- **Modern Review**

(3) Vasti Review

The study deals with the historical glimpse. It is obvious that "*Grahani*" is well described in Ayurvedic text .Any description regarding *Grahani* in various Ayurvedic literatures is mentioned

here in this part. List of previous works on Grahani Roga is also presented in it. The study deals with the literary aspect of Grahani Roga from Ayurvedic point of view as well as modern point of view.

3. The Second part – (Drug Review)-: Drug review deals with detail description of ingredients of the trail drugs. The details of the drugs are mentioned with their properties and pharmacodynamics.

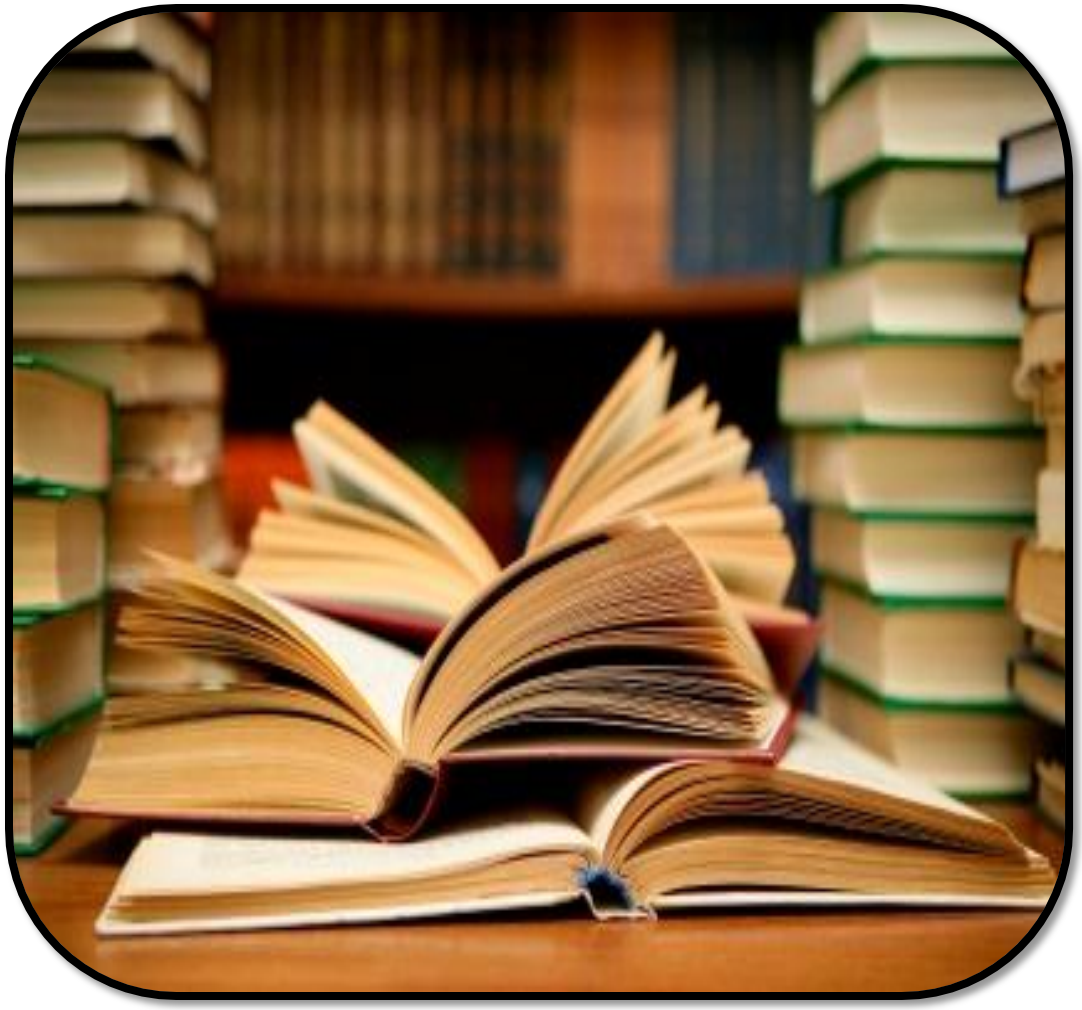
4. The Third part – (Clinical Study)-: Clinical study deals with need and plan of study, bio statistical reports, clinical observations and results.

i. Patients suffering from Grahani Roga were selected from OPD of Rishikul Ay. Hospital of Haridwar.
ii. Drugs used for clinical trial as Yoga Vasti – *Dhanyapanchak kwath & Vidangadi tail*.
iii. A special research Proforma was designed for the present study.
iv. A suitable scoring pattern was adopted for the assessment of clinical trial

5. The Fourth part – (Discussion)-: In this part an illustrative attempt has been made to point out hidden facts in conceptual and clinical contrive.

6. The Fifth part – (Summary & Conclusion)-: This last chapter summarizes the extensive profile of this work and provides conclusions which are presented at the end of study. Lastly this thesis is adjunct with shloka, bibliography and research proforma.

Conceptual study



"The worth of a book is to be measured by what you can carry away from it."
(James Bryce)

CONCEPTUAL STUDY

ANATOMICAL & PHYSIOLOGICAL ASPECT OF GRAHANI

Etymology of the term Grahani

The derivation of the term Grahani has been from the *Dhatu Graha* which has different meanings like,

xzg& bfr xzg.ks] xzkg;fr] xzgh;rs

vknkus

xzkg;fr] xzgfr

miknkus

vkdzers

शब्दकल्पद्रुम ¼ f}fr;ks Òkx% ½

The verb *Grahane, Gruhnati, Gruhnite,* or *Grahayati* and *Grahati,* all these verbs, which have formed from the above cited, *GRAHA* in general, means 'to catch' or 'to get' or 'to hold'. The verbs like *Adane* and *Upadane* have also the same meaning like, giving a base to a particular thing. In all, it seems to denote the action of holding something firmly or mitigating the strength of a particular subject. The verb *Grhnati* in the other form *Grahini* is attributed to *Akramate* i.e. 'to invade upon'. Pointing towards the invasion of this diseased condition on the *Agni Adhisthana* (Base of *Jatharagni*) Grahani or it can be understood that Grahani invades upon *Amashaya* for the process of digestion.

DEFINITION OF GRAHANI:

Almost all the Ayurvedic classics have described the organ - Grahani. It is unanimously considered as an organ of digestion. According to Acharya Charaka : (Ch. Chi. 15/56-57) [1]

Grahani is a site of *Agni* and is situated above *Nabhi*. It is not only a site of *Agni* but is also supported and strengthened by it (i.e. *Jatharagni*). It receives the ingested food, which is retained by it (i.e. *Grahan*), till the process of digestion, and after digestion it releases the food through the sides of lumen to next *Ashaya* i.e. *Pakwashaya*. In abnormal conditions, when it gets vitiated because of *Mandagn*i, it releases the food in undigested form.

Acharya Charaka has defined *Grahani* as an organ of *Mahasrotas* which receives the consumed food. And due to this function of the organ, it has been named as *Grahani*. Commenting on the

functions of *Grahani* mentioned by Acharya Charaka, Chakrapani refers it as *Grahanat iti Dharanat*. It means Grahani not only receives the food but it holds the food too.

In the opinion of Acharya Sushruta, the sixth *Kalaa*, described as *Pitta Dhara-Kalaa* is situated between *Amashaya* and *Pakwashaya*, and it is stated to be *Grahani*. (Su. U. 40/169) [2]

Acharya Vagbhata has supported both these opinions of Charaka and Sushruta and defined Grahani as the organ of *Mahasrotas*, which receives the food and further he supported Acharya Sushruta's opinion by saying that, Grahani is the site for *Pittadharakala*. [3]

Here Acharya Vagbhata has denoted specificity about the organ Grahani. This is a very specific description of the Grahani, Here Grahani is compared with an *Argala* and it is described as the *Argala* (wooden bolt) of *Bhuktamarga.* [4]

In Vaidyaka Shabdasindhu, Grahani is defined as *Agnivaha Dhamanis*.

In Madhukosha, the organ Grahani is defined as *Agnyadhisthana Nadi*.

In Sharangdhara Purva Khanda, the organ Grahani is defined as *Pittadharakala or Agnidharakala* which lies in between other organs like *Amashaya* and *Pakwashaya*.

ANATOMICAL ASPECT OF GRAHANI:

Grahani is an important organ situated in the *Mahasrotas* (i.e. alimentary canal or gastrointestinal tract) and it receives and holds the ingested food. Almost all the ancient Acharyas have described the location of Grahani differently. Acharya Charaka states that Grahani is situated above umbilicus, whereas according to Acharya Sushruta, it is situated between *Pakwashaya* and *Amashaya* and is termed as *Pitta Dhara Kalaa* (Su. U. 40/169).[2]

A clear and precise anatomical description for the most of parts of the *Mahasrotas,* in which Grahani is also mentioned, has been furnished in Charaka Samhita and described by Vaidyaka Sabda Sindhu as *Annapaka-Nadi.* It is called as *Annapaka-Nadi* because it is concerned with the digestion of food. It is composed of *Kalaa* and *Peshi* its upper part is known as *Mukha* and the lower part as *Guda*. The part of *Nadi*, which extends from *Kantha* above and the *Amashaya* below, is known as *Anna-nadi* (oesophagus). It is placed at the back of *Shwasa-nalika*. This tube is composed of two layers, the outer layer is of longitudinal - *Mamsa Kalaa* and the inner one of circular *Mamsa Kalaa* and is having *Shleshma Sravi-Kalaa* (mucous membrane) At its lower portion it pierces through *Mahaprachira* and joins the *Jathara*. *Mahaprachira* is a thick sheet of *Mamsapeshi* and *Snayu* which separates the *Uras* and *Udara*, with its convexity towards the chest and concavity towards abdomen. Under its concavity lie the *Yakrita*, the right side *Jathara* and *Pleeha* on the left side. *Jathara / Urdhva Amashaya* is a big bulge of *Mahasrotas*, forming base line for stasis of food; *Saguha Avayava* (hollow organ).

It is placed on the left side of the upper abdomen and extends towards the centre and also downwards. Behind it, is *Pleeha* and in between these two, lies the *Taila Vartika*. At both ends of this organ (*Jathara*), there is a ring of *Sushira Snayu* (circular ligaments), which by its action can close the passage, hence called *Argala* or *Mudrika* (sphincter). The upper Mudrika is designated as *Hardika-dwara Mudrika* (cardiac sphincter) as it is nearer to heart and the lower Mudrika is called the *Grahani-dwara Mudrika* (pyloric sphincter) which marks the beginning of *Grahani*. *Grahani* is the continuation of *Urdhwa Amashaya* (stomach), extending about 25 cm. It is also the first part of *Kshudrantra* (small intestine).

The Mudrika at its beginning being the powerful one, which holds the food about 2½ to 3hrs, to remain in the *Urdhawa Amashaya* (hence the name Grahani) and latter allows it to pass slowly. The two separate *Nalikas* one from *Yakrit Pittashaya* and another from *Taila Vartika* open inside the Grahani, so as to discharge *Pittas* produced by them (hence the name *Pitta Dhara-kalaa* for *Grahani*) to be mixed with food. *Grahani* is very important organ of *Annavaha-srotas as Ahara Paka* is greatly dependent upon its function.

Adho-Amashaya (*Pachyamanashaya*) is the further continuation of tube and is about 6.5 meters long, lying in loops and coils in the centre of abdomen and held in position by the *Vapa* (omentum) to *Urdhwa Amashaya*, it is thin, but has the same structural pattern of three layers. The inner most layer i.e. *Sleshmasravika Kalaa* is arranged horizontally in folds of quick succession. This layer has innumerable *Sukhsma Srotansi* called the *Rasayanis* (lacteals and villi) by which *Ahara Rasa* is absorbed. *Unduka* is the place of junction of *Kshudrantra with Brihadantra*. Here also there is *Mudrika* made of *Sushira Snayu*. About 5 cm below this junction, a small tail like or worm like projection is seen arising from *Brihadantra* and is called *Unduka Puchcha* or *Antra Puchcha*.

After this structure *Pakwashaya* or *Brihadantra* starts which encircles the whole of *Udara*. *Pakwashaya* terminates finally in to *Uttara Guda* (rectum) and *Adhara Guda* (anus), last terminal of *Mahasrotas* which opens to the exterior (*Bahirmukha*). Here also a *Sushira-Snayu Mudrika* (sphincter) functions as *Argala*, controlling the passage of *Purisha*. *Yakrit* is a solid organ outside *Mahasrotas*, located in *Dakhsina Anuparshwa Pradesha* (right hyprochondrium), and underneath this is the *Pittashaya*. Both *Yakrit and Pittashaya* are connected with *Mahasrotas* by a common tube (common bile duct which opens in to the *Grahani* (duodenum). *Tail- Vartika* resembling big wick soaked in oil, being made up of *Medodhatu.* It is located outside *Mahasrotas* in the *Vama Anuparshwa Pradesha* (left hypochondrium) in between the *Urdhva Amashaya* and *Pleeha*. It is connected to *Grahani* by its own *Nalika* known as pancreatic duct.

According to Acharya Sushruta, *Grahani* is situated between *Pakwashaya* and *Amashaya* and is termed as *Pittadhara Kalaa*. *Pittadhara Kalaa* is so called because this "*Kalaa*" bears *Pitta* (Agni i.e. digestive enzymes). The media between *Dosha*, *Dhatu* and *Mala* is described as the *Kalaa*. Still there is difference of opinion regarding *Kalaa*. It is also described as membrane which separates the '*Dhatu*s' and '*Ashayas*' and is named as *Pittadhara Kalaa* and is considered as Grahani by ancient Acharyas. (Dwarkanth C. 1967).

Acharya Sushruta says, the integrity of *Grahani* depends upon *Agni* and later is located in the former. Any impairment of *Agni*, involves the integrity of *Grahani* and vice versa. (Su. U. 40/170).[5]

Charka has used the term *Koshta* while explaining the process of digestion. He has said that the food ingested is propelled in to the *Kostha* by *Pranavayu* (Ch. Ch. 15/6).[6]

The various definitions and description regarding *Grahani* are cryptive and brief i.e. they are not descriptive. This has led to considerable controversies regarding the actual location of the structure described as Grahani and functions performed by it. Hence it is essential to have a careful analysis of four distinct views presently offered by the persons in the field of Ayurveda.

The views are summarized as follows:

Grahani is

1. Duodenum

2. Whole of small intestine with its mucous membrane

3. Extending from pylorus to ileocaecal junction, including two sphincters.

1. **Duodenum as Grahani:**

According to Charak Samhita, *Grahani is seat of Agni and is situated above Nabhi*. Author in Vaidyaka Shabda Sindhu has clearly mentioned that the first part of the intestine, which is seat of Agni, is Grahani. It is part of intestine extending from pylorus and ending with jejunum where the main digestive secretions i.e. bile from liver and gall bladder and pancreatic juice from pancreas mix together to give nearly all properties of *Pachaka Pitta*, hence it should be considered the main seat of Agni (*Pachaka Pitta*).

In fact, the process of digestion initiates in the stomach, but the food is not completely digested there. It can be said that *Amashaya* provides the food in such a form that it becomes easy to complete the digestion in intestine. This is supported by Acharya Charaka also. (Ch. Chi. 15/10)[7]. The location of *Grahani* stated by Charaka is also in favor of duodenum. No doubt that the functions described to Grahani are more are less, performed throughout the small intestine, but the operative and controlling role played by the duodenum is of main importance.

2. Small Intestine with Mucous Membrane as Grahani:

In Ayurvedic classics, the functions of *Grahani* are described as, retaining, digestion and separation of *Sara and Kitta* out of digested food. These functions have similarity with functions of small intestine describe in modern science. This supports the concept of the interpretation of *Grahani* as small intestine. *Pachaka Pitta* (*Agni*) or digestive secretions are also located between submucous coat and inner mucosa of small intestine.

3. Grahani as Pylorus to Ileocaecal Junction:

This concept is about the corresponding location of *Grahani*. *Urdhwa Amashaya* (stomach) is the organ, which extends from cardiac sphincter of stomach to the pyloric sphincter, and the *Adho-Amashaya* is a region which extends from pyloric antrum to ileocaecal valve, from where *Pakwashaya* starts. Ayurvedic Acharyas have strongly recommended that *Grahani* lies between *Amashaya* and *Pakwashaya*, in the view of observed fact.

- Pyloric sphincter helps in retaining the food in the stomach as temporary storage allowing good time for the digestive enzymes to act and the production of acidified chyme.
- The duodenum exercises a regulating control over the secretion of some of important digestive juices. Secretions from the gall bladder and pancreas are released into the duodenum through a common structure, the hepato-pancreatic ampulla and the opening into the duodenum is guarded by the hepato-pancreatic sphincter (of Oddi). The remaining part of the *Grahani*, corresponding to jejunum and ileum, are lined with *Pittadhara Kala*, which furnishes the essential components of *Jatharagni*, responsible for the completion of *Anupaka*, which later forms the essential aspect of *Jatharagni Vyapara*. In the small intestine the digestion of all the nutrition is completed. Carbohydrates are broken down to monosaccharides. Proteins are broken down to amino acids. Fats are broken down to fatty acids and glycerol.

In addition, the formation of *Sara (Ahara Rasa)* and separation of *Sara* from *Kitta* i.e. indigestible residue of food also takes place in this area. The *Sara bhaga* fraction is retained in this region for the duration of the time required for its *Soshana* (absorption), while *Kitta* fraction is propelled downwards into *Pakwashaya*, under the influence of *Samana Vayu.* Thus, the entire small intestine commencing from the antrum of the pylorus including pyloric sphincter and extending up to the ileocaecal sphincter represent a total entity known as *Grahani*.

PHYSIOLOGICAL ASPECT OF GRAHANI:

The food, after being swallowed, moves down the *Anna nalika*, passes through the *Hardika-dwara Mudrika* and reaches the *Jathara or Urdhwa Amashaya*. Movement of the food through this tube downwards is brought about by *Prana Vayu*; whereas movement of gas or air from the *Jathara* upwards is known as *Udgara* is attributed to *Udana Vayu.*

The food which has reached the *Jathara* is retained there for 2 to 3 hrs. Here quantity of *Kledaka Kapha* (mucin) and *Pachaka Pitta* (hydrochloric acid) increase considerably *Kledaka Kapha* in the beginning and *Pachaka Pitta* afterwards. *Kledaka Kapha* (mucin) breaks down the food material in to finer particles *(Bhinna-sanghata),* soaks it thoroughly and imparts the necessary fluid consistency *(Klinnata)* so that *Pachaka Pitta* can penetrate into every particle of food and bring about *Paka*. This phase of predominance of *Kapha* is called *Madhura-avastha Paka* and is the first phase of *Ahara Paka*.

After this, the fraction of *Pachaka Pitta* which has increased by this time initiates the second phase known as *Amla-avastha Paka* or *Shukta Paka*. The *Pitta* enters into the finer particles of food and brings about *Paka* in both its aspects - *Parinamana* (physical change) and *Pravritti* (chemical change). When *Amla-bhava* has reached its maximum, *Grahani-dwara Mudrika* (pyloric sphincter) opens allowing food to pass slowly into *Grahani*. Actions of two *Mudrika* and contraction of *Jathara* helps in increased production of *Kledaka Kapha* and *Pachaka Pitta* is stimulated by *Samana Vayu.*

- *Bhinna-sanghata* of food is by *Kledaka Kapha*.
- *Udgara* or belching i.e. movement of gas or air upwards is by *Udana Vayu.*
- *Paka* is by *Pachaka Pitta*.
- *Sandhukshana of Agni* by *Samana Vayu.*

When the food passes slowly through *Grahani*, two fractions of *Pitta* one from *Yakrita and Pittashaya* (i.e. bile from liver and gall bladder) and another from *Taila Vartika* (pancreatic Juice) get mixed with it. The process of *Paka* continues further as the food passes in to the *Kshudrantra* or *Adho-Amashaya*. The food, which is thick liquid now, is slowly moved throughout the length of *Kshudrantra*. This part of *Antra* also gives out its own *Pachaka Pitta* (intestinal juice) to be mixed with food. The movement of food is always in forward direction (*Purassarana*), a small segment of the intestine contracting and pushing the contents forwards (peristaltic movements). By the time the food comes the second half of *Ksudrantra*,the process of *Paka* will have been almost completed, *Sara bhaga* and *Kitta bhaga* separated.

The *Sukshma Srotansi* (Villi) present in the *Sleshma Sravikalaa* (mucous membrane) begin to absorb the nutrient portion (*Rasa Shoshana*) while some amount of water and the residue of food are left over, which slowly moves through the *Unduka Mudrika* (caecum) *Argala* to the *Pakwashaya*. Much of the water and nutrient portion of food having been absorbed already, the material that comes to *Pakwashaya* mainly consists of *Kitta* of *Ahara* and degraded *Pitta*. This material here undergoes third *Avastha-paka the Katu bhava*. The *Pitta*, now of a degraded nature, helps for the easy movement of material (*Sarattwa*) imparts yellow color (*Mala Ranjana*) and bad smell (*Durgandha*) to the contents.

This bulky material is slowly moved throughout the three portions of the *Pakwashaya* i.e. ascending, transverse and descending colon, and is allowed to stay in the *Uttara-Guda* for some hours and latter expelled as *Purisha* some quantity of gas called as *Adho-Vata* is also produced during the course of digestion and is expelled along with *Purisha* or even separately. This act is facilitated by *Apana Vayu*.

IMPORTANT FACTS ABOUT GRAHANI:

After going through the definition, etymology and anatomy and physiology of the *Grahani*, it seems that there are few important facts regarding *Grahani*, which are very important in understanding the concept of Grahani Roga.

- Agni Adhisthana
- Pittadhara Kala
- Argala
- Main Functions of Grahani

1. Agni Adhisthana:

Grahani and Agni are said to have *Adhar Adheya Sambandha*. Proper functioning of one element will ultimately boost the proper functioning of other and further combined effect of these two will produce all the needed *Bhavas* for the body.

Supporting the above mentioned concept of *Adhara Adheya Sambandha,* Acharya Charaka has quoted that Grahani makes process of digestion convenient and it gives strength to the functions of *Agni* too. (Ch.Chi.15/56)[8].

So, it has been concluded, that *Bala of Grahani* is the *Bala of Agni* and Vise a versa. So any defect or pathology in the functions of any one of these two, will lead to diseased condition. (A.Hr.Sa.3/53) [9]

2. Pittadharakala Adhisthana:

Acharya Sushruta and Vagbhata have mentioned *Pittadharakala* and which is said to be situated at *Grahani*. Further it is commented that it does the function of digestion.[10]

In Ayurvedic text, *Pitta and Agni* both of these factors have been considered as same entities, at least in the context of process of digestion. Of course with some specificity, It is said that *Pitta,* like of all the other *Sharirika Bhavas,* is made up of *Panchamahabhuta*. In the process of digestion it leaves its *Dravatwa* due to the influence of dominant *Tejas Guna.* Now it is considered as an *Agni* and further it takes a major part to digest the food.

Out of these five types of *Pitta dosha* the *Pitta* situated at the site of *Pittadharakala* or *Grahani* is specifically named as *Pachaka Pitta*. It is considered as the most important of all these *Pitta,* as it is said that this *Pachaka Pitta* not only plays a vital role in the process of digestion. [11]

It can be said that, *Pitta or Agni* is situated at the site of Grahani. This transforming ability of *Pitta or Agni* can perform their proper function because of the *Adhara* provided by the Grahani.

Acharya Sushruta has defined *Kalaa* as *Dhatwashayantara Maryada,* means *Kalaa* is the structure which intervenes between *Dhatu* and *Ashaya*. From available description of this structure, it is seen that *Kalaa* resembles in some respects, the semi permeable membrane and in other respects the mucosal lining of hollow visceral organs. In the present context the description of *Pittadhara Kalaa* would appear to refer to the lining membrane and in special to the lining membrane of gastrointestinal tract extending from pyloric region up to ileocaecal region, in fact,

the lining or mucosal membrane (including submucosa) of small intestines. In addition, it not only serves the purpose of a covering membrane but also -

(a) As a system of glands which provides necessary digestive enzymes

(b) As a surface on which various kinds of digestive reaction takes place

(c) As a surface from which absorption of the digested *Ahara-Rasa* take place.

Argala [12]

The organ *Grahani* is specifically, denoted as, *Argala*. On the opinion of Astanga Hridaya, Acharya Arundatta has commented for described *Argala* as, *Argala* is the thing, which is used to close or to block or to obstruct the way. It can be understood by a very common example, which everyone has experienced in daily routine. By the help of which the doors of a cupboard is closed and opened, is termed as an *Argala* in olden days or in many part of the country today also, A wooden bolt is used to close the doors or way of the house. This bolt is known as an *Argala*.

Acharya Arundatta explains the whole process. The consumed food travels through, mouth then to *Kanthnadi*, and then it travels further down and enters in to the *Kostha i.e. Annavaha srotas* and here due to the obstruction produced by *Argala* i.e. *Grahani* that consumed food is obstructed for the process of digestion. In other words at this place of *Argala*, food is obstructed and so this part is also said to receive the food and so termed as *Grahani* or *Annadhisthana*.

MAIN FUNCTIONS OF GRAHANI:

From the above description, it seems that *Grahani* (duodenum including small intestine) performs the following functions –

- To receives to food
- To hold the food
- To help in the process in digestion.
- To provide adequate time to digest the food.
- To provide beneficial factors like *Ayu, Varna, Bala, Swasthya* etc.

These functions can be discussed one by one, but generally, Grahani's main functions remain confined to the process of digestion.

1. **To receive food: *Grahani* being situated between *Amashaya* and *Pakwashaya*.** The ingested food travels from mouth to *Kantha* and *Annanalika* and finally received by *Amashaya* (Jathara) by closing *Grahani-dwara Mudrika*. In this way *Grahani* receives the food.

2. **To hold the food: As it is described that;** *Grahani* obstructs the food in between *Amashaya* and *Pakwashaya*. Here it holds the food for the further digestive functions.

3. **To help in the process of digestion**: It is already mentioned that, *Grahani* is termed as *Agni Adhisthana* or *Pittadharakala Adhisthana*. *Pitta or Agni* is the main entities in the process of digestion. It can be concluded that *Grahani,* helps in the process of digestion.

4. **To provide adequate time for digestion**: For any process, time is required to complete it. *Grahani* has the main digestive factors as well as the consumed food, which is received and remained at *Grahani*. It plays an important role of providing enough time to that digestive powers to work on the consume food for the proper digestion.

5**. To leave digestive food further:** This is peculiar function of *Grahani.* It expels out the well digested food further into the *Pakwashaya*. It holds the food till the food reaches this stage. As food reaches this stage, it is sending in to *Pakwashaya* for further transformation.[13]

6. **To provide beneficial factors :** *Agni* is located in the *Grahani*, plays very important role in the process of digestion, similarly proper digestion produces number of essential factors which are beneficial for the body in maintaining of *Swasthya*. So it is well established fact that *Ayu, Varna, Bala, Swasthya, Upachaya, Prabha, Dhatu, Oja* etc. depends on *Agni* which is located in *Grahani*.

DOSHAS CONFINED TO ORAGAN - GRAHANI:

After understanding the concept of *Grahani* in Ayurvedic science, next point which should be considered is *Doshas* concerned to Grahani Roga. It is said that *Doshas* are everywhere in the body but on the basis of the particular functions that they produce, the *Doshas* are named accordingly; *Samana Vayu, Pachaka Pitta and Kledaka Kapha* are the *Doshas*, which are confined to the organ *Grahani*. Their role in the proper functioning of *Grahani* is to be considered.

1. Kledaka Kapha[14]

Kledaka Kapha is one of the five types of *Kapha dosha*. Out of these five types, *Kledaka Kapha* is related to *Grahani*. It is described to be associated with *Amashaya*. The peculiar function of *Kledaka Kapha* is mentioned as *Annasamghatasya Kledanatwat* that means *Kledaka Kapha* get mixed with the consumed food when the food reaches *Amashaya* and it acts on the *Samghata* or the consistency of the food.

2. Pachaka Pitta [15]

Pachaka Pitta is one of the five types of *Pitta dosha*. Out of these five types, *Pachaka Pitta* is related to *Grahani*. It is described to be situated in between *Amashaya* and *Pakwashaya*. Physiologically in the process of digestion it plays a major role; it is made up of *Panchamahabhuta*. In digestion process it leaves *Dravatwa* due to influence of dominant *Teja* factor, Now (*Pachaka Pitta*) is named as *Agni* and with the help of other factors like *Vayu and*

Kleda, it not only digests the food but it also differentiates the digested food between *Sara and Kitta bhaga* and it also gives strength to other types of *Pitta dosha* too.

3. Samana Vayu [16]

Samana Vayu is one of the five types of *Vata dosha*. Out of these five types of Vata dosha, *Samana Vayu*, is concerned with *Grahani*. It specifically described as *Agnisamipastha* its specific place is quoted as *Graha*.

As *Samana Vayu* is situated around *Agni*, It's the nature of vayu to give strength to the *Agni* and here same function is carried out by *Samana Vayu* and ultimately by doing this it takes part in the actual process of digestion. In *Amashaya, Kledana* of the *samghata* of food is done by *Kledaka Kapha*, this *Samghata* is further disassociated by *Samana Vayu* by virtue of which, each and every particle of the food is exposed to the *Pitta or Agni* and digestion and transformation of that individual atom of food is made possible.

Further, after the process of digestion is over, *Samana Vayu* carries out the function of expelling the waste form of digested food to next the *Ashayas*. As already described this function i.e. expelling the well digested further into the *Pakwashaya* is mentioned under function of *Grahani* too. So, it can be considered that because of *Samana Vayu* only, *Grahani* carries out this function.

Samana Vayu is very much similar to the functions performed by the intrinsic nerves of stomach and intestines. Modern researches show that there are numerous nerves present in the walls of stomach, intestine and esophagus.

These nerves connect gastrointestinal tract anatomically and functionally with the brain and spinal cord. Muscular layer of GIT consists of two layers of smooth (involuntary) muscle. Muscle fibers of outer layer are arranged longitudinally, and those of inner layer are arranged in circular manner. Between these two muscle layers are blood vessels, lymph vessels and nerve plexus of sympathetic and parasympathetic nerves called myenteric or Auerbach's plexus.

These nerve plexus make up a diffuse mesh work of nerve tissue and serve as a decentralized or peripheral brain by which intestinal movements are controlled. Contraction and relaxation of muscle layers occurs in waves which push the contents of tract onwards.

This type of contraction of smooth muscle is called peristalsis. The submucosa of tract also has nerve plexus called submucosal or Meissner's plexus consisting of sympathetic and parasympathetic nerves. Myenteric or Auerbach's nerve plexus and Meissner's nerve plexus exerts a regulating effect on gastrointestinal peristalsis, which is of utmost importance in the process of digestion, in the same way, as the description of the influence exerted by *Samana Vayu* on the process of digestion.

The above description provide an explanation of the function of *Samana vayu* viz. *Anna-pachana* or enabling the digestion of food, *Anna-vivechana* or separation of the nutrient fraction from the

residual fraction, which is still to be digested or if undigested, the expulsion or *Munchana* of this fraction to the subsequent segment of the intestine. Where by churning movements followed by the peristaltic waves, the process of digestion is continued without interruption, until final digested residue is passed down in a semisolid state into *Pakwashaya*.

CONCEPT OF PACHANA:

The *Pitta or Agni* which digests the food is called *Pachaka Pitta*, which is located between *Amashaya* and *Pakwashaya* and works there. Though its constitution is *Panchabhautik* but still it is predominantly *Teja* in quality. As a result of its *Teja* prominent quality, it gives up its liquid nature and performs the function of digestion, transformation, and combustion etc., which gives it to be named as *Anala* or fire (As. Hr. Su. 12/11) [17]. After digesting the food, it converts the same into *Sara and Kitta*. This *Pitta* though keeping itself confined to its area, oblige other *Pitta* by sending its moieties to them.

Pachana in Grahani:

By the term "*Jatharagni paka*" means the digestion of food under the influence of *Jatharagni*. The *Prana Vayu*, whose function is to ingest food, draws it into stomach. There it is mixed with digestive juices, broken up and on being mixed with unctuous substance, becomes softened. Then the *Jatharagni* being agitated and carried by *Samana Vayu* digest the ingested food of appropriate quality, taken in required quantity and in right time (Ch. Chi. 15/7) [18].

Ahara Dravya are *Panchabhautik* and digestion of different types of food stuffs (*Panchbhutatmak*) takes place in the organ - *Jathara* with the help of *Pachaka Pitta* at different intervals and it is completed in the small intestine (Ch. Chi. 15/57). The changes taking place in *Ahara Dravyas* in different organs is termed as *Awastha-paka*. It takes place in three stages i.e. *Madhura, Amla and Katu* (Ch. Chi. 15/9-10) [19, 20]. After *Jatharagni paka*, the food undergoes complete change which is called *Vipaka* (As. Hr. Su 9/20)[21].

Vagbhata in Astanga Sangraha (As.Sa. Sa. 5/78-79) and in Astanga Hridaya (As. Hr. Sa. 3/59-60) has clearly described the steps leading to *Bhutagni- paka* and according to him, the separation of *Sara and Kitta* takes place after the completion *of Bhutagni paka*. According to Charaka, the formation of *Sara* and separation of *Kitta* occurs at the end of *Jatharagni-paka and Dhatvagni-paka.*

Then the food reached in *Pakwashaya* and dehydrated by the *Vata* and *Agni* is converted into formed feces. These being pungent in taste, lead to increase in *Vayu*. The *Avastha-paka* gives an idea of the form of food received by *Grahani*, Which is partially digested. In this stage, food is digested in the presence of *Pachaka Pitta* which is liquid in consistency; but due to predominance of *Agni Mahabhuta*, *Pachaka Pitta* loses the quality of liquidity and acts as fire and digests the food. At the final, substances after *Jatharagni-paka* are converted in *Vishishta-paka i.e. Vipaka* which depends upon the *Rasa of Dravya* ingested.

1. Avastha Paka:

Ingested *Ahara Dravya* undergoes through different stages of digestion in *Kostha* is called *Avastha-paka*. Charaka has described two terms, i.e. *Prapaka* and *Vipaka*. *Prapaka* is defined as *Prathama Paka* (Ch.Chi.15/9) [19] i.e. first outcome of *Paka* or chemical action. *Vipaka* has been defined as the outcome of *Jatharagni* on the *Ahara* which has been already subjected to *Prathama Paka* (As. Hr. Su. 9/20) [21]. This *Vipaka* is judged from the *Rasa* assumed as the end product of gastrointestinal digestion viz. *Madhura, Amla and Katu.* Digression into the nature of *Dravyas* becomes necessary in view of the description of the products which present the final outcome of *Jatharagni-paka* in terms of *Rasa*.

The main point to be noted here is the fact that change in *Rasa* is directly correlated with the change in composition of *Dravyas,* brought under the influence of *Jatharagni*. Thus *Ahara-paka* in the *Kostha* may be stated to proceed in the order as *Madhura, Amla and Katu Bhavas* respectively.

(I) Madhuravastha Paka:

As soon the food enters the mouth, it comes in contact with *Bodhaka Kapha*, which leads to the perception of taste. The property of *Bodhaka Kapha*, which is mainly fluid, is to dissolve food substances, otherwise the sensation of taste cannot be judged or felt. The outcome of action of *Bodhaka Kapha* on food, which is essentially *Madhura* in taste is seems to be continued and completed in *Urdhva-amashaya*. In this stage, the insoluble *Madhura* portion of food (starch) become sufficiently soluble and mixed up with *Kledaka Kapha* present in the *Urdhva-amashaya*.

The fraction of *Ahara Dravya* which is meant to undergo *Amla Bhava*, remains in this stage up to mixing with *Kledaka Kapha* and further *Kledaka Kapha* makes the food particles *Klinna*. Thus it is seen that all *Ahara Dravyas,* of all kinds attain *Madhura Bhava* as soon as they reach the *Adho-amashaya*.

(II) Amlavastha Paka:

This is the second stage of *Avastha Paka*. This is brought about by the secretion of *AcchaPitta* in *Adho-amashaya* (duodenum). This stage is not related to anything to do with the digestion of the substances which possess *Madhura rasa*. In this sage food stuffs remains partially digested i.e. the digestion is still incomplete. Charaka has stated this stage as *Vidagdha- avastha* (Ch. Chi. 15/10) [20]. Chakrapani interpreted this term as *Pakva-Apakvam or Kinchid Pakvam, Kinchid Apakvam.*

The *Ahara* in this stage is not fit for absorption and utilization for *Bhutagni paka and Dhatvagni paka.* The *Ahara* which has now attained *Amla Bhava* is propelled into next lower portion of the *Mahasrotas* where *Accha Pitta i*s stated to be secreted.

The term "*Accha*" has been interpreted by Chakrapani Dutta and Gangadhar Sen as "*Aghana"* and "*Swachha"* - means thin and clear respectively (Chakrapani and Gangadhar on Ch. Chi. 15/10). *Accha Pitta* would, therefore, represent a total concept of *Pachaka Pitta* or *Jatharagni*.

(III) Katuavastha Paka:

When food reaches *Pakwashaya*, it gets dried by the heat of *Jatharagni* and is rendered in the form of lumps. In this stage, *Ahara* assumes *Katubhava* and formation of *Vayu* takes place (Ch. Chi. 15/11).

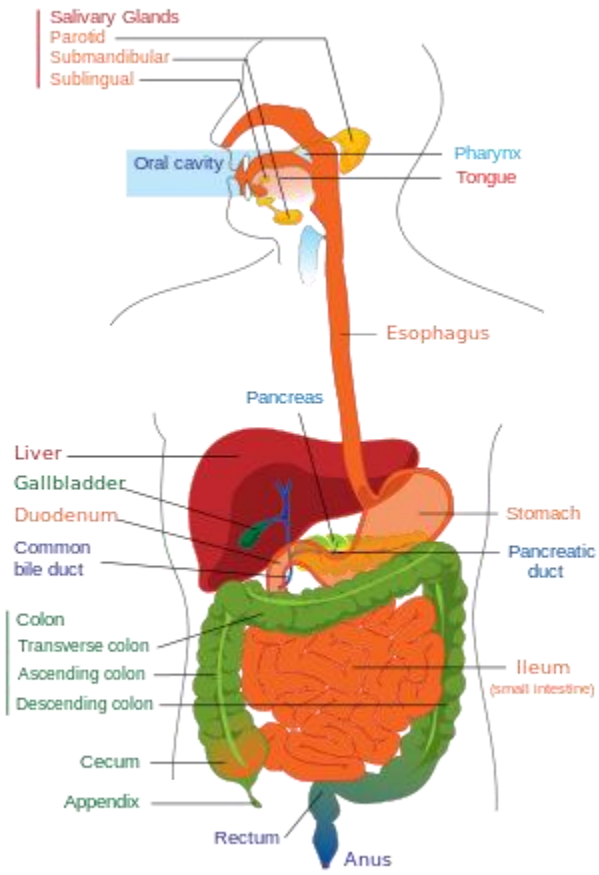
Chakrapani Dutta commented on the above verse clearly as "*Paripindita-Pakwashaya*" means the change of material present in *Pakwashaya* to form the lumps, in the process of formation of *Mala* (Ch. Chi. 15/11 commented by Chakrapani).

2. Nishta Paka (Vipaka):

There is no clear cut definition of this phenomenon as mentioned by Charaka and Sushruta. But detailed description can be found. By the word "*Vipaka*" itself explains that it is different from other type of *Pakas*. i.e. *Vishishta Paka Vipaka* Vagbhata in Astanga Hridaya has explained as the *Rasa* which goes to another *Rasa* after the end of *Jatharagni paka* is *Vipaka* (AsHr.Su. 9/20) [21]. Charaka has described Vipaka as *Vipaka Karmanisthaya* i.e. *Vipaka* is the completion of action (Ch. Su. 26/66) [22]. The difference between *Avastha paka and Nishta-paka* has been described by Hemadri, another commentator of the same treatise.

The description given by him is the three *Avastha-paka* come to an end before the complete action of *Jatharagni*, where as *Vipaka* is formed after the completion of *Jatharagni paka*. According to Chakrapani-Dutta, *Guna* which produced at *Nishta Kaala (*particular time) after the coherence of *Jatharagni* into the food, is *Vipaka*. (Chakrapani on Ch. Su. 26/28)

THE DIGESTIVE SYSTEM:



The digestive system is a collective name used to describe the alimentary canal with some accessory organs and a variety of digestive process which takes place at different levels in the canal to prepare food eaten in the diet for absorption. Alimentary canal begins at the mouth, passes through the thorax, abdomen and pelvis and finally ends at the anus.

The complex digestive process gradually breaks down the food eaten until they are in a suitable form for absorption. Chemical substances or enzymes which effect these changes are secreted into the canal, by specialized glands, some of which are in the walls of the canal and some are outside the canal, but with ducts leading into it. After absorption, nutrients are used to synthesize body constituents; they provide raw materials for the manufacturing of new cells, hormones and energy needed for these and other processes and for the disposal of waste materials. The activities of the digestive system can be grouped under five headings.

1. Ingestion: This is the process of taking food into the alimentary canal.

2. Propulsion: This moves the content along the alimentary tract.

3. Digestion: This consists of:

 Mechanical breakdown of food e.g. mastication (chewing)

 Chemical digestion of food by enzymes present insecretion produced by glands and accessory organs of digestive system.

4. Absorption: This is a process by which digested food substance pass through the walls of alimentary canal and nutrient fraction is taken into blood and lymph capillaries for circulation around the body.

5. Elimination: Food substances, which have been eaten, but cannot be digested and absorbed, are excreted by the bowel as feces.

SMALL INTESTINE

The small intestine is a narrow tube, continuous with the stomach at pyloric sphincter and leads in to large intestine at ileocaecal valve. It is approximately about 5 meters long and lies in the abdominal cavity, surrounded by large intestines. In the small intestine, the chemical digestion of food is completed and most of the absorption of nutrients takes place. The small intestine comprises three main parts and continuous with each other.

1. Duodenum: It follows the stomach at pyloric sphincter and is about 25 cm long, C-shaped structure which curves around the head of pancreas. Secretions from gall bladder and pancreas are released into the duodenum, through a common structure, the hepato-pancreatic ampulla, and the opening into duodenum is guarded by the hepato-pancreatic sphincter, commonly known as sphincter of Oddi.

2. Jejunum: The jejunum is the middle part of small intestine and is about 2 meters long. Its wall is thicker and more vascular than that of ileum.

3. Ileum: The ileum or terminal section forms the lower part of small intestine. It is about 3 meters long and ends at the ileocaecal valve, which controls the flow of material from the ileum to the caecum, the first part of large intestine, and prevents regurgitation.

STRUCTURES OF THE SMALL INTESTINE:

The walls of the small intestine are composed of four layers of tissue as described earlier in the layer of stomach with some modifications of the peritoneum and mucosa. The description is as follows:

1. PERITONEUM:

A double layer of peritoneum called mesentery attaches the jejunum and ileum to posterior abdominal wall. The large blood vessels and nerves lie on the posterior abdominal wall and branches to the small intestine pass between the two layers of mesentery.

2. MUCOSA (MUCOUS MEMBRANE LINING):

The surface area of the small intestine mucosa is greatly increased by permanent circular folds; villi and microvilli. The permanent circular folds, unlike the rugae of the stomach, are not smoothed out when the small intestine is distended. They promote mixing of chyme as it passes along these circular folds are known as plicae circulars. The villi are tiny finger like projections of the mucosal layer into intestinal lumen, about 5 to 1 mm long. Their walls consist of columnar epithelial cells or enterocytes, with tiny microvilli on their free border. The goblet cells that secrete mucous are interspersed between the enterocytes. These epithelial cells enclose a network of blood and lymph capillaries. The lymph capillaries are called lacteals because absorbed fat, gives the lymph milky appearance. Absorption of nutrients takes place in the enterocytes before entering the blood and lymph capillaries.

The intestinal glands are simple tubular glands situated below the surface between the villi. The cells of the gland migrate upwards to form the walls of villi replacing those at the tips, as they are rubbed off by the intestinal contents. The entire epithelium is replaced every 3 to 5 days. During migration the cells from digestive enzyme that lodged in the microvilli, and together with intestinal juice, complete the chemical digestion of carbohydrates, protein and fats.

Numerous lymph nodes are found in the mucosa at regular intervals throughout the length of the small intestine. The smaller ones one known as solitary lymphatic follicles, and about 20 to 30 larger lymph nodes situated towards the distal end of the ileum are called aggregated lymphatic follicles (Payer's patches). The lymphatic tissues, packed with defensive cells, are strategically placed to neutralize ingested antigens.

FUNCTIONS OF SMALL INTESTINE:

The functions are:

- Onward movement of its contents, which is produced by peristalsis
- Secretion of intestinal juice
- Completion of chemical digestion of carbohydrates, protein and fats in the enterocytes of villi
- Protection against infection by microbes that have survived the antimicrobial action of hydrochloric acid in the stomach, by the solitary lymph follicles and aggregated lymph follicles (Payer's patches)
- Secretion of hormone - cholecystokinin (CCK) and secretin.
- Absorption of nutrients.

Intestinal Juice or Succus entericus: About 1500 ml of intestinal juice is secreted daily by glands of small intestine. If consists of

- Water
- Mucous

- Mineral salts
- Enzyme: enterokinase (enteropeptidase)

The pH of intestinal juice is usually between 7.8 and 8.0; it helps in raising the pH of intestinal contents to between 6.5 and 7.5. Most of digestive enzymes in the small intestine are contained in the enterocytes in the walls of villi. Digestion of carbohydrate, protein and fat is completed by direct contact between these nutrients and the microvilli and within the enterocytes. Enterokinase activates pancreatic peptidases such as trypsin which convert some polypeptides to amino acids and some to smaller peptides.

The final stage of break down to amino acids of all peptides occurs inside the enterocytes. Lipase completes the digestion of emulsified fats to fatty acids and glycerol partly in the intestine and partly in the enterocytes. Sucrase, maltase and lactase complete the digestion of carbohydrates converting disaccharides such as sucrose, maltose and lactose to monosaccharides inside the enterocytes.

PANCREAS

The pancreas is a pale grey gland weighing about 60 gm. It is about 12-15 cm long and is situated in the epigastria and left hypo gastric region. It consists of a broad head, a body and tail. Head lies in the C-shaped curve of duodenum. The pancreas is both exocrine and endocrine gland, the exocrine part of pancreas produce pancreatic juice containing enzymes that digest carbohydrates, proteins and fats. The endocrine part of pancreas has specialized cells called islets of Langerhans. The islets have no ducts so hormones diffuse directly into the blood. Islets of Langerhans secrete hormones - insulin and glucagon, which are principally concerned with control of blood glucose level.

Pancreatic Juice: Pancreatic juice secreted from the exocrine part of pancreas enters the duodenum at hepato-pancreatic ampulla and consists of:

- Water
- Mineral salts
- Enzymes
    * Amylase
    * Lipase
- Inactive enzyme precursors
    * Trypsinogen

* Chymotrypsinogen

* Procarboxypeptidase

Pancreatic juice is alkaline (pH 8), because it contains significant quantities of bicarbonate ions, which are alkaline in nature. When acid contents of stomach enters duodenum they are mixed with pancreatic juice and bile, and pH is raised between 6 to 8. This is the pH at which pancreatic enzymes - amylase and lipase act most effectively.

LIVER

Liver is the largest gland in the body, weighing up to 1.5 to 2.3 kg. It is situated in the upper part of abdominal cavity and occupies greater part of the right hypochondria, part of epigastrium and extending in the left hypochondriac region. The liver has four lobes. The most obvious are the right - large and the smaller wedge shaped - left lobe. The other two, the caudate and quadrate lobes, are areas on posterior surface. The lobes of liver are made up of tiny lobules and are hexagonal in outline and are formed by cubical shaped cells called hepatocytes, arranged in pairs of columns radiating from a central vein.

Between the two pairs of columns of cells there are sinusoids (blood vessels with incomplete walls) containing a mixture of blood from branches of the portal vein and hepatic artery. This arrangement allows the arterial blood and portal venous blood to mix and come in close contact with liver cells. Amongst the cells lining the sinusoids are hepatic macrophages (Kupffer cells) whose function is to digest and destroy any foreign particle present in the blood flowing through the liver.

One of the important function of liver is to secrete bile; the bile canaliculi run between the columns of liver cells, means each column of hepatocytes has a blood sinusoid on one side and bile canaliculi on the other. The canaliculi join up to form larger bile canals and finally they form right and left hepatic ducts which drain the bile from liver

Bile:

Secretion of Bile: Bile is secreted by the liver, it contains no enzymes. The hepatocytes synthesize the constituents of the bile from the mixed arterial and venous blood in the sinusoids. These include bile salts, bile pigments, and cholesterol.

Composition and Functions of Bile:

About 500 ml of bile is secreted by the liver cells daily. Bile consists of

 Water

 Mineral salts

 Mucous

 Bile pigments mainly bilirubin

 Bile salts, which are derived from bileacids i.e. colicacid and chenodoxycholic acid

The bile acids (colicacid and chenodoxycholic acid) are synthesized by hepatocytes from cholesterol, conjugated (combined) either with glycerin or taurine, then secreted in to bile as sodium or potassium salts. In the intestine they emulsify fats and help in fat digestion. In the terminal ileum most of bile salts are reabsorbed and return to the liver through the portal vein. Bilirubin is one of the products of haemolysis of erythrocytes by hepatic macrophages (Kupffer cells) in the liver and other macrophages in the spleen and bone marrow. In its original form bilirubin is insoluble in water and is carried in the blood bound to albumin.

In the hepatocytes it is conjugated with glucuronic acid and becomes water soluble before being excreted in bile. Bacteria in the intestine change the form of bilirubin and most is excreted as stercobilinogen in the feces. A small amount is reabsorbed and excreted in urine as urobilinogen.

GALL BLADDER

The gall bladder is a pear shaped sac attached to the posterior surface of liver. It has a fundus, a body and neck which is continuous with the cystic duct. It acts as reservoir for bile, the right and left hepatic ducts join to form common hepatic duct just outside the portal fissure. The hepatic duct passes downwards about 3 cm where it is joined at an acute angle by cystic duct from the gall bladder. The cystic and hepatic ducts together from the common bile duct which passes downward behind the head of pancreas to be joined to main pancreatic duct at hepato-pancreatic ampulla.

The opening of combined duct into the duodenum is controlled by hepato-pancreatic sphincter (sphincter of Oddi). As the bile is secreted by the liver, it contains no enzymes and thus has no chemical action on food. Its salts mainly, sodium glycocholate and sodium taurocholate, reduce the surface tension of large fat droplets and break them into many small ones in the small intestine. This process is called emulsification of fat. The small fat droplets present larger surface area to lipases. This increases lipase action on fats.

LARGE INTESTINE (COLON), RECTUM AND ANAL CANAL:

Large Intestine: This is about 1.5 meters long, beginning at the caecum in the right iliac fossa and terminate at the rectum and anal canal deep in the pelvis. Its lumen is large than that of small intestine. It forms an arch round the coiled up small intestine. For descriptive purpose the colon is divided in to the caecum, ascending colon, transverse colon, descending colon, sigmoid colon, rectum and anal canal.

Caecum: This is the first part of colon. It is a dilated region which has a blind end inferiorly and is continuous with the ascending colon superiorly. Just below the junction of the two, the ileocaecal valve opens from the ileum. The vermiform appendix is a fine tube, closed at one end,

which leads from the caecum, is usually 13 cm long and has the same structure as the walls of the colon, but contains more lymphoid tissue.

Ascending Colon: This passes upward from the caecum to the level of the liver where it curves to the left at hepatic flexor to become transverse colon.

Transverse Colon: This is a loop of colon which extends across the abdominal cavity in front of duodenum and the stomach to the area of spleen, where if forms the splenic flexor and curves acutely downwards to become the descending colon.

Descending Colon: This passes down the left side of the abdominal cavity then curve towards the midline. After it enters the true pelvis it is known as the sigmoid colon.

The Sigmoid Colon: This part describes an S-shaped curve in the pelvis and then continues downwards to b1ecome the rectum.

Rectum: This is a slightly dilated section of the colon which is about 13 cm long. It leads from the sigmoid colon and terminates in the anal canal.

Anal Canal: This is a short passage about 3.8 cm long in the adults and leads from the rectum to the exterior. Two sphincter muscles control the anus, the internal sphincter, consisting of smooth muscle fibers, is under the control of the autonomic nervous system and the external sphincter, formed by skeletal muscle, is under voluntary control.

FUNCTIONS OF LARGE INTESTINE, RECTUM AND ANAL CANAL:

1. **Absorption:**

The contents of ileum which pass through the ileocaecal valve into caecum are fluid, even though some water has been absorbed in the small intestine. In the large intestine, absorption of water continues until the familiar semisolid consistency of feces is achieved. Mineral, salts, vitamins and some drug are also absorbed in to the blood capillaries from large intestine.

2. **Microbial Activity:**

The large intestine is heavily colonized by certain types of bacteria, which synthesise Vit. K and folic acid. They include Escherichia coli, Enterobacter aerogens, Streptococcus faecalis and Clostridium perfringens. These microbes are commensals in humans. They may become pathogenic, if transferred to other parts of body. e.g. Escherichia coli may cause cystitis if it gains entry to urinary bladder. Gases in the bowel consist of some of constituents of air, mainly nitrogen swallowed with food and drink and as a feature of some anxiety states. Hydrogen, carbon dioxide and methane are produced by bacterial fermentation of unabsorbed nutrients especially carbohydrates. Gases pass out of the bowel as flatus.

3. **Mass Movement:**

The large intestine does not exhibit peristaltic movement as it is seen in other parts of the digestive tract. Only at fairly long intervals (about twice an hour) wave of mass movements takes place.

4. Defecation:

Usually rectum is empty, but when a mass movement forces the contents of sigmoid colon into rectum, the nerve endings in its wall are stretched. In the infant defecation occurs by reflex (involuntary) action. However, some time in the second or third year of life, the ability to override the defecation reflex is developed. In practical term this acquired voluntary control, means that the brain can inhibit reflex until such time, as it is convenient to defecate. The external anal sphincter is under conscious control through pudendal nerve.

Thus defecation involves voluntary contraction of muscles of rectum and relaxation of the internal anal sphincter. Contraction of abdominal muscles and lowering of diaphragm increases the abdominal pressure (Valsalva's manoeuver) and so assist the process of defecation. When defecation is voluntarily postponed the feeling of fullness and need to defecate tends to fade until the next mass movement occurs and reflex is initiated again. Repeated suppression of reflex may lead to constipation.

Constituents of Feces:

The feces consist of semisolid brown mass. The brown color is due to the presence of stercobilin. Even though, absorption of water taken place in the large intestine, water still makes up 60-70% of the weight of feces. The remainder consists of

- Fiber (indigestible cellular plant and animal material)
- Dead and live microbes
- Epithelial cells from walls of tract
- Fatty acids
- Mucous secreted by the epithelial lining of the large intestine.

Mucus helps to lubricate the feces and adequate amount of roughage in the diet ensures that the contents of the colon are sufficiently bulky to stimulate defecation.

AYURVEDIC REVIEW OF GRAHANI ROGA

The "Grahani Roga" is the leading disorder of the gastrointestinal tract. As the hypo function of Agni i.e. *Mandagni* is the root cause of all the disease. Due to various etiological factors of

Grahani Roga, the Grahani becomes impaired as a result of *Dusti* or Vitiation of *Pacakaagni* and *Samana Vayu*.

Acharya Charaka has mentioned that- Functionally weak Agni i.e. *Mandagni* causes improper digestion of ingested food, which moves either in *Urdhva or Adho-marga*; when it goes in *Adho-marga*, then it leads to *Grahani Gada*. (Ch.Chi. 15/51) [1]

Acharya Sushruta (in Uttara-sthana-40/168) [2] has mentioned that, patients of *Atisara*, during the stage of *Agnimandya*, if indulge in injudicious diet, may lead to Grahani Roga.

Similarly Acharya Chakrapani, while commenting on *Grahani Chikitsa* has clearly mentioned that *Grahani* is *Ashraya* and *Agni* is *Ashrita*. The *Upachara* for Grahani Roga is same as that of *Agni*. (Chakrapani, Ch. Chi.15/7).

Aetiological Factors:

The pathogenesis of *Grahani Roga* revolves around *Agnidosha*. The relationship between *Agni* and *Grahani* that stand both in physiological and pathological states is comparable to the relationship that exists between structure and function. Any involvement of *Grahani* - like hyper, hypo and perverse functions may result in a corresponding disturbance of *Agni*. But especially *mandagni* predisposes Grahani Roga. Thus etiological factor of *Agnidushti* are the causes of Grahani Roga. So *Agnidushti* is the main cause of Grahani Roga (Ch. Chi. 15/57) [3], (Ch. Chi. 14/245) [4].

NIDANA:

The true etiological factors, which are stated to bring about *Agnidusti* are (Ch. Chi. 15/42-43) [5], (Su. Su. 46/508) [6].

1. Ahara :
1. Abhojana
2. Samashana, Vishamashana and Viruddhashana
3. Atibhojana
4. Indigestion due to
(a) Asatmya-Bhojana
(b) Atiguru-bhojana
(c) Sheeta-Bhojana
(d) Atiruksha-Bhojana
(e) Sandushta-Bhojana
2. Vishesha : Vyapada of
(a) Virechana
(b) Vamana
(c) Snehana
3. Emaciation or wasting brought about by other disease
4. Viruddha or Incompatibility of -

(a) Desha
(b) Kala
(c) Ritu
5. Vega-Vidharana
6. Mental, Psychological and Emotional instabilities like
(a) Irshya
(b) Bhaya
(c) Krodha
(d) Lobha
(e) Shoka
Similarly the aetiological factors responsible for production of *Amadosha* mentioned by Acharya Charaka in *Vimana 2/8-9* are also responsible for causing Grahani Roga.

PURVA RUPA OF GRAHANI ROGA:

It is doubtful if, in Grahani Roga, which is a long drawn condition, information relating to *Purva Rupa* can be obtained from the patient.

The *Purva Rupa* of Grahani Roga can be tabulated as below:

(Ch.Chi. 15/54 [7], Su. U. 40/173 [8], A. H. Ni. 8/19-20 [9])

Lakshanas.	Ch.	Su.	A.H.	M.N.	A.S.	Y.R.	Dalh.
Trishna	+	+	+	+	+	+	+
Alasya	+	+	-	+	-	+	+
Bala kshaya	+	+	-	+	-	+	+
Anna vidaha	+	-	-	+	-	+	+
Chira paka	+	-	+	+	+	+	-
Kaya guarava	+	-	-	+	-	+	-
Vidaha	-	+	-	-	-	-	+
Sadana	-	+	+	-	+	-	+
Klama	-	+	+	-	+	-	+
Aruchi	-	+	+	-	+	-	-
Karna kshveda	-	+	+	-	+	-	+
Aantra kunjana	-	+	+	-	+	-	-
Angasada	-	-	-	-	-	-	+
Pipasa	-	-	-	-	-	-	+
Kasa	-	+	-	-	-	-	-
Chhardi	-	-	+	-	+	-	-

Bhrama	-	-	+	-	+	-	-
Anutsaha	-	-	-	-	-	-	+
Amlaka	-	-	+	-	+	-	-
Praseka	-	-	+	-	+	-	-
Vaktra vairasya	-	-	+	-	+	-	-

RUPA OF GRAHANI ROGA:

According to various Acharyas, the signs & symptoms of Grahani Roga can be tabulated as below,

Samanya Lakshana:

Symptoms	Charaka [10]	Sushruta [11]	Vagbhata [12]
Muhurbaddha-Muhurdrava Mala Pravriti	-	-	+
Ati Srushta Mala Pravriti	+	-	-
Vibbadha Mala Pravriti	+	-	-
Trishna	+	+	-
Arochaka	+	+	-
Vairashaya	+	+	-
Praseka	+	+	-
Tamaka	+	+	-
Shuna Padakara	+	+	+
Chardana	+	+	-
Jwara	+	+	-
Lohanugandhi Udgara	+	+	-
Daha	-	+	-
Karshya	-	+	+
Loulya	-	+	-
Dhumaka	-	-	+
Murchha	-	-	+
Shiroruka	-	-	+
Vistambha	-	-	+

Vishishta Lakshana:

Vataja Grahani:

Symptoms	Charak [13]	Sushrut [14]	Vagbhat [15]

Jirne jiryati cha adhmanam	+	-	+
Bhukte Swasthyam	+	-	+
Chirat srijet varcha	+	-	+
Sadukh malapravriti	+	-	+
Chirat Drava, Shushka Malapravriti	+	-	+
Ama Yukta, Sashabda, Saphena Malapravriti	+	-	+
Punah punaha srijet varcha	+	-	+
Annam Pachate Dukham	+	-	-
Shukta Paka	+	-	-
Kharangata	+	-	-
Kanth Ashya Shosha	+	-	-
Kshudha	+	-	+
Trishna	+	-	+
Timira	+	-	+
Karnayo Swanaha	+	-	+
Parshva Ruja	+	+	+
Uru,Vankshana,Griva Ruja	+	-	+
Visuchika	+	-	+
Hrida Pida	+	-	-
Karshya	+	-	-
Daurbalya	+	-	-
Muka Vairashya	+	-	-
Guda, Hrida Roga, Arsha Pandu Pliha Shanki	+	+	+
Mastishka Shoola	-	+	-
Udara Shoola	-	+	-
Kasa, Shwasa	+	+	+

Pittaja Grahani:

Symptoms	**Charak [16]**	**Sushrut [14]**	**Vagbhat [17]**
Ajirna	+	-	-
Nil Pitabha Mala	+	-	+
Puti(Durgandhi), Amlodgara	+	-	+
Hrida Kantha Daha/ Daha	+	+	+
Aruchi	+	-	+
Trishna	+	-	+
Shoola	+	-	+

Symptoms	Charak [16]	Sushrut [14]	Vagbhat [17]
Ajirna	+	-	-
Nil Pitabha Mala	+	-	+
Puti(Durgandhi), Amlodgara	+	-	+
Hrida Kantha Daha/ Daha	+	+	+
Aruchi	+	-	+
Trishna	+	-	+
Shoola	+	-	+

Kaphaja Grahani:

Symptoms	Charak [18]	Sushrut [14]	Vagbhat [19]
Annam Pachate Dukham	+	-	+
Bhinna, Ama Yukta Mala	+	-	+
Shleshma Bhuyishta Mala	+	-	+
Hrillasa/ Chhardi	+	-	+
Arochaka	+	-	+
Asyopadeha	+	-	+
Sarvasharirguruta	-	+	-
Asya Madhurya	+	-	-
Madhura Udgara	+	-	+
Peenasa, Kasa, Sthivana	+	-	+
Udara Staimitya	+	-	+
Sadana	+	-	+
Akrushsyapi daurbalya	+	-	+
Alasya	+	-	+

Classification of Grahani Roga:

Types	Ch.Sm.	Su. Sm.	A.H.	M. N.	Sh. Sm.
Vataj	+	+	+	+	+
Pittaj	+	+	+	+	+
Kaphaj	+	+	+	+	+
Sannipatik	+	+	+	+	+
Sangraha	-	-	-	+	-
Ghatiyantra	-	-	-	+	-
Amaja	-	-	-	-	+

Sannipatik Grahani:
Nidana – *Tridosha Prakopaka*
Lakshana - The mixed symptoms of *Vataja, Pittaja and Kaphaja* types.

Sangraha Grahani:

In M. N. 4th chapter this condition of *Tridosha Grahani* is described. He explains the signs and symptoms as below:
1. *Antrakunjan*
2. Alasya
3. Daurbalya
4. Sadan
5. *Drava, Sheeta, Ghana* (Sometimes), *Snigdha, Malapravriti* along with kativedana.
6. *Ama, Bahu, Picchila, Sashabda, Malapravritti* in large quantity associated with mild pain.
7. This condition aggravates in daytime and subsides at night
8. This is a chronic condition and difficult to cure

Ghatiyantra Grahani:

Symptoms
1. Pain in flanks while lying down
2. Gargling sound similar to the sound of filling a pot with water.
3. This condition is incurable

Sama and Niram Lakshana of Grahani-

This is considered to be similar to that of *Atisara*.

Sama laksana of Purisha –

Durgandhi
Picchilla
Sink in water.
Nirama laksana of Purisa –
Laghu
Floats on water

SAMPRAPTI OF GRAHANI ROGA

Agnidushti is the main cause of Grahani Roga. In this disease, due to *Nidan sevan* primarily *Jatharagni* is especially vitiated. Because of *Agnidushti*, ingested food is not properly digested and results in *Apachana* and *Ama* formation, the food attains *Shuktapaka.* At this stage, *Doshas* (i.e. *Kledaka Kapha, Pachaka Pitta and Samana Vayu*) sheltered in the organ - *Grahani* gets vitiated and mixed with *Vidagadha ahara*. The *Shuktapaka* stage leads to *Annavisha*. If the

proper care is not taken, then later it may spread in the whole body through rasa, and mixes with *Doshas, Dushya or Dhatus*, this leads to Grahani Roga. (Ch. Chi. 15/44) [20]

In Context of pathogenesis of Grahani Roga Acharya Sushruta stated that: Grahani Roga occurs as a sequel of disease *Atisara*. A person who has been relieved of *Atisara*, but is still having *mandagni*, if he takes injudicious food it leads to vitiation of *Agni* and then damages the organ *Grahani*. This condition is calling Grahani Roga (Su.U.40/166) [21].

The Samprapti according to different classics is like –

In the beginning, *Agnidushti* occurs in mild form. Because of *Agnidushti* ingested food is not properly digested and results in *Apachana* and *Ama* formation. Thus, the food attains *Shuktata.* At this stage, dosha i.e. *Kledaka Kapha, Pachaka Pitta, and Samana Vayu* sheltered in the organ *Grahani* gets vitiated. During this stage of indigestion and *Shuktapaka* the following symptoms viz. *Vistambha, Praseka, Arti, Vidaha, Aruchi and Gaurava* are produced. (Ch.Chi. 15/73)[22].

The *Shuktapaka* stage leads to *Annavisha* formation. Here indigested food undergoes fermentative changes. Now in this condition food attains such a form that it becomes able to produce so many ailments like poison does. *Annavisha* while, remaining in the *Grahani* and spread in the whole body through *Rasadi dhatus* produces symptoms, Viz. Abdominal distension, headache, fainting and giddiness, stiffness of back and lumber region, yawning, malaise, morbid thirst, fever, vomiting, tenesmus, anorexia and indigestion of food. This is a serious condition (Ch. Chi. 15/45-56). It is named as Grahani Roga.

For the manifestation of Grahani Roga, the vitiation of following basic component of body is involved-:

1. DOSHA 2.DHATU 3.SROTAS 4.AGNI

1. DOSHAS- In pathogenesis of Grahani Roga all the three dosha are involved-:

(a)- SAMANA VATA- As *Samana Vayu* is situated around *Agni*, it gives strength to Agni by its *Sandhukshana Karma* and similarly further dissociate the *Samghata* of food, by virtue of which each and every particle of food is exposed to *Pachaka Pitta* and thus the proper digestion and transformation of food is made possible. The movement of food is always forward in direction, small segment of intestine contracting and pushing the contents forward. The *Sara Bhaga* and *Kitta Bhaga* separated. *Sukshma Srotamsi* present in the *Shlehsma-Sravi Kalaa* begin to absorb the nutrient fraction *(Rasa Shoshana*), while some amount of water and the residue of food are left over, which slowly move through *Unduka Mudrika* (caecum) to the *Pakwashaya*. This whole function is carried out by *Samana Vayu*.

(b)- PACHAK PITTA- *Pachaka Pitta* (digestive enzymes) to act on the food.

(c)- KALEDAKA KAPHA- *Kledaka Kapha* helps in mixing the consumed food and help in *Samghata Bhedana Kriya*, which provide maximum surface area for *Pachaka Pitta* to act on every particle of food.

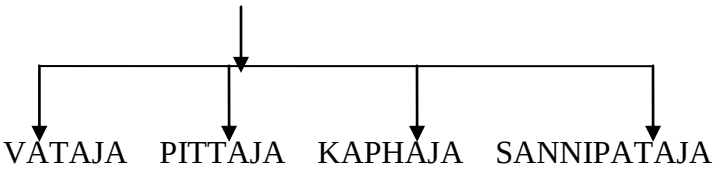
2-DHATU- *Rasa*

3-SROTAS- *Annavaha Srotas, Purishavaha Srotas, Rasavaha Srotas* these three *Srotas* are related with digestion, absorption and excretion. So, it can be said that in 'Grahani Roga' above mentioned functions are hampered.

4-AGNI- Jatharagni

Schematic representation of Grahani Roga Samprapti

NIDANA SEVANA
↓
DOSHA PRAKOPA
↓
AGNI DUSTI
↓
APACHANA (Indigestion)
↓
AMOTPATTI
↓
SHUKTA PAKA
↓
AMAVISHA
(Localized at GIT level-Generalized in whole Body)
↓
GRAHANI DOSHA
↓ with Bowel → Kukshigata Rogas
with Dhatu → Dhatugata Rogas
GRAHANI DUSHTI
↓
GRAHANI ROGA



Samprapti Ghataka of Grahani Roga

Samprapti Ghataka of Grahani Roga can be summarized under the following headings:

1. NIDANA : *Aharaja, Viharaja, Manasika Karanas*

2. DOSHA : *Kaledaka Kapha, Pachaka Pitta, Samana Vayu*

3. DUSHYA: *Rasa (Ahara Rasa)*

4. AGNI: *Jatharagni-Mandya*

5. AMA: *Amavisha* formation at GIT level

6. SROTAS: *Annavaha, Rasavaha, Purishavaha Srotas*

7. SAROTODUSTI TYPE : *Sanga, Vimarga-gamana, Atipravriti*

8. UDBHAVASTHANA: *Amashaya*

9. ROGAMARGA: *Madhyama and Bahya Roga Marga*

10. VYADHISWABHAVA: *Chirakari*

11. ADHISTHANA: *Grahani*

While formulating schematic representation of Grahani Roga Samprapti due consideration is given to following three factors,

• Grahani is the organ of *Mahasrotas.*

• *Pittadhara Kalaa* occupies the organ Grahani and produces *Pachaka Pitta* (*Jatharagni*)

• Doshas like *Samana Vayu, Kledaka Kapha and Pachaka Pitta* are associated with Grahani organ.

Thus, the whole *Samprapti* can be understood in two ways,

First due to various etiological factors, functions of organ - Grahani becomes disturbed, which is followed by *Agnidushti*, which result in vitiation of *Grahani Ashrita doshas* and ultimately whole process turns into *Grahani dosha* and then those vitiated *doshas* travel through whole body with *Rasadi dushyas*, finally it leads to Grahani Roga.

Second, after stimulation by various etiological factors, there is vitiation of *Jatharagni* i.e. *Agnidushti* occurs first, which is the direct cause of vitiation of *Grahani Ashrita dosha*, followed by disturb function of Grahani, it leads to Grahani dosha, and then there is structural changes in Grahani organ which ultimately turns into disease - Grahani Roga. Also Acharya Charaka has used the term *Dushta Grahani* (Duodenum including small intestine is damaged) which indicate towards the Grahani Roga.

Specific Pathogenesis on the basis of Dosha predominance:

Acharya Charaka has mentioned *Vata, Pitta, Sleshma and Sannipatik Grahani*.

1. Vatik Grahani : When the pt. indulges in the etiological factors of *Vatik Grahani*, it leads to provocation of *Vata* which in turn effects the *Agni* and make it weak leading to *Vatik Grahani Roga*. Food is digested with difficulty and pain occurs. (Ch. Chi. 15/59) [13]

2. Pittaj Grahani: The *Pitta* by its aetiological factors, submerges the *Agni*, impairs its action just as hot water extinguishes the fire, leading to the production of *Pittaja Grahani* (Ch. Chi. 15/65) [16]

3. Shleshmaj Grahani: The *Kapha dosha* get vitiated by its aetiological factors and impairs the *Agni.* The food is not digested easily. (Ch. Chi. 15/67) [23]

Prognosis of Grahani Roga:
The disease Grahani is *Krichchha Sadhya Vyadhi*.
According to Acharya Madhava, 20 the *Asadhya Lakshanas* of Grahani are similar to *Asadhya Lakshanas of Atisara* viz. *Shoola, Pipasa*, etc. He also opines that, in *Balyavastha*, Grahani is considered as *Sadhya*, in *Yuva* and *Vriddha Avastha* it is stated to be *Krichchha Sadhya* and *Asadhya* respectively.

Upadrava of Grahani Roga:
Acharya Harita described six complication of Grahani Roga-
• *Pliha Yakrita Vriddhi*

• *Kandu*

• *Mala Bandha*

• *Asthila*

• *Krimi*

• *Udara Roga*

PRINCIPLES OF TREATMENT OF GRAHANI ROGA
(Ch. Chi.15/75) [24]
There is general line of treatment described in the classics for almost all the disease. First there is *Shodhana* of *Doshas*, in which vitiated *Doshas* are eliminated out of the body. This modality is always preferred by Acharyas because, if *Doshas* are thrown out of body, disease not only gets cured but the chances of recurrence also become nil.

If the physician is confirmed that *Doshas* are confined to *Kostha or Annavaha Srotas*, then they should be eliminated from nearest possible root, i.e. if they are related to *Amashaya* then by oral route with *Vamana Karma* and if related to *Pakwashaya* then by *Virechana Karma.* In this

disease, various *Deepana- Pachana* drugs are described in the classics, followed by light diet regimen and then shifting the patient on regular diet.

Other References of Grahani Roga Chikitsa [25]
After screening all *Chikitsa sutras* of 'Grahani Roga', one thing is found to be very common and that is about the sutra which is quoted by various Acharyas to treat 'Grahani Roga' just like *Ajirna or Atisara*. So, due consideration has to be given to the treatment of these diseases followed by possible rationality behind them.

***Ajirna* :**

Ajirna is a disease described by almost all the text and it is characterized by disturbed digestion. Its types and symptomatology are very elaborately mentioned in the classics. Here concentration has to be paid to the treatment aspect only.
First of all, Acharyas have clearly mentioned that in such *Awasthas* like *Ajirna* which are influenced by the *Amadosha*, medicines are of less use as the digestive power is not able to digest either food or medicines too.
Diseases caused by *Amdosha* are cured only by *Apatarpana*, which is of three types and which should be administered by a Physician after a thorough examination and investigation of the patients. The three type of *Apatarpana* are *Langhan,Langhan-Pachan* and *Shodhan or Avasechanam*.

Indications of these are,

अल्प आमदोष	लंघनम्
मध्य आमदोष	लंघनपाचनम्
प्रभूत आमदोष	शोधन/ अवसेचन

After the primary management, the principle of the treatment described as above (A.S.Su.11/43) [26].

***Atisara* :**

This is another disease, Acharyas have advocated following while treating Grahani Roga. *Atisara* is again a disease in which digestive power of an individual is decreased and this too, is a disease confined to *Annavaha srotas* and pathogenesis wise it related to *Amadosha*. Concentrating on the treatment aspect of diseases, *Atisara* again, as it is a *Amadoshaj vyadhi*, first line of treatment described by almost all Acharyas is *Apatarpan* .

This *Langhan* may of *Shaman* type likes *Upavasa or Pachana* etc. It has to be decided by the Physician by examining the *awastha* of *Atisara.* For example in *Vataja Atisara* due to *amadoshtwa – Upavasadi langhan* is indicated. While for *Kapha* and *Pitta* dosha or for

aggravated symptom confined to a particular *Ashaya* like A*mashaya* or *Pakwashaya*, *Shodhana* like *Vamana* or S*ramsana* can be applied accordingly.

Atisara (Prabuta - Bhuishtha Dosha Awastha)

All the *Amadoshajanya Vyadhies* have classified for their treatment on the basis of *Bahu doshata*, *Madhya doshata and Alpa doshata*. *Atisara* too, is not an exception to this, there is a special description of *Prabhuta doshas*, that means *Doshas* after their vitiation and aggravation in excess quantity, start to go out of the body from nearest possible root. Regarding the treatment of these *Awasthas*, all most all text has advocated not to use any kind of *Stambhana* medicine. On the other hand to remove such *Bhuistha doshas*, *Anuloman aushadhi*, like *Haritaki* is indicated.

After looking on the general principles of treatment of *Ajirna* and *Atisara*, Concentration has to be paid, over the similarities between the approaches of the treatment in these three diseases.

The probable points can be enlisted as below:-

1. All the three mentioned diseases, *Atisara*, *Ajirna and Grahani Roga* are confined to *Annavaha srotas*.
2. All the three conditions have *Agnimandyata or Agni vikruti*, as a common factor.
3. All the three diseases have a strong relation with *Ama or Amanubandhata.*
4. All the three conditions manifest as improper digestion of food.
5. All the three diseases have, *Prabhuta doshawastha*, sometimes *Vibbadha doshawastha* may also be encountered.
6. In All the three conditions consumption of *Angi vikritikara hetus* can be traced out.

So, because of all these reasons the General principle of treatment for all the above mentioned conditions is same as,

1. *Shodhana* is indicated in all the three diseases.
2. It is advised to remove the *doshas* from the nearest root, from where they are accumulated.
3. Treatment principles of *Ama* are common for all the above conditions.
4. In *Lina or Prabhuta dosha* or *Dhatugat awastha*, *Shodhana* is indicated in all the three conditions.
5. In *Madhya dosha* or *Alpa dosha*, *pachana* of *doshas* is advocated.
6. In all the conditions, after *Ashaya shudhi*, number of recipes for *Agni deepana* is mentioned.
7. In all the diseases *Nidana Parivarjanam*, is given due importance along with *Laghu* i.e. easily digestible food.

The treatment of Grahani Roga should proceed on the full recognition of *Agnidusti*. Grahani Roga, represents the *Dushti* and *Dosha* of *Annavaha Srotas*, with the obvious implication that, in either case, there is the manifestation of *Amadosa and Sama*.

The main line of treatment should, therefore, aim at:

(a) *Dosa Pratyaneeka Chikitsa* in Grahani Roga and breaking up of the vicious circle phenomenon by *Deepana and Pachana* therapeutics, and

(b) *Vyadhipratyaneeka Chikitsa* in Grahani Roga by properly conceived medicines (*Deepana and Pacana*) *Aharas*, *Swedana*, *Shodhana* therapies, where there are indications for them.

DIETETIC REGIMEN:

Oleation, Sudation, Purification and lightening therapies, articles that are gastric stimulants, various kinds of *Churnas*, salts, alkalis, honey *Arishta, Sura, Asava*, various kinds of butter milk courses, and digestive stimulant ghee should be resorted to, by the patient suffering from *Grahani*. (Ch.Chi. 15/196) [27]

Importance of Takra in Management of Grahani Roga:

The authors of the three main classics have laid emphasis on the administration of *Takra or Takrasadhita kashaya* as the main diet and medicine. Explaining the advantage of *Takra* over other articles of diet, in *Grahani-dosha* and *Grahani Roga*, Vagbhata says, "*Takra* is the best diet for patients suffering from *Grahani-dosha and Grahani Roga*". As *Takra* is *Laghu in Guna*, process D*eepana* properties and attains *Madhurapaka*, it does not provoke an increase of *Pitta*, because of its *Kashaya-rasa*, *Ushna Virya*, *Vikasi and Ruksha Gunas*, it is also useful in *Kapha*; as freshly churned *Takra* is sweet, slightly sour and sufficiently thick, it will not produce *Daha* in the Kostha and it is also *Vatahara*.(A. H. Chi. 10/415)[28].

The advantage of *Takra* is that, it contains less fat and is easily digestible.

Charaka has also suggested the use of *Takra* and *Takrarista* in the routine treatment of *Grahani*.(Ch.Chi. 15/117-119)[29]

Classics have also advocated the use of different kinds of *Panas, Takras, Suras and Asavas* in the management of Grahani Roga (A. S. Chi. 12/4), (A. H. Chi. 10/3)[30].

Somatic treatment

- Shodhana : *Vasti chikitsa*
- Shamana : *Deepana, Pachana, Grahi, Tridosha Shamak and Medhya drugs*

PATHYA APATHYA-

Nutritious, easily digestible and *Sattvika* diet has always been recommended. Over eating and consumption of *Rajasika -Tamasika* diet should be avoided.

1. **PATHYA AHARA:**

Annavarga – Sashtti Shali, Jirna Shali, Masoora, Tuvari, Mudga Yusha, Lajamanda, Vilepi etc.
Shakavarga – Changeri, Rambha Pushpa, Kamalakanda
Phalavarga – Rambha, Jambu, Kapittha, Dadima
Dugdhavarga – Aja or Gavya Dugdha, Takra, Ghrita
Tailavarga – Tila Taila

PATHYA VIHARA: Nidra, Vishrama, Activities making mind happy

2. APATHYA AHARA: Atishita Jala, Dushta Jala, Guru, Snigdha, Drava, Atiruksha, & Saraka substances, Viruddha Bhojana, Rasona, Patra Shaka etc.

APATHYA VIHARA: Vegavidharana, Chinta, Shoka, Bhaya, Krodha, etc.

MODERN REVIEW OF GRAHANI ROGA

In the present study a concept of Grahani Roga is constructed with the consideration of symptoms like: *Udara-Shoola, Aruchi, Atop, Udara Gaurava, Vibandha or Abaddha-mala Pravritti, Bhojanottara Mala-Pravritti* etc. as chief complaints. In modern medical science, no disease or condition is exactly similar to Grahani Roga. Following symptoms found in different gastro-intestinal disorders can be taken as study point of view of Grahani Roga-

- Chronic abdominal pain
- Reduced appetite or loss of appetite
- Abdominal distension
- Flatulence
- Belching
- Eructation / Salivation
- Nausea / Vomiting
- Indigestion (Mal digestion)
- Chronic altered loose motion/ constipation
- Stools with mucous and foul smell
- Frequency of loose stool just after meal etc.

Following conditions and diseases may be considered in context of Grahani Roga:

- Irritable Bowel Syndrome
- Mal absorption syndrome
- Coeliac disease
- Tropical sprue
- Irritable Bowel Disease- Crohn's Disease
  -Ulcerative Colitis
- Parasitic Colitis- Amoebiasis
  -Giardiasis

IRRITABLE BOWEL DISEASE

IBS is characterized by abdominal pain and altered bowel habit, including diarrhoea, constipation, or alternating diarrhoea and constipation. Symptoms are typically intermittent but may be continuous and should be present for at least 3 months.

AETIOLOGY-

It is not clear why patients develop IBS. IBS is often considered 'functional' disorder because no structural, biochemical or infectious aetiology has been found. It is generally believed that most

patients develop symptoms in response to psychological factors, Altered Gastrointestinal motility, abnormal visceral perception, Food sensitivity.

1. **Psychological Factors**: More than half of patients with IBS can relate the start of symptoms to a stressful event like depression, anxiety, hysteria and somatisation in their life. Symptoms tend to become worse during times of stress or anxiety. The colon is connected to the brain through nerves of the autonomic nervous system. These nerves become more active during times of stress, and can cause the intestines to squeeze or contract more. People with IBS may have a colon that is over-responsive to these nerves. Over activity of the nerves or muscles of the gut may be responsible for altered gastrointestinal motility.

2. **Altered Gastrointestinal motility**-Slow motility can lead to constipation and fast motility can lead to diarrhoea. Spasms, or sudden strong muscle contractions that come and go, can cause abdominal pain.

3**. Abnormal visceral perception-** IBS is associated with increased sensitivity to intestinal distension induced by inflation of balloons in the ileum, colon and rectum. Patients with IBS have a lower pain threshold to stretching of the bowel caused by gas or stool compared with people who do not have IBS. The brain may process pain signals from the bowel differently in people with IBS.

4. **Food sensitivity** - Certain foods and beverages can cause symptoms, such as foods rich in carbohydrates, spicy or fatty foods, coffee, and alcohol. However, people with food sensitivity typically do not have clinical signs of food allergy. For instance, chocolate, milk and alcohol might cause constipation or diarrhoea. Carbonated beverages and some fruits and vegetables may lead to bloating and discomfort in some people with IBS.

SIGNS AND SYMPTOMS-

The signs and symptoms of irritable bowel syndrome can vary widely from person to person and often resemble those of other diseases. Among the most common are:

- Abdominal pain or cramping
- A bloated feeling
- Gas (flatulence)
- Diarrhoea or constipation — sometimes even alternating bouts of constipation and diarrhoea
- Mucus in the stool

Abdominal pain, fullness, gas, and bloating that have been present for at least 3 months are the main symptoms of IBS. The pain and other symptoms will often:

- Occur after meals
- On and off
- Be reduced or go away after a bowel movement

Altered bowel habits in IBS may have the following characteristics:

- Constipation variably results in complaints of hard stools, painful or infrequent defecation, and intractability to laxatives
- Diarrhoea usually is described as small volumes of loose stool, with evacuation preceded by urgency or frequent defecation

Additional symptoms consistent with irritable bowel syndrome are as follows:

- Loss of appetite
- Dyspepsia,
- heartburn
- Nausea, vomiting
- Urinary frequency and urgency have been noted
- Stress-related symptoms

COMPLICATIONS

IBS isn't associated with any serious conditions, such as colon cancer. But, diarrhoea and constipation, both signs of irritable bowel syndrome, can aggravate or even cause haemorrhoids. The impact of IBS on overall quality of life may be its most significant complication. IBS might limit ability to:

- With IBS, the difficulty of coping with symptoms away from home may cause one to avoid social engagements.
- The physical discomfort of IBS may make sexual activity unappealing or even painful.
- These effects of IBS may cause a feeling that one does not living life to the fullest, leading to discouragement or even depression.

MANAGEMENT

Though there is no cure for IBS, the symptoms can be treated with a combination of the following:

- changes in eating, diet, and nutrition
- medications
- probiotics
- Reassurance

1-Eating, Diet, and Nutrition- Large meals can cause cramping and diarrhoea, so eating smaller meals more often, or eating smaller portions, may help in reducing IBS symptoms. Eating meals that are low in fat and high in carbohydrates, such as pasta, rice, whole-grain breads and cereals, fruits, and vegetables, may help. Certain foods and drinks may cause IBS symptoms in some people, such as foods high in fat, milk products, alcohol or caffeine, drinks with large amounts of artificial sweeteners, which are substances used in place of sugar, foods that may cause gas, such as beans and cabbage. People with IBS may avoid these foods. Dietary fibre may lessen constipation in people with IBS.

2-Medications

- **Fibre supplements**
- **Laxatives**
- **Antidiarrheals.** Loperamide
- **Antispasmodics.** Hyoscine, Cimetropium, and Pinaverium
- **Antidepressants.** Tricyclic antidepressants (TCAs) and selective serotonin reuptake inhibitors (SSRIs) in low doses can help relieve IBS symptoms including abdominal pain.
- **Lubiprostone (Amitiza).** It improves symptoms of abdominal pain or discomfort, stool consistency, straining, and constipation severity.

3-Probiotics-Specifically*Bifidobacteria* and certain probiotic combinations, improve symptoms of IBS when taken in large enough amounts.

4-Reassurance and stress reduction

Grahani Vis-à-vis IBS

Symptoms of IBS have similarities with the symptoms of Grahani, like alternate constipation and diarrhoea (*Muhurbaddha muhurdrava*), mucus mixed stools (*shleshmika malapravriti*), etc.

MALABSORPTION SYNDROME (MAS)

Malabsorption syndromes (disorders) are conditions that cause insufficient assimilation of ingested nutrients as a result of either mal digestion or mal absorption.

AETIOLOGY

Mucosal causes: It is due to small bowel resection or condition in which damage the small intestinal epithelium. Intestinal hurry due to gastrectomy or Gastrojejunostomy .This considerably reduces the surface area available for absorption.

Intraluminal causes 1. Deficiency of bile
2. Pancreatic insufficiency

PATHOPHYSIOLOGY

Malabsorption constitutes the pathological interference with the normal physiological sequence

of digestion, absorption and transport of nutrients. Intestinal malabsorption can be due to:

- Mucosal damage
- Congenital or acquired reduction in absorptive surface
- Defects of specific hydrolysis
- Defects of ion transport
- Pancreatic insufficiency
- Impaired enterohepatic circulation

Protein mal absorption usually occurs along with fat and carbohydrate mal- absorption. It is characterized by intestinal inflammation and mucosal damage. Protein losing enteropathy occurs when there is protein as predominant nutrient is not absorbed as in intestinal lymphangiectasia or from increased venous pressure in the intestine or to the right sided heart failure.
Similarly carbohydrate malabsorption is common and occurs with ingestion of poorly absorbed sugars like sorbitol or disorders of mucosa or defects of intraluminal phase of digestion (exocrine pancreatic insufficiency).
The digestion and absorption of fat are complex process, requiring 3 stages: 1.Intraluminal digestion 2. Mucosal absorption 3.Proper intestinal transportation. There are various disorders affecting these stages that can cause fat malabsorption. Patients with malabsorption are liable to develop deficiency of fat soluble vitamins. Primary and secondary alteration of bowel mucosa may also result in deficiency of water soluble vitamins.

CLINICAL FEATURS OF MAS:

The clinical manifestations of mal absorption syndrome vary according to underlying cause. However some common symptoms are: Chronic diarrhoea : Commonest mode of presentation is bulky highly offensive stools, sometimes watery stools, Abdominal distension, Abdominal pain, Anorexia, Weight loss, Undigested food in stool, Malaise, Muscle cramps, Failure to thrive, Lethargy, Oedema, Clubbing of fingers, depigmentation of skin and hairs, Hemorrhagic diathesis, Eczema, Follicular hyperkeratosis, Stomatitis, Recurrent respiratory infections.

COMPLICATIONS

- Children will have stunted growth.
- Infertility
- Anaemia may occur.
- Rickets, osteoporosis or osteomalacia may occur.

MANAGEMENT-- Management depends upon the cause.

- Add nutrients which are not absorbed.
- Pancreatic insufficiency requires the oral administration of enzymes with food.
- Blockage of the flow of bile requires surgery.
- Where bile salts are not reabsorbed, it may be necessary to give resins to bind them

- Nutrient replacement to correct deficiencies includes folic acid, vitamin B-12, and iron.

Grahani Vis-à-vis Malabsorption Syndrome

The presence of hydrochloric acid, in the stomach, is inimical to a large number of bacteria. Many of them are destroyed by salivary secretion and hydrochloric acid, and some of them which survive may enter into the intestine. In a hypothetical case where, there is a deficient gastro-secretion, especially HCl, protein digestion in the stomach may not only be disturbed, but the starch content of food may undergo fermentative changes(*Shuktatva*) yielding lactic acid, butyric acid, acetic acid and the protein may undergo putrefactive changes, resulting in the production of foul odour.

Since gastric emptying of the ingested food is dependent to a large extent, on the acidification of the chyme, which in turn stimulates the pyloric sphincter to open to allow the material to pass into duodenum?

A deficit of acid secretion may lead to the retention of the food for a longer duration in the stomach than what is normal. The lack of acidity in the material that is propelled into the duodenum may result in either scanty production or non secretion of the hormones of this area. As a result, pancreas may not produce required quantity and quality of pancreatic juice and gall bladder may not discharge the bile properly contained in it. Thus the pH of the duodenum will be disturbed.

The overall outcome of these sequences may result in the disturbance of protein, carbohydrate and fat. This explanation of possible pathogenesis of Malabsorption Syndrome is explained by Prof. S. C. Dhyani to co-relate it with *Samprapti of Grahani* as explained by Charaka.

COELIAC DISEASE

Coeliac disease (CD) is a chronic immune-mediated disorder that develops in genetically susceptible persons when gluten, a major protein found in wheat, barley, and rye is ingested in the diet. Also called non-tropical sprue, or gluten-sensitive enteropathy, CD is primarily an enteropathy characterized by inflammation of the small bowel mucosa and atrophy of the villi, resulting in nutrient malabsorption, wasting, and diarrhoea.

AETIOLOGY- The major genetic association of celiac disease is with genes whose complex locus lies in chromosome-6. The celiac disease is an immunologically mediated small intestine enteropathy. The mucosal lesion suggest both cell mediated and humoral immunological over stimulation. There is strong genetic influence on the susceptibility to Coeliac disease and is suggested by occurrence of multiple cases in families.

PATHOPHYSIOLOGY-

Celiac disease is a multifactorial and a multisystem disorder involving a genetic predisposition, environmental exposure of the small bowel mucosa to gluten, and an immunologic response to gluten.

1**. Genetic:** The majority (>90%) of people with CD possess the HLA DQ2 haplotype, and 5% to 10% possess the DQ8 haplotype, conferring a negative predictive value greater than 98%. These haplotypes are encoded within the HLA class II region of the major histocompatibility complex on chromosome 6p.

2.Environmental: Risk for developing CD is increased with the introduction of gluten in the diet of infants before the age of 4 months. Grains that activate the disease contain proteins that can form gluten (prolamins: glutenins and gliadins) and include wheat, barley, and rye.

3. **Immunologic:** Exposure of the upper small bowel mucosa to gluten in susceptible people precipitates an immune mediated reaction that involves both the innate and the adaptive immune responses. Tissue trans-glutaminase, an enzyme present in the lamina propria of the small bowel, deamidates glutamine residues in gluten to form glutamic acid. Glutamic acid is a negatively charged molecule that is recognized by the antigen-precipitating cells that express the HLA DQ2/DQ8 receptors for T lymphocytes. T lymphocytes become activated and they begin to divide rapidly and secrete several immunomodulators such as immunoglobulins, cytokines, interferons, tumor necrosis factor, and interleukin 15 and 17 that cause damage to the enterocytes and result in villous atrophy.

CLINICAL FEATURES

The clinical features of Coeliac disease depend upon the severity and extent of the small intestine pathology. The common features include:

_ Chronic diarrhoea

_ Abdominal distension

_ Abdominal pain

_ Muscle wasting

_ Anorexia

_ Irritability

Clinical history reveals that patient starts passing bulky, greasy and foul smelling stool; The mucosa of small intestine is damaged and altered, and hence release of secretin and CCK-P2 are decreased. Pancreatic enzyme secretin is markedly decreased, this leads to indigestion, and damaged mucosa leads to malabsorption.

Other physical signs include:

_ Peripheral oedema

_ Clubbing of fingers

_ Smooth tongue

COMPLICATION- 1. Malignancy related to CD includes enteropathy-associated intestinal lymphoma or enteropathy-associated T-cell lymphoma and various carcinomas
2. Ulcerative jejunoileitis

MANAGEMENT-

- Withdrawing gluten from the diet for life. It entails eliminating wheat, barley, and rye. This allows healing of the small bowel mucosa and restitution of normal nutritional status.
- Lactose-containing products can worsen gastrointestinal symptoms and should be avoided initially until restitution of a normal mucosa.
- Deficiencies of vitamins D and B_{12}, folic acid, calcium, and iron and other nutritional deficiencies should be replaced as necessary.
- Complications of CD should be managed appropriately, and increased vigilance in recognizing and managing lymphomas and cancers is very important in these patients.

TROPICAL SPRUE

Tropical sprue is a chronic disorder commonly found in the tropical regions, marked with abnormal flattening of the villi and inflammation of the lining of the small intestine. It is characterized by abnormalities of the small intestine structure and function, which become progressively more severe. It eventually leads to the development of the disease and manifestations of nutritional deficiencies.

AETIOLOGY

The exact causative factor of tropical sprue is unknown. The epidemiological pattern suggests its infectious type, but not a single bacterium has been isolated, the condition often begins after an acute diarrhoeal illness. It has been suggested that it is caused by bacterial, viral, amoebal, or parasitic infection. Folic acid deficiency has also been suggested as possible causes. Small bowel bacterial overgrowth with the bacteria such as: Klebsiella, Escherichia coli, Enterobacter.

PATHOPHYSIOLOGY

The exact role of microbial agents in the initiation and propagation of the disease is poorly understood. One theory is that an acute intestinal infection leads to jejunal and ileal mucosa injury; then intestinal bacterial overgrowth and increased plasma enteroglucagon results in

retardation of small-intestinal transit. Central to this process is folate deficiency, which probably contributes to further mucosal injury.

The upper small intestine is predominantly affected; however, because it is a progressive and contiguous disease, the distal small intestine up to the terminal ileum may be involved. Pathological changes are rarely demonstrated in the stomach and colon. Coliform bacteria, such as Klebsiella, Escherichia coli, Enterobacter species are isolated and are the usual organisms associated with tropical sprue.

CLINICAL FEATURS

Tropical sprue is a syndrome characterized by acute or chronic diarrhoea, weight loss, and malabsorption of nutrients. It starts as an acute episode of watery diarrhoea accompanied by malaise, fever and weakness. The diarrhoea does not subside in the usual time. Individual develops abdominal cramps, excessive flatus, anorexia, and weakness.

Common signs of malnutrition may include night blindness, glossitis, stomatitis, cheilosis, hyper-pigmentation and oedema. Muscle wasting is marked and abdomen is often distended. Megaloblastic anaemia is the result of folate and Vit. B12 deficiency.

MANAGEMENT

1 - Antibiotics - tetracycline or Sulfamethoxazole/ Trimethoprim for 3 to 6 months, as well as supplementation of vitamins B_{12} and folic acid.

2 - Replacement of nutrients (eg. folic acid, vitamin B-12, iron), deficient fluid, and sometimes blood.

3 -The fluid, electrolyte and acid-base disturbances should be corrected.

4 -Unlike Coeliac disease, dietary restrictions are not necessary.

Grahani Vis-à-vis Tropical sprue

Prof. S. C. Dhyani opines, the *Samprapti* is borne by factual evidence furnished by modern medicine. In case of Grahani Roga diagnosed by modern medicine as “Tropical-sprue”, there is usually the atrophy of the small intestine microvilli, so as to render it almost diaphanous. The main changes are thinning and atrophy of the mucous membrane of the absorptive and secretary epithelium with some shrinkage of some of microvilli. These changes have been essentially degenerative and aplastic.

The signs and symptoms of tropical sprue will draw attention to the fact that in this condition, deficiency of some of the essential factors of *Pitta,* viz. Castles factor (*Amashayastha Ranjaka Pitta of Vagbhatta*) and deficiency of folic acid (*Yakritastha Ranjaka Pitta of Sushruta*) among others, are more prominent. One of the important contributory factors is a previous gastrointestinal disease amounting to Grahani Roga.

It may be stated that, in Grahani Roga changes occur in the structure of Grahani (Duodenum including small intestine).

INFLAMMATORY BOWEL DISEASE (IBD)

Inflammatory Bowel disease (IBD) is a general term for a group of chronic inflammatory disorders of unknown cause involving the gastro-intestinal tract. It may be divided into two major groups:-

1. Ulcerative colitis.

2. Crohn's disease

1. **Ulcerative Colitis:** An inflammatory disease of unknown origin characterized clinically by recurrent attacks of bloody diarrhoea and pathologically by a diffuse inflammation of the colonic mucosa.

Clinical features:

1). **Acute**: Can be mild, moderate or severe passage of frequent, small volume, loose stools with fresh blood and mucous.

- Cramping abdominal pain
- Tenesmus with fever
- Tachycardia

2) **Chronic**

- Diarrhoea
- Passage of blood and mucous with faeces
- Tenderness over colon
- Malaise
- Anorexia
- Malabsorption
- Weight loss

2. **Crohn's Disease:**

It is non-specific granulomatous inflammation of single or multiple areas of the intestine.

Clinical Features:

- Fever
- Weight loss
- Malabsorption
- Abdominal mass
- Recurrent abdominal pain and diarrhoea

The term "'inflammatory bowel disease" (IBD) is commonly used to include two idiopathic bowel diseases having many similarities" but the conditions usually have distinctive morphological appearance.

These two conditions are.

1. Crohn's disease or regional enteritis is an idiopathic chronic ulcerative IBD, characterised by transmural, non-caseating granulomatous inflammation, affecting most commonly the segment of terminal ileum and/or colon, though any part of the gastro intestinal tract may be involved.
2. Ulcerative colitis is an idiopathic from of acute and chronic ulcer inflammatory colitis affecting chiefly the mucosa and subsmucosa of the rectum, and descending colon, though sometimes it may involve the entire length of large bowel.
The main difference between Crohn's disease and UC is the *location* and *nature* of the inflammatory changes. Crohn's can affect any part of the gastrointestinal tract, from mouth to anus (skip lesions), although a majority of the cases start in the terminal ileum. Ulcerative colitis, in contrast, is restricted to the colon and the rectum ulcerative colitis is restricted to the mucosa (epithelial lining of the gut), while Crohn's disease affects the whole bowel wall ("transmural lesions").

ETIOPATHOGENESIS: The exact aetiology of IBD remains unknown. Therefore, IBD is called an idiopathic disease.

Aetiology is Unknown. Possible factors are:
1. Genetic and environmental factors
2. Immunological factor
3. Infection
4. Psychological factors
An unknown factor/agent (or a combination of factors) triggers the body's immune system to produce an inflammatory reaction in the intestinal tract that continues without control. As a result of the inflammatory reaction, the intestinal wall is damaged leading to bloody diarrhoea and abdominal pain.

Symptoms in Crohn's disease vs. ulcerative colitis
Symptoms may range from mild to severe and generally depend upon the part of the intestinal tract involved. They include the following:

Abdominal cramps and pain
Bloody diarrhoea
Severe urgency to have a bowel movement
Fever
Loss of appetite
Weight loss
Anaemia (due to blood loss)

No.	Features	Crohn's disease	Ulcerative colitis
1	Defecation	Often porridge-like' sometimes steatorrhea	Often mucus-like and with blood
2	Tenesmus	Less common	More common
3	Fever	Common	Indicates severe disease
4	Fistulae	Common	Seldom

5	Weight loss	Often	More seldom

COMPLICATIONS

- Profuse bleeding from the ulcers
- Perforation (rupture) of the bowel
- Strictures and obstruction
- Fistulae and perianal disease
- Malignancy: colon cancer

MANAGEMENT

I. Medical

Diet and nutrition:

(i) Avoid high fibre diet in presence of diarrhoea / dysentery
(ii) Diet should be nutritious
(iii) Supplemental fat soluble vitamins, medium chain triglycerides and parenteral Vit B12.
(iv) In severe inflammation
(a) Nothing by mouth
(b) Total parenteral nutrition
Drugs : (a**) Sulfasalazine**
(b) Corticosteroids
(c) Immunosupressants
(d) Antidiarrhoeals
(e) Metronidazole
(f) Bile acid binding resins and medium chained triglycerides.
(g) Antibiotics,
Depending on specific condition, Psychotherapy
II. Surgery -removal of affected part
Bowel resection, strictureplastycolostomy or ileostomy

In chronic stage both these conditions have many symptoms similar to Grahani Roga. These are also responsible for mal absorption. Inflammatory Bowel Disease also includes parasitic colitis:

PARASITIC COLITIS:

Amoebiasis or amoebic dysentery and Giardiasis are the most common conditions among parasitic infections. Even though both result in diarrhoea as a main symptom, they can be considered in Grahani.

AMOEBIASIS

Amoebiasis is a common intestinal protozoal infestation, which may also cause systemic manifestations; in majority of cases the infestation is asymptomatic. It is more common in regions with poor standards of personal and food hygiene, and inadequate sanitation.

Infection is transmitted by ingestion of food or water contaminated with fecal material containing cysts of Entamoeba.

PATHOGENESIS

Following ingestion, cysts open in the intestine to produce eight trophozoites. Trophozoites colonise the mucosa of large intestine and may cause tissue invasion and destruction in the form of ulcer with local inflammatory response.

FEATURES OF AMOEBIC DYSENTARY

- Number of stools per day 6 to 8
- Amount Relatively copious
- Odour Offensive
- Colour Dark red
- Nature Blood and mucous mixed with stools
- Reaction Acid
- Consistency Not adherent to the container

COMPLICATIONS:

Entamoeba histolytica may reach liver through portal circulation and may produce similar lytic lesion, the so called amoebic liver abscess. Abscess may be sterile, containing viscid, chocolate, non-pyogenic material. Amoebic involvement of peritoneum, pericardium, pleura, lungs, brain, and genitourinary system occurs rarely.

GIARDIASIS

Giardiasis known as beaver fever is a parasitic disease caused by the flagellate protozoan *Giardia lamblia*. The giardia organism inhabits the digestive tract of a wide variety of domestic and wild animal species, as well as humans. Giardiasis is passed via the fecal-oral route.

PATHOPHYSIOLOGY- Giardia are flagellated protozoans, which cause decreased action of brush-border enzymes, morphological changes to the microvillous, and apoptosis of small intestinal epithelial cells.

The attachment of trophozoites, of which *Giardia lamblia* causes villus flattening and inhibition of disaccharides activities. The alteration of the villi leads to an inability for nutrient and water absorption from the intestine. This results in diarrhoea, one of the predominant symptoms.

On an immunological level, activated host T-lymphocytes attack endothelial cells that have been injured in order to remove the cell. This occurs after the disruption of the tight junctions between endothelial cells that make up the brush border. The result is heavily increased intestinal permeability.

Giardia protects its own growth by reducing the formation of nitric oxide by consuming all local arginine which is the necessary substrate for the production of nitric oxide. Arginine starvation is known to be a cause of programmed cell death and local removal is a strong apoptotic agent.

SIGNS AND SYMPTOMS-

Symptoms include loss of appetite, diarrhoea, hematuria (blood in urine), loose or watery stool, stomach cramps, upset stomach, projectile vomiting (uncommon), bloating, excessive gas, and burping (often sulphurous). Symptoms typically begin one to two weeks after infection and may wane and reappear cyclically. Disease manifestations of Giardiasis range from asymptomatic carriage to fulminate diarrhoea and malabsorption. Symptoms may develop suddenly or gradually in persons with acute giardiasis, symptoms develop after incubation - period that lasts for at least 5 to 6 days and usually 1 to 3 weeks. Prominent early symptoms include diarrhoea, abdominal pain, bloating, belching, flatus, nausea and vomiting. Individuals with chronic giardiasis may present with or without having experienced an antacid acute symptomatic episode.

Diarrhoea is not necessarily prominent, but increased flatus, loose stools, and weight loss occur. Symptoms may be continual or episodic and can persist for years. Symptoms tend to be intermittent yet recurring and gradually debilitating, in contrast with the acute disabling symptoms associated with many enteric bacterial infections. However, the disease can be severe resulting in malabsorption, weight loss, growth retardation, dehydration, and in rare cases- death.

MANAGEMENT

- Treatment is not always necessary as the infection usually resolves by itself.
- Standard treatment for amoebiasis & giardiasis consists of antibiotic therapy. Usually metronidazole, albendazole, and tinidazole are used.
- Appropriate fluid and electrolyte management is critical, particularly in patients with large-volume diarrheal losses.
- Severely dehydrated or malnourished patients should be admitted for further care.

In this chapter some of the disease entities pertaining to gastrointestinal tract which are comparable with Grahani are briefly discussed as per the modern view. None of these can be correlated singly with Grahani Roga. Their signs and symptoms are seen in Grahani in its various stages, say Grahani dosha or Grahani Roga or in its different varieties like Vataja Grahani etc. Considering these facts, in the present study none of these diseases are specifically taken but

consideration was done purely on Ayurvedic basis depending on the *Grahani Lakshanas* observed in the patient.

VASTI REVIEW

Vasti is the most important *Karma* among *Panchakarma* due to its multiple effects. *Pitta* and *Kapha* is dependent on *Vata* as it governs their functions. *Vasti* is not only best for *Vata* disorders it also equally effective in correcting the morbid *Pitta*, *Kapha* and *Rakta*. *Charaka* has considered, Vasti therapy as half of the treatment of all the diseases, while some authors consider it as the complete remedy for all the ailments.

Among all the therapeutic procedures, *Vasti* is superior because *Vamana* and *Virechana* can produce only vomiting and purgation respectively but *Vasti* has got multidimensional therapeutic goal like *Bhrimhana, Shodhana, Shamana, Rasayana,Vajikarana* etc. therapeutic effects can be achieved by *Vasti*.

In modern medicine, enema is mainly given to remove the feces from the large intestine. While in Ayurveda, *Vasti* is given as a route of administration of the drugs for multiple actions, which acts locally on large intestine as well as systematically on the whole body.

Definition:

It is defined in two ways i.e. one indicates the whole of the Karma and the other indicates just the instrument used for it.

(1) Charaka defined Vasti on the basis of the Karma similar to that of Vamana and Virechana i.e. “The Karma where in the drugs administered through anal canal reaches upto Nabhi Pradesha, Kati, Parsva, Kukshi (Anatomical Landmarks on the abdomen), churns the accumulated Dosha and Purisha (Morbid humors and fecal matters), spreads the unctuousness all over the body and easily comes out along with the churned Purisha and Dosha, is called as Vasti.” This denotes the Nirooh and Anuvasana Vasti only, as they eliminate the accumulated Dosha and Purisha.[1]

(2) The other Acharya has described Vasti in general on the basis of the instrument used. i.e. “The procedure in which, either Vasti is used for the administration of the drugs OR the drugs administered first reaches to the Vasti.” [2]

Historical Aspects of *Vasti*

Charaka Samhita:

Charaka has described Vasti elaborately and out of the twelve chapters of Siddhi Sthana, 8 chapters are contributed to Vasti In addition scattered references regarding Vasti are available in various chapters of this Samhita. First two chapters of Siddhisthana, deals with properties of Vasti Samyakayoga, Ayoga Lakshanas, indications and contraindications of Vasti.

Sushruta Samhita:

In Sushruta Samhita, four chapters have been devoted completely for the description of the *Vasti* in *Chikitsa Sthana*. Other numerous references of *Vasti* are also available in this *Samhita*.

Ashtanga Sangraha:

28th chapter of *Sutra Sthana* has been devoted to *Vasti* only. In addition four chapters of *Kalpa Sthana* also deal with *Vasti*.

Ashtanga Hridaya:

In this text, 19th chapter of *Sutrasthana-Vasti Vidhi* and 4th and 5th chapter of *Kalpasthana* named as *Vasti Kalpa* and *Vasti Vyapada Siddhi* explain the every aspect of *Vasti*.

Kashyapa Samhita:

In *Kashyapa Samhita, Vasti* has been explained in detail in *Siddhisthana* and *Khilasthana*.

Classification of *Vasti*:

In Ayurveda, many varieties of *Vasti* have been mentioned in different contexts which can be classified under the following headings:

(A) On the basis of fixed schedule: In this type of group three *Vasti* are mentioned: [3]

1**. Karma Vasti:**

In this schedule 30 *Vasti* are being administered out of which there are 18 *Anuvasana* and 12 *Nirooh*. Initially one *Anuvasana* is administered then 12 *Nirooh* and 12 *Anuvasana* are given alternately and in the last 5 *Anuvasana* should be given. Every day one *Vasti* can be given.[3]

2. **Kala Vasti:**

Charaka mentioned that it includes half number of *Vasti* to that of *Karma Vasti*. But Chakrapani opined that it includes 16 *Vasti*. According to Vagbhata it includes 15 *Vasti*. He reduced one

Anuvasana in this schedule. On first day 1 *Anuvasana* can be given then Afterwards 6 *Anuvasana* and 6 *Nirooh* given alternatively and at last 3 *Anuvasana* are administered.[3]

3. **Yoga Vasti:**

……तताश्च योगः। (Ch.Sid.1/47)

Charaka mentioned that it includes half number of *Vasti* to that of *Kala Vasti*. It includes 8 *Vasti* out of which 5 *Anuvasana* and 3 *Nirooh*.[3] On the first day 1 *Anuvasana* then 3 *Nirooh* and 3 *Anuvasana* alternatively and at last 1 *Anuvasana* should be given. This *Vasti* schedule is called *Yoga Vasti*. It is used in the patients having *Kapha Sansarga* along with *Vata* vitiation.

(B) On the Basis of Adhisthana:

It depends upon the part of the body used for the administration of *Vasti*.

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(B) On the Basis of Adhisthana:

It depends upon the part of the body used for the administration of *Vasti*.

Internal Application:

A- *Pakvashayagata Vasti*

B- *Uttara Vasti* *1. Garbhashayagata Vasti 2. Mutrashayagata Vasti*

External Application:

1- *Vranagata Vasti* 2- *Kati Vasti*

3- *Shiro Vasti* 4- *Netra Vasti*

(C**) On the nature of Vasti drugs:**

Depending up on the nature of *Vasti* drugs i.e. *Kashaya* and *Sneha* the *Vasti* is mainly sub-classified as *Nirooh* and *Anuvasana Vasti*.

a) *Nirooh Vasti* (Evacuative or Un-unctuous Enema):

The *Vasti* which eliminates the vitiated *Dosha* thus provides strength to the body, is called *Nirooh Vasti*19. Its other important synonym is *Asthapana*.

वयः स्थापनादायुः स्थापनाद्वा आस्थापनम्। (Su.Chi.35/18)

It stabilizes the young age and provides longevity (*Ayu Sthapana*), so it is called as *Asthapana Vasti*.

In *Nirooh Vasti*, *Kashaya* (decoction) is the dominant content along with *Sneha, Kalka, Madhu* and *Saindhava*, but depending upon drugs used for preparations of *Vasti*. It may be classified as follows:

1. *Madhutailaika Vasti* 2. *Yuktaratha Vasti*

3. *Yapana Vasti* 4. *Siddha Vasti*

b) *Anuvasana Vasti* (Unctuous Enema):

In this type of *Vasti* only *Sneha* is used.

अनुवासन्नपि न दुष्यत्यनुदिवसं वा दीयत इत्यनुवासनः। (Su.Chi.35/18)

The *Sneha* given in the *Vasti* does not harm even if it is retained for one day, therefore it is called *Anuvasana Vasti*

According to the quantity of oil used in the *Vasti*, it is subdivide as follows:

Sneha Vasti : 1/4th of the quantity of *Nirooh* i.e. 6 Pala (298ml)

Anuvasana Vasti : The quantity of *Sneha* is half of the *Sneha Vasti* i.e. 3 Pala (148ml).

Matra Vasti : In Matra *Vasti*, minimum quantity of *Sneha* is given i.e.½ of *Anuvasana Vasti* (1½ Pala or 72ml).

Pharmacological Classification:

(A) According to effects after administration

1. *Shodhana Vasti*

2. *Lekhana Vasti*

3. *Brimhana Vasti*

(B) According to Dose:

1 *Dvadasha Prasritaki Vasti* 4 *Chatuha Prasritaki Vasti*

2 *Ekadasha Prasritaki Vasti* 5 *Ekaika Prasritaki Vasti*

3 *Nava Prasritaki Vasti* 6*Pancha Prasritaki Vasti*

(C**) Miscellaneous Classification:**

1 *Rakta Vasti* 4 Vaitarana *Vasti*

2 *Kshara Vasti* 5 *Mutra Vasti*

3 *Mamsa Vasti* 6 *Kshira Vasti*

(D) On the basis of Nature of the *Vasti* Dravya:

1 *Mridu Vasti* 3 *Tikshna Vasti*

2 *Madhyama Vasti*

(E) On the Basis of Special Purpose with Special Indications:

1 *Madhutailika Vasti* 5 Pichchha *Vasti*

2 *Siddha Vasti* 6 *Pichchhila Vasti*

3 *Yuktaratha Vasti* 7 *Vaitarana Vasti*

4 *Yapana Vasti*

(F**) On the Basis of Chief action:**

1 *Sneha*na *Vasti* 7 *Rasayana Vasti*.

2 *Brinhana Vasti* 8 Vajikarana *Vasti*

3 *Shamana Vasti* 9 *Bala-varnakrita Vasti*

4 *Lekhana Vasti* 10 *Chakshushya Vasti*

5 *Shodhana Vasti* 11 *Dipana Vasti*

6 *Sangrahika Vasti*

(G) On the Basis of Specific indication indications:

1 *Pramehahara Vasti* 7 *Abhishyandahara Vasti*

2 *Visarpahara Vasti* 8 *Krimihara Vasti*

3 *RaktaPittahara Vasti* 9 *Dahaghna Vasti*

4 *Kusthahara Vasti* 10 *Mutrakrichchhahara Vasti*

5 Vataraktahara *Vasti* 11 *Parikartikahara Vasti*

6 *Gulmahara Vasti*

Approximately 216 kinds of *Vasti* formulations are mentioned by *Charaka* in various chapters of *Siddhisthana*

Action of Vasti:[1]

Acharya Charaka has defined the *Vasti* as the procedure in which the drug prepared administered through the anus reaches up to the *Nabhi Pradesha* (umbilical region), *Kati* (lumber region), *Parshva* and *Kukshi* (flanks), churns the accumulated *Dosha* and *Purisha* (stool), spreads the unctuousness (potency of the drugs) all over the body and easily comes out along with the churned *Purisha* and *Dosha*s..

1. Systemic Action of Vasti:[4]

The *Virya* of *Vasti* administered through the *Vasti* into the *Pakwashaya* reaches the whole body through the channels (*Srotasa*), as the active principles in the water when poured at the root of the tree reaches the whole plant.

2. Eliminative or Purificative Action of Vasti:[5]

Vasti administered into *Pakwashaya* draws the *Dosha*/*Mala* (morbid matter) from all over the body from the foot to the head by the virtue of its *Virya* (potency), just as the sun situated in the sky draws the moisture from the earth by its heat.

3. Action of Vasti on Vayu:

Vayu is considered to be the main controller of the body. Now if *Vayu* alone or in combination with other *Dosha* get vitiated, then *Vasti* by the way of evacuation or elimination normalizes the path of *Vayu* along with *Pitta*, *Kapha* and fecal matter.

Effect of Vasti:

- It cleanses all the systems and makes a clear passage up to micro channel level.
- It acts on various disorders because of the selection of the drug according to disease.
- Palliative.
- *Vasti* can be administered at any age and at any stage of disorder after proper examination. It can also be given in normal persons too.

(a) Promotive Aspects:[6]

- Sustains Age.
- Provides better life, improves strength, digestive Power, voice and complexion.
- Perform all functions.
- Provides firmness.
- Corpulence.
- Lightness in systems because of removal of morbid matter from all over the body.
- Restores normalcy.

(b) Curative Aspect:

- Relieves Stiffness.
- Relieves contractions and adhesions.
- Effective in discoloration and fracture condition. Effective in those conditions where *Vata* aggravated in *Shakha*/extremities.
- Relieves pain.
- Effective in disorders of GI tract.

- Effective in diseases of *Shakha and Kostha*.
- Effective in the diseases of vital parts, upper extremities and Localized or General part.
- Beneficial to debilitated and weak persons.
- Arrest premature old age and the graying of hair.

(c) Preventive Aspects: Effective to cleanse various systems of the body from time to time seasonal application.

(d) Rejuvinative Aspect:

- Increases the quantity and quality of sperm.
- Effective to restore the normal functions of blood and other *Dhatu*.
- It provides strength by increasing muscle power.
- Beneficial as aphrodisiac.

(e) Effect on Brain and Psychology:

- Improves intellectual power.
- Provides clarity of mind.
- Improves clarity of sense organs.
- Induces sound sleep.
- Lightness.
- Exhilaration.
- Pleases the mind.

(f) Effective at any Age and in any Season:

- *Vasti* is non antagonistic to healthy, diseased and old persons.
- Applicable in all seasons.
- *Vasti* can be administered in child and older person too because it is free from complications.

Anuvasana Vasti:-

Purvakarma:-

In *Anuvasana Vasti* only *Sneha* is given which should always be *Pakva* and luke warm at the time of administration. As the maximum dose of *Anuvasana Vasti* is approximately 280 ml therefore metal enema syringes available in the market may be used, but conventional *Vasti Yantra* should be preferred.

Indications for Anuvasana Vasti [7]

Anuvasana is indicated in patients who are already indicated for *Nirooh*, but special mention has been given to certain conditions like *Rooksha, Kevala Vata Roga* and *Atyagni* where *Anuvasana* is more beneficial.

Contraindications of Anuvasana Vasti [8]

Anuvasana Vasti given in *Anasthapya, Abhuktabhakta* leads to upward movement of *Sneha*. *Anuvasana Vasti* given in *Navajwara, Kamala & Prameha* leads to *Udara Roga; Arsha* leads to *Adhmana; Arochaka* leads to more *Anannabhilasha Mandagni & Durbala* leads to increase in the condition; *Pleehodara & Kaphodara* leads to more *Dosha Vardhana Urustambha, Garapeeta, Kaphabhishyanda, Gurukoshta, Shleepada, Galaganda, Apachi, Krimikoshta, Kushta, Sthaulya, Peenasa, Krushna, Varchobheda Pratishyaya Pandu Vishapeeta.*

The body of the patient should be prepared with suitable *Abhyanga* and *Swedana*. Then patient is advised to have his prescribed meal (1/4 or ¾ then routine) and asked to take a short walk. Having passed stool and urine he is laid on a bed, which is not very high, and the head must be at lower level. No pillows are used. The patient should be on his left side drawing up the right leg and straightening the left leg.

Pradhana Karma:-

The *Sneha* prescribed for *Anuvasana* is to be taken in the *Vasti-putaka* and tied well placing the *Vasti Netra* in position. The trapped air in *Vasti-yantra* is expelled by gently pressing the *Vasti-putaka*. Then the anal region and the *Netra* should be smeared with oil. Gently probe the anal orifice with the index finger of the left hand and introduce the *Vasti Netra* through it into the rectum up to first *Karnika*. Keeping in the same position, press the *Vasti-putaka* with right hand with adequate force. Remove carefully the *Vasti-netra* when a little quantity of *Sneha* remaining inside the *Vastiputaka*.

Pashchata Karma:-

The patient is kept lying on his back as long as it would take to count up to hundred. The patient should be gently struck three times on each of the soles and over the buttocks. The lower limb should be raised thrice. If patient gets the urge for defecation one can attend. But in the conditions in which *Sneha* passes immediately, another *Anuvasana Vasti* can be given. After passing the motion with *Sneha* in proper time the patient is allowed to take light food if he feels hungry.

The ideal time for coming out of *Vasti Sneha* is 3 Yama i.e. 9 hours, but it may be retained for 24 hours if it is not disturbing the patient.[9]

Complications of Sneha Vasti:-

Six types of complications may arise in *Sneha Vasti*, which are due to: -

i *Vata avrita Sneha* iv *Atibhukta (Annavruta Sneha*)

ii *Pitta avrita Sneha* v *Pureesha avrita Sneha*

iii *Kapha avrita Sneha* iv *Abhukta -Pranita Sneha*

NIROOH VASTI:

Purvakarma:-

Indications for Nirooh Vasti [10]

Sarvangaroga, Rajakshaya, Ekangaroga, Vishamagni, Kukshiroga, Spikshoola, Vatasanga, Janushoola, Mutrasanga, Janghashoola, Malasanga, Urushoola, Shukrasanga, Gulphashoola, Balakshaya, Parshnishoola, Mamsakshaya, Prapadashoola, Doshakshaya, Yonishoola, Shukrakshaya, Bahushoola, Aadhmana, Angulishoola, Angasupti, , Sthanashoola, Krimikoshta, Dantashoola, Udavarta, Nakhashoola, Sudhatisara, Parvasthishoola, Parvabheda, Shopha, Abhitapa, Sthmaba, PleehaDosha, Aantrakoojana, Gulma, Parikartika, Shoola, MaharogoktaVatavyadhi, Hridroga, Jwara, Bhagandara, Timira, Unmad, Pratishaya, Jwara, Adhimantha, Bradhna, Ardita, Shirashoola, Pakshaghata, Karnaroga, Ashmari, Hritshoola, Upadamsha, Parshwashoola, Vatarakta, Prushtashoola, Arshas, Katishoola, Stanyakshaya, Vepana, Manyagraha, Aakshepa, Hanugraha, Angagaurava, Ashmari, Atilaghava. Moodhagarbha AmlaPitta, Hridroga, Asrugdhara AmlaPitta, Hridroga, Asrugdhara and Vishamanajwara

Contraindication for Nirooh Vasti [11]

The *Nirooh Vasti* has been contraindicated in the following conditions, which are described along with the reasons for their contraindications:

- If *Nirooh Vasti* is given in *Ajeerna, Atisnigdha* & *PeetaSneha*, it may lead to *Dushyodara, Moorchha, and Shotha*.
- If *Nirooh Vasti* is given in *Utklishta Dosha* & *Alpagni*, it may lead to *Tivra Aruchi*.
- *Nirooh Vasti* given in *Yana-klanta, Atidurbala, Kshudhaarta* leads to *Shaeerashosha & Pranaparodha. Trishnaarta, Sharmaarta* leads to *Kruchraswasa.*
- If *Nirooh Vasti* is given in *Atikrisha, Bhuktabhakta & Pitodaka* it may lead to more *Karshya and Utklesha* of *Dosha*.
- If *Nirooh Vasti* is given in *Vamita & Virikta*, more *Rookshata* will occur.

- If *Nirooh Vasti* is given in *Krita Nasyakarma* it may lead to *Manovibhrama and Srotonirodha*.
- *Nirooh Vasti*, given in *Krudha & Bheeta* causes *Vastidravya* to move up.
- *Nirooh Vasti* given in *Mata & Murchita* leads to *Sangnanasha* and *Hrudayopaghata*.
- *Nirooh Vasti* given in *Prasakta-chhardi* causes *Vasti Dravya* to moves up because of the existing *Urdhvagati* of *Vata*.
- *Nirooh Vasti* given in *Prasaktanishteeva, Svasaprasakta, Kasaprasakta, Hikkaprasakta, Baddhagudodara, Chhidrodara, Dakodara & Adhmana* leads to death by causing severe distension of abdomen
- *Nirooh Vasti* given in *Alasaka, Visoochika, AsmaDosha, Amatisara causes Teevra Amavastha* of the body.
- *Nirooh Vasti* given in *Madhumeha & Prameha* leads to *Vyadhi Vardhakam Kushtha, Arshas, Pandu, Bhrama, Arochaka, Unmad, Shokagrastha, Sthaulya, Kandhashosha, Garbhini, Bala, Vruddha, Alpavarcha, Gudashodha, Amaprajatha Shopha* were also mentioned.

Vasti – Ingredients:

Significance of different ingredients in the *Vasti Dravya* :

The importance of each of the ingredient for the preparation of *Nirooh Vasti*. Dravya in general can be explained as follows:

1**) Madhu (Honey):**

It is considered as the Best among the vehicles, as it contains various substances in it, which denotes its drug (potency of the drug) Carrying Capacity.

Owing to its *Sukshma Guna* it reaches up to the micro channels, in turn carries the drug (potency of) the drug at the molecular level through the micro channels. Further it is *Tridoshahara;* hence it is always wholesome and can be used in all the conditions.

Charaka says that *Vasti Dravya* containing excess of honey when administered to the person makes him extremely virile and *Vasti Dravya* with honey do not lead to over action or under action.

2) **Saindhava Lavana:**

Lavana in general are having the properties like *Vishyandi, Sukshma, Tikshna, Ushna and Vataghna* and promotes the evacuation of bladder and rectum.

Owing to the *Sukshma* property it helps the drug (potency of the drug) to reach in the micro channels, *Saindhava* mixed with *Madhu* is capable of liquefying the viscid *Kapha* and breaking

it into minute particles for their easy elimination. Similarly it may liquefy the morbid *Dosha Sanghata* and break it into smaller particles by virtue of its *Ushna and Tikshna* property respectively and thus helps their elimination. Apart from this, *Saindhava* destroys the *Pichcchila, Bahula and Kashaya* properties of *Madhu* and makes close union with it to form a homogeneous mixture. Absence or less quantity of *Saindhava* is responsible for *Ayoga* and excess quantity produces *Daha and Atisara*.

3) Sneha:

It includes *Ghrita, Taila, Vasa, Majja* and each one is having its specific properties accordingly it produces beneficial effects. *Sneha* in general is *Vatahara, Mridukara* (Produces softness in the channels and tissues, in turn helps for easy elimination of waste substances) and destroys the compact *Mala* and removes the obstruction in the channels produced by the *Mala* i.e *Malanam Vinihanti Sangam*.

Owing to the *Snigdha Guna*, it produces unctuousness in the body in turn helps for easy elimination and by *Sukshma Guna* it helps the drug (potency of the drug) to reach into the micro channels. Apart from these functions, it protects the mucous membrane from the untoward effect of irritating drugs in the *Vasti Dravya.*

Thus these three substances viz. *Madhu, Saindhava* and *Sneha* helps to form a homogeneous mixture of the *Vasti Dravya* and after administration they helps to reach the drug (potency of the drug) through the micro channels at the cellular level and to eliminate the waste substances from the body.

4**) Kalka Dravya:**

It serves the function of *Utkleshana or Doshaharana or Samshamana* depending upon the contents, the contents are selected accordingly. It gives required thickness to the *Vasti* material. Less quantity or absence of *Kalka* makes the *Vasti Dravya* thin which comes out immediately after administration. Excess quantity of the *Kalka* makes the *Vasti Dravya* thick and difficult for administration and may not come out within the expected time.

5) **Kwatha:**

It is the *Drava Dravya*, usually the *Kashaya* is used, but as per the need *Kshira, Gomutra, Amlakanji, Prasanna, Mamsarasa* etc. are also used in place of *Kashaya* or for the preparation of *Kwatha* itself.

The drugs used for the preparation of *Kalka and Kwatha* are selected on the basis of *Dosha, Dushya and Srotas* involved in the pathogenesis of the disease; hence they are the main constituents of the *Vasti Dravya.*

6) **Avapa Dravya:**

They are used sometimes in order to make the *Vasti* either *Tikshna or Mridu* and to affect the particular *Dosha*.

Dose of drugs: *Vagbhatta* advised, in the following proportion for the *Vasti Dravya*[12] :

Sneha –One fourth of kwath dravya

Kalka – One eighth of kwath dravya

Makshika – yathayogya or as Sneha dravya

Lavana – yathayogya or half karsha

Physician must consider factor mentioned by *Acharya Vagbhatta*, because practical aspect of factor mentioned by *Acharya Vagbhatta* considering very applicable in present time.

Preparation of the Vasti:

It plays significant role in getting the expected results. Mixing of the ingredients of the *Vasti* should be in this way. First of all the ingredients are to be taken in the required quantity by measuring them.

The ingredients should be mixed by triturating in the order of *Madhu, Saindhava, Sneha, Kalka, Kwatha* and then *Avapa Dravya* one by one gradually until it becomes a homogeneous mixture.[13] Then it should be churned further to make it more fine and homogeneous, heated in water bath to make it *Sukhoshna* i.e. nearer to the normal body temperature.

I. Pradhana Karma

It includes advice to the patient, *Vasti Pranidhana, Vasti Pratyagamana* and observing the *Samyaka yoga, Ayoga and Atiyoga Lakshana*.

Vasti Pranidhana :

Vasti is to be administered when the patient is having the symptoms of *Jirnahara* and is not very hungry. After performing *Abhyanga and Nadi Sweda,* the patient is asked to lie down in the left lateral position on the *Vasti* table. Then patient is asked to keep his left hand below the head as a pillow, to extend the left leg completely and to flex the right leg at the knee joint, keeping on the left leg by flexing the hip joint. Then *Sukhoshna Sneha* is to be applied in the anal region and on the *Vasti Netra*, remove the cotton piece and the air bubble if any and keep the thumb on the *Netra* while introducing it. Then introduce the *Vasti Netra* gradually in the parallel direction to that of the vertebral column up to ¼ part of the *Netra* until the nearer *Karnika* fixes over the anus. Then hold the *Vasti Putaka* in the left hand and keep the right hand on the *Putaka*.

After this press it gradually with the constant pressure, neither too fast nor too slow, without tremoring the hand. By asking the patient to breath in, push the *Vasti Dravya* into the rectum till a little quantity remains in the *Putaka* otherwise *Vayu* enters into the *Pakwashaya*, and then withdraw the *Netra* gradually. Then the patient is asked to lie down in the supine position. After this the patient is asked to lie in a comfortable position with a pillow below the hips till he gets the urge for defecation and when he/she gets the urge ask him/her to sit in *Utkatasana* and pass the urge. After administration of *Vasti Dravya*, a keen observation should be done so as to evaluate the proper function of *Vasti*.

Vasti Pratyagamana:

One muhurta (48 min) is the maximum period of time in which the *Pratyagamana* of *Vasti* should occur. If it does not occur then it causes untoward consequences like *Vata Pratilomata, Vistabdhata, Shula, Arati, Jwara* and even death.

Hence if it does not come out within the stipulated time period certain measures are to be undertaken for the *Vasti Pratyagamana* like administration of the *Tikshna Vasti, Phalavarti, Swedana* over the pelvic region, *Utrasana* (Showing fear) and administration of *Virechana Aushadhi*. Until the *Pratyagaman* takes place, the physician should observe the patient. However, *Kashyapa* opines that *Yapana Vasti* owing to its *Mridu* nature retains for longer time and *Tikshna Vasti* comes out in 100 matra periods, hence *Atitikshna Vasti* should not be administered.

YOGA – AYOGA - ATIYOGA LAKSHANA

Samyaka Yoga Lakshana[14]:

Prasrista Vitakata, Prasrista Mutrata, Prasrista Vata, Kramena – Mala , Pitta, Kapha & Vayu Visarjana, Laghuta, Ruchi, Agnidipti, Ashaya Laghuta, Rogoprashamana, Prakritisthitata, Bala Vriddhi.

Ayoga Lakshana[15]:

Shiro – Hrit – Guda – Vasti – Medhra Vedana, Shotha, Pratishyaya, Parikartika, Hrillasa, Vatasanga, Mutrasanga, Swasakrichchhrata, Alpa Vega, Alpa Vasti Pratyagamana, Alpa Mala – Anila Pratyagamana, Aruchi, Gaurava. In Ayoga, measures for Vasti Pratyagamana should be undertaken.

Atiyoga Lakshana[16]:

These Lakshanas are similar to that of *Virechana Atiyoga i.e. Angasupti, Angamarda, Klama, Kampa, Nidra, Daurbalya, Tamapravesha, Unmada, Hikka. In Atiyoga, Grahi, Dipana, Pachana Aushadhi* is to be administered and according to symptoms it is to be managed.

II. Paschata Karma :

If *Samyaka Niruhita Lakshanas* are not observed, then again *Vasti* may be administered preferably after administering an *Anuvasana Vasti* and further 3rd or 4th *Nirooh Vasti* may be administered on next day till getting the *Samyaka Nirudhita Lakshana*.

Vasti Vyapada[17] :

These *Vyapadas* can be rectified by taking precautions and proper care. But certain other *Vyapadas* that occurs are of serious nature should be effectively Managed. They are as follows:

1] Ayoga: Due to less quantity of *Vasti Dravya*, rock salt, add oil leads to heaviness in abdomen, obstruction of flatus stool and urine, burning sensation, inflammation at anal region, itching, anorexia, etc.

2] Atiyoga: Administration of *Tikshna Vasti* to *Mridu Kostha* person leads to *Atiyoga* and symptoms are similar to *Vamana Virechana Atiyoga*.

3] Klama: Conduction of *Mridu Vasti* in *Ama* state, *Pitta* and *Kapha* gets vitiated and block the channels, which lead to dyspepsia. Thereafter *Vata* also become vitiated and causes fatigue, syncope, colic, chest pain, heaviness.

4] Adhmana: Due to low potency drugs to strong person, dry bodies and costive bowel, the drugs are not able to expel vitiated *Dosha* ,and *Vata* gets vitiated leading to *Adhmana* causing pain in *Vasti* and *Hridaya*, severe burning sensation, pain in testicles and groin.

5] Hikka: Hiccup results in administering *Tikshna Vasti* to weak person and *Mridu Kostha* with excessive expulsion of *Dosha*.

6] Hrit Prapti: *Vasti Dravya* reaches the cardiac region by entering into deeper levels due to complete squeezing or improper handling of *Vastiputaka* and causes pain in chest and the surroundings.

7] Urdhwagamana: Suppression of urges before or after *Vast karma* and squeezing *Vastiputaka* with high pressure leads to the upward movement.

8] Pravahika: Administration of less potent and insufficient quantity of *Vastidravya* to the person suffering from intensive vitiated *Dosha* leads to *Pravahika*.

9] Shiroarti: Includes symptoms of headache, earache, deafness, tinnitus and coryza, eye disorders due to administration of less potent *Sheeta Virya Dravyas* with insufficient quantity to weak persons.

10] Angarti: Administration of *Tikshna Vasti* without conducting pre-operative procedures like *Abhyanga and Sweda* leads to *Angarti* with upward movement of *Vata* and twisting and pricking pain in the body.

11] Parikartika: *Ruksha and Tikshna Vasti* in excessive quantity to the person having *Mridukoshta* and in conduction of less vitiated *Dosha* leads to the excessive expulsion of *Dosha* causing *Parikartika*.

12] Parisrava: Administration of *Tikshna and Ushna Vasti* to the person suffering from *Pitta Roga / RaktaPitta* leads to *Parisrava* and causes burning sensation, erosion and cutting.

MODE OF ACTION OF VASTI:-

1. Ayurvedic view: Probable mode of action of Vasti:

In Ayurvedic classics, Acharyas have tried to explain actions of *Vasti* with suitable analogies-

मूले निषिक्तो हि यथा द्रुमः स्यान्नीलच्छदः कोमलपल्लवाग्र्यः ।

(As.H.Su. 19/47)

As tree irrigated in its root level Attains nourishment for whole tree, In the same way, *Vasti* drugs given through *Guda* {Rich of blood vessels, lymphatic & nerves} Nourishes all the limbs & organs of the body. By the above mentioned reference, a collation of information about *Guda Sharira* (structure of Anus), its relations, its physiology etc. gives compendious information about it. *Guda* (Anus) is one of the *Pranayatana*, where all twelve *Prana* dwell predominantly. *Guda* (Anus) is a *Mamsa Marma* of *Sadyapranahara* type. Being a *Marma* it has roots of all four types of *Sira* embedded in it viz. *Vatavaha, Pittavaha, Kaphavaha and Shonitavaha*. Due to its *Sadyapranahara* nature, *Guda* (Anus) is highly sensitive. Even a mild stimulation to it, say, by *Vasti* drugs and procedure may sensitize the whole body by vigorous action of *Vayu* through all the *Siras* present in the body.

This physiology confirms immediate and all pervasive action of *Vasti* drugs even though the *Vasti* lies in *Pakvashaya*.

Relations of Guda (Anus):

Apana Vayu - Anus is the seat of Apana Vayu

Prana Vayu - Being Sadyapranahara Marma

Vyana Vayu - Vyana is all-pervasive

Samana Vayu - It moves all over the Kostha.

Pachaka Pitta - Helps in digestion

Sira, Snayu, Sandhi, Asthi - As it is a Marma and Mamsa Sannipata

Kala - Maladhara, Asthidhara and Majjadhara.

Dhatu - Rasa, Rakta, Mamsa, Meda, Majja & Shukra.

From the above-sited relevance, it may be said that, *Vasti* influences whole body. However, it acts mainly on the structures related to *Guda* (Anus). If *Apana* is controlled in its own abode other four *Vayus* can be bridled automatically. *Vagbhata* illustrated the whole phenomenon as follows-

The *Virya* (potency) of collective *Vasti* drug is first taken up by *Apana Vayu*, i.e. it acts or influences the *Gunas* of *Apana Vayu* with which it comes in contact first. Consequently the *Samana Vayu* is also affected followed by *Vyana, Prana and Udana*. By the *Gunas* of *Vasti Dravya*, the vitiated *Vayu* regain their normal state and supports the body. They also bring vitiated *Pitta* and *Kapha* in their normal state, and the five types of *Vayu* nourish their respective *Sharira-Bhuta Guna*.

Vasti drugs in *Pakwashaya* acts on whole body in a same way that of sun, which though placed in the sky, causes evaporation of water on the earth.[18A] The *Virya*(potency) of *Dravya* are propagated by the *Vyana* in *Tiryaka* or lateral direction, by the *Apana* in downward direction and in upward direction by *Prana*, just as water pipes carry water to the different parts of the field similarly the "*Harini*" (Channels) carry the *Gunas* of the *Vasti Dravya* to every part the body, hence a *Vasti* which is appropriate will with the help of *Vata*, *Pitta* and *Kapha* through the *Shira* will spread in all body and cures even the most difficult disease. *Pakwashaya* is the place where *Poshakamsha* (nutritive substences) originates and supplies the nutrition to all *Vayus*. As *Vasti* is introduced in its *Udbhavasthana*, it has capacity to control all the five *Vayu*. However it acts more on *Samana and Apana* because it has direct contact with their places.

Charaka clearly mentioned that in normal conditions *Sneha* of *Anuvasana* is digested within three days. As the *Sneha* is difficult to digest than *Kwatha* so it may be inferred that the drugs in the *Vasti*, other than *Sneha*, are digested sooner than *Sneha*. Chakrapani explored it further and explained, *Sneha* impregnated to *Pakwashaya* is digested by the *Agni* located there which gets exudates to the exterior. Further he stated that *Agni* is located above the colon, hence the *Sneha* adhered to the wall of the colon does not come in direct contact with *Agni*. Even then fractions of *Jatharagni* that come in contact with the *Sneha* perform this work of digestion.

2. Pharmacokinetics of Vasti Dravya- Modern aspect:

(I) Saindhava:

1] The cells of the intestinal mucosal membrane are so easily permeable for sodium chloride that hypotonic / isotonic solution are absorbed almost as rapidly as pure water.

2] The presence of Na+ (*Saindhava*) in *Vasti* Dravya may play important role for the absorption of the drug with the help of Na+ channels; the most commonly used channel for the absorption of the substances.

3] The concentrated dose of salt causes irritant action on the bowel producing peristalsis.

(II) Honey (Madhu):

Glucose molecules of Honey have better permeability to get absorbed and enter the circulation. Along with salts honey makes homogenous solution having properties to get penetrated easily.

(III) Taila (oily substance):

Oil mainly helps to protect the intestinal mucosa from the irritating substances. It helps for easy elimination of *Vasti Dravya*. Volatile substances are rapidly absorbed from aqueous or oil solutions. Oil enema or oil present in the enema preparation can also get absorbed.

(IV) Kalka (Paste):

This is one of the ingredients mainly according to the disease. *Kalka* gives thickness to the *Vasti Dravya*. The drugs containing volatile properties which cannot be used for the decoction can be used in the form of *Kalka*.

(V) Kwatha (Decoction):

This is the main content of *Vasti Dravya*. The drugs used for decoction are mainly according to the disease and the stage of the disease. The drugs which are soluble in water can be used in this way. Water base is always essential for the absorption of the drugs from the intestine. The *Kwath* gives essential quantity to the *Vasti Dravya* for administration.

3. Absorption and Influence of Vasti:

Vasti is not merely the enema, one which exerts local cleansing effect; rather it is a highly complex, sophisticated and systemic therapy having wider range of therapeutic actions and indication. It exerts its action by endcolonic (action inside the colon), encolonic(action on tissues of colon) and diacolonic (for systemic action) ways.

A) Absorption:

Vasti may be absorbed by: diffusion, filtration, osmosis or by adsorption depending upon substance used in it.

a) **Drug absorption**

1. The rectum has rich blood & lymph supply.

2. *Vasti* drugs get absorbed via two routes:

1) Drug absorbed by upper haemorrhoidal vein goes into portal circulation. 2) Drug absorbed by middle and inferior haemorrhoidal veins is always absorbed without reacting with digestive enzymes and acids.

b) **Electrolyte absorption-**

The ions like sodium (Na+), calcium (Ca) and potassium are absorbed and are essential for the generation of action potential, which is the main functional unit of Nervous system. Here are the mechanisms how they absorb from intestinal mucosa.

1. Sodium (Na+) ions are absorbed by Diffusion & Active Transport.

2. Chloride (Cl-) ions penetrates via Passive diffusion and facilitated by sodium absorption

3. Calcium (Ca) ions can be absorbed via Active Transport

c) Fat absorption-

1. In *Anuvasana Vasti*

- The Fat given by *Vasti* stimulates Cholecystokinin enzyme which stimulates Gall bladder to secrete the bile.
- Bile contains bile salts, 20-50 molecules of bile salt aggregate to form 'micelles' which have the ability to dissolve in water.
- The central part of micelles is fat soluble, so fatty acids & mono-glycerides dissolve in the center of micelle.
- When they come in contact with the surface of epithelial cells, fatty acids & mono-glycerides diffuses into the cell leaving the micelles behind.
- In this way the absorption of fat takes place in *Anuvasana Vasti*.

2. In *Asthapana Vasti*-

- While preparing the *Asthapana Vasti Sneha* is added into *Madhu & Saindhava.*
- By continuous *Mardana* of *Sneha* it gets emulsified in small particles.
- The small particles are covered by a layer of honey & rock salt and which is water soluble just like a micelles of bile salts which can be absorbed through the epithelial layer of intestine.

B) Influence on Bacterial Flora

a) *Vasti* influences the normal bacterial flora thus it increases the endogenous synthesis of Vitamin B12, Vitamin K etc. *Vasti* makes the whole metabolism normal.

b) Production of Thiamine with the help of bacteria, which is necessary for nerve conduction and which is produced in large intestine, may be controlled by *Vasti*.

C) **Influence through ENS (Enteric Nervous System):**

a) ENS (Enteric Nervous System) is Substantial group of neurons

b) It is capable of Autonomous reflex without influence of central nervous system.

c) More than 500 million neurons present in the ENS (Enteric Nervous System) so it's called "second brain".

d) There are so many similarities between CNS-ENS regarding cellular structure, neuropeptide secretion and specific functions. And recent studies have shown that there is great influence of CNS and ENS (Enteric Nervous System) on each other.

In this way, *Vasti* may produce Neuromuscular remodelling, pain modulation by influencing ENS (Enteric Nervous System) and thereby CNS (Central Nervous System).

Drug review

God sleeps in the minerals, awakens in plants, walks in animals, and thinks in man.
(*Arthur Young*)

DRUG REVIEW

The Vasti karma was observed on the patients of Grahani Roga in present study. The schedule of Vasti karma was adopted as Yoga Vasti.

The Vidangadi Taila (Ch.Sid.4/18)[1] was used in Anuvasana Vasti and the Contents of Dhanyapanchak Kwatha (Chakradutta- 3/21)[2] were taken in preparation of Nirooh Vasti.

VIDANGADI TAILA

Vidangadi Taila has been selected for present study. Yavakut of Kwatha dravya is taken in same quantity and added water 8 times of total amount of Kwatha dravya, prepared its decoction with ¼ reduction of water, and then added Tila Taila in Chaturthansha Pramana of Kwatha and Kalka in Chaturthansha Pramana of Taila. Taila is prepared on slow fire.

This Vidangadi Taila is indicated for the treatment of Grahani Roga, Agni- vishmata, Malavikriti and all three Dosha Prokopa. It is used as Pana, Abhyanga and Vasti method.

The Latin name, Family and Gana of the ingredients of Vidangadi Taila are as given below:-

DRUG	BOTANICAL NAME	FAMILY	PART USED	PROPERTIES					DOSHAGHNATA
				RASA	GUNA	VIRYA	VIPAKA	KARMA	
VIDANG	Embelia ribs	Myrsinaceae	Phala	Katu, Kasaya	Laghu, Ruksha, Tikshna	Ushna	Katu	Krimighna Dipana, Pachana Anulomana, Rasayna dravya,	KAPHAVATA
ERAND	Ricinus communis	Euphorbiaceae	Mool,	Madhura	Snigdh, Tiksna Sukshma	Ushna	Madhura	Amashodhana, Dipana, Bhedana	KAPHAVATA
PATOLA	Trichosanthes dioca	Cucurbitaceae	Patra	Tikta	Laghu, Singdha	Ushna	Katu	Dipana, Rochana	VATA, PITTA, KAPHA
GUDUCHI	Tinospora cordifolia	Menispermaceae	Kanda	Tikta, Kashaya	Laghu, Snigdha	Ushna	Madhura	Rasayan, Dipan, Balya, Samgrahi	VATA, PITTA, KAPHA
HARITAKI	Terminalia Chebula	Combertaceae	Phala	Pancha rasa (Lavana Varjita), Kashayapradhana	Laghu, Ruksha	Ushna	Madhura	Vedanasthapana, Vranashodhana, Vranaropana, Dipana, Pachana, Krimighna, Anulomana,	VATA, PITTA, KAPHA
VIBHITAKI	Terminalia Bellirica	Combretaceae	Phala	Kashaya	Ruksha, Laghu	Ushna	Madhura	Anulomana, Bhedaniya, Shothahara	VATA, PITTA, KAPHA
AMALAKI	Emblica Officinalis	Euphorbiaceae	Phala	Pancharas (Lavana Varjita) Amla Pradhana	Guru, Ruksha,	Sheeta	Madhura	Dahaprashamana, Rechana, Dipana, Anulomana,	VATA, PITTA, KAPHA
JATI	Jasninum officinale	Oleaceae	Patra,	Tikta, Kashaya	Laghu, Snigdha,	Ushna	Katu	Anulomana	VATA, PITTA, KAPHA
NIRGUNDI	Vitex negundo	Verbenaceae	Patra,	Katu, Tikta, Kashaya	Laghu, Ruksha	Ushna	Katu	Amapachana, Shothahara, VedanaSthapana, Jwaraghna	VATA KAPHA
AKHUP	Merremia	Convolvul	Panch	Katu	Laghu,	Ushna	Katu	Dipana,	KAPHAVA

ARNIKA	emarginata	aceae	ang		Ruksha, Tikshna			Rechan, Krimighna	TA
NIMBA	Azadiracta indica	Meliaceae	Kand tvak	Tikta, Kashaya	Laghu	Sheeta	Katu	Sangrhahi, Balaya, Agnivardaka,	KAPHA PITTA
PATHA	Cissampelos Pareira	Menispermeaceae	Mula Bhumik Kand	Tikta	Laghu, Tikshna	Ushna	Katu	Dipana, Pachana,Grahi	VATA, PITTA, KAPHA
PIYAVASA	Barberia prionitis	Acanthaceae	Bija,	Tikta,	Laghu	Ushna	Katu	Vishaghna, Shothahar, Raktashodhak, Vedanasthapan	KAPHAVATA
AMALTASA	Cassia fistula	Caesalpiniaceae	Phala majja,	Madhura	Guru, Snigdha, Mridu	Sheeta	Madhura	Mriduvirechana, Anulomana	KAPHA PITTA
KARVIRKA	Thevetia neriifolia	Apocynaceae	Mula	Katu, Tikta	Laghu, ruksha, Tikshna	Ushna	Katu	Dipana, Vidahi, Bhedana	KAPHAVATA
MADAN PHALA	Randia spinosa	Rubiaceae	Phala	Kashaya, Madhura, Tikta, Katu	Laghu, Ruksha, Vyavayi, Vikasi	Ushna	Katu	Vatanulomana, Lekhana	KAPHA PITTA
BILVA	Aegle marmelos	Rutaceae	Mula, Tvaka, Phala	Kashaya, Tikta, Madhura	Laghu, Ruksha	Ushna	Katu	Dipana, Pachana,Grahi	KAPHAVATA
TRIVRITA	Operculum terpathu	Convolvulaceae	Mula-tvaka	Katu , Tikta	Laghu, Ruksha, Tikshna	Ushna	Katu	Lekhan, Sukhavirechan	KAPHA PITTA
PIPALI	Piper longum	Piperaceae	Phala,	Katu	Laghu, Snigdha, Tikshna	Anusna Sheeta	Madhura	Dipana, Shirovirechana, Raktashodhaka,	VATA KAPHA

RASNA	Pluchea lanceolata	Compositae	Kanda	Tikta	Guru	Ushna	Katu	Amapachan, Shoolaghna, Vedanasthapan	KAPHAVATA
BHUNIMBA	Andrographis paniculata	Acanhthaceae	Whole Plant	Tikta	Laghu, Ruksha	Ushna	Katu	Dipana, Piitasraka Saraka	KAPHA PITTA

DEVDARU	Cedrus deodara	Pinaceae	Kandsara	Tikta	Laghu, Snigdha	Ushna	Katu	Dipana, Pachana	KAPHAVATA
SAPTAPARNA	Alstonia scholaris	Apocynaceae	Tvaka	Tikta, Kashaya	Laghu, Snigdha	Ushna	Katu	Dipana, Anulomana, Yakridbalya	KAPHAPITTA
VACHA	Acorus Calamus	Araceae	Mula	Katu, Tikta	Laghu Tikshna	Ushna	Katu	Shoolaghna, Shakrita-Mutra Shodhana Pramathi proerty (of Vacha) dilates Srotomukha (Ch.Chi.8/166).	VATAKAPHA
USHIRA	Vetiveria zizanioidis	Graminae	Mula	Tikta, Madhura	Ruksha, Laghu	Sheeta	Katu	Dipana,Pachana, Trishnanigrahana,Chardinigrahana,Stambhana	KP↓

DARUHARIDRA	Berberis aristata	Berberidaceae	Mula,	Tikta, Kashaya	Laghu, Ruksha	Ushna	Katu	Dipana, grahi, Shothahara Vedanasthapana	KAPHAVATA
KUSTHA	Saussurea lappa	Compositae	Mula	Katu, Tikta, Madhura	Laghu, Ruksha Tikshna	Ushna	Katu	Dipana,Pachana,Anulomana, Shulaprashamana	KAPHAVATA
INDRAYAVA	Holarrhena antidysentrica	Apocynaceae	Bija	Katu, Tikta	Laghu, Ruksha	Sheeta	Katu	Sangrahi, Dipana	VATA, PITTA, KAPHA
MANJISTHA	Rubia cordifolia	Rubiaceae	Mula	Kashaya, Tikta,	Guru, Ruksha	Ushna	Katu	Krimighna, vishaghna, raktashodhaka,	KAPHAPITTA
HARIDRA	Curcuma longa	Zingiberaceae	Kanda	Tikta, Katu	Laghu, Ruksha	Ushna	Katu	Raktavardhana Raktaprasadhan Anulomana, Jwaraghna.	VATA, PITTA, KAPHA
SHATAHVA	Foenieulum vulgare	Umbelliferae	Phala,	Madhura Katu, Tikta	Laghu, Snigdha	Sheeta	Madhura	Dipana,Pachana,Anulomana, Trishnanigrahana,Chardinigrahana	VATA, PITTA
CHITRA	Plumbago	Plumbagin	Mula	Katu,	Laghu,	Ushna	Katu	Dipana,Pachan	KAPHAVA

KA	zeylenica	aceae		Tikta	Ruksa, Tiksna, Usna			a, Lekhana, Shothahara	TA
KARCHURA	Curcuma zedoaria	Zinziberaceae	Kanda	Katu, Tikta	Laghu, Tikshna	Ushna	Katu	Dipana, Rochana, Anulomana, Yakridottejaka	KAPHAVATA
CHORAKA	Angelica glauca	Umbelliferae	Mula	Katu, Tikta	Laghu, Tikshna	Ushna	Katu	Dipana, Pachana, Anulomana, Rochana	KAPHAVATA
PUSHKAR MULA	Inula racemosa	Compositae	Mula	Katu, Tikta	Laghu, Tikshna	Ushna	Katu	Dipana,Pachan, Anulomana	KAPHAVATA

Dashmula

Ingredients: Bilva Root (Aegle marmelos), Agnimantha Root (Premna integrifolia), Shyonaka Root (Oroxylum indicum), Patala Root (Stereospermym suaveolens), Kashmari Root (Gmelina arborea), bruhati Root (Solanum indicum), Kantakari Root (Solanum xanthocarpum), Shalaparni Root (Desmodium gangeticum), Prushniparni Root (Uraria picta), Gokshura Root (Tribulus terrestris).

Actions: Charaka has described Dashamula in Shothahara Mahakashaya. Dashamula mitigates Doshas especially Vata (Sushruta). It is Shwasahara, Amapachana, and Jwarahara (Sushruta). According to Bhavaprakasha, it is useful in Shotha, Shwasa, Kasa, Shiroruja, Tandra and Parshvapida. Dashamula are used extensively in Vatavyadhi in different formulations and in different forms like Churna, Kwatha, Asava etc.

Medicinal uses: Though Dashamula are useful in all Vata disorders, however, each drug in Dashamula has its action on specific type of Vata, e.g. Kantakari and Brihati act on Udana Vatu, Shalaparni and Prishniparni and Agnimantha act on Vyana Vayu. Bilva and Shyonaka has main action on Samana Vayu and; and Gokshura pacifies Apana Vayu (Gokhale, 1962).

Tila Taila -

Latin name - Sesamum indicum

Family - Pedaliaceae

Part used - Taila

Rasapanchaka

Rasa - Madhura, kashaya, Tikta

Virya - Ushna

Vipaka - Madhura

Guna - Guru, Snigdha, Picchila, Laghu, Ruksha, Sukshma

Doshaghnata - Vata

Phytochemical profile: Sesamum oil is rich in oleic and linoleic acids, which together account of 85% of the total fatty acid. Myristic, palmitic stearic, arachidic, hexadechoneic, and lignoceric acid is present in trace, sesamin, sesamolin and sterol are found in the oil.

Properties and uses: The sesamum oil is sweet with astringent as subsidiary taste, penetrating, hot readily absorbed, aggravates Pitta and Kapha, constipating, antidiuretic, the best among the Vata alleviating, strength promoting, beneficial for skin, and promotes intellect and appetite. It destroys all diseases due to combination of drugs and processing (Ch. Su. 27/286-288) [3].

DHANYAPANCHAK KWATHA-

The Dhanyapanchak Kwatha consists of 5 drugs and mentioned in Chakradutta-Ch. 3/21.[2]

The Latin name, Family, Gana and Part used of the ingredients of Dhanyapanchak Nirooh Vasti is given below:-

1) DHANYAKA:

Botanical Name : Coriandrum sativum

Family : Umbelliferae

Synonyms : Chhatra, Kustumburu, Vitunnaka

English Name : Coriander

Gana : Trishna Nigrahana, Shitaprashamana (Ch.) Guduchyadi (Su.)

Part used: Fruit, Oil, Leaves

Properties :

Rasa - Kashaya,Tikta, Katu

Guna - Snigdha, Laghu

Virya - Ushna

Vipaka - Madhura

Doshaghnata - Tridoshahara

Chemical :In fruit Moisture11.2%, Protein 14.11%, Fat 16.1%, Constituents Carbohydrate 2.6%, Minerals 4.4%, Volatile oil 0.5%, it contain Coriandrol. Fatty oil is 19-21%. (Glossary of Indian Medicinal Plants – 1992)

Action & uses: It is Deepana, Pachana, Mutral, Rochana & Grahi. Hence it is prescribed in condition of Jvara, Trishna, Daha, Shvasa, Kasa, Arsha, Krimi etc.

2) SHUNTHI

Latin Name : Zingier officinale Rosc

Family : Zingiberaceae

Gana: Charaka : Truptighna, Dipaniya, Trishanigraha

Sushruta : Pipalyadi, Trikatu.

Classical Name: Shunthi, Vishva, Vishvabheshaja, Shringavera,

Mahaushadha, Nagara.

Sanskrit Name : Shunthi

Hindi Name : Shonth

English Name : Ginger, Dry Zingiber

Properties

Rasa : Katu

Guna : Laghu, Snigdh

Virya : Ushna

Vipaka : Madhura

Doshaghnata : Kapha-Vata Shamaka

Part used : Rhizome

Karma : Kapha-Vata shamaka, Shothahara, Dipana, Pachana, Anulomana, Shoolahara, Srotorodhanivarana, AmaPachana.

Actions and Uses: - It is aromatic, carminative, stimulant to the gastrointestinal tract and stomachic. It removes viscid matter, strengthens memory, removes obstruction in the vessels. It is used is nervous diseases, Sannipata Jvara, Agnimandya, Ajeerna, Amavata , Grahani, Hikka, Urustambha, etc.

Chemical Composition:- Camphene, Phellandrene, Zingiberine, Cineol and borneol, ginerol. Gingerin is the active principle. Other resins and starch, K-Oxalate is also present. Zingiber officinale contains 0.25 to 3% of a volatile oil possessing the aroma. The drug contains in addition resin and about 56% of starch. The crude fibre varies from 1.7% to 9% with an average of 4% the vitamins present in the green ginger are; Thiamine 0.06, riboflavin 0.03, niacin 0.06, and vitamin C 6.0 mg/100 gm. The carotene present in 40mg/100g.

Shunthi is included under Deepanaiya Mahakashaya so by virtue of Deepana Pachana and Rochan guna , it modulates the Agni especially at the Dhatu level of metabolism. By its Trishnanigrahan property, it prevents voracious thirst.

3) NAGAR MOTHA

Latin name : Cyperus rotandus

Family : Cyperaceae

Gana

Charka : Triptighna, Trushanigrahana,Lekhaniya

Sushruta : Mustadi, Vachadi

Classical Name : Varid, Mustaka

Sanskrit Name : Mustak

Hindi Name : Motha

English Name : Nut grass

Part used: Rhizome

Properties:

Rasa: Tikta, Katu;

Vipaka: Katu;

Virya: Shita;

Guna: Laghu, Ruksha.

Actions: Dipana, Pachana, Vatakar, Kaphapittahara, Jwarahara. Acts on Rasa, Asthi, Majja Dhatu, Amashaya and Basti. (Phadke, 1960)

Medicinal uses: Musta is the drug of choice among all Dipana and Pachana drugs (Ch. Su. 25).

Chemical Constituents: β – sitosterol, pinene, cineol, linolenic, linolic, oleic, myristic and stearic acids, cyperotundone, α-rotunol, β-rotanol, cyperolone, cyperenone, aureusidin.

Pharmacological Activities: Tranquillizing, anti-inflammatory, anti-pyretic, oestrogenic, antiemetic, smooth muscle relaxant, antimicrobial, diuretic.

4) BILWA :

Latin Name : Aegle marmelos

Family : Rutaceae

Gana:

Charaka : Sothahara, Arshoghna, Asthapanopaga, Anuvasanopaga.

Sushruta : Vrihat Panchamoola, Varunadi, Jambawastthadi.

Classical Name: Shriphala, Sadaphala, Shandily, Mahakapitha

Sanskrit Name : Bilwa

Hindi Name : Bael

English Name : Bael

Properties

Rasa : Kashaya, Tikta

Guna : Laghu, Ruksha

Virya : Ushna

Vipaka : Katu

Doshaghnata : Kapha-Vata Shamaka

Part used : Mool, Twak, Phala, Patra

Actions: Pacifies Vata and Kapha and aggravate Pitta. Its root is used in Vata Vyadhi (Sharma, 1988).

Chemical Constituents: Tannic acid, volatile oil etc. Most important active principle is 'marmelosin'.

Pharmacological Activities: Antibacterial (Bhatt et al. 1984), anti-inflammatory and wound healing (Udupa et al. 1994).

5) SUGANDHABALA

Botanical Name : Valeriana wellichii DC.

Family : Valerianaceae

Parts used : Root

Synonyms : Tagara, Nata, Vakra, Nahush, Udeechya

Action and Uses : The plant is indicated in poisoning,epilepsy, colics and in eye diseases.Also tridoshahara.

Properties :

Rasa : Katu, Tikta, Kashaya

Guna : Laghu, Snigdha

Virya : Ushna

Vipaka : Katu

Doshaghnata : Kapha, Vata Shamaka

Karma : Vednasthapaka, Akshepahara, Vranaropaka, Shulaprashama, Saraka, Kaphaghana and Shwashara. Yakrit and Hridyottejaka, Vishaghna, and Balya.

Pharmacological activities : Analgesic, anti- convulsive, cardiac tonic.

Rasapanchaka of the Dhaanyapanchak

INGREDIENT	RASA	GUNA	VIRYA	VIPAKA	PRABHAV	KARMA
DHANYAKA	Katu	Laghu,Snigdha	Ushna	Madhura	Dipan,Pachan,Grahi	VPK↓
BILVA	Tikta	Laghu,Ruksha	Ushna	Katu	Dipan,Pachan,Grahi	KV↓
NAGARMOTHA	Katu	Laghu,Ruksha	Sheeta	Katu	Dipan,Pachan,Grahi	KP↓
SUGANDHBALA	Katu	Laghu,Snigdha	Ushna	Katu	Dipan,Pachan,Grahi	KV↓
SHUNTHI	Katu	Laghu,Snigdha	Ushna	Madhura	Dipan,Pachan,Grahi	KV↓

SAINDHAVA LAVANA

Latin Name : Sodii Chloridum

Rasapanchaka

Rasa : Lavana, Madhura

Guna : Snigdha, Tikshna, Sukshma & Laghu

Veerya : Anushna Sheeta & Sheeta (B.P)

Vipaka : Madhura

Doshghnata : Tridoshahara

Phytochemical profile: It is a white transparent & cubic in shape, which contains NaCl, KCl, Ca.So4, CaCl2, and MgCl2 & NaHCo3. The chloride content is 59.64 w/w & Sulphide content is 10.40 w/w. Its specific gravity is 2.17.

Properties and uses: Agni Deepaka, Pachaka, Ruchikaraka, Kapha Vilayana & Chedana, Vrisya, Chakshusya, Hridya & Srustamutrapurisa. All the salts are Vishyandi, Sukshma, Tikshna, Ushna and Vataghna in action. They promote evacuation of bladder and rectum (A.H.Su.6/143) [4]

These all properties exist in Saindhava also. Besides, it is Madhura in trace, Vrishya and eliminates all the three Doshas. It is Laghu and slight Ushna, doesn't cause Vidaha and is Dipana. Because of its Vishyandi property it separates the particles and thus reduces the compactness and density of Kapha.

On account of its Sukshma property it can go in the microchannels of body. Thus molecule of other contents of Vasti if bounded with Saindhava may also reach up to the micro-channels. Here Saindhava plays the role of a carrier, and helps to act the Vasti in deep level. Saindhava liquefies and segregates the Kapha in the body (Ch.K.1/15)[5]. It also liquefies the accumulated morbid matter there in by virtue of its Ushna property and breaks it up by its Tikshna property. As it promotes the evacuation, the broken and liquefied matter is expelled out (Ch.Su.25/43) hence Vasti doesn't retain inside and comes out after certain time.

MADHU:

Honey is Madhura and Kashaya in taste, Ruksha Shita Laghu in Guna and is Deepan, Varnya, Savarnya, Lekhana, Hridya Vajikaran, Sandhankar, Shodhana, Ropana and Prasadan in action. It has capacity to go through micro channels. Because of its Laghu Guna it eliminates Kapha. By virtue of its Pichhila Guna and Madhura and Kashaya taste it eliminates Vata and Pitta. Thus it is Tridosha Prashmana in nature (Su.Su. 45/132) [6].

According to charaka honey is provocative of Vata, Guru, Shita, curative of Rakta Pitta and Kapha disorders (Ch. Su.27/245) [7].

As honey is composed of various substances it is the best of vehicles. (Ch. Su. 27/249) [8]. Honey is best Kapha-nashaka, and moderately Pitta-nashaka. It leads to Mansa and Meda Kshapana, Rakta Prasadana, Rasa Pachana and Vrishya quality (Nanal, 1998).

Honey being the best vehicle and having capacity to go through micro channels, increases the potency of Vasti drugs. This also carries the drug to molecular level. Vasti with honey do not lead to over action or under action.

Chemical constituents: Laevulose 40 - 50 %, Dextrose 32 - 37 %, and sucrose 0.4 - 0.6%, vitamin B, B2, B6, C and Nicotinic acid. The miner constituents of honey are Pestrine and Gums 0.7 %, Ash 0.182 - 1%, and Miscellaneous acid, Pollen grains, Beeswax pigments etc.0.1 - 7 %. It also contains minerals like Potassium, Magnesium, Zinc, Calcium, Iron, and Copper etc.

Actions and Uses: Honey could lower blood sugar and improve renal hepatic and bone marrow functions and lipid profile. It decreases Sr. Cholesterol, Sr. LDL, Sr. triglyceride and increase S.HDL level.

PATHYA

The registered patients were advised to follow the Pathya regimen following were chosen –
Takra, Payas,Shuntthi,Saumf, Mudgayusha, Ushnajala

The patients were advised to include the above mentioned dietary articles in their normal routine, after registration and up-to the day of investigations were completed i.e. before the commencement of clinical trial. Later on, the same Pathya was advised to be followed throughout the entire schedule of treatment.

Once, the Vasti procedure was started, they were advised to consume Ushnajala, Takra and Yusha in sufficient quantities throughout the day. The Guna Karma of these Pathya articles have been briefly presented here:-

a. Takra: Laghu, Kashaya, Amla, Dipana, Kaphavatahara, Aruchinashaka.

b. Kshira: Svadupaka, Snigdha, Ojasya, Dhatuvardhana, Vata-pittahara, Mutra-krcchrahara etc.

c. Mudga: Kashaya, Madhura, Rakta-pittahara.

d. Ushna Jala: Laghu, Ushna, Dipana, Pachana, Basti shodhana,Vata-kaphahara etc.

The Pathya dravya by virtue of their Kapha-vatahara, Dipana,Pachana and Vasti-shodhana actions fortify the action of the drugs taken for the study.

Clinical study

"Observation more than books and experience more than persons, are the prime educators."
(Alcott, Amos Bronson)

CLINICAL STUDY

Research is a 'creative work' of high order, different from the routine work and having a sense of further development. Research in general requires a strict disciplinary and scientific code of investigational approach to the problem which has to be followed rigidly and then only the results could be authentic and reproducible. For achieving the reproducible results one has to follow the strict unbiased observation without any sentimental attachment to any science. It is accepted by all sciences that *pratyaksha direct evidence is the most* acceptable to all evidences.
A small step of research can become a boon to humanity. Hence the present work is a small step in the field of medical science. In the research of medical science, clinical study is the most vital part of it and evaluation of any therapeutics is incomplete unless and until they are tried clinically.

AIMS AND OBJECTIVES

• To evaluate the effect of Vasti karma in management of Grahani Roga.

- To study Grahani Roga with reference to I.B.S.and other disorders from Ayurveda and Modern System of medicine.

SELECTION OF PATIENTS: All the patients were selected from O.P.D. and I.P.D. of Rishikul Govt. P.G. Ayurvedic College & Hospital, Haridwar (U.K.).

SAMPLING TECHNIQUE: The patients were selected irrespective of their sex, religion, occupation etc. and simple random sampling technique was followed.

DIAGNOSTIC CRITERIA:

All the patients were diagnosed on basis of prepared Proforma incorporating all the sign and symptoms of Grahani Roga according to ayurvedic and modern classics. The detailed examination carried out on each patient to exclude other diseases properly.

INCLUSION CRITERIA:

- Age – 16 – 60 years.
- Clinical features suggesting Grahani Roga.
- Patients of conventional long term therapy with no satisfactory response.

EXCLUSION CRITERIA:

- Age < 16 years and > 60 years.
- Patients with major ailments like heart disease, diabetes mellitus, piles, blood mixed stool, ascitis, etc.
- Patients having tuberculosis, malignancy or hepatic abscess.
- Patients with any surgery of GI tract.

INVESTIGATION:

Routine Haematological Hb%, TLC, DLC, ESR, Urine & Stool examination were carried out to assess the general condition and exclusion of other pathogenesis of the patients.

DETAILS OF MATERIAL & MATHOD:

The method adopted in present study is randomized clinical study. The patients were administered with *Yoga Vasti* prepared with *Dhanyapanchak Kwatha as Nirooh Vasti and Vidangadi Taila as Anuvasana Vasti*. A 32 days complete course of *Vasti karma* was consist 8 days *Vasti karma* and after 16 days interval the next course of 8 days of *Vasti* was performed -

Day 1 to 8 - *Vasti*

Day 9 to 24 - *Parihaar kaal*

Day 25 to 32 - *Vasti*

YOGA VASTI:

In the present study, schedule of *Yoga Vasti* followed where on day first 1 *Anuvasana* was given then Afterwards 3 *Anuvasana* and 3 *Nirooh* were given alternatively and at last 1 *Anuvasana Vasti* were administered.

CONTENTS OF VASTI:

Nirooh Vasti-

Dhanyapanchak Kwatha- 400ml

Vidangadi Taila- 100ml

Madhu- 100 ml,

Dhanyapanchak Kalka – 30 gm

Saindhav- 15 gm

Total dose administered- approx. 645 ml

Anuvasana Vasti- *Vidangadi tail*

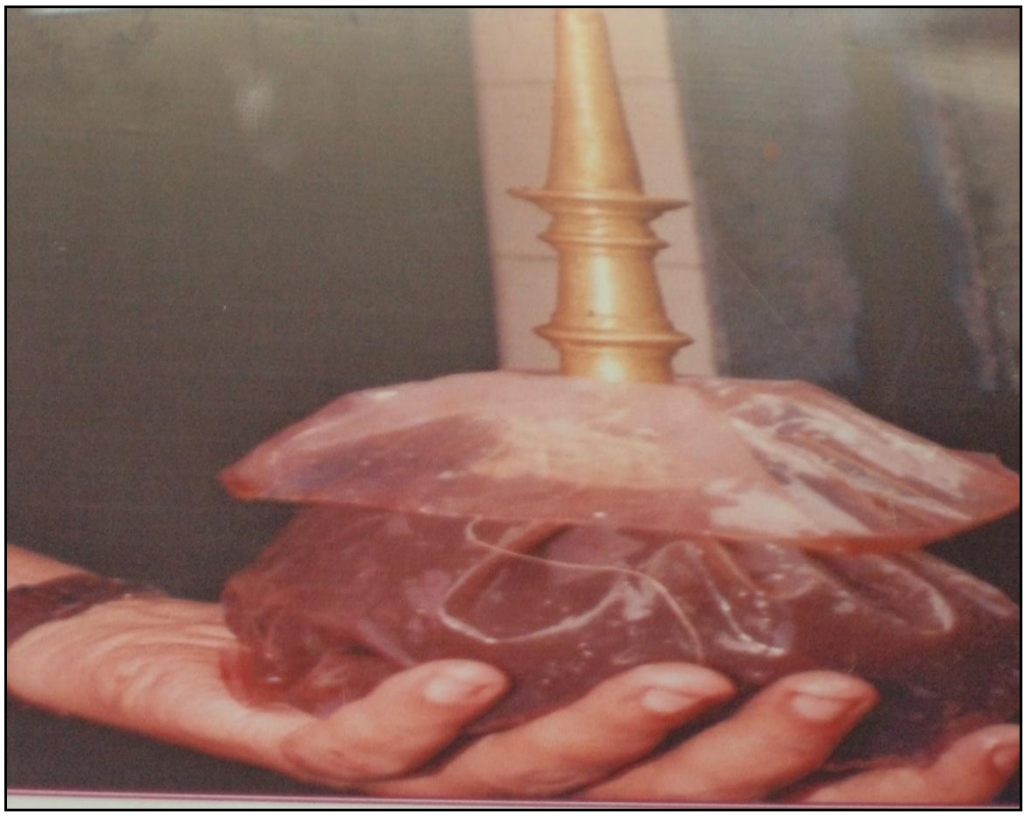
Dose administered- approx. 120ml

Step1: Preparation of Dhanyapanchak decoction.

- Decoction is the main part of the *Vasti* and is selected to serve the specific functions.
- To prepare decoction, approx.1.6 liters of water is taken and 100 gms of *Dhanyapanchak Yakut* is added into it. Now it is allowed to get boiled up to ¼ of total e.g.400 ml. So ultimately 400 ml decoction can be obtained.
- By making a Decoction preparation, all the qualities of crude drugs are transferred to water by boiling process.
- Water is the source matter of nourishment i.e. *Rasayoni.* It promotes the nourishing effect of the ingredients added to the Vasti and enhances the action of Vasti *Dravyagata Rasa* (essence of Vasti). Water, by dint of its *Avyakta rasa* and *Laghu Guna* potentially imbibes qualities of the drugs boiled with it and the preparation, thus, becomes more effective and readily absorbable. Water possess qualities like *Jivana*(vital), *Tarpana*(nourishing), *Amritam* etc. Amongst these, *Amritam* is the most important quality. Dalhana opined it is said *Amrit* because it does not provoke any *Dosha* - it's chemically inert.
- Due to Decoction formation, the substratum changes from solid to liquid. However, qualities of the drugs remain same.

Step 2: Mixing of honey and rock salt.

- 15 gms of rock salt and 100 mg of honey are mixed together in mortar.
- Honey, is first of all poured and triturated well with rock salt. Rock salt disintegrates *Paichhilya* (stickyness), *Bahalatva* (voluminous) and *Kashayatva* (astringent) property of honey and potentiates its *Sukshmasrotogami* and *Srotoshodhaka* property.
- Absence or less quantity of rock salt is responsible for *Ayoga* where as in excess quantity it produces burning and diarrhoea. Honey is extensively *Yogavahi* , *Rasayana* and *Tridoshahara.*



- When Vasti is fortified with honey, they do not allow any *Atiyoga* or *Ayoga*.

Step 3: Oil is to be poured in the mortar.

- 100 ml of *Vidangadi* oil is poured in the mixture of honey and rock salt and triturated well.
- The qualities of *Sneha* like *Snigdha*, *Guru* get mixed with above solution and form a uniform mixture. It counterparts the some of initiating properties of honey and rock salt.

Step 4: - Kalka Dravyas (paste) are added.

- To prepare *Kalka* (paste) 30 gms of *Dhanyapanchak* powder is taken and adequate amount of water is added into it and mixed vigorously to obtain paste like consistency. Then it is added to the mixture and mixed well till the mixture become homogenous.
- It also gives required thickness to the Vasti material so that the Vasti may be retained in *Pakwashaya* for appropriate time. Less quality or absence of *Kalka* makes Vasti too thin, which cannot retain in the body for longer time. Excess quantity of *Kalka* makes Vasti viscid, and difficult to administer. Thicker Vasti cannot return in the expected time.

Step 5: Decoction is added in the mixture.

- Decoction and mixture in the mortar are to be mixed and stirred well. This addition of Decoction brings homogeneity in the Vasti.
- *Vasti Dravya* is made lukewarm by keeping it into hot water.

QUALITIES OF PREPARED VASTI DRAVYA:

(1) A prepared *Vasti dravya* should be homogenous.

(2) *Vasti dravya* should be kept at body temperature at the time of administration.

(3) No oil drops should be floating on the surface of *Vasti dravya*.

(4) Consistency of Vasti should be not so thick and not so liquid.

Method of Administration of Dhanyapanchak Vasti:

After passing the stool and urine the patients were subjected to local *Abhyanga* (with Bala Oil) and *Swedana* (Nadi Sweda). Patients undergone preparatory procedure were given left lateral position with their left leg held out stretched while the right leg flexed at knee and held near abdomen. Movements at the time of Vasti were prohibited. *Vasti Yantra* was used for

administration of Vasti. *Vasti Netra* was lubricated with oil. *Vasti Puttaka* was filled with required quantity of prepared drug and *Vasti Netra* was introduced into anus steadily and slowly.

Vasti Netra was removed after administration of Vasti and patients were advised to relax in supine position. After sometimes, patients were advised to get up from the table and to take rest in bed.

Method of Administration of Anuvasana Vasti:

Anuvasana Vasti was given with the help of Anuvasana *Vasti Yantra*. Patients were advised to have take meal before coming for *Anuvasana Vasti.* After performing local *Abhyanga*, lubricated catheter was inserted into anus slowly. Then the oil was pushed steadily by pressing the handle. Catheter was removed after administration of Vasti and patients were advised to relax in supine position. Then gentle pats were given on the soles and buttocks of the patients. After sometimes patients were advised to get up from the table and to take rest on bed.

PARIHARA-

Pathya Ahar and *Vihar* should be observed for double the period as undertaken in the entire course of Vasti therapy. The patients should avoid activities like *Atyasana, Avasthana*, speaking loudly, sleeping during the day, excessive sexual activities, and use of cold water roaming in the sun, cold wind and angry temperament. He should take beneficial food, considering the *Kaala*. (Ch. Si. 1/54, 55) [9].

PATHYA VICHAR

• Nirooh: After the *Vasti Dravyas* have been adequately let out, the patient should be allowed to rest and take bath with luke warm water. Milk,*Yusha* and *Mansarasa* should be given in dominance of *Pitta, Kapha and Vata* respectively. (Ch.Si 3/70 & Su.Chi.38/12) [10]. Light diet should be taken with one third or half fraction of stomach remaining empty (Su.chi38/13) [11]. Acharya Vagbhatt opines that *Doshas* which gain momentum due to Nirooh and tend to produce complications can be pacified by the use of warm water. (A.H.Su.19/51) [12]

• Anuvasana: The day following Vasti, good food should be given in the afternoon and *Yushadi* in the evening (Su.Chi.38/11-13). The patient should be given water incorporated with *Dhanyaka and Nagar*. This aid in digestion, assimilation of *Sneha*, does *Kapha chhedana* and *Vatanulomana* (Ch. Si. 4/43-44) [13].

CONSENT FORM-

The purpose of the study, nature of the study drugs, the procedures to be carried out and the potential risks and benefits were explained to the patients in details. Thereafter their consent was taken.

FOLLOW UP-

The follow ups and assessment of the patients were done on 30days and 60 days after the complete *Vasti karma*.

CRITERIA FOR ASSESSMENT

Grading of parameters taken for assessment

1. Muhurbaddha / Muhurdrava Mal pravriti

0 - Passing of normal consistency stool.
1 - Passing stool (2-3 times /day) irregular, without pain.
2 - Passing stool (3-5 times / day) just after meals, irregular, with pain.
3 - Passing stool more than 5 times/day just after meals, irregular, with pain

2. Arochak:

0 - Normal appetite.
1 - Loss of appetite without eating habits.
2 - Oral intake altered without significant weight loss.
3 - Associated with significant weight loss.

3. Trishna :

0 - No thirst.
1 -Thirst satisfaction from taking normal limited water.
2 - Thirst satisfactions after taking more than normal limited water. frequency of taking water is also increases.
3- No satisfaction after taking water, taking electrolytes.

4. Praseka :

0 - Normal salivation during meal.
1 - Morning or evening, one time without meal time.
2 - Morning and evening, both time without meal time.
3 - Everytime.

5. Shoonpaadkarah :

0 - No swelling.
1 - Only in lower limbs.
2 - Only in upper limbs.
3 - In all limbs.

6. Asthiparvaruk :

0 - No pain.
1 - Pain in major joints/bones in either one extremities.
2 - Pain in major joints/bones in either both extremities.

3 - Pain in all small & major joints/bones in all extremities.

7. Chhardan :

0 - No emesis

1 - 1- episode in 24 hours.

2 - 2-5 episodes in 24 hours.

3 - > 5 episodes in 24 hours

8. Udara Shoola (Abdominal pain or discomfort):

0 - No abdominal pain.

1 - Sometime/ rarely abdominal pain.

2 - Intermittent crampy lower abdominal pain which is relieved by passage of flatus or stool.

3 - Continuous abdominal pain often over the right upper quadrant/ mid epigastria/ lower iliac region which is not relieved by passage of flatus or stool.

9. Shleshma mala pravriti (Presence of mucous in stool):

0 - No visible mucous in stool.

1 - Visible mucous stickled to the stool.

2 - Passage of mucous with frequent stool.

3 - Passage of large amount of mucous in stool.

10. Atopa (Gas / Flatulence):

0 - No abnormal gas/flatulence.

1 - Occasional abdominal distension.

2 - Frequently abdominal distention with increased flatulence & bleeding.

3 - Gargling/Rumbling sound present in abdomen.

11. Alasya:

0 – No laziness

1 – Laziness for hard physical work.

2 – Refuse to physical work.

3 – No desire even for routine activities.

Other-

─Jwar : Yes / No

─Lohaamagandhi-tiktaamla udgar : Yes / No

In this study an effort has been made to follow the guidelines laid down by Acharya Charaka for assessment of results. Assessment of results on the basis of only cardinal symptoms will not give the complete assessment of therapy. Acharya Charaka has advised assessment as the wise physician should carefully investigate minute changes in excess, normalcy or diminution of the morbid elements as well as the strength of body, *Agni* and mind.

OVERALL ASSESSMENT OF THERAPY

The overall assessment was calculated on the basis of average improvement in the percentage relief of symptom score.

The total effect of Therapy was marked as follows:

Cured : 100% relief

Marked improvement : 75% relief to 99% relief

Moderate improvement : 50% up to 74% relief

Mild improvement : 25% up to 49% relief

No improvement : < 25% relief

STASTICAL ANALYSIS

The information gathered on the basis of observation made about various parameters, was subjected to statistical analysis in term of Mean, Standard Deviation (SD) and Standard Error (SE).

The data were analyzed by paired 't'test, at $p<0.05$, $p<0.01$, and $p<0.001$. The obtained results was interpreted as,

Non significant : $p>0.05$,

Significant : $p<0.05$,

Highly significant : $p<0.01$, $P<0.001$

Presentation of Data

The data collected and compiled from the multi dimensional clinical work was sorted out and processed further by subjective criteria to varied statistical methods.

The effect of individual therapy was evaluated and is hereby presented in the following sections.

1. The first component incorporated the general observations as Age, Sex, and Religion etc.
2. The second part deals with the results of the therapy evaluated on the basis of improvement in,
   (a) Symptoms
   (b) Total effect of therapy

OBSERVATION

In the present study total 38 patients of Grahani Roga were registered for the treatment. Out of which 30 patients were completed. The full duration of treatment, 8 patients were left at different stages of treatment.

Table 1

Age wise distribution of 30 patients

Age	Number of patients	%
16-20	2	6.67
21-30	6	20
31-40	4	13.33
41-50	14	46.67
51-60	4	13.33

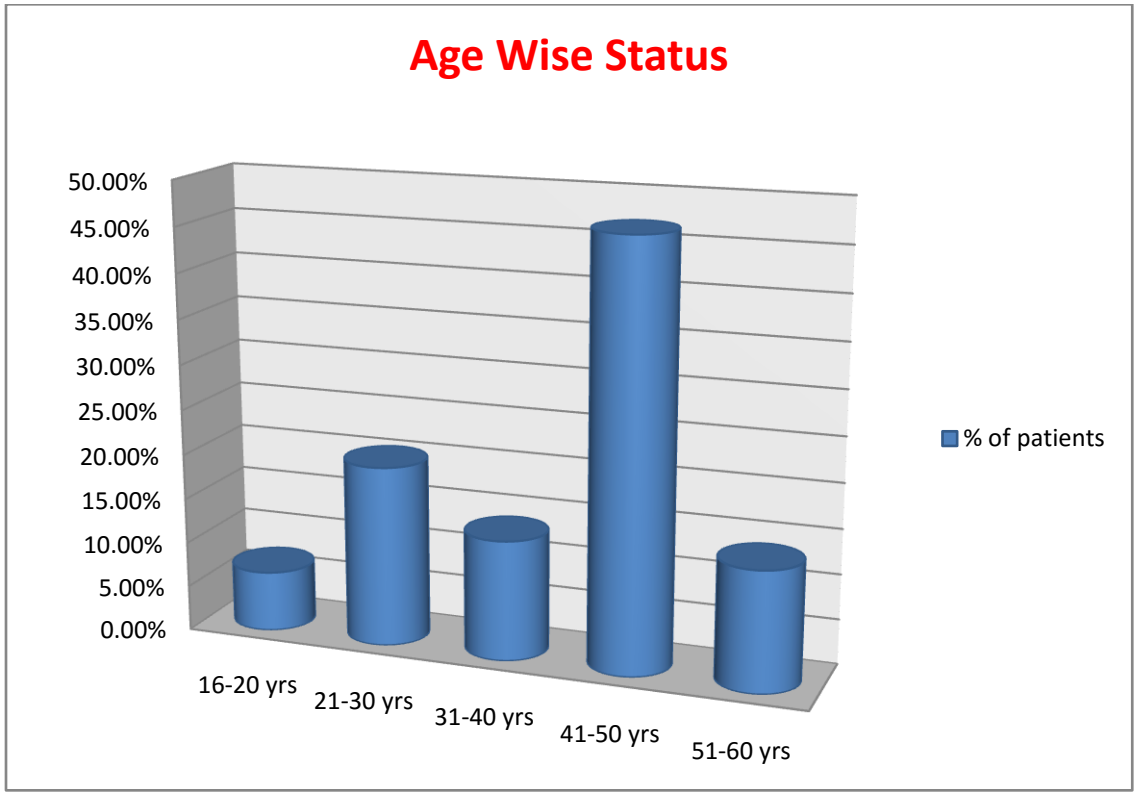
In the present study, all patients were in the range of 16-60 years out of these 6.67% in the age group of 12-20 years, 20% in the age group of 21-30years, 13.33% in the age group of 31-40years, 46.67% in the age group of 41-50 group and 13.33% of patients belonged to age group of 51-60 years.

Table 2

Age wise distribution of male patients

Age	Number of patients	%
16-20	2	10.52
21-30	5	26.31
31-40	1	5.27
41-50	10	52.63
51-60	1	5.27

From above table this was observed that maximum number of male patients 52.63% belonging to age group of 41-50 years. After that 26.31% belonged to age group of 21-30 years and minimum 5.27% belonged to each age group of 31-40 and 51-60 years.


Age Wise Status
50.00%
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
16-20 yrs
21-30 yrs
31-40 yrs
41-50 yrs
51-60 yrs
% of patients

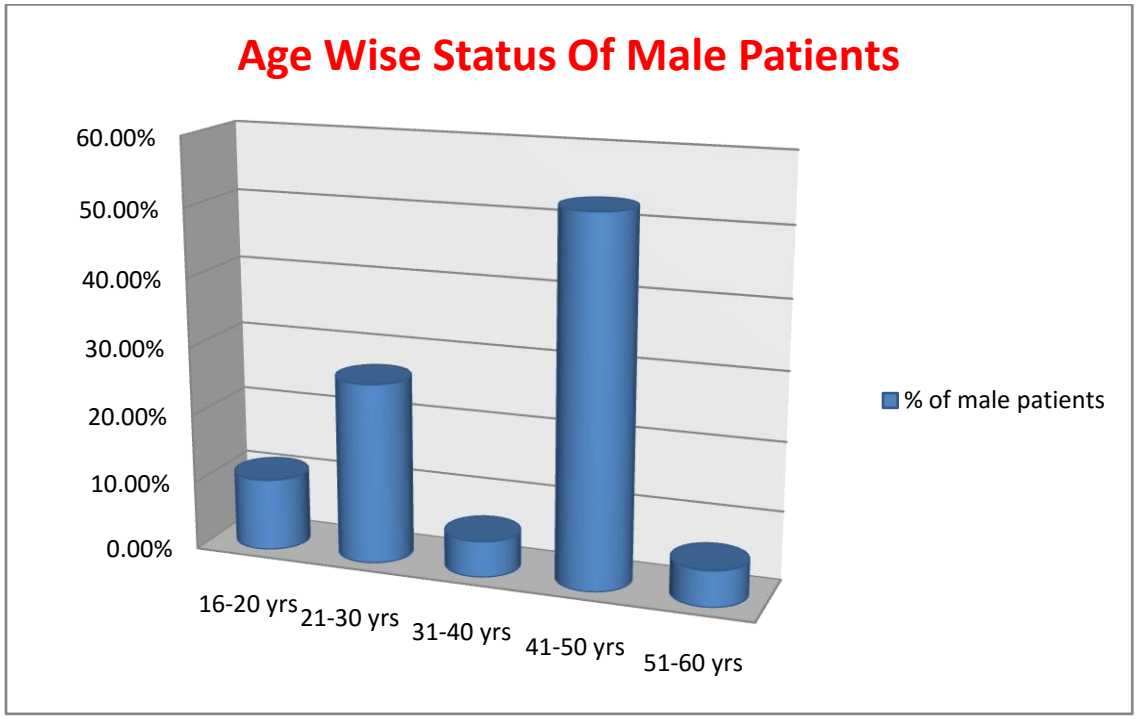

Age Wise Status Of Male Patients
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
16-20 yrs
21-30 yrs
31-40 yrs
41-50 yrs
51-60 yrs
% of male patients

Table 3

Age wise distribution of female patients

Age	Number of patients	%
12-20	0	0
21-30	1	9.09
31-40	3	27.27
41-50	4	36.37
51-60	3	27.27

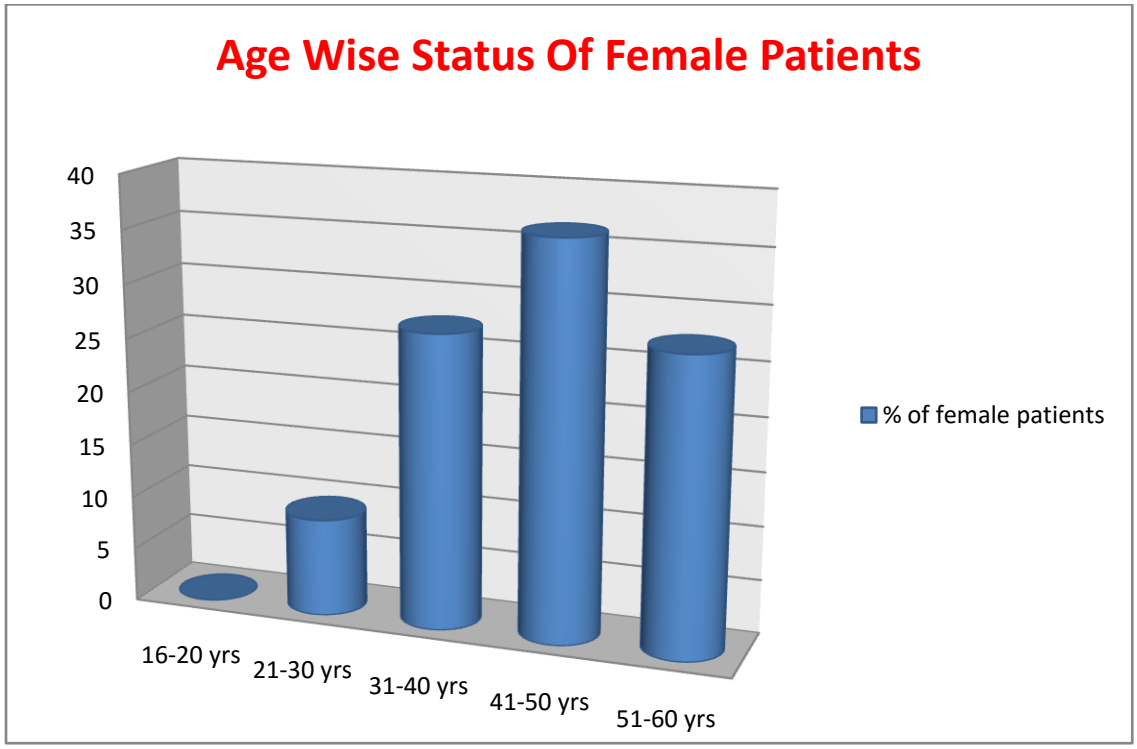
From above table it was observed that maximum number of female patients belonged to 36.37 % age group of 41-50 years. Minimum number of patients was 0% in the age group of 12-20 years and next minimum was 9.09 % in the age group of 21-30 years.

Table 4

Sex wise distribution of 30 patients

Sex	Number of patients	%
Male	19	63.33
Female	11	36.67

Maximum 63.33 % patients were male and 36.67 % patients were female.


Age Wise Status Of Female Patients
40
35
30
25
20
15
10
5
0
16-20 yrs
21-30 yrs
31-40 yrs
41-50 yrs
51-60 yrs
% of female patients

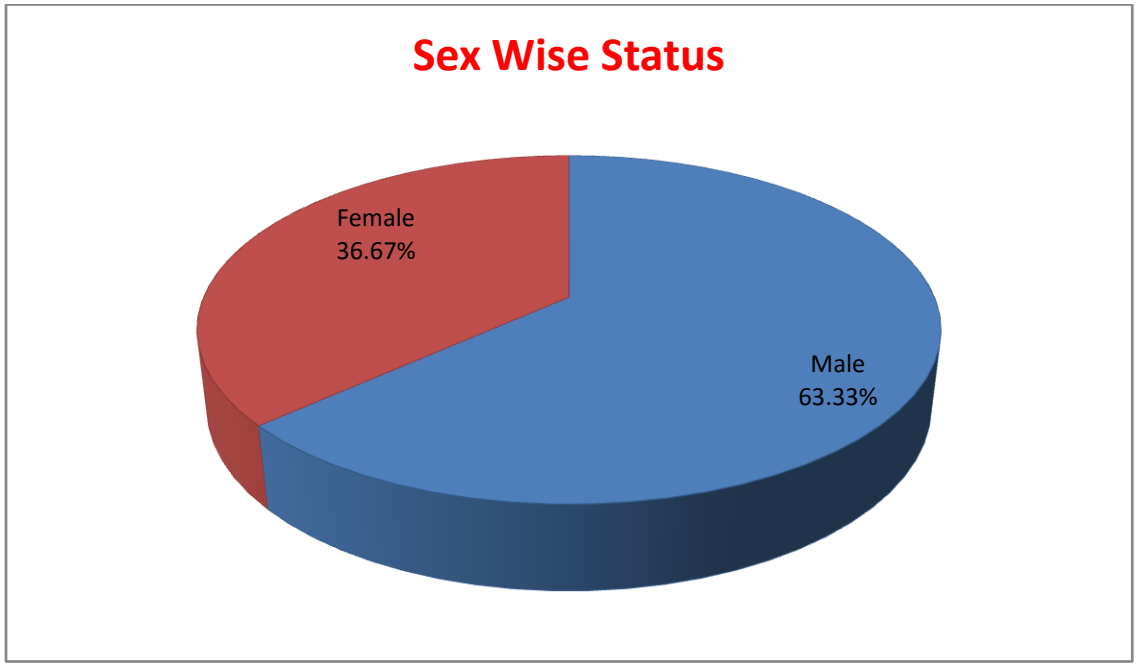

Sex Wise Status
Female
36.67%
Male
63.33%

Table 5

Religion wise distribution of 30 patients

Religion	Number of patients	%
Hindu	22	73.33
Muslim	8	26.67

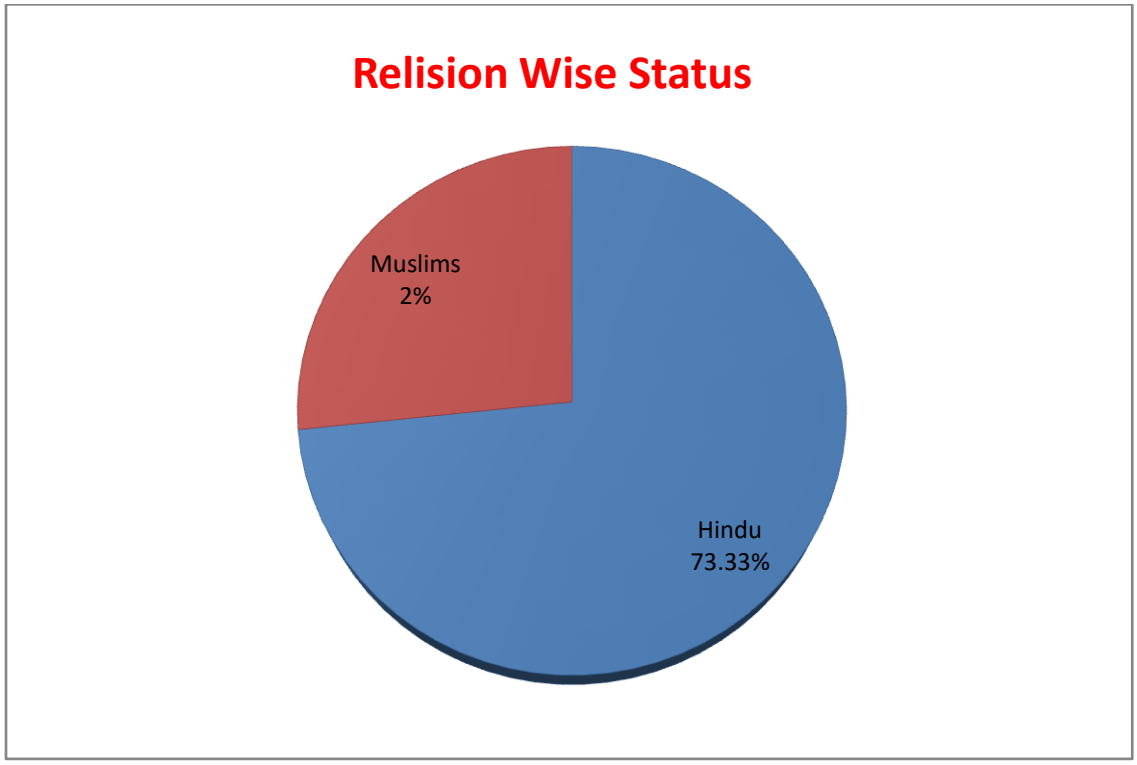
It was observed that maximum number of patients (73.33%) were Hindu and 26.66 % were Muslim. This is because the hospital is situated in Hindu population area. So there is no any relation of distribution of disease with religion.

T**able 6**

Marital status wise distribution of 30 patients

Marital status	Number of patients	%
Married	24	80
Unmarried	5	16.67
Widow	1	3.33

Among registered cases 80% patients were married. This shows that disease is more prominent in married patients and in older age group.


Relision Wise Status
Muslims
2%
Hindu
73.33%

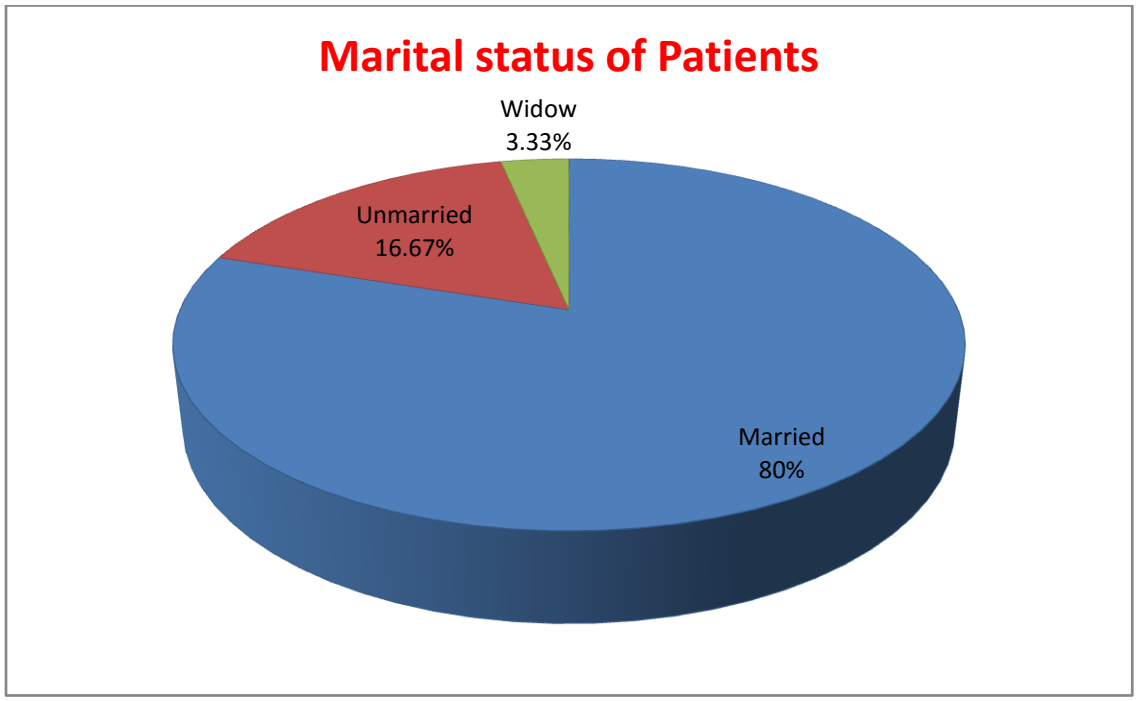

Marital status of Patients
Widow
3.33%
Unmarried
16.67%
Married
80%

Table 7

Occupation wise distribution of 30 patients

Occupation	Number of patients	%
Student	2	6.67
House wife	11	36.66
Service	9	30
Business	3	10
Labour	5	16.67

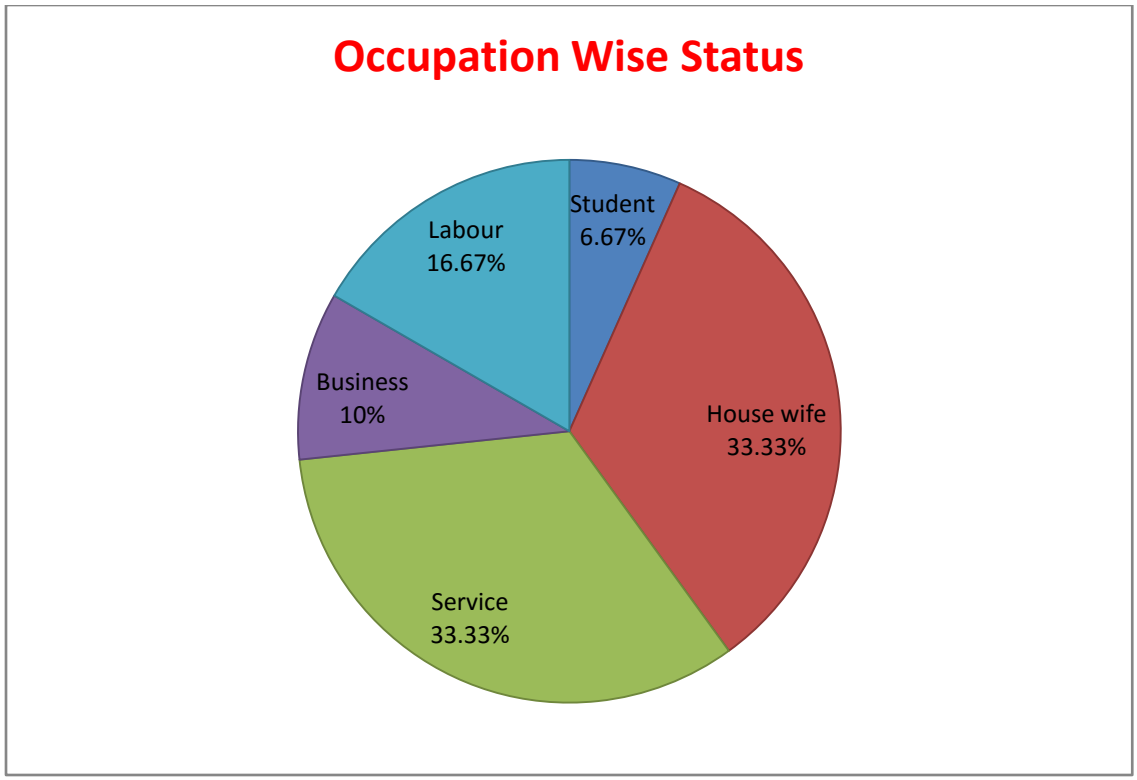
From above table it was observed that 36.66 % patients were house wives and 30% were service class, 10 % business man, 16.67 % were labour and 6.67 % were students.

Table -8

Education wise distribution of 30 patients –

Qualification	Number of patients	%
Illiterate	7	23.33
Primary school	5	16.67
High school	8	26.67
Graduate	8	26.67
Post graduate	2	6.67
Ph.D.	0	0

Amongst 30 patients, 23.33% patients were illiterate, 16.67% patients were primary educated, 26.67% of each high school and graduate educated, post graduate patients were only 6.67%.


Occupation Wise Status
Student
6.67%
Labour
16.67%
Business
10%
House wife
33.33%
Service
33.33%

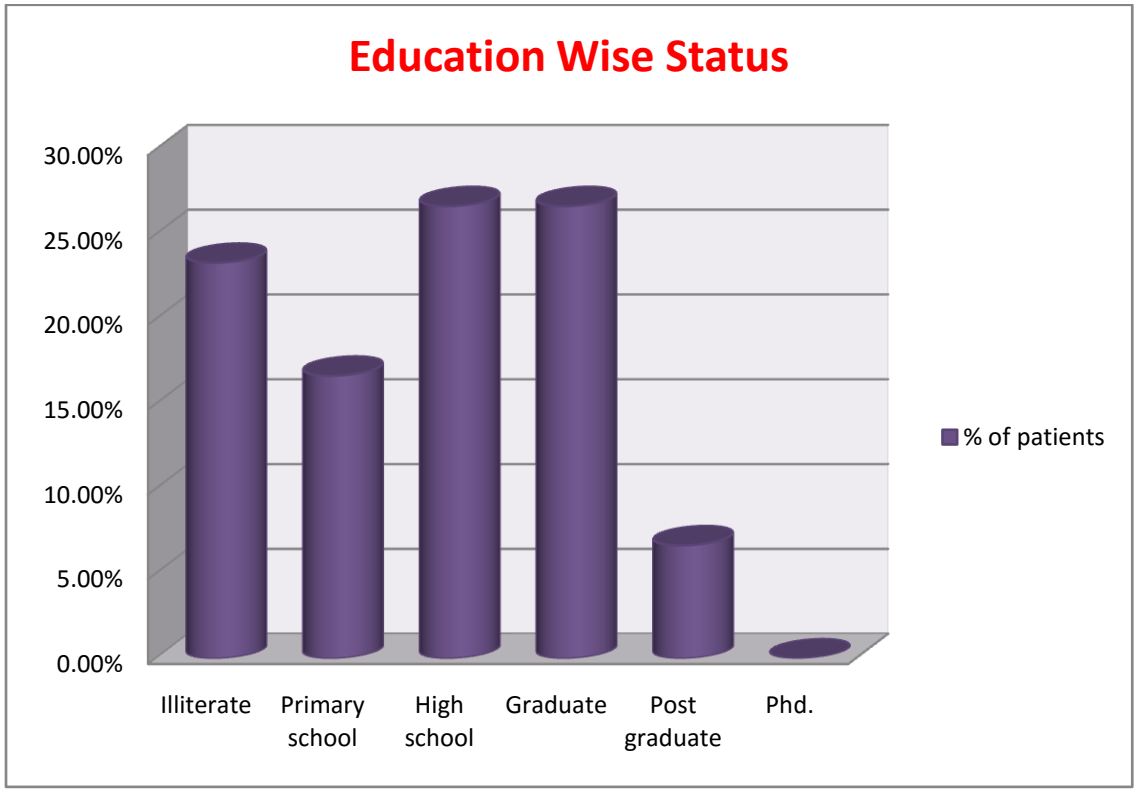

Education Wise Status
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Illiterate
Primary school
High school
Graduate
Post graduate
Phd.
% of patients

Table -9

Distribution of disease with Economic status –

Economic status	Number of patients	%
Higher class	2	6.67
Higher middle class	4	13.33
Middle class	14	46.67
Lower class	10	33.33

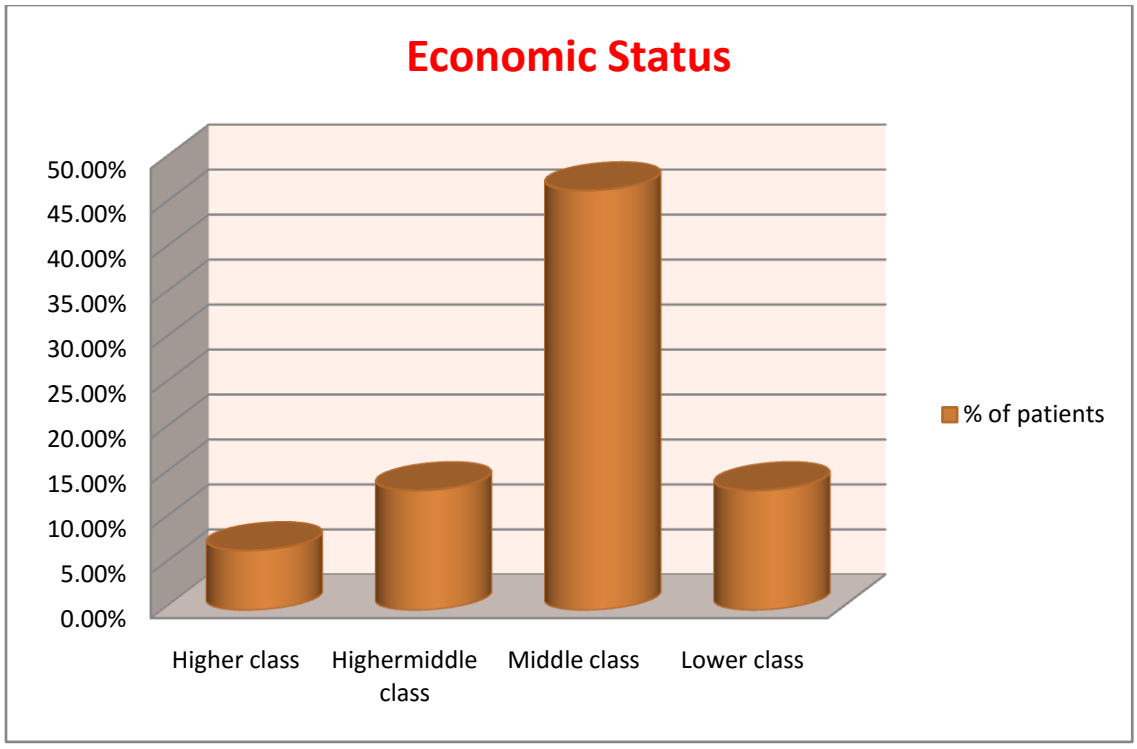
From above table it was observed that maximum number of patients (46.67%) belonged to middle class family and next to this 33.33% patients belonged to lower class family. Minimum 6.67% patients belonged to higher class family. This shows disease is more prominent in middle class and lower class family.

Table -10

Family history wise distribution of 30 patients –

Family history	Number of patients	%
Present	4	13.33
Absent	26	86.67

Only 13.33% patients showed family history which is insignificant in report of this disease.


Economic Status
50.00%
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Higher class
Highermiddle class
Middle class
Lower class
% of patients

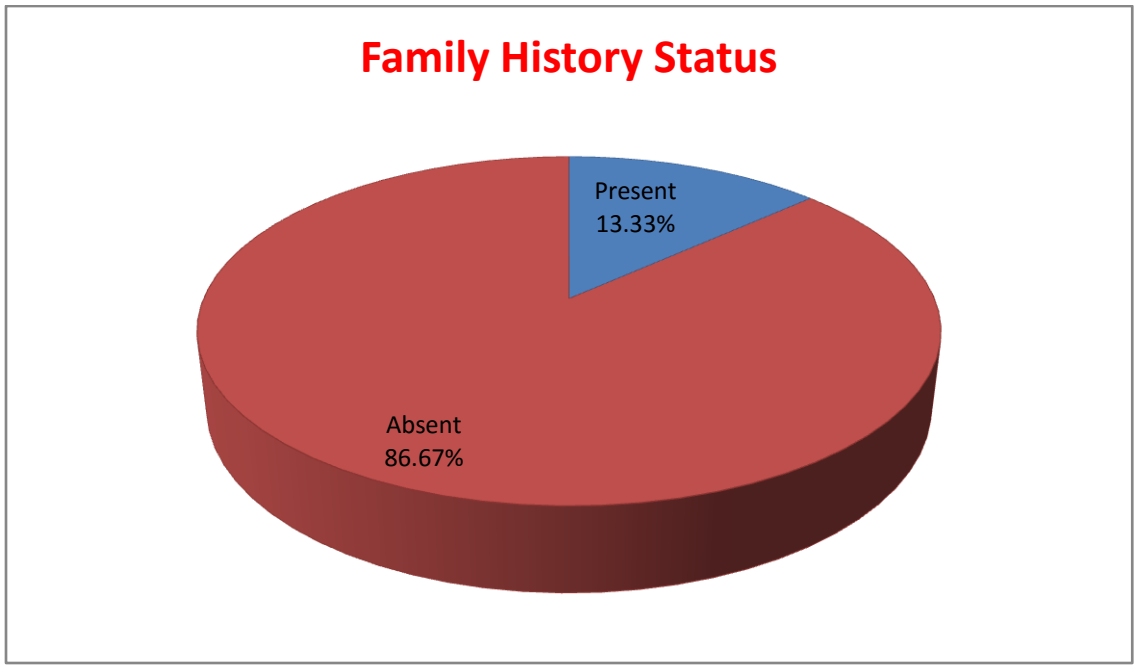

Family History Status
Present
13.33%
Absent
86.67%

Table -11

Chronicity wise distribution of 30 patients –

Chronicity of disease	Number of patients	%
Up to 6 months	1	3.33
6 months to 1 year	4	13.33
1 year to 11/2 year	13	43.33
11/2 year to 2 year	8	26.67
More than 2 year	4	13.33

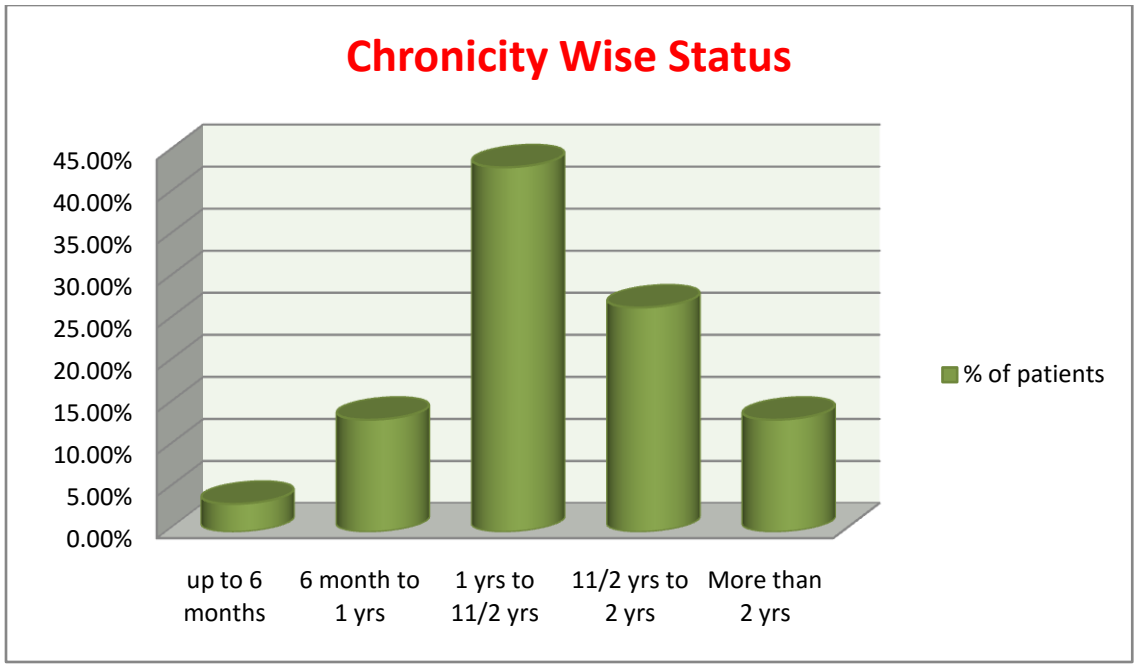
From above table it was observed that maximum 43.33% of patients the duration of disease are 1 year to 11/2 year. Although in 13.33% the duration of disease is more than 2 yrs (2-10 yrs), 3.33% patients duration up to 6 months and 13.33 % patients the duration of disease up to 6 months to 1 years.

Table -12

Nature of diet wise distribution of 30 patients-

Nature of diet	Number of patients	%
Vegetarian	14	46.67
Non-vegetarian	16	53.33

From above table it was observed that 46.67% patients were vegetarian and 53.33% patients' belonged to mixed group this shows that the disease is somewhat more prominent in non-vegetarian patients.


Chronicity Wise Status
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
up to 6 months
6 month to 1 yrs
1 yrs to 11/2 yrs
11/2 yrs to 2 yrs
More than 2 yrs
% of patients

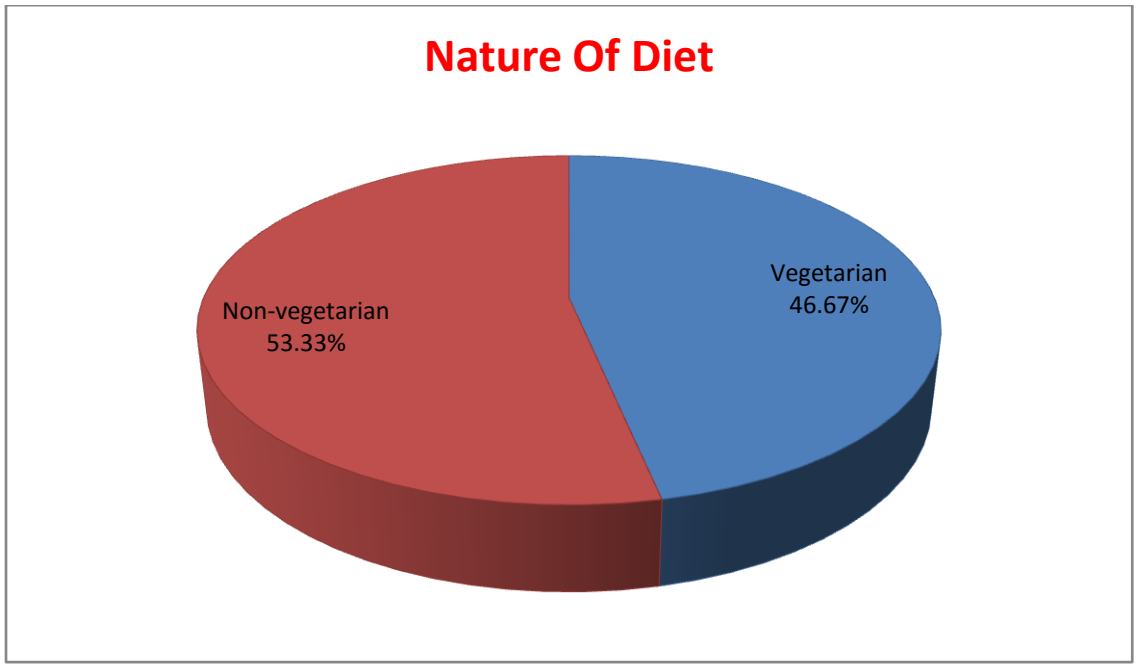

Nature Of Diet
Vegetarian
46.67%
Non-vegetarian
53.33%

Table -13

Appetite wise distribution of 30 patients –

Appetite	Number of patients	%
Normal	10	33.33
Less	20	66.67

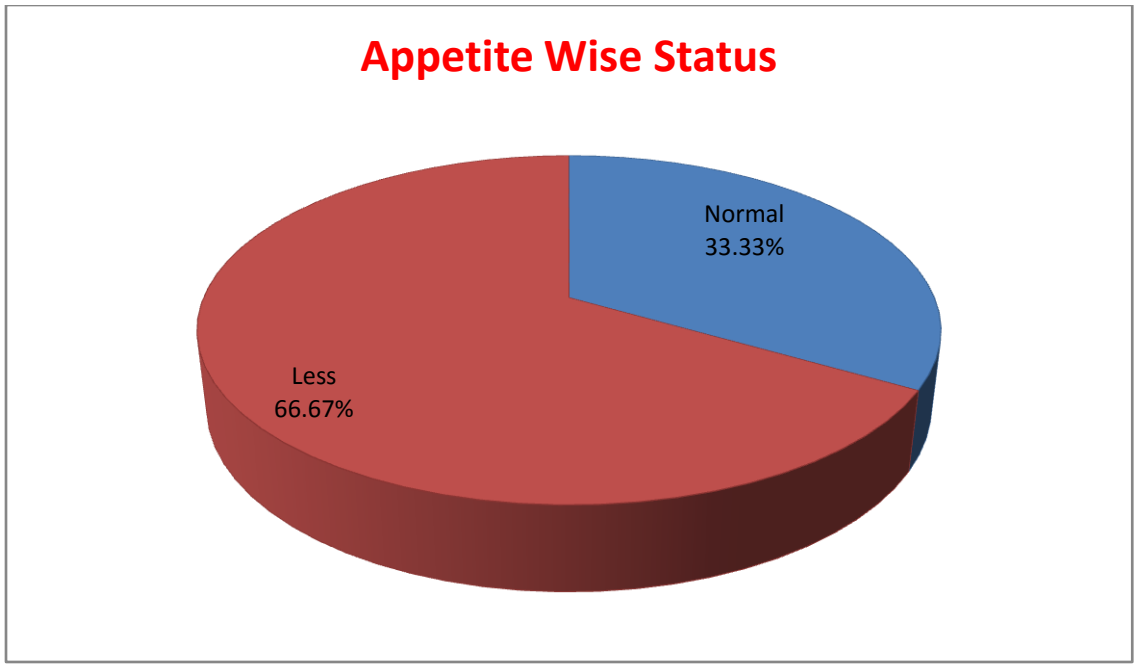
It was observed that 20 patients out 30 patients i.e.66.67% patients having less than normal appetite. This shows disease is more prominent in patients having deprived appetite.

Table -14

Aggravating factor wise distribution of 30 patients –

Aggravating factor	Number of patients	%
Specific drugs	0	00
Specific Diet	12	40
Weather/Climate changes	0	00
Occupational stress	6	20
No aggravating factor	12	40

It was observed that diet and occupational stress were most common aggravating factors. 40% patients were having no such aggravating factor. Diet was mainly aggravating factor because diet was responsible in 40% of patients.


Appetite Wise Status
Normal
33.33%
Less
66.67%

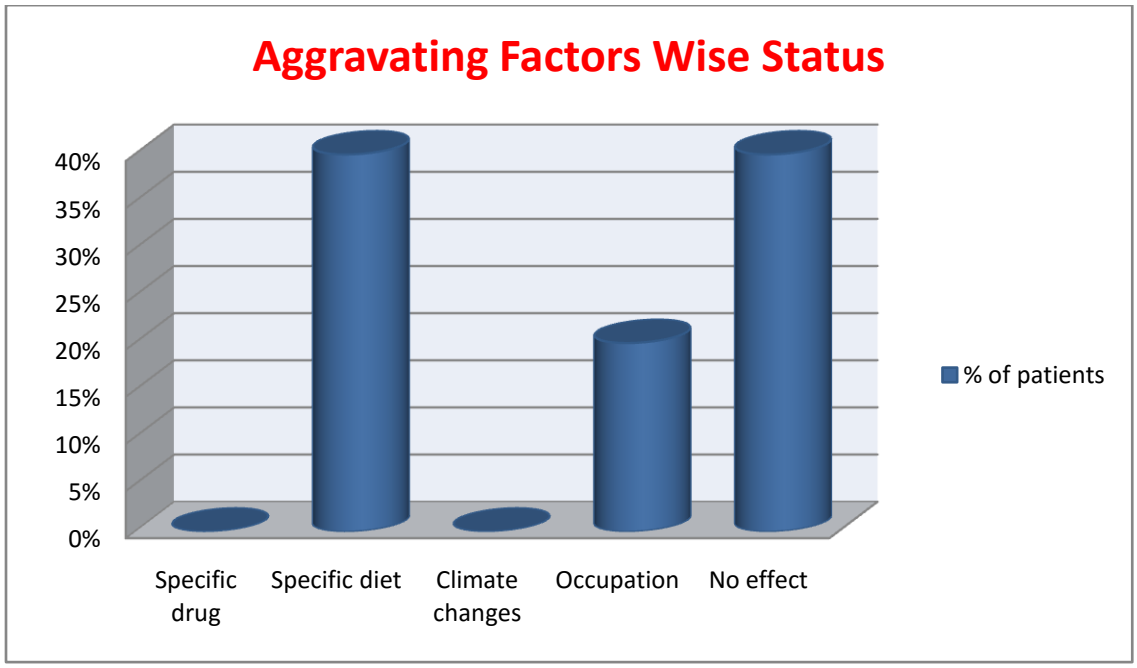

Aggravating Factors Wise Status
40%
35%
30%
25%
20%
15%
10%
5%
0%
Specific drug
Specific diet
Climate changes
Occupation
No effect
% of patients

Table -15

Meal time wise distribution of 30 patients –

Meal time	Number of patients	%
Timely	12	40
Untimely	18	60

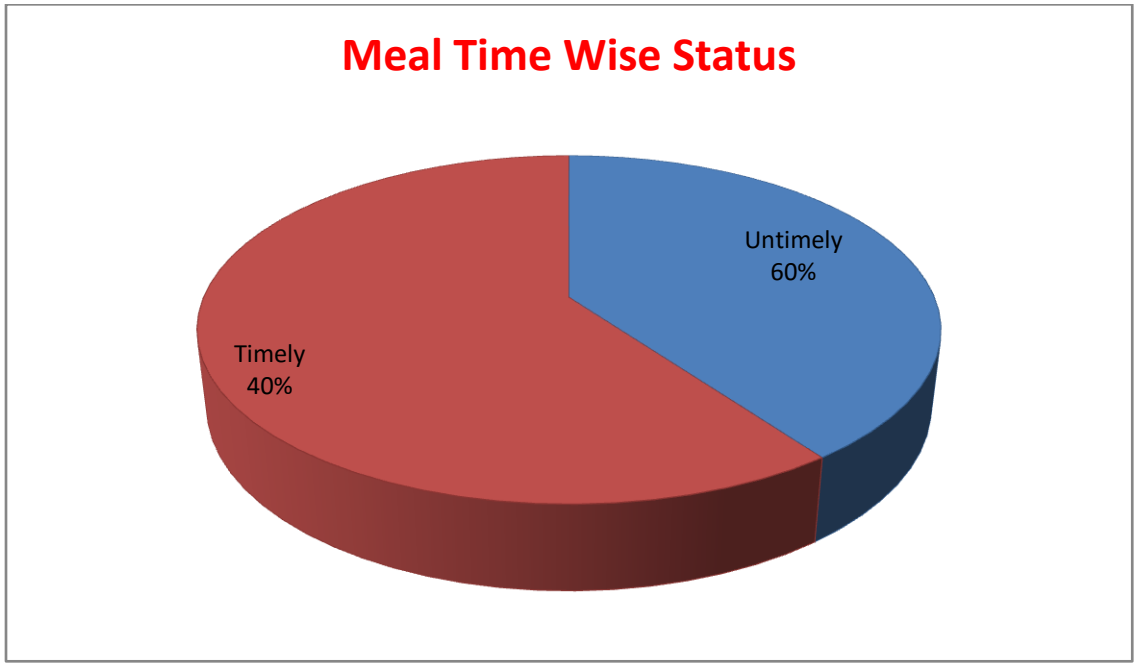
This table shows 40 % patients were taking meal timely and 60 % patients were taking meal untimely.

Table -16

Dietary habit wise distribution of 30 patients –

Dietary habit	Number of patients	%
Vishamasana	13	43.33
Samasana	4	13.33
Adhyasana	10	33.33
Viruddhasana	3	10

The above table shows that 43.33% patients were having Dietetic habit of *Vishamasana* while 33.33% *Adhyasana*, 13.33% *Samasana* and 10% patients were having habit of *Viruddhasana*.


Meal Time Wise Status
Untimely
60%
Timely
40%

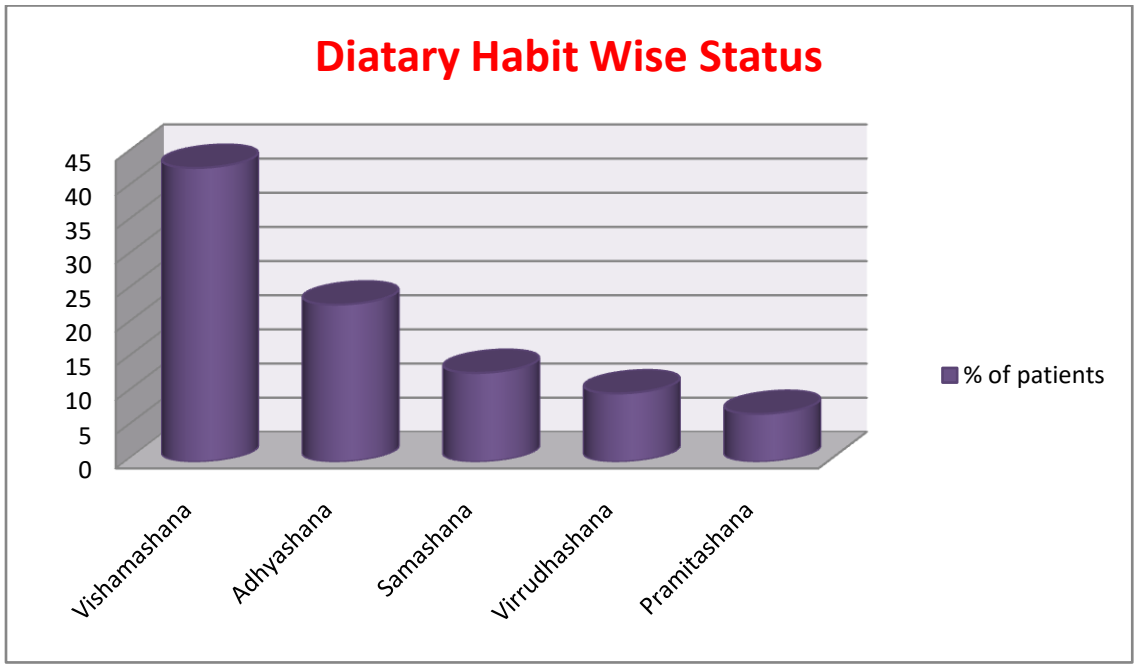

Diatary Habit Wise Status
45
40
35
30
25
20
15
10
5
0
Vishamashana
Adhyashana
Samashana
Virrudhashana
Pramitashana
% of patients

Table -17

Excessive Supplementary food wise distribution of 30 patients

Supplementary food	Number of patients	%
Tea	21	70
Coffee	1	3.33
Milk	5	16.67
Cold drink	0	0
Tea & milk	4	13.33

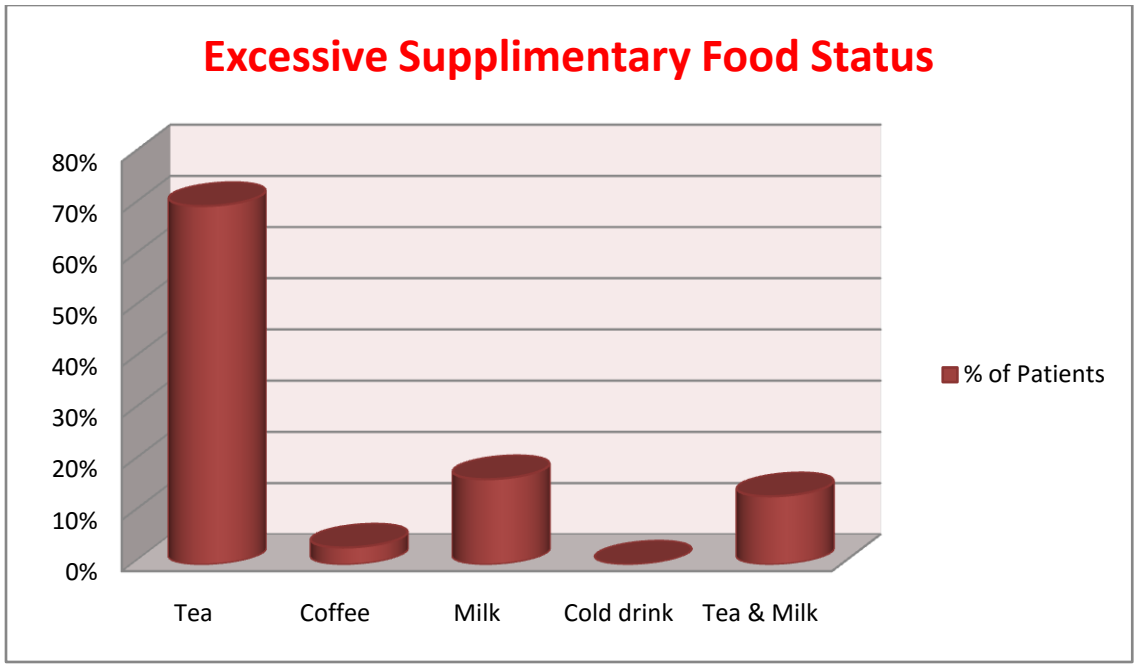
Above table shows that 70 % patients were taking excessive tea, 13.33 % patients were taking tea & milk, 16.67 % patients were taking milk and 3.33% taking coffee as food supplements.

Table –18

Addiction wise distribution of 30 patients –

Addictive	Number of patients	%
Tobacco	4	13.33
Smoking	1	3.33
Alcohol & Smoking	2	6.67
No addiction	23	76.67

Maximum numbers of 76.67 % patients were not taking any addiction, while 13.33 %patients were taking tobacco, 6.67 % patients were taking Alcohol & Smoking and 3.33 % patients were on smoking


Excessive Supplimentary Food Status
80%
70%
60%
50%
40%
30%
20%
10%
0%
Tea
Coffee
Milk
Cold drink
Tea & Milk
% of Patients

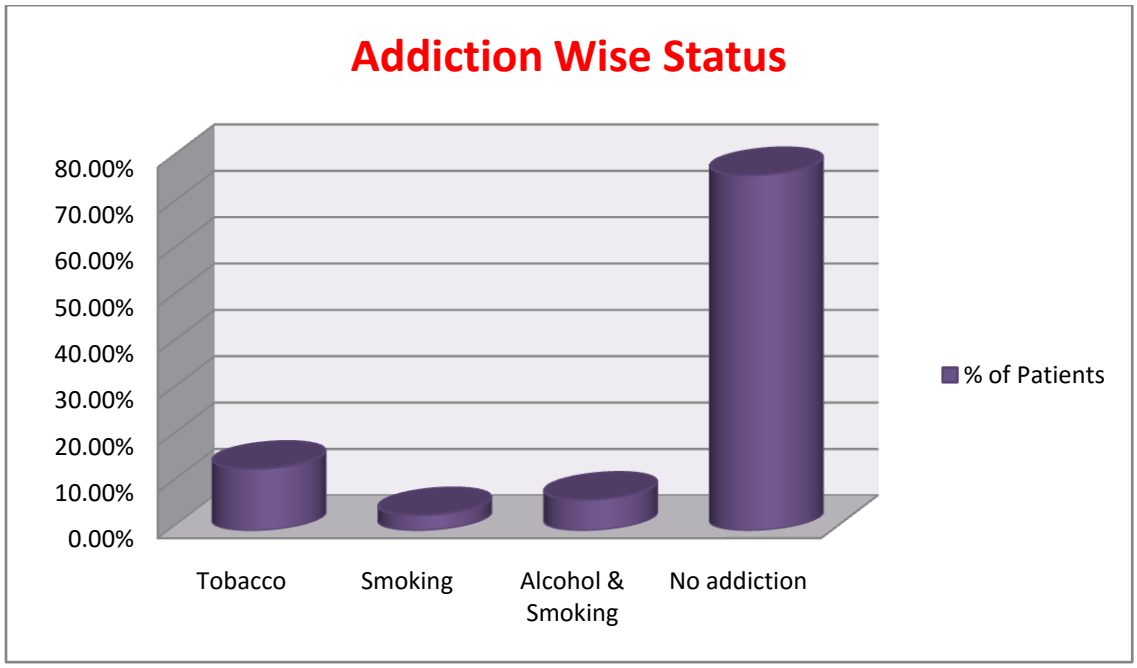

Addiction Wise Status
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Tobacco
Smoking
Alcohol & Smoking
No addiction
% of Patients

Table –19

Exercise wise distribution of 30 patients –

Physical exercise	Number of patients	%
Regular	7	23.33
Irregular	8	26.67
No exercise	15	50

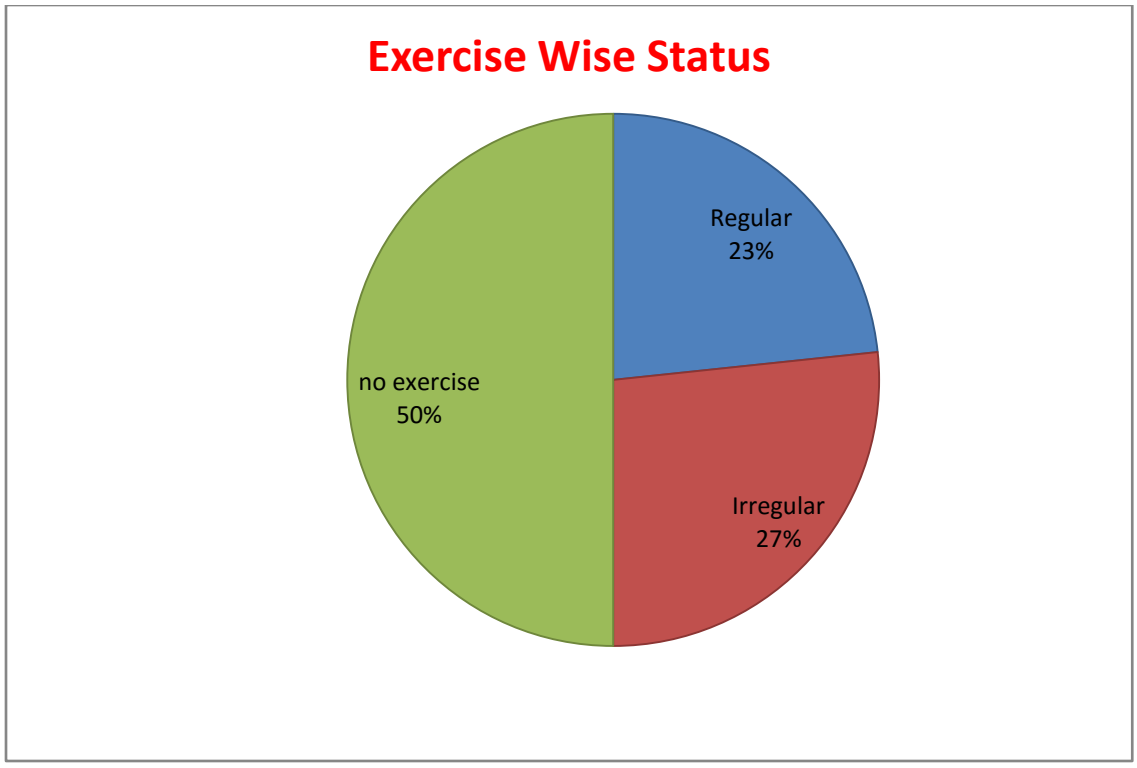
As shown in table 50% patients were doing exercise, 26.67 % patients were doing exercise irregularly where as only 23.33% of the patients were doing regular exercise.

Table -20

Nature of Occupation wise distribution of 30 patients –

Occupation	Number of patients	%
Physical	22	73.33
Mental	8	26.67

The above table shows nature of Occupation of 73.33 % patients were of physical work while 26.67% patients having mental work.


Exercise Wise Status
Regular
23%
Irregular
27%
no exercise
50%

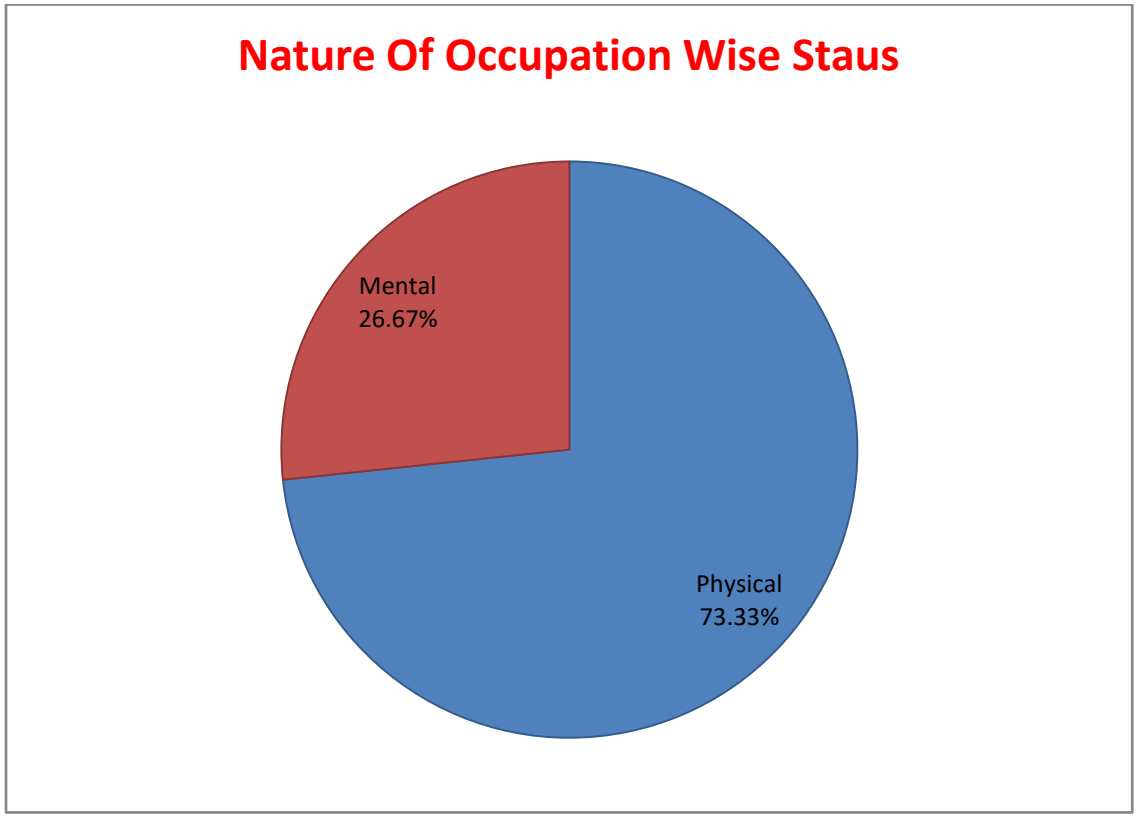

Nature Of Occupation Wise Staus
Mental
26.67%
Physical
73.33%

Table -21

Sleep wise distribution of 30 patients –

Sleep	Number of patients	%
Proper	8	26.67
Less	10	33.33
Excessive	2	6.67
Disturbed	10	33.33

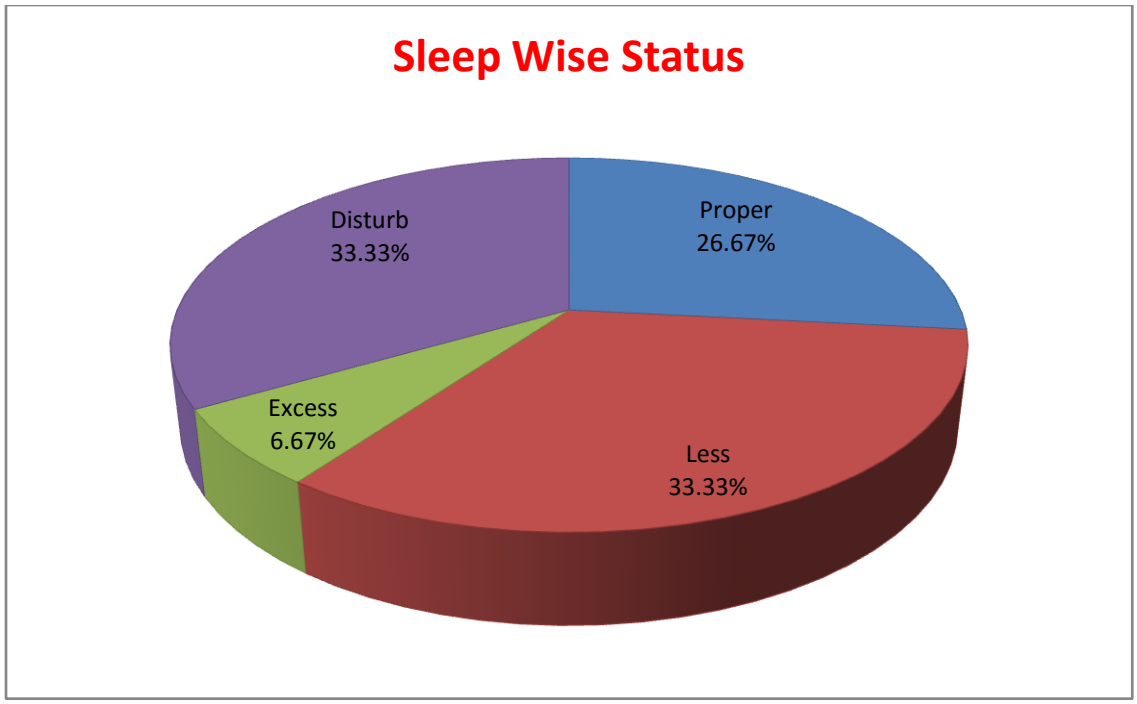
33.33% patients were having less sleep, 33.33% patients were having disturbed sleep, 26.67 % patients were having proper sleep and 6.67 % patients were having excessive sleep.

Table -22

Psychological condition wise distribution of 30 patients –

Psychological condition	Number of patients	%
Anxiety	16	53.33
Stress	8	26.67
Depression	2	6.67
Normal	4	13.33

As shown in table 6.67% patients were of depressed mood, 26.67 % patients were in stress, 53.33 % patients were having anxiety where as only 13.33 % of the patients were having normal mood.


Sleep Wise Status
Disturb
33.33%
Proper
26.67%
Excess
6.67%
Less
33.33%

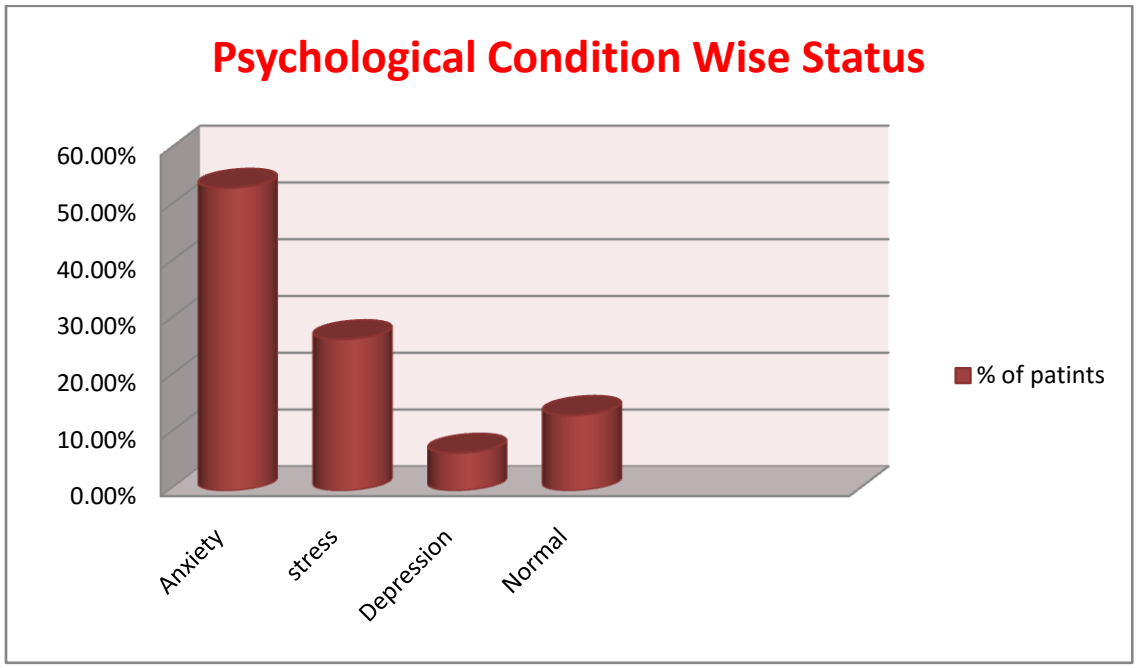

Psychological Condition Wise Status
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Anxiety
stress
Depression
Normal
% of patints

Table –23

Sharir Prakriti wise distribution of 30 patients –

Sharir prakriti	Number of patients	%
Vata Kaphaja	10	33.33
Vata Pittaja	16	53.33
Kapha Pittaja	4	13.33

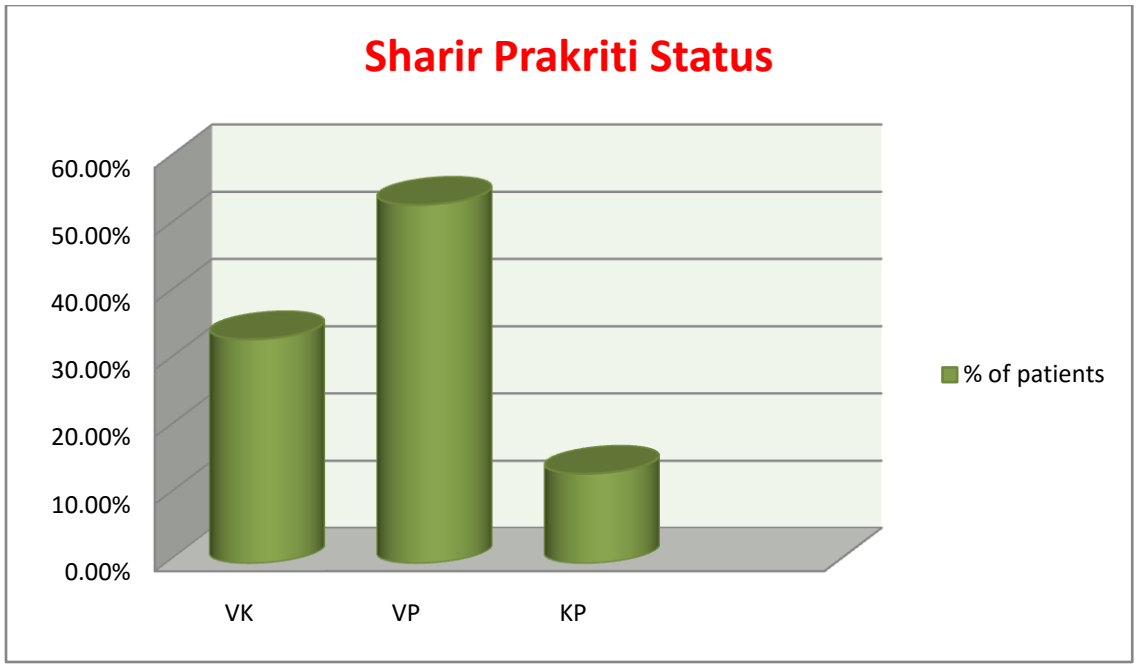
Maximum 53.33 % patients were *Vata Pittaja prakriti*, 33.33 % were Vata *Kaphaja prakriti* and only 13.33 % patients were *Kapha Pittaja prakriti*.

Table -24

Manas Prakriti wise distribution of 30 patients –

Manas prakriti	Number of patients	%
Sattvik	1	3.33
Rajas	12	40
Tamas	17	56.67

From above table it was observed that maximum 56.67 % patients were of *Tamas prakriti*, 40 % patients were of *Rajas prakriti* and only 3.33 % patients were of *Sattvik prakriti*.


Sharir Prakriti Status
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
VK
VP
KP
% of patients

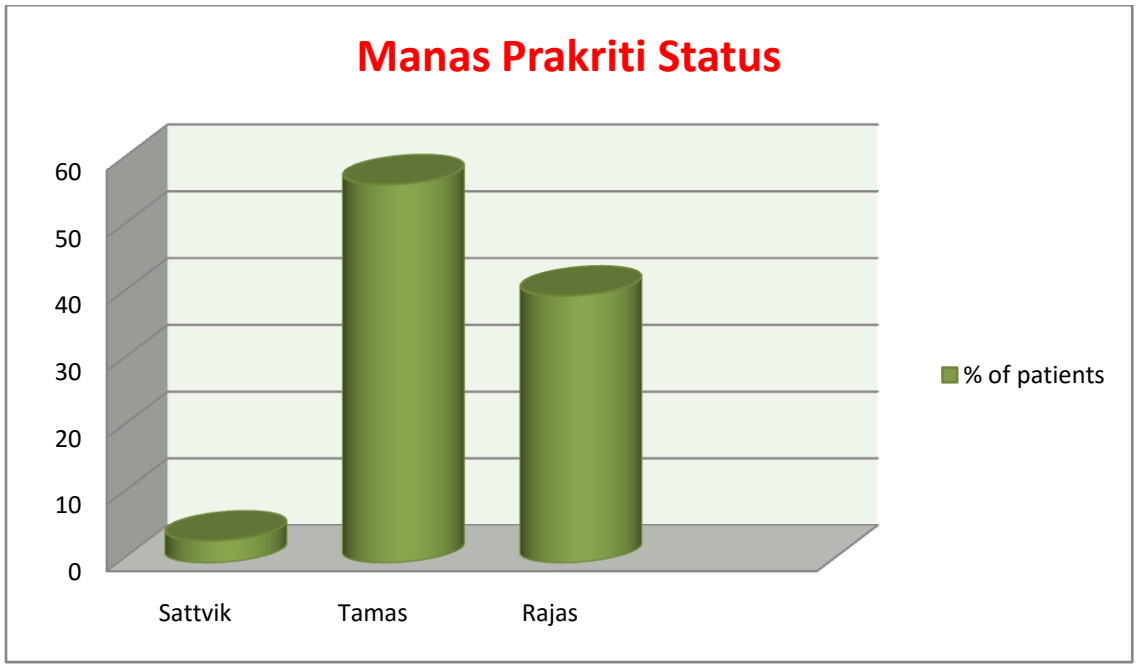

Manas Prakriti Status
60
50
40
30
20
10
0
Sattvik
Tamas
Rajas
% of patients

Table –25

Sara wise distribution of 30 patients –

Sara	Number of patients	%
Pravara	1	3.33
Madhyam	21	70
Avara	8	26.67

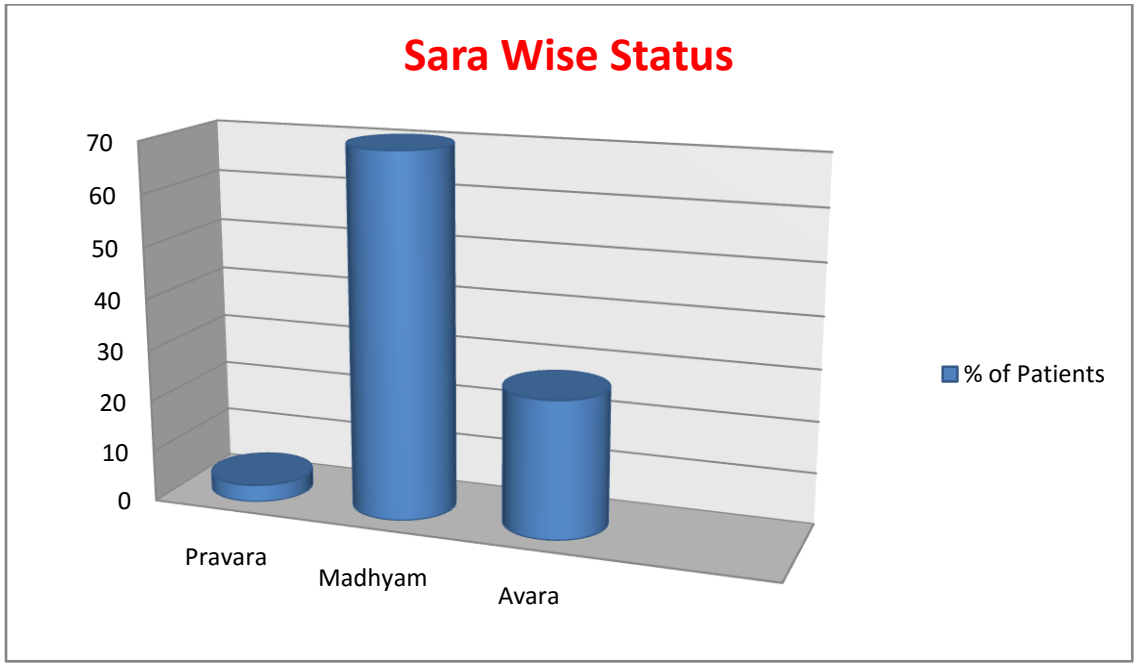
This table shows that 26.67 % patients were of *Avara sara*, 3.33 % patients were of *Pravara sara* and 70 % patients were of *Madhyama sara*.

Table-26

Samhanan wise distribution of 30 patients –

Samhanan	Number of patients	%
Pravara	8	26.67
Madhyam	16	53.33
Avara	6	20

Maximum 53.33 % of patients were of *Madhyam samhanan* 26.67% patients were of *Pravara samhanan* and 20 % patients were of *Avara samhanan.*


Sara Wise Status
70
60
50
40
30
20
10
0
Pravara
Madhyam
Avara
% of Patients

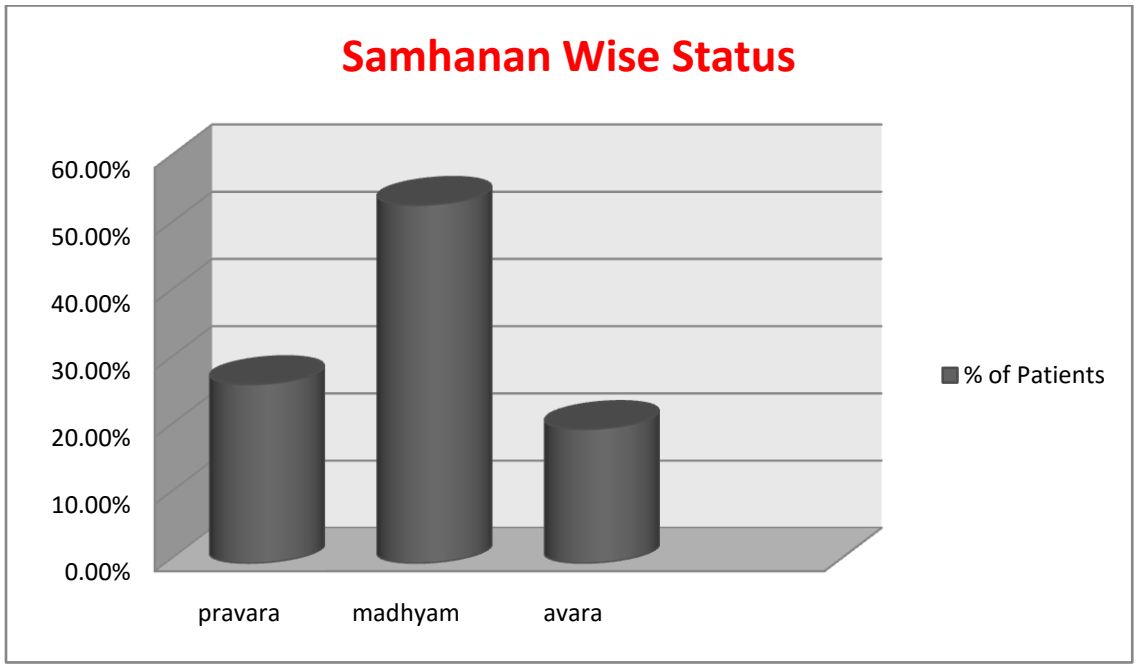

Samhanan Wise Status
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
pravara
madhyam
avara
% of Patients

Table-27

Satva wise distribution of 30 patients –

Satva	Number of patients	%
Pravara	9	30
Madhyam	15	50
Avara	6	20

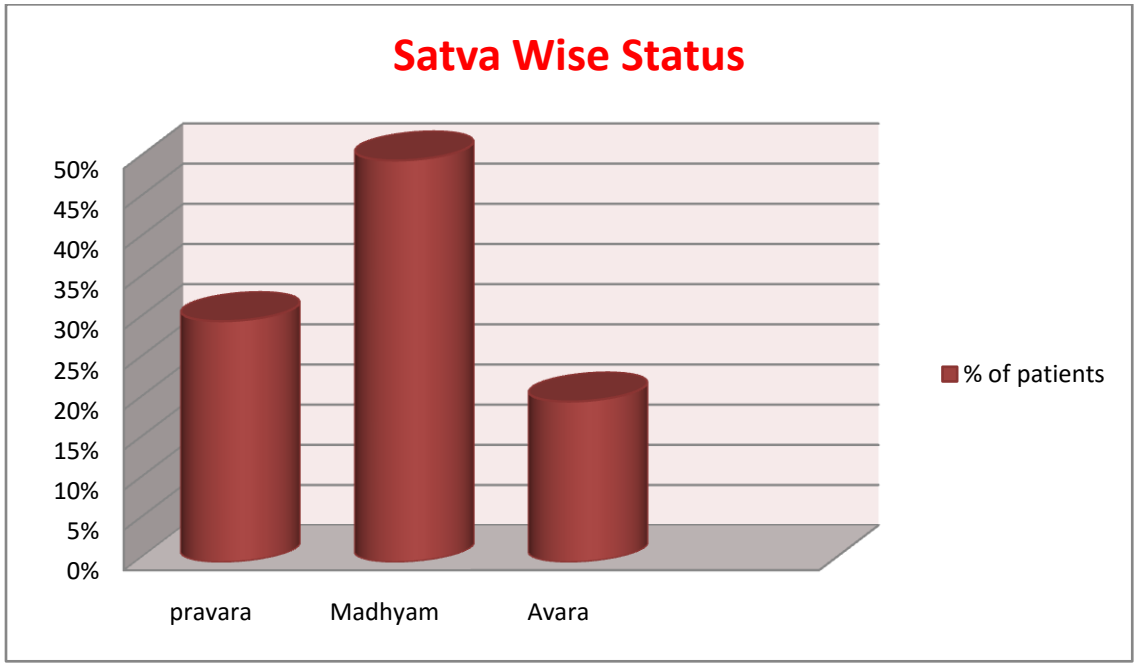
From above table it was observed that 50 % patients were of *Madhyam satva* 30 % patients were of *Pravara satva* and 20 % patients were of *Avara satva.*

Table-28

Satmya wise distribution of 30 patients –

Satmya	Number of patients	%
Pravara	0	00
Madhyam	22	73.33
Avara	7	26.67

Maximum 73.33% patients were having *Madhyam satmya*, 26.67 % patients were having *Avara satmya* and no one patient was having *Pravara satmya*.


Satva Wise Status
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
pravara
Madhyam
Avara
% of patients

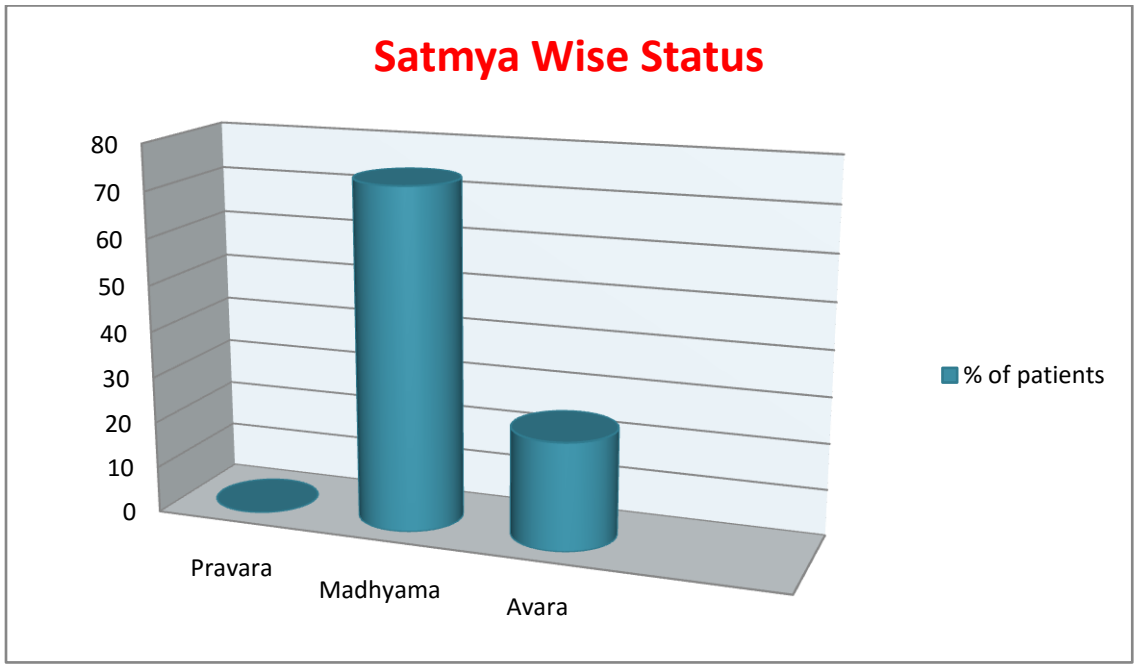

Satmya Wise Status
80
70
60
50
40
30
20
10
0
Pravara
Madhyama
Avara
% of patients

Table-29

Prominent Dosha wise distribution of 30 patients –

Prominent dosha	Number of Patients	%
Vata	16	53.33
Pitta	6	20
Kapha	8	26.67

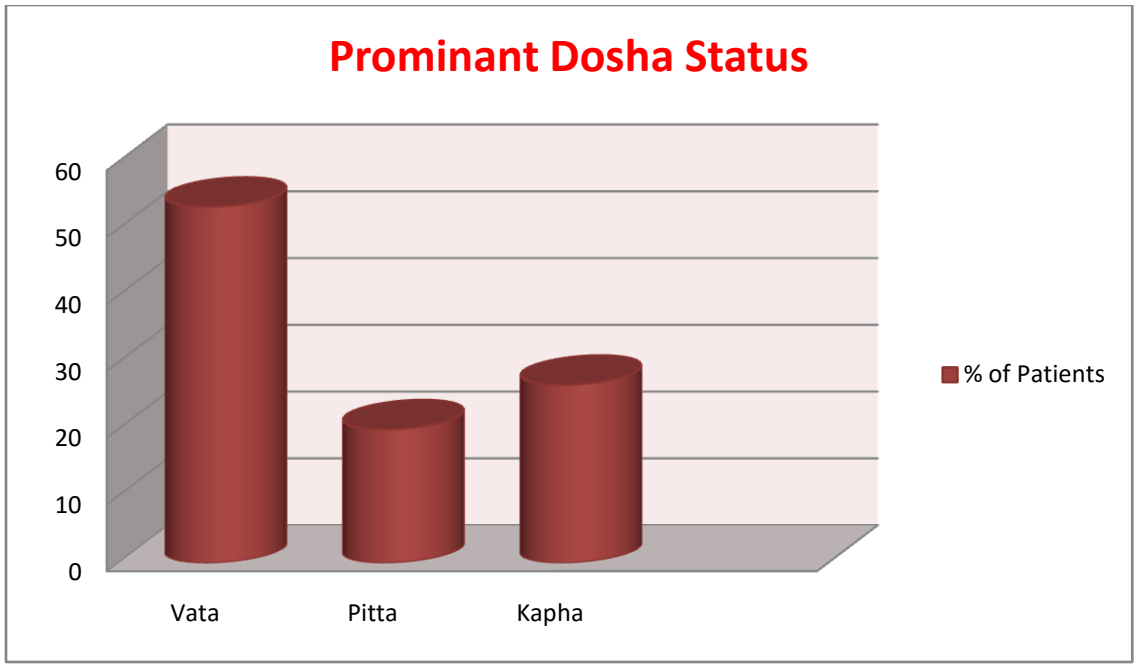
Vata dosha was prominent in 53.33% patients, *Pitta dosha* was prominent in 20% patients and *Kapha dosha* was prominent in 26.67% patients.

Table- 30

Vyayama Shakti wise distribution of 30 patients –

Vyayama shakti	Number of patients	%
Pravara	3	10
Madhyam	12	40
Avara	15	50

Maximum 50 % of patients were having *Avara vyayama shakti*, 40% patients were having *Madhyam vyayama shakti* and 10 % patients were having *Pravara vyayama shakti*.


Prominant Dosha Status
60
50
40
30
20
10
0
Vata
Pitta
Kapha
% of Patients

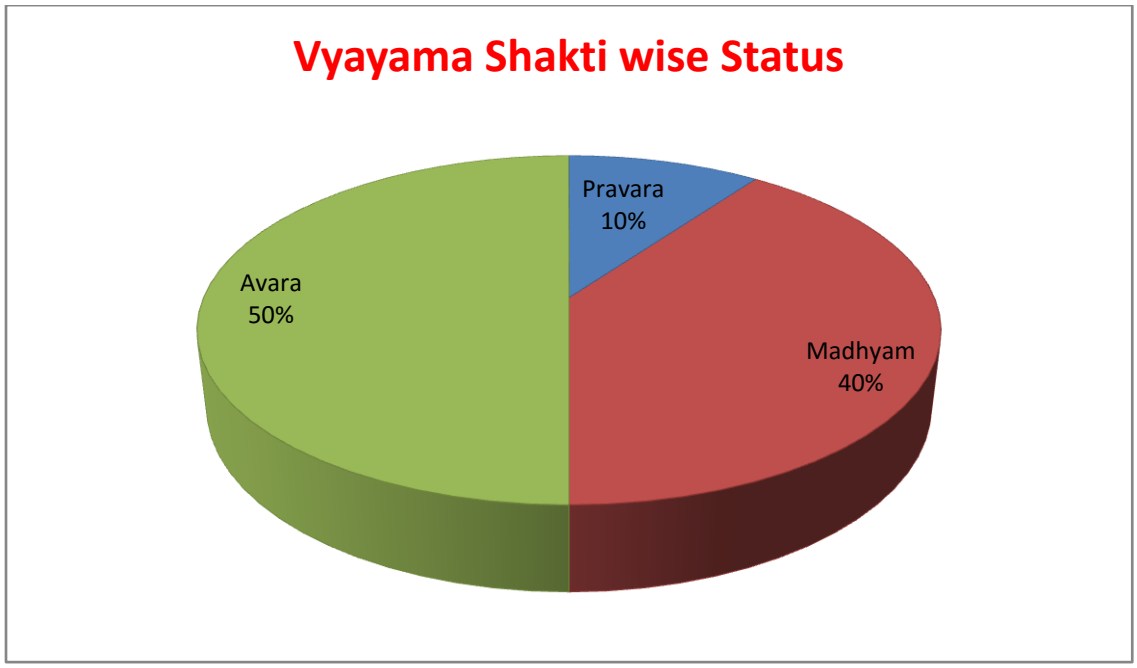

Vyayama Shakti wise Status
Pravara
10%
Avara
50%
Madhyam
40%

Table-31

Ahara Shakti wise distribution of 30 patients –

A.

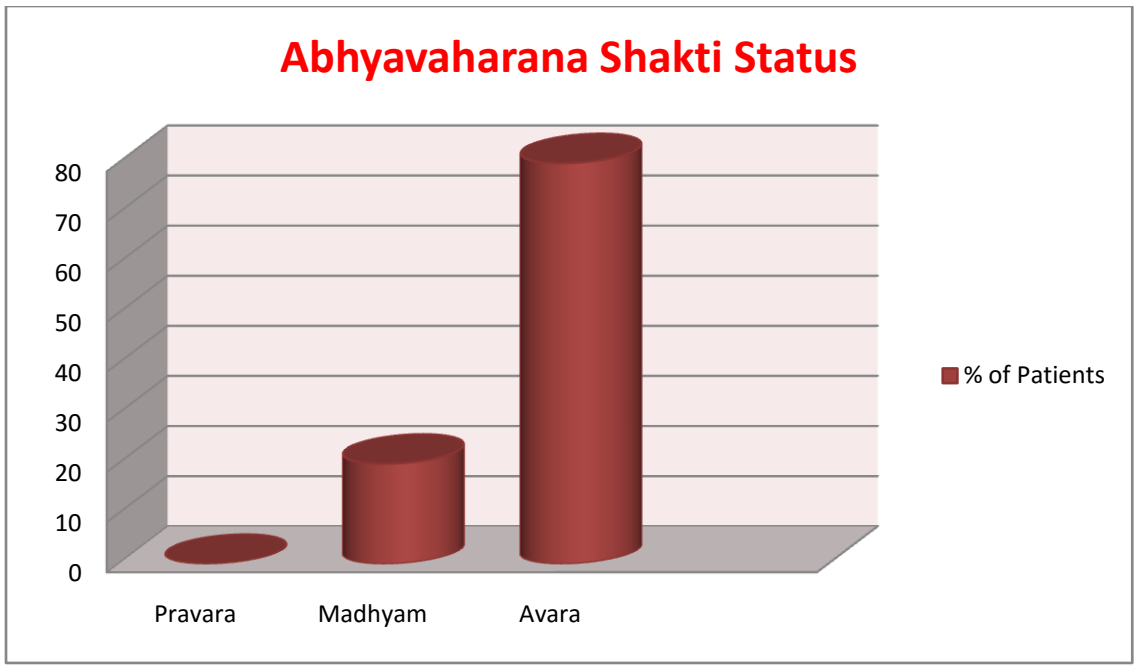
Abhyavaharana shakti	Number of patients	%
Pravara	0	0
Madhyam	6	20
Avara	24	80

Abhyavaharana shakti was observed as Avara in 80% subjects, Madhyam in 20% and none of the subjects showed *Pravara shakti*.

B.

Jarana shakti	Number of patients	%
Pravara	0	00
Madhyam	4	13.33
Avara	26	86.67

Jarana shakti was observed as Avara in 86.67% subjects. *Madhyam* in 13.33% and none of the subject showed *Pravara shakti*.


Abhyavaharana Shakti Status
80
70
60
50
40
30
20
10
0
Pravara
Madhyam
Avara
% of Patients

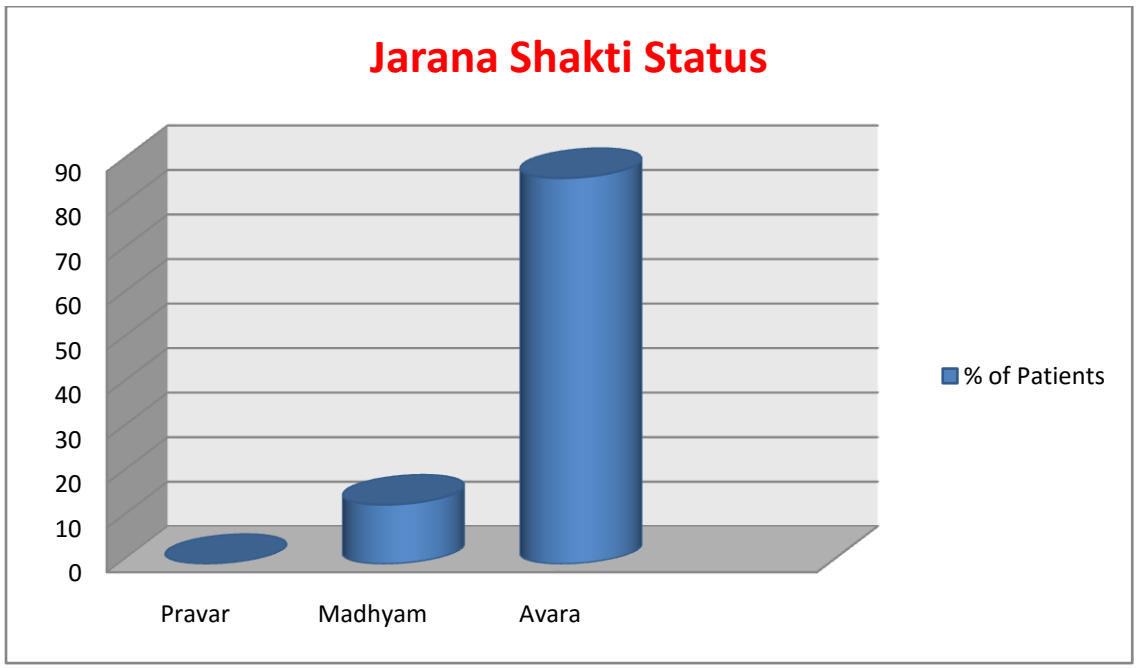

Jarana Shakti Status
90
80
70
60
50
40
30
20
10
0
Pravar
Madhyam
Avara
% of Patients

Table- 32

Agni wise distribution of 30 patients –

Agni	Number of patients	%
Mandagni	26	86.67
Vishamagni	4	13.33
Tikshanagni	0	0
Samagni	0	0

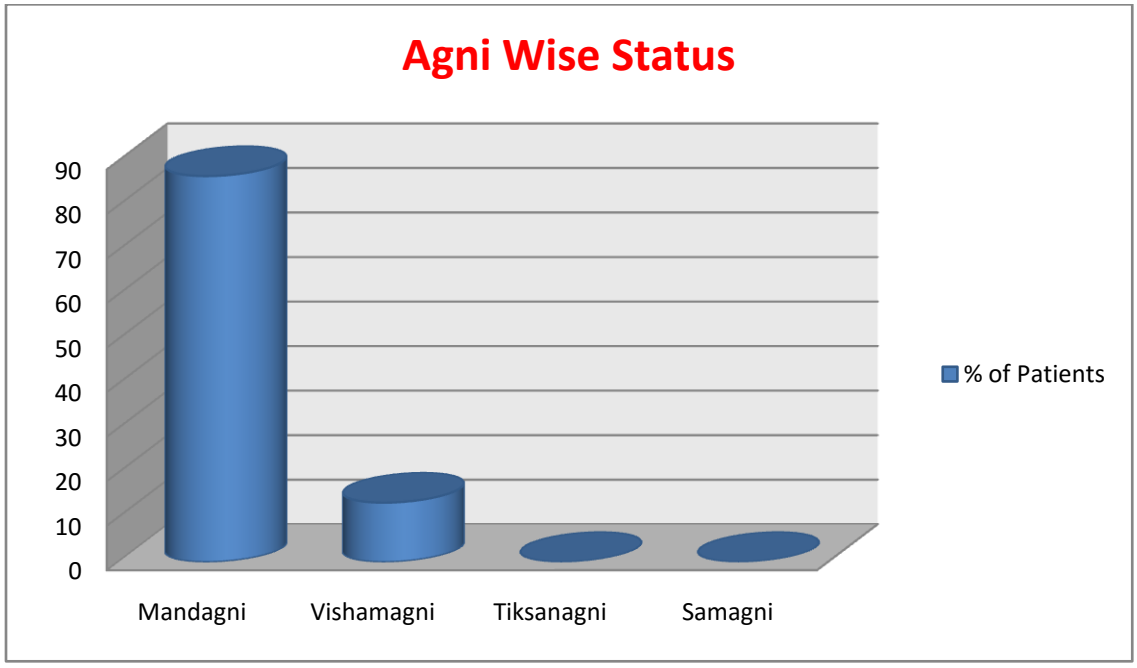
Highest number of patients i.e. 26 (86.67%) had Mandagni, 13.33% had Vishamagni and no patient were reported with *Tikshnagni or Samagni*.

Table- 33

Mutra pravriti wise distributions of 30 patients-

Mutra pravriti			No. of patients	%
Varna		Vishesha	0	0
		Avishesha	30	100
Frequency	Day	2-4times	8	26.66
		5-7times	22	73.33
		>7times	0	0
	Night	1-2times	19	63.33
		>2times	1	3.33

100% Patients were found normal colour of urine. Most of Patients i.e. 22 (73.33%) had frequency of micturition 5 to 7 times/day. 26.66% of Patients had frequency of micturition 2 to 4 times / day. 63.33% Patients had frequency of micturition 1- 2 times / night, while 3.33% had frequency of micturition > 2 times / night.


Agni Wise Status
90
80
70
60
50
40
30
20
10
0
Mandagni
Vishamagni
Tiksanagni
Samagni
% of Patients

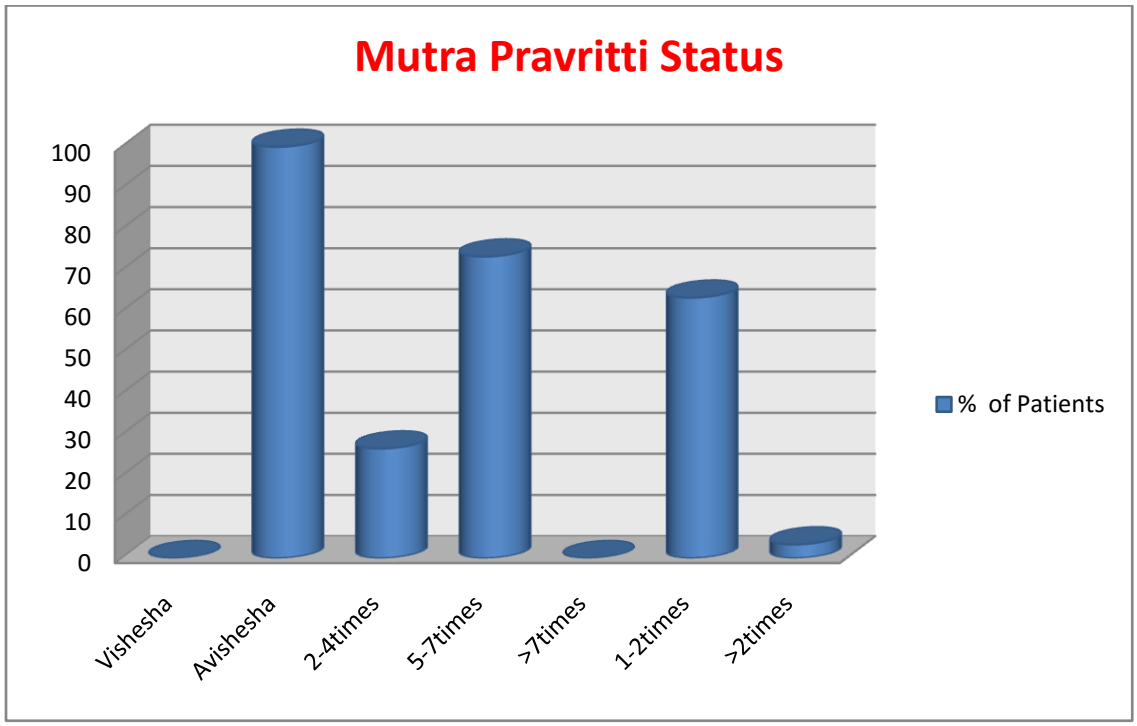

Mutra Pravritti Status
100
90
80
70
60
50
40
30
20
10
0
Vishesha
Avishesha
2-4times
5-7times
>7times
1-2times
>2times
% of Patients

Table- 34

Mal Pravriti wise distribution of 30 patients

	Mala Pravriti	No. of patients	%
Nature	Muhurbaddha-drava Mala	30	100
	Durgandhita	23	76.66
	Shleshmala	14	46.66
Colour	Avishesh	30	100
	Vishesh	0	0
Habit	irregular	30	100
	regular	0	0
Frequency	2 to 3 times	6	20
	3 to 4 times	13	43.33
	> 5 times	11	36.66

Muhur baddha-drava mala pravriti was found in all i.e. 100% of patients.
76.66% of patients had *Durgandhita mala pravriti*, while, *Shleshmala mala pravriti* was observed in 46.66% of patients. All i.e. 100% of patients had normal colour of stool. 100% of patients were having irregular bowel habit. 43.33% of patients, frequency of stool was observed 3 to 4 times in a day. In 20% of patients, it was observed 2 to 3 times in a day, while in 36.66% of patients frequency of stool was observed more than 5 times in a day.

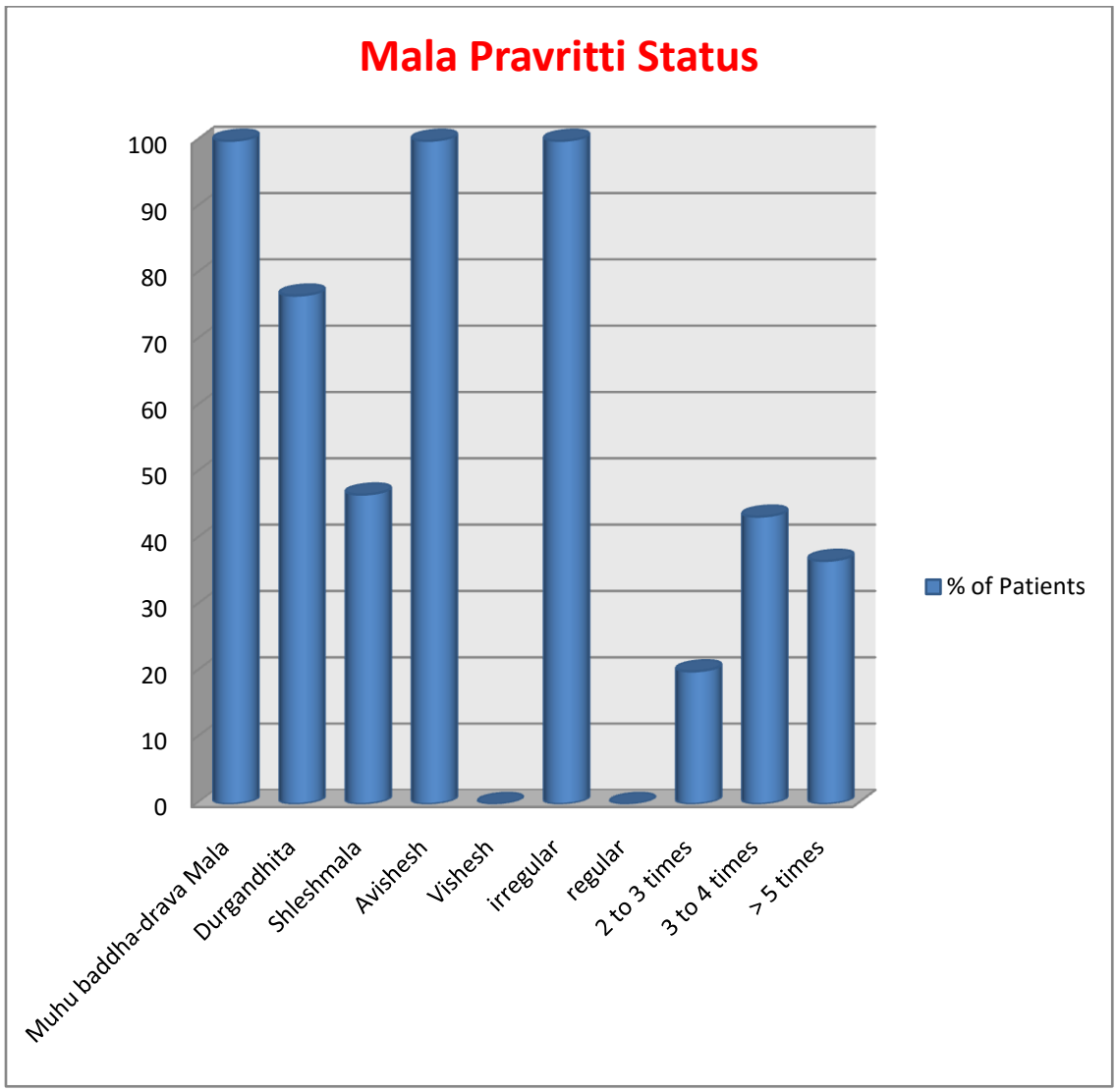


Table- 35
Nidana (Etiological factors) reported by 30 patients-

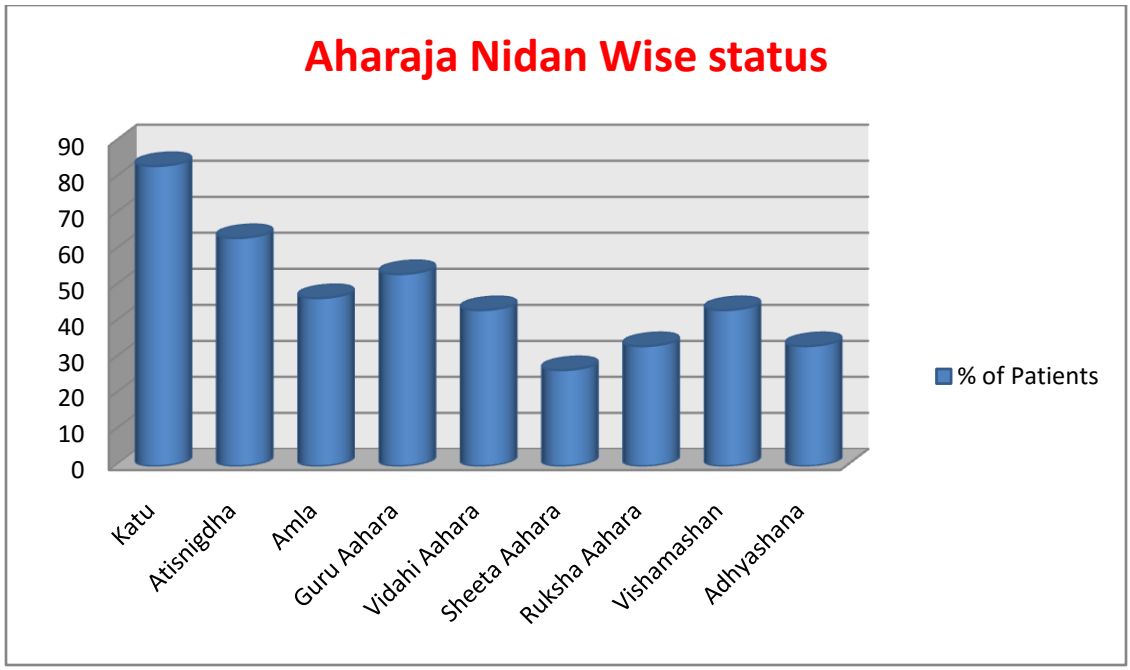
Nidana	No. of patients	%
Katu	25	83.33
Atisnigdha	19	63.33
Amla	14	46.66

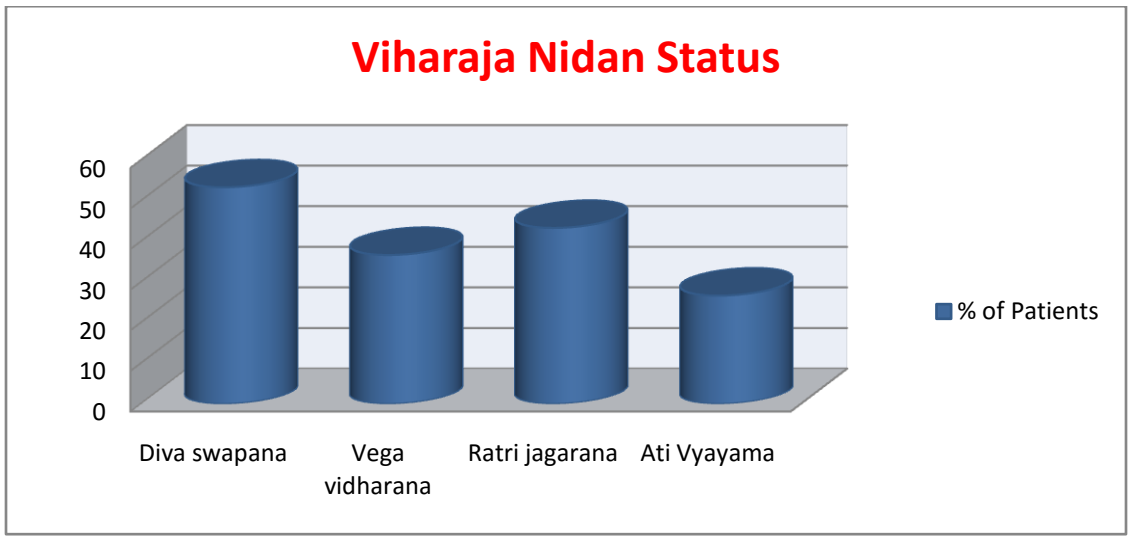
Guru Ahara	16	53.33
Vidahi Ahara	13	43.33
Sheeta Ahara	8	26.66
Ruksha Ahara	10	33.33
Vishamashan	13	43.33
Adhyashana	10	33.33
		Viharaja
Divaswapna	16	53.33
Vega vidharana	11	36.66
Ratri jagarana	13	43.33
Ativyayama	8	26.66
		Manasika
Chinta	22	73.33
Shoka	14	46.66
Krodha	13	43.33
Bhaya	6	20

Aharaja: According to *Nidana* of Grahani Roga, *Katu ahara* was observed in 83.33% of patients. *Atisnigdha ahara* was found in 63.33% of patients. *Amla & Guru ahara* were observed in 46.66% & 53.33% of patients respectively. Sheeta ahara was found in 26.66% of patients. *Adhyashana* was found in 33.33% of patients. *Ruksha ahara* was observed in 33.33% of patients. *Vishamashana* was found in 40% of patients.

Viharaja: According to *Viharaja Nidana*, *Divaswapna* was found in 53.33% of patients, *Ratri-jagarana* was observed in 43.33% of patients, *Vega-vidharana* was observed in 36.66% of patients, and *Ativyayam* was found in 26.66% of patients.

Manasika: *Chinta* was found in 73.33% of patient, while *Shoka* was observed in 46.66% of patients. *Bhaya* was found in 20% of patient, while *Krodha* was observed in 43.33% of patients.


Aharaja Nidan Wise status
90
80
70
60
50
40
30
20
10
0
Katu
Atisnigdha
Amla
Guru Aahara
Vidahi Aahara
Sheeta Aahara
Ruksha Aahara
Vishamashan
Adhyashana
% of Patients


Viharaja Nidan Status
60
50
40
30
20
10
0
Diva swapana
Vega vidharana
Ratri jagarana
Ati Vyayama
% of Patients

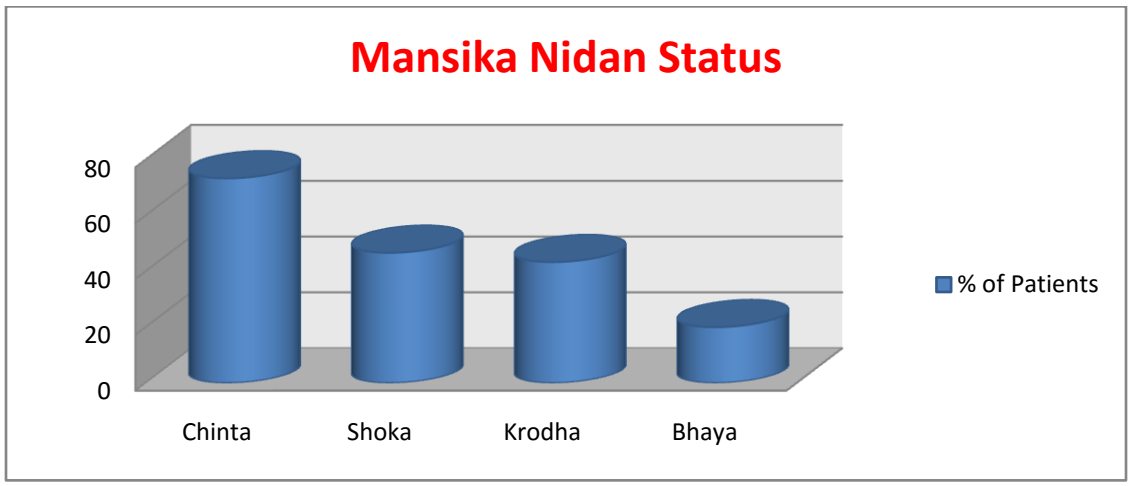

Mansika Nidan Status
80
60
40
20
0
Chinta
Shoka
Krodha
Bhaya
% of Patients

Table no. -36

Stool Examination in 30 Patients –

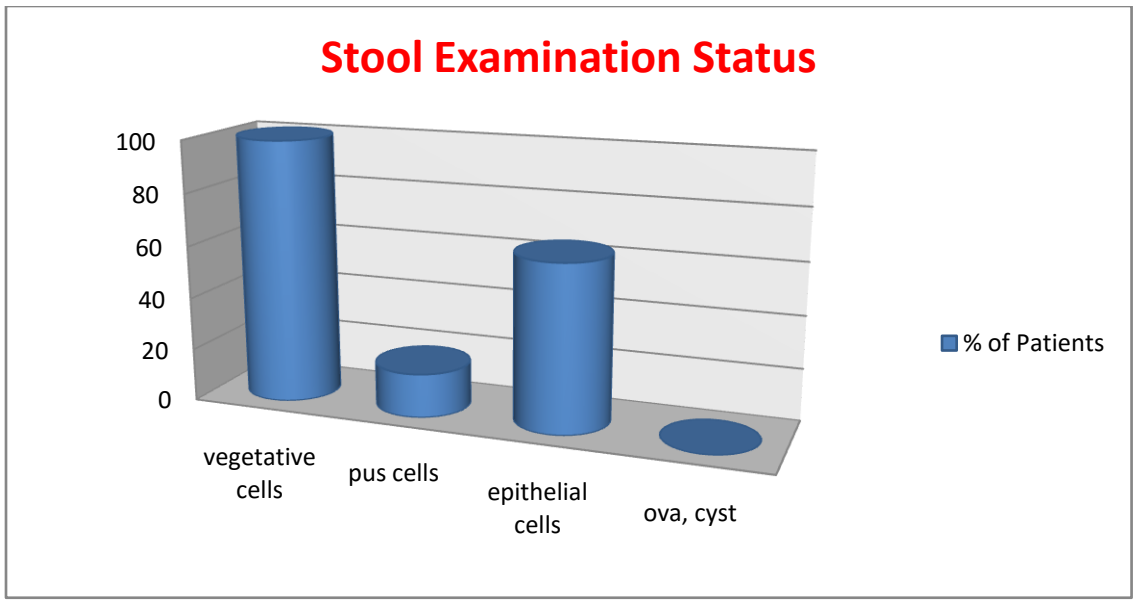
Stool	No. of patients	%
vegetative cells	30	100
Pus cells	5	16.66
epithelial cell	19	63.33
Ova, Cyst	0	0

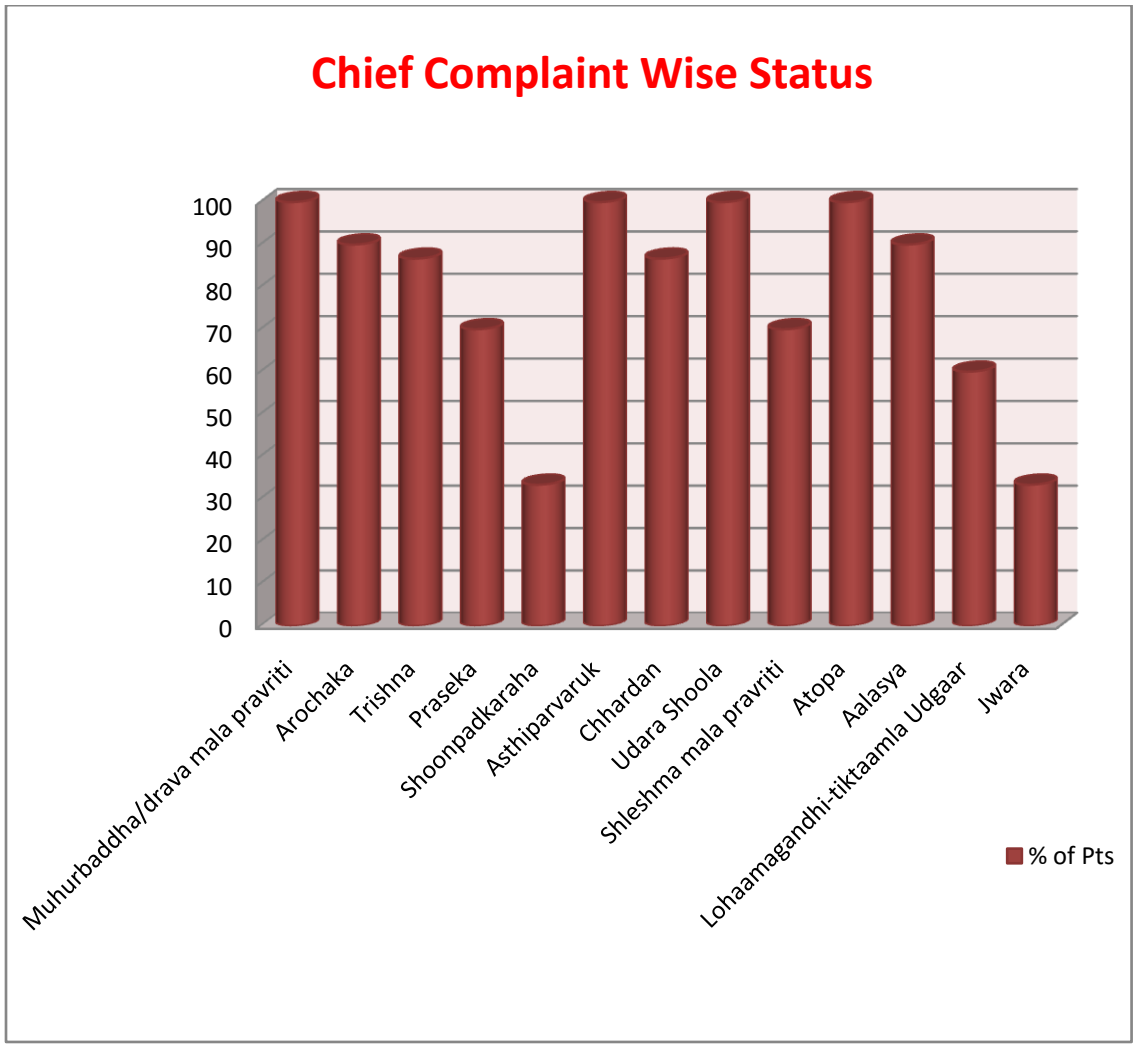
Stool examination wise, vegetative cells was present in all the patients, pus cells was present in 16.66% of patients, epithelial cell was present in 63.33% of patients and ova & cyst was not found in any of patient.

Table no. - 37
Chief complaints wise distribution of 30 Patients –

Chief complaints	No. of patients	%
Muhurbaddha/Muhurdrava mala pravriti	30	100
Arochaka	27	90
Trishna	26	86.66
Praseka	21	70
Shoonpadkaraha	10	33.33
Asthiparvaruk	30	100
Chhardan	26	86.67
Udara Shoola	30	100
Shleshma mala pravriti	21	70
Atopa	30	100
Aalasya	27	90
Other complaints		
Lohaamagandhi-tiktaamla Udgara	18	60
Jwara	10	33.33

In the present study, *Muhur baddha/drava mala privriti* was found as chief complaint in 100% patients, while *Arochaka* were found in 90% patients, *Trishna* in 86.66% patients, and *Praseka* in 70% patients, *Shoonpadkaraha* in 33.33% patients, *Asthiparvaruk* in all patients and *Chhardan* in 86.66% patients. *Udarshoola* and *atopa* was observed in all patients, *Alasya* in 90% patients, *Shleshma malapravriti* in 70% patients, *Lohaamagandhi-tiktaamla Udgara* in 60% patients and in a few i.e. 33.33% patients *Jwara* was found.


Stool Examination Status
100
80
60
40
20
0
vegetative cells
pus cells
epithelial cells
ova, cyst
% of Patients


Chief Complaint Wise Status
100
90
80
70
60
50
40
30
20
10
0
Muhurbaddha/drava mala pravriti
Arochaka
Trishna
Praseka
Shoonpadkaraha
Asthiparvaruk
Chhardan
Udara Shoola
Shleshma mala pravriti
Atopa
Aalasya
Lohaamagandhi-tiktaamla Udgaar
Jwara
% of Pts

EFFECT OF THERAPY

In the present study, 30 patients of *Grahani Roga* were registered for trial and were treated completely. During the treatment patients were followed up after certain interval. The effect of therapy on symptoms is being presented here in following tables.

Table- 38

Effect of Vasti Karma on sign and Symptoms –

S.N	Symptoms	Mean Grade Score		Diff.	%of relief
		BT	AT		
1	Muhurbaddha/Muhurdrava mala pravriti	68	17	51	75
2	Arochaka	65	9	56	86.15
3	Trishna	41	0	41	100
4	Praseka	41	13	28	68.29
5	Shoonpadkarah	18	8	10	55.55
6	Asthiparvaruk	70	13	57	81.42
7	Chhardan	52	4	48	92.30
8	Udara Shoola	74	23	51	68.91
9	Shleshma mala pravriti	36	2	34	94.44
10	Atopa	75	13	62	82.66
11	Aalasya	64	12	52	81.25

Improvement in the symptom of *Muhurbaddha / Muhurdrava mala pravriti* was 75, *Arochaka* was 86.15%, *Trishna* was 100%, and *Praseka* was 68.29%, *Asthiparvaruk* was 100%, *Chhardan* was 92.30%, *Udara-shoola* was 68.91%, *atopa* was 82.66%, *Alasya* was 81.25% and *Shleshma mala-pravriti* was in 94.44%.

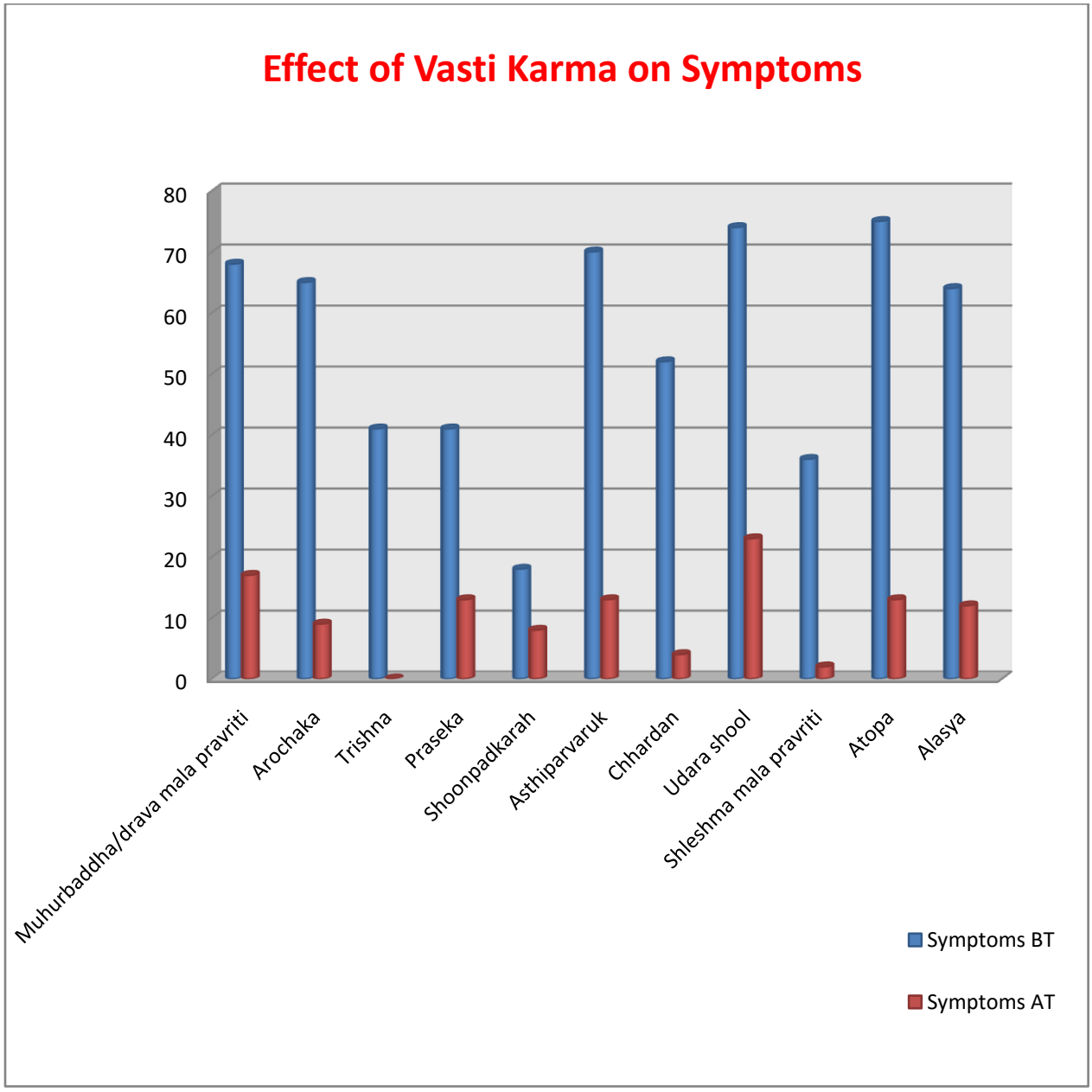

Effect of Vasti Karma on Symptoms
80
70
60
50
40
30
20
10
0
Muhurbaddha/drava mala pravriti
Arochaka
Trishna
Praseka
Shoonpadkarah
Asthiparvaruk
Chhardan
Udara shool
Shleshma mala pravriti
Atopa
Alasya
Symptoms BT
Symptoms AT

Table –39

Effect of Vasti Karma on Sign and Symptoms of 30 patients

Symptoms	Mean Score		Diff.	%of relief	SD +_	SE +_	t	P
	BT	AT						
Muhurbaddha/ Muhurdrava mala pravriti	2.26	0.56	1.7	75	0.59	0.10	15.62	< .001
Arochaka	2.16	0.3	1.86	86.15	1.04	0.19	9.81	< .001
Trishna	1.36	0	1.36	100	0.71	0.13	10.41	< .001
Praseka	1.36	0.43	0.93	68.29	0.78	0.14	6.51	<.001
Shoonpadkarah	0.6	0.26	0.33	55.55	0.66	0.12	2.76	< .02
Asthiparvaruk	2.33	0.43	1.9	81.42	0.71	0.12	14.61	< .001
Chhardan	1.73	0.13	1.6	92.30	1.00	0.18	8.73	< .001
Udara Shool	2.46	0.76	1.7	68.91	0.70	0.12	13.25	< .001
Shleshma mala pravriti	1.2	0.06	1.13	94.44	0.93	0.17	6.62	< .001
Atopa	2.5	0.43	2.06	82.66	0.69	0.12	16.36	< .001
Alasya	2.13	0.4	1.73	81.25	0.58	0.10	16.27	< .001

The result of *Vidangadi Taila- Dhanyapanchak Kwath Vasti* has been found highly significant in all the symptoms except *Shoonpadkarah*.

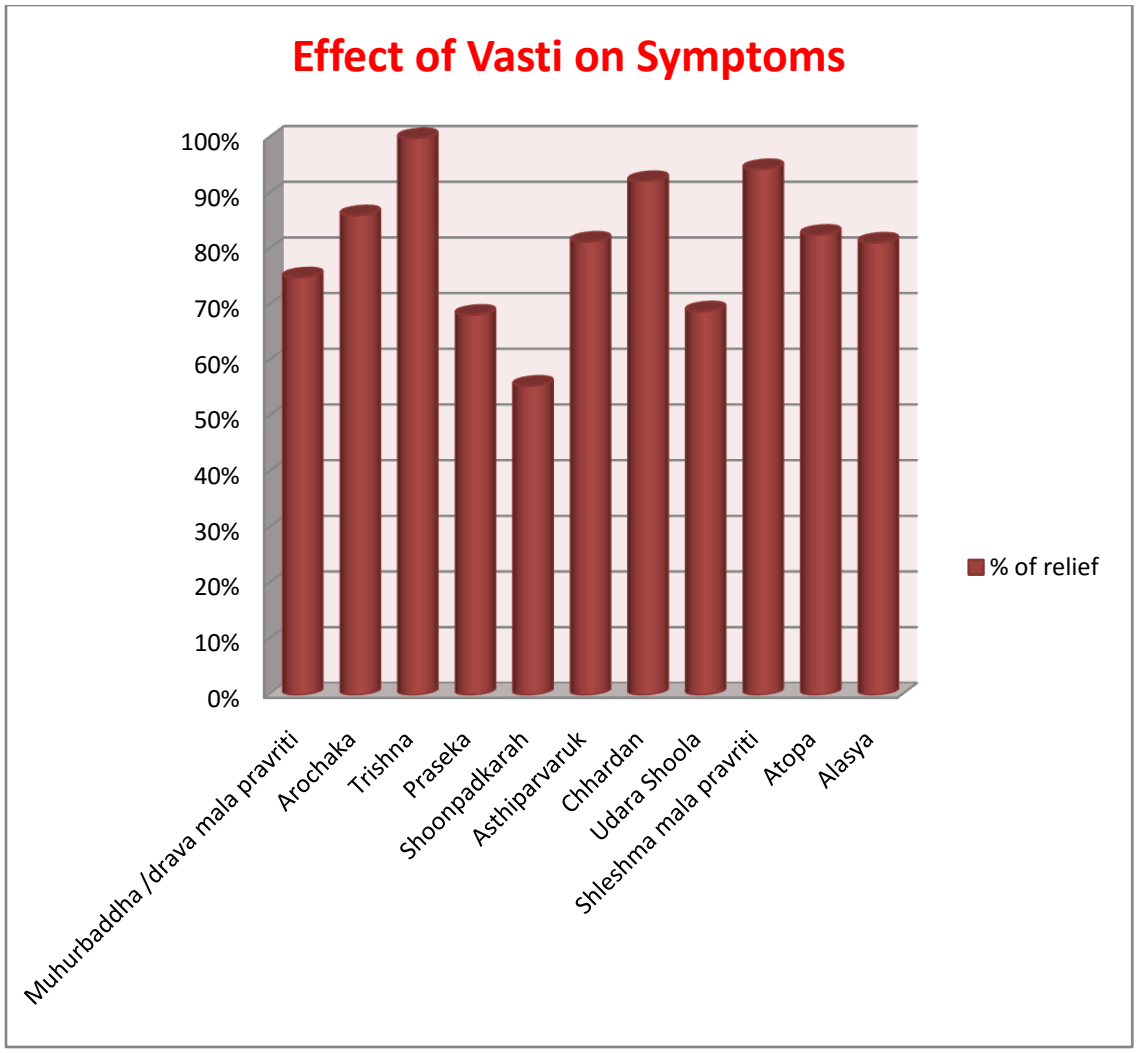

Effect of Vasti on Symptoms
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% of relief
Muhurbaddha /drava mala pravriti
Arochaka
Trishna
Praseka
Shoonpadkarah
Asthiparvaruk
Chhardan
Udara Shoola
Shleshma mala pravriti
Atopa
Alasya

Table –40

Effect of Vasti Karma on Other symptoms of 30 patients

S.No.	Other Symptoms	BT		AT	
		No. of pts.	%	No. of pts.	%
1.	Jwara	10	33.33	0	0
2.	Lohaamagandhi-tiktaamla Udgara	18	60	3	10

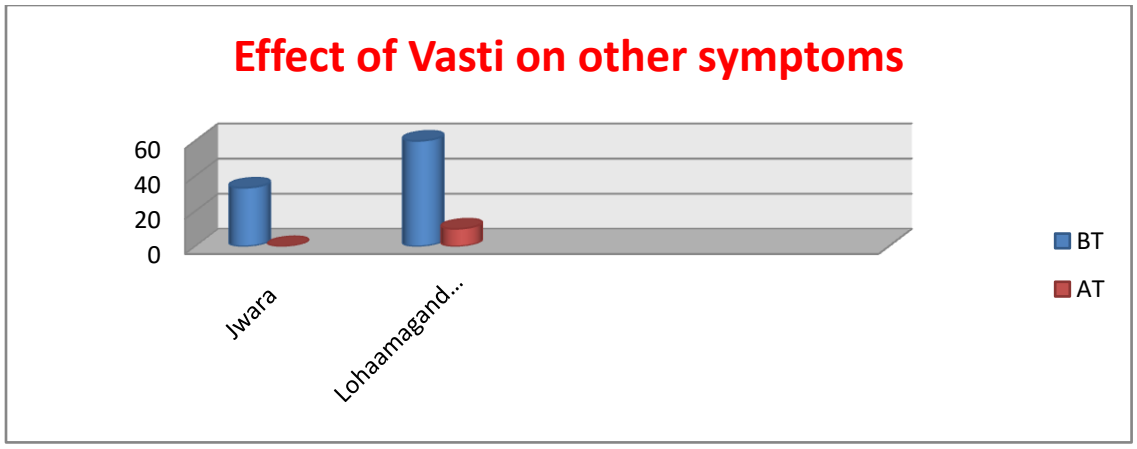
Before treatment *Lohaamagandhi-tiktaamla udgaar* present in 60% patients and *Jwara* present in 33.33% patients. After treatment *Jwara* was not found in any patients and *Lohaamagandhi-tiktaamla Udgara* was found only 10% patients.

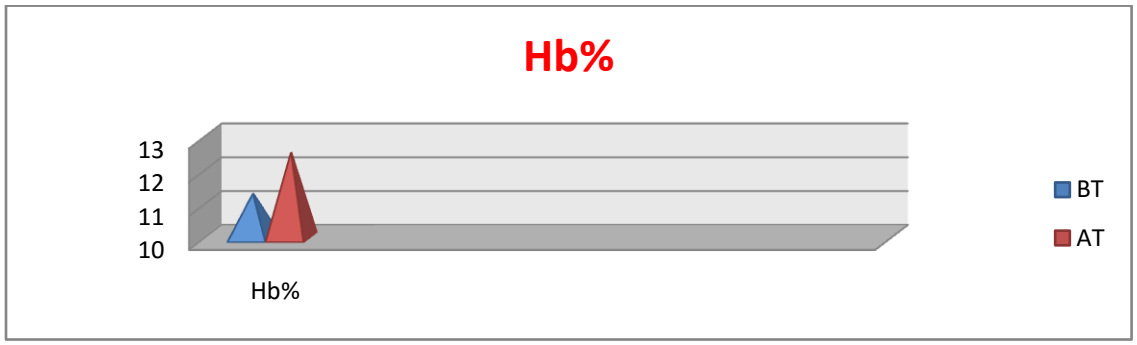
Table-41

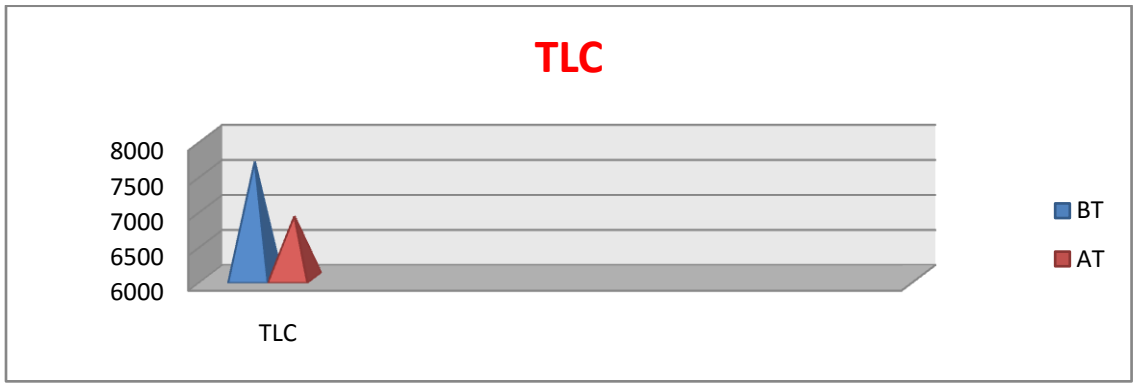
Effect of Vasti Karma on Hematological parameters

Parameters	Mean	
	BT	AT
Hb%	11.30	12.52
TLC	7660	6880
ESR	14.33	8.6

This table shows that hematological status (Hb, TLC, and ESR) was improved after treatment.


Effect of Vasti on other symptoms
60
40
20
0
Jwara
Lohaamagand...
BT
AT


Hb%
13
12
11
10
Hb%
BT
AT


TLC
8000
7500
7000
6500
6000
TLC
BT
AT

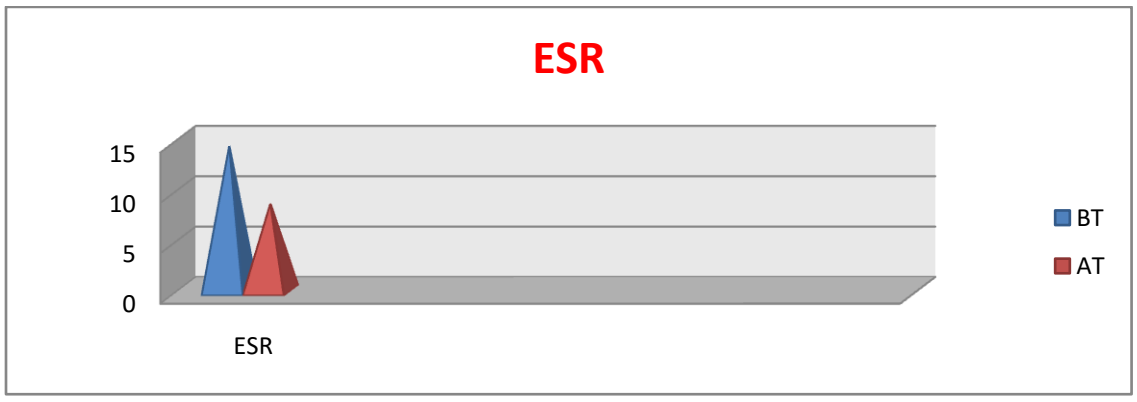

ESR
15
10
5
0
ESR
BT
AT

Table-42

Effect of Vasti Karma on Ahara shakti-

A. Abhyavaharana shakti

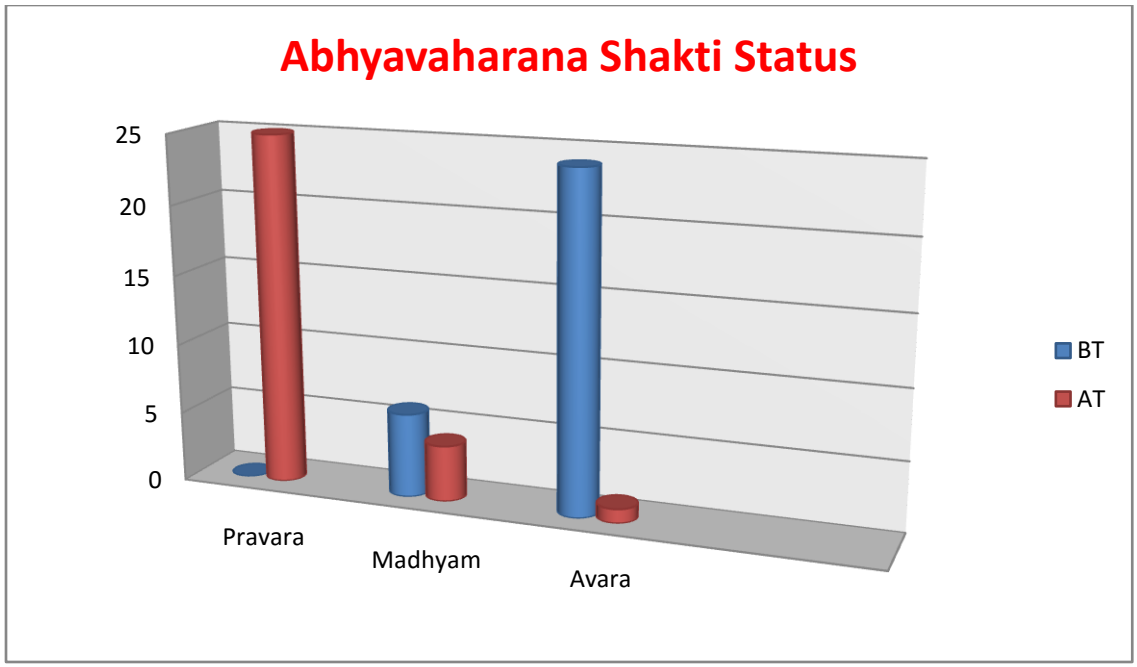
Abhyavaharana shakti	No. of patients	
	BT	AT
Pravara	0	25
Madhyam	6	4
Avara	24	1

Before treatment total 30 patients were having Madhyam and Avara (6+24) *Abhyavaharana shakti* but after completion of treatment 25 patients acquired *Pravara Abhyavaharan shakti*.

B. Jarana shakti

Jarana shakti	No. of patients	
	BT	AT
Pravara	0	24
Madhyam	4	5
Avara	26	1

Before treatment total 30 patients were having *Madhyam and Avara* (4+26) *Jarana shakti* but after completion of treatment 24 patients acquired *Pravara Jarana shakti.*


Abhyavaharana Shakti Status
25
20
15
10
5
0
Pravara
Madhyam
Avara
BT
AT

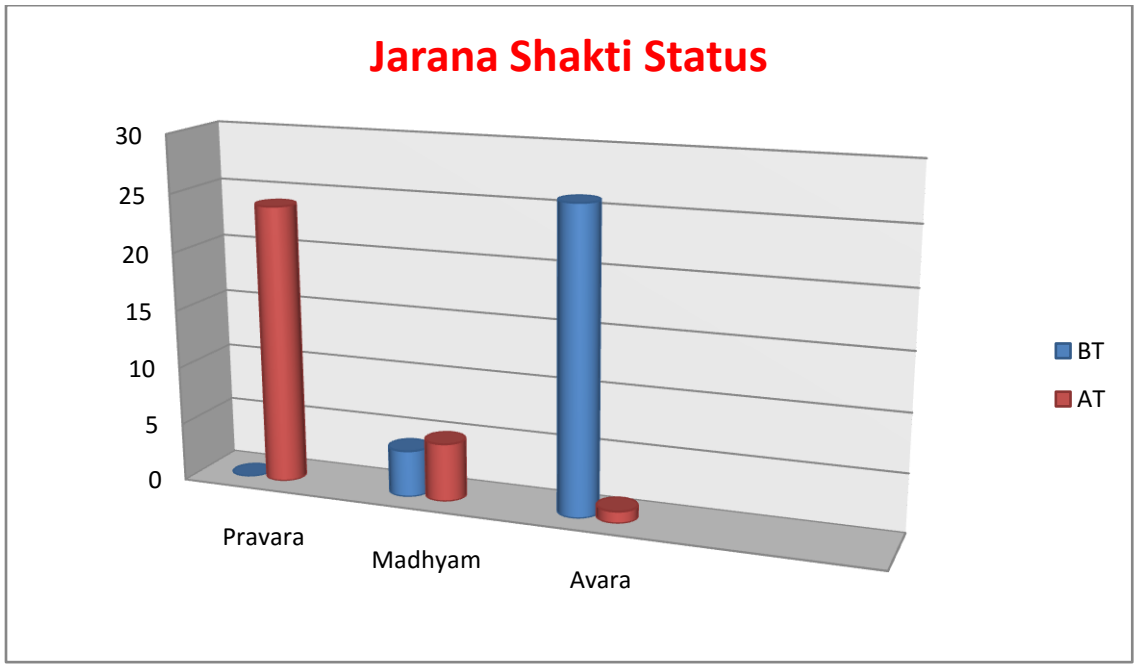

Jarana Shakti Status
30
25
20
15
10
5
0
Pravara
Madhyam
Avara
BT
AT

Table-43

Effect of Vasti Karma on Vyayama Shakti –

Vyayama shakti	No. of patients	
	BT	AT
Pravara	3	18
Madhyam	12	7
Avara	15	5

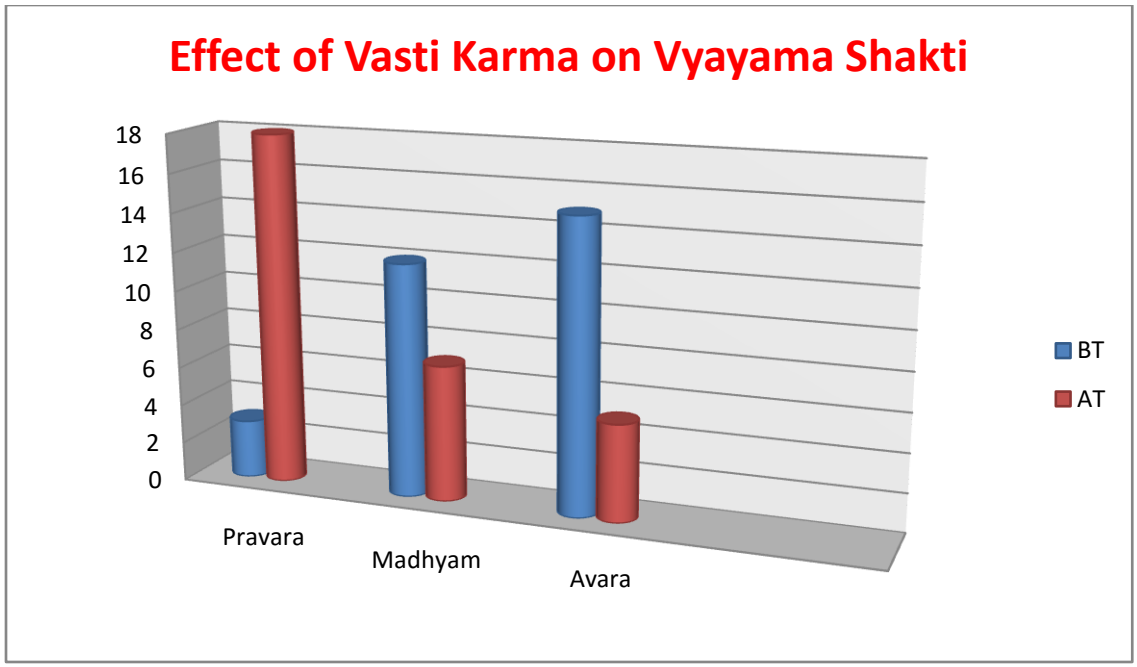
Before treatment total 30 patients were having *Pravara, Madhyam and Avara* (3+12+15) *vyayama shakti* but after completion of treatment 18 patients acquired *Pravara vyayama shakti*, 7 patients were having *Madhyam vyayama shakti* and only 5 patients having remain *Avara vyayama shakti*.

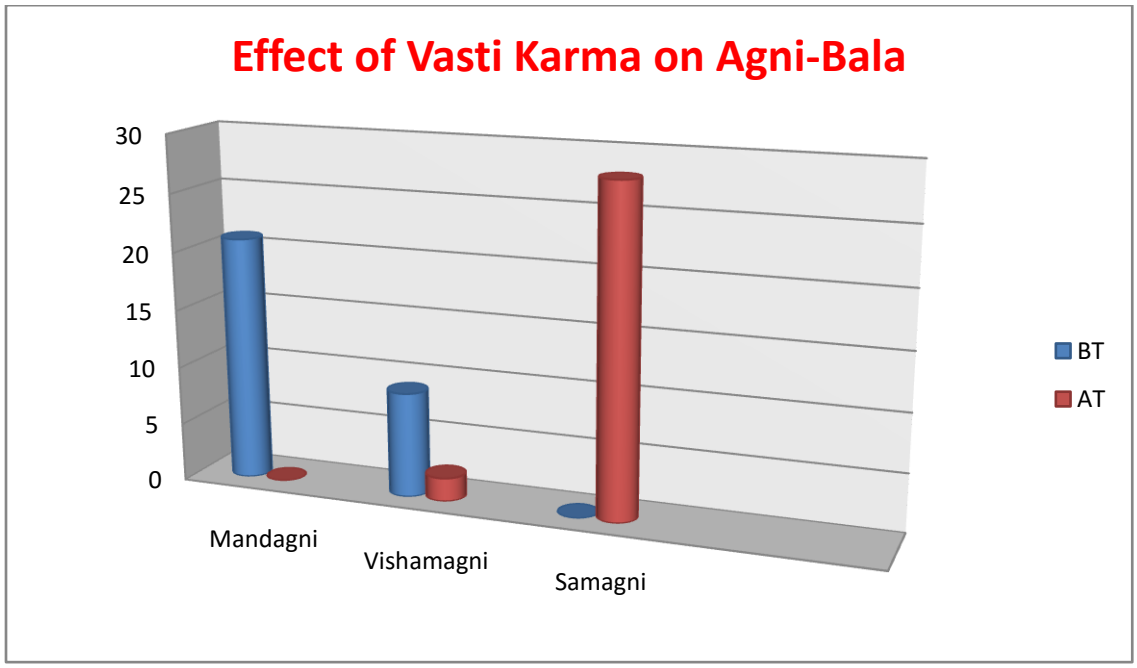
Table- 44

Effect of Vasti Karma on Agni-bala –

Agni-bala	No. of patients	
	BT	AT
Mandagni	21	0
Vishamagni	9	2
Samagni	0	28

Before treatment total 30 patients were having *Mandagni and Vishamagni* (21+9) *Agni-bala* but after completion of treatment 28 patients acquired *Samagni*.


Effect of Vasti Karma on Vyayama Shakti
18
16
14
12
10
8
6
4
2
0
Pravara
Madhyam
Avara
BT
AT


Effect of Vasti Karma on Agni-Bala
30
25
20
15
10
5
0
Mandagni
Vishamagni
Samagni
BT
AT

OVERALL EFFECT OF THERAPY

Table: - 45

OVERALL EFFECT	No. of Patients	%
Marked Improvement	24	80
Moderate Improvement	6	20
Mild Improvement	0	0
No Improvement	0	0

Twenty four patients (80%) got marked relief and six patients (20%) got moderate relief. No patient was listed under mild improvement or unchanged/ no Improvement category.

Discussion

"The larger the island of knowledge, the longer the soreline of mistery."

DISCUSSION

This is the vital & mandatory part of every research work, which comprises the discussion of important points from conceptual study as well as from clinical study based on the results obtained. Discussion is nothing but the logical reasoning of observations based upon the figures and facts. If all the points are discussed with proper reasoning than only they will helpful to illustrate proper conclusions. It is a bridge, which connects the findings with conclusions. Only a properly done discussion can fulfill the purpose of research work i.e. to draw some conclusions from the findings and results. The clinical research which was carried out on a devastating entity like Grahani Roga is needed to be discussed in the following terms.

Discussion of the present study consists following points-

1. CLINICAL STUDY
2. CONCEPTUAL STUDY OF DISEASE
3. PROBABLE MODE OF ACTION OF TRIAL DRUGS

CLINICAL STUDY:

In the present study total 38 patients of Grahani Roga were selected from OPD and registered for the treatment. Out of which 30 patients completed the full duration of treatment, while 8 patients were left at different stages of treatment and follow-up.

Age

It was observed from study that maximum patients of Grahani Roga 14(46.67%) found in the age group of 41-50 years and minimum 2(6.67%) in 16-20 years of age group. From table 3 & 4, it is clear that age group 41-50 is more prone to the disease in both sexes.

Maximum patients are from age group i.e. 41-50. In this age group people have more busy and stressed life span, so they usually indulge in unwholesome regimen e.g. *Adhyashana, Vishamashana, Ratrijagarana, Diwasvapana* etc. This leads to inequilibrium of *Tridosha* mainly *Samana Vayu, Pachaka Pitta, & Kledaka Kapha.* Anxiety and stress badly affects function of *Agni* so that function of Grahani gets disturbs and they produce Grahani Roga.

Sex:

From present study it may be concluded that males are more prone to Grahani Roga that females. Out of 30 patients- 19 males were registered and 11 females were registered for this study.

This may be due to more stress and burden of work, travel and outside meals are common life style in males, that why they are more affected to gastrointestinal disorders like Grahani Roga.

Religion:

It was observed that maximum 73.33% are Hindu patients and 26.66 % are Muslim patients. This is because the hospital is situated in Hindu population area.

Marital status:

80% patients are married. This shows that disease is more prominent in married patients and in older age group in comparison to unmarried patients. Although there is no relation between the Grahani Roga & Marital status but due to increased stress and hurry in life they are more affected with this disease.

Occupation:

Among registered patients, 33% were house wives and 33% were service class. So the both groups were equally affected. This study reveals that sedentary life style and hectic life style both are equally responsible to produce Grahani Roga. Sedentary life style produce *Mandagni* when as hectic life style produce *Vishamagni*. Both states of *Agni* are responsible for Grahani Roga.

Education:

In this study, 76.67 % patients are educated. This incidence is observed maximum in educated people may be due to hurried and worried life, irregular diet habit etc.

Economic status:

It is observed that maximum number of patients 46.67% belongs to middle class family and next to these 33.33% patients belongs to lower class family. Minimum 6.67 % patients belong to high class family. This shows possibility of disease is more in middle class and lower class family. Middle class people pay more attention to maintain their status in the society, which causes mental stress and vitiation of *Vata Dosha* produces *Vishamagni* and later on Grahani Roga.

Family history:

It is observed that there is no any correlation with family history because family history is present in only 13.33% of patient.

Chronicity of disease:

Maximum 43.33% patients had history of disease from one year to one and half year and 26.67% of patients had history of disease up to one and half year to two year.

Maximum numbers of patients i.e. 70.00% were having chronicity of disease Grahani Roga from 1to 2 years. As patients initially do not care of mild symptoms of Grahani disease and keep them on self medication once prescribed by physician just as digestive, appetizer etc. Due to these

types of drugs temporary suppress the symptoms of disease, hence patient attend hospital lately. This disease is more chronic in nature also due to its periodic type.

Nature of diet:

Patients taking non-vegetarian diet suffering somewhat more 53.33% than vegetarian patients 46.67%. This shows non vegetarian diet making patients more prone to this disease. This observation reflects although the predominant diet of this region is vegetarian of the local population but more patients who are suffering from Grahani Roga in this region are non vegetarian.

Appetite:

Results are showing that 66.67% of Grahani Roga having deprived appetite. This shows it, appetite has been decreased with this disease due to *Ama* deposition.

Aggravating factors:

Different aggravating factors drugs, diet, climate changes, occupation etc are taken into consideration; results showing diet and occupation are most common aggravating factors. Diet is main aggravating factor because it was responsible in 40% of patients.

Meal time:

Maximum 60 %patients are on irregular meal and 40 % on regular meal.

Dietetic Habit:

43.33% of patients of this clinical study are doing *Vishamasana* followed by 33.33% patients are doing *Adhyasana* because both *Vishamasana* and *Adhyasana* type of dietetic habit produce *Ama* in the body; finally it results into occurrence of disease.

Supplementary food:

This study shows 70 % patients are taking excessive tea, 13.33 % patients are taking excessive tea & milk, and 16.67 % patients are taking milk and 3.33 % taking coffee as food supplements. Maximum no. of patients i.e. 70% are taking tea as supplementary diet.

The secretion of digestive juice increases for digestion of tea in those persons who are consuming excessive tea. This excessive secretion of digestive juice leads to damage of gastric mucosa. In such persons, at the time of meal, secretion of digestive juice are inappropriate in quantity, this leads to indigestion and later causes Grahani Roga.

Addiction:

76.67 % patients were not taking any addiction, while 13.33 % patients were taking tobacco, 6.67 % patients were taking alcohol & smoking and 3.33 % patients were on smoking. This

statistical data shows maximum patients are not taking any addiction. The reason behind this data may be that patients not given addiction history truly because of society factor. Although they are taking addictives even they don't want to show in society.

Exercise:

The data shows that 50% patients were not doing any exercise. This may be due to today's busy scheduled people have no time for exercise. It causes *Ama* production which hampers proper digestion. 26.67 % patients were doing exercise irregularly where as only 23.33% of the patients were doing regular exercise. It means peoples not doing any exercise are suffering more with Grahani Roga in comparison to those doing exercise.

Nature of work:

Majority of patients i.e. 73.33 % were doing physical work, because of maximum patients were labours and female.

Sleeping pattern:

Majority of patients i.e. 33.33% patients were having decreased sleep, 33.33% patients were having disturbed sleep. Patients with some psychological problems get less or disturbed sleep. This observation reflects the disease is related to psychological problems of the patient also.

Disturbed natural night sleep causes *Divaswapna* .This *Divaswapna* causes *Agnimandya/Ajirna* which later causes Grahani Roga.

Psychological Status:

In the present study Majority of patients i.e. 53.33 % were having anxiety followed by 26.67% were stressed and 6.67% patients were depressed where as only 13.33 % of the patients were with normal mood. Emotional anxiety and stress leads to vitiation of Agni and it results into *Amavastha* of Grahani Roga.

Sharir Prakriti & Manasa Prakriti:

In present clinical study, all patients were having *Dwandaja Prakriti*. Among them each of 53.33% had *Vata-Pittaja* followed by 33.33% *Vata-Kaphaja Prakriti*, while 13.33% patients had *Kaphaja-Pittaja Prakriti*.

56.67 % of patients were having Raja dominant Prakriti followed by 40 % patients having Tama dominant Prakriti. Generally People of *Rajasika & Tamasika prakriti* are less care taking regarding their *Ahara – Vihara*. Due to this *Mithya Ahara Vihara*, *Agni* is vitiated and finally it leads to *Amavastha* of the disease.

Sara, Samhanana, Pramana, Satva & Satmya:

The majority of patients were having *Madhyama Sara* (70%), *Madhyama Samhanana* (53.33%), *Madhyama Satva* (50%). These observations show that the most of the patients were having

Madhyama Bala. The data reflects the usual presentation of *Sara, Samhanana, Satva and Satmya* of society.

Vyayama Shakti:

Before treatment maximum number of patients i.e.15 (50%) were showing *Avara Vyayama shakti*, 12 (40%) patients were having *Madhyam Vyayama shakti* and 3 (10%) patients having *Pravara Vyayama shakti*. Maximum patients i.e. 50% were showing *Avara Vyayama shakti* before treatment due to disease but after therapy *Vyayama shakti* of patients improved due to proper digestion, absorption and elimination of food, which increases immunity and strength of body. After treatment maximum number of patients 18 (60%) were showing *Pravara Vyayama shakti*.

Ahara Shakti

• **Abhyavaharana Shakti & Jarana Shakti:**

Before treatment 80 % patients were having *Avara Abhyavaharana Shakti*, 20% patients were having *Madhyam Abhyavaharana shakti* and 86.67% patients were having *Avara Jarana shakti*. This signifies the importance of Agni in the pathogenesis of Grahani Roga.

After treatment in maximum 25 (83.33%) patients improved to *Pravara Abhyavaharana Shakti* and no one patient was showing *Avara Abhyavaharana Shakti*. After treatment in maximum 24 (80%) patients improved to *Pravara Jarana Shakti* and only 3.33% patients remain in *Avara Jarana Shakti*.

After therapy *Abhyavaharana Shakti and Jarana Shakti* of patients improved due to *Ama Pachana* and proper absorption and elimination of *Sara and Kitta bhag* from the body. It eliminates the *Srotorodha*. The *pachana* of *Ahara* is improved, so *Ahara Shakti* of patients improved after therapy.

Status of Agni:

In the present clinical study, highest number of patients i.e. 70% had *Mandagni*, followed by 30% of *Vishamagni*. This signifies the importance of *Mandagni* in the pathogenesis. Mandagni results into vitiation of *Dosha* which leads to *Ama* formation. It plays a key role in *Samprapti* of Grahani Roga. Therefore here drug was given having *Deepana and Pachana* properties.

After Treatment maximum 93.33% patients were showing *Samagni*. Nobody was showing *Mandagni*. This is due to *Deepana and Pachana* drug administration and *Ama pachana*.

Mala Pravriti:

Muhurbaddha Muhurdrava Mala Pravriti was found in all i.e. 100% of patients. 76.66% of patients had *Durgandhita Mala Pravriti, Shleshmala Mala Pravriti* was observed in 46.67% of patients, 100% of patients were having irregular bowel habit. In 43.33% patients, frequency of

stool was observed 3 to 4 times in a day. This observation shows, vitiation of *Agni* may cause improper digestion and it may create irregular *Mala Pravriti*.

Mutra Pravriti:

In 96.66% patients, the colour of *Mutra* was *Avishesha*. 73.33% had to pass urine 5 to 7 times /day. 63.33% patients had to pass urine 1 to 2 times / night. The data shows the general information regarding *Mutra*. Nothing significant can be drawn from the data.

Etiological Factors:

Aharaja Nidana :
Katu Ahara was found in 83.33% patients. *Atisnigdha Ahara* was observed in 63.33% of patients. *Amla Ahara* was found in 46.66% of patients. *Guru Bhojana* was observed in 53.33% of patients. *Vidahi Bhojana* was observed in 43.33% of patients. *Sheeta Ahara* was observed in 26.66% patients. *Ruksha Ahara* was found in 33.33% patients. *Vishamasana* was found in 43.33% of patients and *Adhyashana* was found in 33.33% patients. Maximum patients were having faulty Dietetic habits. This is responsible for vitiation of *Dosha* which leads to *Agni Dushti* and Formation of *Ama,* which leads to disease occurrence.

Viharaja Nidana:
Divaswapna was found in 53.33% patients. *Vega-vidharana* was observed in 36.67% of patients. While *Ratri-jagarana* found in 43.33% patients. *Ati-Vyayama* was found in 26.66% of patients.
These all things are responsible for improper digestion and vitiation of *Doshas,* leading to *Amavastha* and finally lead to Grahani Roga.

Manasika Nidana:

Chinta was found in 73.33% patient while *Shoka* was found in 46.66% of patients. *Krodha* was found in 43.33% of patient while *Bhaya* was observed in 20% of patients. It may be due to prolong ill health & different types of dietary restriction. This is responsible for improper digestion which leads to *Ajirna* like condition as mentioned in Ayurvedic classics. These psychological factors play a dominant role in the development of *Agni dushti.*

In all the cases, involvement of *Annavaha, Purishavaha and Rasavaha Srotasa* was observed. These three *Srotas* are related with digestion, absorption and excretion. So, it can be said that in 'Grahani Roga' above mentioned functions are hampered. Hence it can be summarized that in Grahani Roga the predominantly involved *Srotasas* are *Rasavaha, Annavaha and Purishavaha Srotasa.*

Chief Complaints:

In the present study, *Muhurbaddha/ Muhurdrava mala privriti* was found as chief complaint in 100% patients. While *Arochaka* was found in 90% patients, *Trishna* in 86.67%, *Praseka* in 70%, *Shoonpadkaraha* in 33.33% and *Asthiparvaruk* in all patients.

Chhardan was found in 86.66% patients, *Udara Shool* in all patients, and *Atopa* in 68.18% patients. *Shleshma mala pravriti* was found in 70% patients, *Loha-amagandhi udgara* in 60% and *jwara* in 33.33% patients. *Alasya* was observed in 36.36% patients.
These all are the cardinal symptoms of Grahani Roga. Faulty dietetic habit, mental disturbance and sleeping pattern etc. are the etiological factors, due to these factors there is vitiation of *Tridosha* and by these *Agni* is vitiated which leads to vitiation of *Grahani* that results in symptoms of Grahani Roga.

EFFECT OF THERAPY-

Total 30 patients were registered for this study. These were randomly selected. For the assessment of results the symptoms which are in classics were adopted. For statistical analysis to make these criteria more objective, an effort has been made to give scores to all subjective criteria. Each symptom has been given score 03. Few symptoms have been given Present/Absent scoring also.
Further all the scores of symptoms have been combined to assess the overall effect of therapy. Assigning the score depending upon their severity did the assessments of signs & symptoms regarding improvement.

♦Drug was found to be highly effective in relieving *Muhurbaddha / Muhurdrava mala pravriti* by 75% which was statistically highly significant ($p < 0.001$).

♦ *Arochaka* was promptly relieved by 86.15% which was statistically highly significant ($p<0.001$).
♦ *Trishna* was subsided by 100% which was statistically highly significant ($p<0.001$).
♦*Praseka* was relieved by 68.29% which was statistically highly significant ($p< 0.001$).
♦In 55.55% patients improvement in *Shoonpadkarah* was seen which was statistically significant ($p<0.05$).
♦*Asthiparvaruk* was relieved in 81.42% patients which was statistically highly significant ($p<0.001$).
♦The symptoms of *Chhardan* reduced by 92.30% which was statistically highly significant at $p<0.001$.
♦*Udarshoola* was relieved by 68.91% and was statistically highly significant ($p<0.001$).
♦*Atopa* was subsided by 82.66% which was statistically highly significant at $p<0.001$.
♦Relief in *Alasya* was found in 81.25% patients which was statistically highly significant ($p<0.001$).

♦*Shleshma mala pravriti* was relieved by 94.44%, which was statistically highly significant at p<0.001.
♦*Jwara* was subsided after treatment and *Loha-amagandhi-tiktaamla Udgara* was remaining only 10% patients.
These observations clearly emphasis *Deepana-Pachana* effect of *Vidangadi Taila Dhanyapanchak Kwath Vasti* and its efficacy.

TOTAL EFFECT OF THERAPY:
Twenty four patients (80%) were markedly improved and Six patients
(20%) were moderately improved. From this observation, it is seen that drug– *Vidangadi Taila Dhanyapanchak Kwatha Vasti* was highly effective in treating Grahani Roga.

Discussion on effect on sign and symptoms-

As mentioned earlier all these above mentioned symptoms are caused mainly due to vitiation of *Pachaka Pitta, Samana-Vayu and Kledaka Kapha*, *Jatharagnimandya, Amarasa. Vidangadi tail-Dhanyapanchak kwath Vasti* provided better relief in almost all the symptoms because their Dravyas have *Katu-tikta rasa, Laghu-tikshna-sukshma guna, Deepana-pachana property and Katu Vipaka* reduces *Kapha- Vata dushti*, correct the *Jatharagni*, and digest the *Ama*. By this normal physiology of digestion gets restored which in turns leads to proper formation of *Sara and Kitta bhaga* and relief in above symptoms.

PROBABLE MODE OF ACTION OF VASTI
Mode of action. *"Guda moolam hi shareeram……"* Drug cross rectal mucosa. Upper rectal mucosa→ Sup.hemorrhoidal vein→ Portal circulation. Lower rectal mucosa→ Middle & Inf.hemorrhoidal vein→Systemic circulation.

Nirooh Vasti:- Hyper osmotic- facilitates absorption of endotoxins in the solution- Detoxification. *AnuvasanaVasti*- Hypo osmotic- absorption in blood.

In *Vasti dravya*, First of all sodium ion in *Saindhav* actively absorb from colon. Removes excess acidity, Generates hydro-electric energies in the cells & for nerve cells communication. It stimulates ionic action potential. High concentration of sodium ion facilitates sugar influx. Increase sodium ion in mucosal membrane generate osmotic gradient. Water follows this osmotic gradient thus passive absorption of water take place. Free fatty acid is easily absorbed by passive diffusion in the colon. Sugar absorbs quickly- instant energizer. Hygroscopic nature- It speeds up the healing, growth of healing tissue, Antibacterial-acidic nature. Regular usage increases WBC, good antioxidant also. *Sneha* gives potency to whole combination. It helps to disintegrate *Malas*- increasing osmotic permeability of solution. *Kalka* maintains volume of fluid and helps in spreading & cleaning. Water Electrolytes, some vitamins are also absorbed through

the colon, Colon bacteria in normal condition, produces Vitamin B1, 2, B12 & K. Similarly some of the Nutrients of *Vasti* can also be absorbed from the colon and reaches at the cellular level.

From above description, it can be understood that how *Saindhav, Madhu, Sneha and Kwatha*, lipid and water soluble portion is absorbed from colon.

FOLLOW-UP STUDY:

Data shows the percentage-wise comparative data of follow-up study regarding signs and symptoms of Grahani Roga in patients undergone treatment.

According to Ayurveda, the management protocol of any disease consists of three major components i.e. *Aushadha, Ahara and Vihara.* Regarding the treatment of Grahani Roga, it is evident that more emphasis is given to *Ahara and Vihara* than medicines except in some specific conditions. The *Pathya- Apathya* always becomes a major part of treatment.

Since no treatment can be thought of in *Ayurveda* without proper observation of *Pathya-Apathya*. The possible etiological factors like outside food, fast foods, ice creams, chocolates, pav-bhaji, panipuri, wafers, low quality bakery items etc. were strictly avoided. They were advised to wash hands properly before eating and after toilet, cleaning of nails, and not to wear dirty cloths, take at least 20 minutes boiled water (some of the ova / cysts are not destroyed during chlorination of water only 20 minutes boiling of water can destroy them) and proper care regarding food and food habits.

The striking results were observed in the group clearly show that they have followed these instructions sincerely. It is evident from the results that life style management and avoiding the etiological factors have the major role to play in the management of Grahani Roga. The way the treatment has worked is very simple. All the possible causative factors of *Agnimandya* were effectively ruled out, along with this intake of boiled water, fresh and warm food, avoiding of bakery items and outside food might have increased the digestive power. Various clinical and observational studies conducted in modern medicines have also shown the same conclusion that life style management has an upper hand in preventing the gastrointestinal disorders.

The scheduled Vasti karma was found to be definitely effective in the cases of Grahani. The effect of *Vasti karma* obtained probably due to *Vatanulomana* property and balancing effect on equilibrium of *Tridosha* and more probably due to Vasti ingredients having *Deepana, pachana, Grahi* and *Snehan* effects. The overall activity may be improving the function of digestion and absorption of food with correcting the peristaltic movement of intestine. The disease becomes more difficult to cure in chronic form as described in classic.

CONCEPTUAL STUDY OF DISEASE:

The word *Grahani* peculiarly specific for organ of *Mahasrotas* considered as a main seat of *Agni*. The meaning of that word means to hold or to provide a base for a particular thing. Another meaning of the word Grahani is to invade upon. Grahani is described to be situated in between *Amashaya and Pakwashaya*. So, it can be said that Grahani is an organ which invades

upon *Amashaya* and by doing this; it holds or obstructs the food and provides base for Agni to act on the consumed food.

Grahani is described as an *Argala*; this similarity clarifies the anatomical and functional aspect of Grahani. An *Argala* is a sort of wooden bolt that is used to close the doors, in other words *Argala* obstructs or blocks the way.

Likewise, Grahani too, in between *Amashaya and Pakwashaya* obstructs the way for consumed food.

The location of Grahani is stated between *Amashaya and Pakwashaya (Sushruta)* and above *Nabhi (Charaka)*. The organ stomach can be considered as *Amashaya* which is primarily a storage site and engaged in the process of digestion. The *Adho-amashaya* i.e. small intestine (along with pyloric sphincter and ileocaecal sphincter) can be anatomically and physiologically considered as Grahani. But the duodenum the most suitable part of intestine to be called as Grahani.

Grahani is described as *Agni Adhisthana* or site of *Pachaka Pitta* and it is considered as the primary site for digestion, But, this half truth in both the aspect, in view of digestion and in the view of functions of Grahani too.

So, the whole process of digestion can understood in step wise manner, as follows,

♦Food is consumed and digestive process starts in mouth itself.

♦This transformed food in a different nature is then brought to *Koshtha* or *Amashaya* in particular, through *Kantha nadi* mainly by *Prana vayu.*

♦When this food is reached in to the *Amashaya*. It is obstructed by Grahani and remained in *Amashaya* itself and prevented from entering into *Pakwashaya.*

♦Here all the transforming and digestive process take place by *Kledaka Kapha, Pachaka Pitta and Samana Vayu.*

♦As the food is well digested it is expelled out into *Pakwashaya* by Grahani.

♦Then as a part of digestive process, well digested food is differentiated into *Sara and Kitta*.

♦From the *Sara* part all the *Dhatu* are produced by further process of transformation.

♦While, *Kitta* part is further divided into *Accha mutra* and *Ghana or Samhat Purisha.*

♦It is said that, tongue is the mirror of digestive canal, further it can be added by saying that a well formed stool is a mark of healthy digestive process.

In *Samhita Granthas*, Grahani Roga is discussed as an independent disease and is considered as *Maharoga*. Grahani Roga is described in *Charaka Samhita Chikitsa Sthanam* chapter 15, *Astanga hridaya Nidan Sthanam* Chapter 08 and *Ashtang Hridaya Chikitsa Sthanam* Chapter 10.

When the vitiated *Doshas* get confined only to the organ Grahani, then it should be called *Grahani Dosha*. When the vitiated *Doshas* travels throughout the *Rasadi dhatus* i.e. *Sarvasharira- gatatva* then it should be called as Grahani Roga.

It has been seen that *Grahani and Agni* are interdependent; therefore all the aetiological factors of *Agnidushti* is the direct cause of Grahani Roga.

The etiological factors which are stated to cause *Agnidushti* are- *Aharaja, Vishesha (Vyapada of Virechana, Vamana and Snehana),* Emaciation or wasting brought about by other

disease,*Virudha dosha, Kaala, Ritu, Vega vidharana,* mental, psychological and emotional instabilities.

Regarding the *Purvarupa* of the disease, In Ashtanga Hridaya the *Purvarupa* are described i.e. '*Pragrupam Tasya Sadanam*.' But, *Acharya* Arundatta has commented over it by saying that these are the *Rupas* of Grahani Roga. While the immediate next Shloka of Ashtanga Hridaya explains the clinical features of Grahani Roga which is accepted as a *Rupa* of Grahani Roga by Arundatta too.

Pathogenesis of the disease is confined to *Annavaha srotas*, which is clear as *Charaka* has described *Pakwashaya*stha and *Linawastha* after describing the Grahani Roga, So the symptoms, mentioned in *Charaka* which are manifested as *Vistambha, Aruchi, Gaurava, Praseka, Arti, and Udarashool* etc. Coming on the point, course of the disease, etiological factors lead to vitiation of *Grahanistha Doshas* or disturbance in the functions of *Grahani* manifested as Grahani Roga. If the etiological factors and environment is remained persistent the pathology will not remain confined to *Amashaya*, but it will lead to severity with *Bhuyatah vikriti, Linatwa* (distribution of Doshas all over the body) and *Bahudoshatwa* manifesting as "Grahani Roga" which is described as *Maharoga.*

In the *Samprapti* of Grahani Roga, Acharya Charaka elaborated a cascade of events viz. indulgence in *Agni Vikritikara hetus →Dosha prakopa → Agni dushti → Apachana → Ama-utpatti → Shukta paka → Anna visha or Ama visha → Grahani dosha →Grahani dushti →* ***GRAHANI ROGA.***

The *Shuktapaka* stage leads to *Annavisha* formation. The *Annavisha* thus produced may remain localized in the Grahani or it may spread in the body through *Rasa* with the help of *Vyana-Vayu* and mixes with *Dosha, Dushya or Dhatus*. If *Annavisha* localizes, it causes affections at GIT level; if it is mixed with *Rasa, Rakta* etc. *Dhatus*, it causes disease of those *Dhatu* i.e. *Dhatu dushti*. This whole process of production of Grahani Roga can be considered in three pathways viz.

1. *Durbala Agni* (Weakened digestive power)
2. *Durbala Bala* (Weak holding capacity of Grahani)
3. *Dushta Grahani* (Duodenum including small intestine is damaged)

Pathway up to *Durbala Agni* and *Durbala Bala* may be considered as Grahani Dosha and stage of *Dushta Grahani* as Grahani Roga.

It is very well known that Grahani is *Ashraya* and Agni is *Ashrita* and due to various etiological factors the functions of Grahani becomes impaired as a result of vitiation of *Pachaka Pitta, Samana-Vayu and Kledaka Kapha.*

PROBABLE MODE OF ACTION OF TRIAL DRUGS

The main lacuna with the present available health practice (irrespective of the system) is that emphasis is always given on curative aspect of disease but not to the preventive aspect. *Ayurveda* is unique in its approach, where it clearly mentions its ultimate aim as nothing but to prevent the disease, and maintain the health of healthy individual.

Ayurvedic texts have infinite number of herbal combinations for successful treatment of Grahani Roga. *Vidangadi Taila and Dhanyapanchak Kwath* was selected as trial drug for the present study.

Pharmacological Analysis of Vasti-Drugs on Ayurvedic Parameters-

The pharmacology of the drugs used in therapy was analyzed on Ayurvedic Parameter. The combination of *rasa* was predominantly *Katu* and *Tikta.* Laghu (85%), Ruksha (51.43%), and *Tikshna (37.14%) Guna* was predominant in this composition. The composition was predominant of *Ushna veerya (82.35%)* in comparision to opposite *Veerya Sheeta (17.65%). Vipaka* was found *Katu dominant (77.14%)* followed by *Madhura (22.86%*). *Doshaghnata* of the combination was assessed as *Kapha-Vata Shamaka (50%), Kapha-Pitta Shamaka (23.53%), and Tridosha Shamaka (26.47%).*

The drugs in the combination are having appetizing, digestive, carminative, anti-spasmodic, antibacterial, anti-amoebic, anti inflammatory, anti-helmintic, hepatoprotective, anti viral, anti-Giardia, anti ulcerative, immunomodulator, purgative, laxative, anti-emetic, antidepressant, prostaglandin inhibitory properties.

Probable Mode of the Action of Drugs:

Acharya Charaka states that, certain drugs act through *Rasa*; some through *Veerya*; some through their *Gunas*; some through their *Vipaka* and some through their *Prabhava*.

• At the level of Dosha:

Because of its *Laghu, Ruksha - Guna* and *Katu, Tikta - Rasa* (dominant with *Agni, Vayu* and *Akasha Mahabhuta*) it subsides the aggravated *Kapha*. While, by *Ushna Veerya* & *Tikshna Guna* it counteracts *Vata*.

• At the level of Agni:

By virtue of its *Tikshna Guna* which is predominant with *Agni, Vayu* and *Akasha Mahabhuta*. *Ushna Veerya, Katu - Tikta Rasa* it stimulates *Jatharagni* which turn by turn stimulates all other *Agnis*.

• At the level of Srotasa:

Due to its *Laghu, Ruksha, Tikshna Guna* and *Ushna Veerya* it removes present *Srotorodha* as it penetrates minutest *Srotasa.*

• At the level of Dhatu:

Due to *Katu, Tikta Rasa, Katu Vipaka, Ushna Virya, Laghu, Ruksha, Tikshna Guna* drug brings down the increased *Rasa Dhatu* to normalcy and due to equilibrium of *Rasa, Madhura Rasa and Snigdha Guna* nourish the *Rasadi Dhatu*.

In Grahani Roga, mainly there is vitiation of Agni, usually *Mandagni* is seen. This ultimately results in *Ama* formation and also may lead to *Suktapaka*. Drugs of Vasti have properties like *Katu, Tikta Rasa, Katu Vipaka, Laghu, Ruksha, Tikshna, Snigdha Guna* acts as *Agni Dipaka* and also *Amapachaka. Tikta Rasa and Laghu, Ruksha Guna* helps in reducing the colonic motility

and thereby helps in *Sashleshma mala pravriti*. Due to these pharmacodynamics it has specific action on *Jatharagni* and ultimately on the Grahani Roga. This characteristic combination of *Rasa, Guna, Veerya and Vipaka* can be summarized as *Deepana, Pachakaa, Ruchya, Shodhan, Annasya Shoshanaha, Srotansi Vivrunoti,* etc.
Maximum Drugs have an *Ushna virya* because of this feature it acts on *Jathargni* and Grahani too. The feature of *Ushna virya* is very specific for the process of digestion.

So, because of predominantly *Katu, Tikta rasa and Katu vipaka and Ushna virya* the drug has an action on *Jhathargni* and as, Agni and Grahani has *Adheya – Adhar Sambandha,* the drug acts on *Grahani* too. With the same time, because of the specific action (*Adhishthan gamatwa*) of drugs, it is supposed to act on Grahani too. So, the drug of Vasti regulates the *Jatharagni* and the functions of Grahani and ultimately curing 'Grahani Roga'.

Summary & Conclusion

Satisfaction does not come with achievement, but with effort. Full effort is full victory.
(Gandhi Ji)

SUMMARY

Today there is tremendous increase in life style disorders because of a change in dietary and living habits. This type of lifestyle and food habits affects the function of Grahani (site of Agni or Pitta) by means of vitiation (Vishamagni) or suppression (Mandagni) of Agni. When proper digestion of food does not take place in Grahani and this undigested food material passes through it to further parts of intestine, then it disturbs further digestion, absorption and other functions of small and large intestine. In Grahani Roga, although Rogadhisthan is Grahani but dysfunction occurs in whole G.I. tract. Vasti karma is indicated in the management of Grahani. It helps in improving the function of gut and also nourishes it.

The common symptoms of gastro-intestinal disorders include abdominal pain, bowel disturbance i.e. diarrhoea, constipation, nausea, vomiting, abdominal pain, alteration in appetite, indigestion, malabsorption and ultimately failure to thrive, are also the result of indigestion. These features cannot be grouped under any particular heading.

In Ayurvedic Texts, conditions like Udara Shoola, Kshudha-Alpata, Aruchi, Adhmana, Hrillasa, Avipaka, Vibaddha Mala Pravritti and Abaddha Mala Pravritti alternately etc. have been described under the heading of Grahani Roga.

The present study entitled, "A clinical study to evaluate the efficacy of Vasti karma in the management of "GRAHANI ROGA"

Aim and Objective-

- To evaluate the effect of Vasti karma in management of Grahani Roga.
- To study Grahani Roga with reference to I.B.S. and other disorders from Ayurveda and modern system of medicine.

Present thesis work comprises of four parts viz. conceptual Study, clinical study, discussion and summary & conclusions.

Conceptual study: This chapter dealt with the concept of Grahani, anatomical and physiological review of Grahani, review of Grahani Roga, and modern review of diseases related to Grahani Roga, review of Grahani Roga in respect of modern literature.

Under the conceptual study various Ayurvedic and modern text books, journals, previous and ongoing research works related to the subject are thoroughly screened, analysed and summarized. Definitions of Grahani, etymology, anatomy and physiology of organ - Grahani,

Agni Adhisthana, Pittadhara Kalaa, Argala, main functions of Grahani, Doshas associated with Grahani (i.e. Kledaka Kapha, Pachaka Pitta and Samana-Vayu), concept of Agni, concept of Pachana, modern anatomy and physiology of digestive system along with physiology of digestion are also described under this section.

In the modern medical science, no disease or condition is found exactly similar to Grahani Roga; but the conditions which have very close similarity with the Grahani Roga, which are commonly observed are malabsorption syndrome, celiac disease tropical sprue, irritable bowel syndrome, worm infestations like Amoebiasis and Giardiasis are also explained in this section.

Drug Review- The drugs – Vidangadi Taila and Dhanyapanchak Kwatha having almost same Ayurvedic properties, i.e. predominant Rasa is Katu and Tikta; predominant Guna is Laghu and Ruksha. Most of the drugs of both formulas are having Ushna Veerya, predominantly Katu Vipaka. The Doshghnata of drugs is Kapha-Vata Shamaka. So, because of predominantly Katu Tikta rasa and Katu Vipaka and Ushna veerya the drug has an action on Jhathargni and as, Agni and Grahani has Adheya –Adhar Sambandha and Paraspara Upakaraka bhava, the drug acts on Grahani too

Both compound drugs having properties like digestive, carminative, antispasmodic, appetizer, anti inflammatory, anthelmintic, hepato-protective, stomachic, antiviral, antibacterial, anti-amoebic, antigiardial, haematinic properties, anti ulcerative, immunomodulator.

Clinical study: In this section plan of study with material and methods, criteria for selection, criteria for assessment, observation in tabular form along with statistical analysis of result were observed.

Clinical trial was carried out in 30 patients of 16-60 year of age group from O.P.D. and I.P.D. of department of Panchakarma and Kayachikitsa, Rishikul state ayurvedic P.G. College and hospital, Haridwar, having cardinal signs and symptoms of Grahani Roga. Routine haematological & biochemical examination, Stool and urine investigations were done to rule out any systemic disorder in all the registered patients. In all patients Vasti schedule (2 course of Yoga Vasti with Parihar kaala). Pathyaapathya were also kept during complete course.

Observation- Majority of patients i.e. 66.67% were from 31-50 year of age. The disease was found higher in males 63.33% as compared to females 36.67%. Majority of the patients were Hindu 73.33%. Maximum of the patients i.e. 80% were married. 76.67% patients were educated. Maximum of patients were housewives and service class, 46.67% were belonging to middle class.

53.33% patients were observed as mixed diet, and 46.67% patients were having vegetarian. Maximum of patients i.e. 60% were having regular diet pattern. In dietetic habit, Vishamashana in 43.33% patients were observed. 83.33% patients were taking Katu Rasa. Maximum of patients i.e. were having disturbed or less sleep. 100% patients were complaining unsatisfactory bowel.

73.33% patients were doing physical work. Maximum of patients i.e. 53.33% were having anxious / tensive type of nature.

In 53.33% patients, Vata-Pittaja Prakriti was observed, While 33.33% of the patients had Vata-Kahaja Prakriti. 56.67% patients were found as Tamas Pradhana Manasa Prakriti. Maximum patients, i.e. 70% were observed as Madhyama Sara, Madhyama Samhanana was found in 53.33% of the cases, 50% patients were observed as Madhyama Satva. 73.33% of patients were observed as Madhyama Satamya, 50% were having Avara Vyayama Shakti.

Abhyavarana Shakti was Avara in 73.33% of patients, 86.66% patients were having Avara Jarana Shakti, and Mandagni was found in 86.67% of patients. In 43.33% patients, the frequency 3 to 4 times/day of bowel was observed. 70% patients were having 1-2 year chronicity.

According to Nidana, in Aharaja Nidana various Nidana were observed, i.e. Katu Ahara in 83.33% patients, Ati Snigdha in 63.33%, While Amla in 46.66%, Guru in 53.33%, Vidahi Ahara in 43.33% patients. In Viharaja Nidana, Divaswapna was found in 53.33% of patients, Vega Vidharana in 36.67% and Ratri Jagarana was found in 43.33% of patients. In Manasa Nidana, Chinta and Shoka were found in 73.33% & in 46.67% patients respectably.

Regarding chief complain, Muhurbaddha/Muhurdrava Mala Pravriti was observed in 100% patients, and other symptoms were found i.e. Arochak were found in 90% patients, Trishna in 86.66% patients, Praseka in 70% of patients, Asthiparvaruk in 100% patients, Chhardan in 86.67% patients, Lohaamagandhi-tiktaamla Udgara in 60% patients, and Alasya in 90% patients, Udara Shoola (Abdominal pain or Discomfort) and Atopa (Gas / Flatulence) in 100% patients.

Effect of Therapy –

Patients who completed treatment have showed average percentage improvement obtained was 80%.In patients treated with therapy, highly significant were obtained in the symptoms of Muhurbaddha-Muhurdrava Mala Pravriti(75%), Arochaka (86.15%), Trishna (100%), Praseka (68.29)%, Asthiparvaruk (81.42)%, Chhardan in (92.30)%, Lohaamagandhi-tiktaamla Udgara , Udara Shoola (68.91%) and Atopa (82.66%)and Alasya (81.25%). In Agnibala, highly significant results obtained with Abhyavaharana Shakti (48.86%), and Jarana Shakti (50.0%). Highly significant result was obtained with Vyayama shakti (52.46%).

Overall effect of therapy:

After therapy administration, twenty four patients (80%) were marked improvement, six patients (20%) were moderate improvement, and no any patient was unchanged or complete remission.

The Vasti karma was found to be definitely effective in the cases of Grahani. The effect of Vasti karma obtained probably due to Vatanulomana property and balancing effect on equilibrium of Tridosha and more probably due to Vasti ingredients having Deepana, Pachana, Grahi and Snehan effects. The overall activity may be improving the function of digestion and absorption

of food with correcting the peristaltic movement of intestine. The disease becomes more difficult to cure in chronic form as described in classic.

CONCLUSION

It can be concluded from the study that Vidangadi Taila and Dhanyapanchak Kwatha Vasti found very effective in the management of Grahani Roga. No patient reported any adverse effect of the treatment. The complete course of the treatment has improved the feeling of wellbeing and health status of the patients.

Appendix

"The mystery of life is not a problem to be solved but a reality to be experienced."
(Art Van Der Leeuw)

Conceptual Study

1 अग्न्यधिष्ठानमन्नस्य ग्रहणाद् ग्रहणी मता ।
नाभेरुपर्यग्निबलेनोपष्टब्धोबृंहिता ॥
अपक्व धारयत्यन्नं पक्वं सृजति पार्श्वतः।
दुर्बलाग्निबला दुष्टा त्वाममेव विमुञ्चति ॥ (Ch.Chi.15/56-57)

2 षष्ठी पित्तधरा नाम या कला परिकीर्तिता ।
पक्वामाशयमध्यस्था ग्रहणी सा प्रकीर्तिता ॥ (Su.U.40/169)

3 षष्ठी पित्तधरा नाम पक्वामाशयमध्यस्था.....ततो। (A.S.Sha.5/52)

4 तदधिष्ठानमन्नस्य ग्रहणाद् ग्रहणी मता ।
सैव धन्वन्तरिमते कला पित्तधराह्वया ॥ (A.H.Sha.3/50)

……भुक्तमार्गार्गलैव सा । (A.H.Sha.3/51)

5 ग्रहण्या बलमग्निर्हि स चापि ग्रहणी श्रितः ।
तस्मात् सन्दूषिते वह्नौ ग्रहणी सम्प्रदुष्यति ॥ (Su.U.40/170)

6 अन्नमादानकर्मा तु प्राणः कोष्ठं प्रकर्षति ।
तद्वैर्भिन्नसन्घातं स्नेहेन मृदुतां गतम् ॥ (Ch.Chi.15/6)

7 परं तु पच्यमानस्य विदग्धस्याम्लभावतः ।
आशयच्युवमानस्य पित्तमच्छमुदीर्यते ॥ (Ch.Chi.15/10)

8 नाभेरुपर्यग्निबलेनोपष्टब्धोपबृंहिता । (Ch.Chi.15/56)

9 ग्रहण्या बलमग्निर्हि स चापि ग्रहणीबलः ।
दूषितेऽग्नावतो दुष्टा ग्रहणी रोगकारिणी ॥ (A.H.Sha.3/53)

10 षष्ठी पित्तधरा नाम पक्वामाशयमध्यस्था | (A.S.Sha.5/36)

11 ……. तत्रपक्वामाशयमध्यगम् ।
पञ्चभुतात्मकत्वेऽपि यत्तैजसगुणोदयात् ॥
त्यक्तद्रवत्वं पाकादिकर्मणाऽनलशब्दतम् ।
पचत्यन्नं विभजते सारकिट्टौ पृथक् तथा ॥ (A.H.Su.12/10-11)

12 तदधिष्ठानमन्नस्य ग्रहणाद् ग्रहणी मता ।सैव धन्वन्तरिमते कला पित्तधराह्वया ॥ आयुरारोग्यवीर्योजोभूतधात्वाग्निपुष्टये। स्थिता पक्वाशयद्वारि भुक्तमार्गार्गलैव सा
(A.H.Sha.3/51)

13 भुक्तमामाशये रुद्ध्वा सा विपाच्य नयत्यधः।
बलवत्यबला त्वान्नामामेव विमुञ्चति॥ (A.H.Sha.3/52)

14 ……..यस्त्वामाशयसंस्थितः ।
क्लेदकः सोऽन्नसंघातक्लेदनात् ……. (A.H.Su.12/16)

15 यदामाशयपक्वाशयमध्यस्थं पञ्चभुतात्मकत्वेऽपि तेजोगुणोदयात् क्षपितसोमगुणं ततश्च व्यक्तद्रवस्वभाव सहकारिकारणैर्वायुक्लेदादिभिरनुग्रहाद्दहनपाचनादिक्रियया लब्धाग्निशब्दं पित्तमन्नं पचति सारकिट्टौ विभजति शेषाणि च पित्तस्थानानि तत्रस्थमेवानुगृहणाति तत् पाचकमित्युच्यते ।
(A.S.Su.20/5)

16 समानो-अग्निसमीपस्थः कोष्ठे चरति सर्वतः ।
अन्नं ग्रहणाति पचति विवेचयति मुञ्चति ॥ (A.H.Su. 12/8)

17 त्यक्तद्रवत्वं पाकादिकर्मणाऽनलशब्दितम् ।
पचत्यन्नं विभजते सारकिट्टौ पृथक् तथा ॥ (A.H.Su.12/11)

18 समानेनावधूतोऽग्निरुदर्यः पवनोदृहः ।
काले भुक्तं समं सम्यक् पचत्यायुर्विवृद्धये ॥ (Ch.Chi.15/7)

19 अन्नस्य भुक्तमात्रस्य षड्सस्य प्रपाकतः ।
मधुराद्दात् कफोभावात् फेनभूतं उदीर्यते ॥ (Ch.Chi.15/9)

20 परं तु पच्यमानस्य विदग्धस्याम्लभावतः ।
आशयङ्क्ष्यवमानस्य पित्तमच्छमुदीर्यते ॥ (Ch.Chi.15/10)

21 जाठरेणाग्निना योगा|दुदेति रसान्तरम् ।
रसानां परिणामान्ते स विपाक इति स्मृतः ॥ (A.H.Su.9/20)

22 रसो निपाते द्रव्याणां, विपाकः कर्मनिष्ठया ।
वीर्यं यावदधीवासान्निपाताच्चोपलभ्यते ॥ (Ch.Su.26/66)

Disease Review

1 विषमो धातुवैषम्यं करोति विषमं पचन् ।
तीक्ष्णो मन्देन्धनोधातून् विशोषयति पावकः॥
युक्तं भुक्तवतो युक्तो धातुसाम्यं समं पचन् ।
दुर्बलो विदहत्यन्नं त|ksत्यूर्ध्वमधोऽपि वा ॥ (Ch.Chi.15/51-52)

2 अतिसारे निवृत्तेऽपि मन्दाग्नेरहिताशिनः ।
भूयः सन्दूषितो वह्निर्ग्रहणीमभिदूषयेत् ॥ (Su.U.40/167)

3 अपक्व धारयत्यन्नं पक्वं सृजति पार्श्वतः।
दुर्बलाग्निबला दुष्टा त्वाममेव विमुञ्चति ॥ (Ch.Chi.15/57)

4 त्र्यो विकाराः प्रायेण ये परस्पर हेतवः ।
अर्शांसि चातिसारश्च ग्रहणीदोष एव च ॥
एषामग्निबले हीने वृद्धिवृद्धे परिक्ष्यः ।
यस्मादग्निबलं रक्ष्यमेषु त्रिषु विशेषतः ॥ (Ch.Chi.14/244-245)

5 अभोजनादजीर्णातिभोजनाद्विषमाशनात् । असात्म्यगुरुशीतातिरुक्षसन्दुष्टभोजनात् ॥ ४२
विरेक वमन स्नेह विभ्रमाव्याधिकर्षणात्।देशकलार्तुवैषम्याद्वेगानां च विधारणात् ॥ ४३
(Ch.Chi.15/42-43)

6 अत्याम्बुपानाद्विषमाशना}ks सन्धरणात् स्वप्नविपर्ययाच्च ।
कालेऽपि सात्म्यं लघु चापि भुक्तमन्नं न पाकं भजते नरस्य ।।
ईर्ष्याभयक्रोधपरिक्षतेन् लुब्धेनरुग्दैन्यनिपीडितेन् ॥
प्र}kS"k;q क्तेन च सेव्यमानमन्नं न सम्यक् परिणाममेति॥ (Su.Su.46/507-508)

7 पूर्वरुपं तु तस्येदं तृष्णाऽऽलस्यं बलक्षयः ।
विदाहोऽन्नस्य पाकश्च चिरात् कायस्य गौरवम् ॥ (Ch.Chi15/55)

8 तस्योत्पत्तौ विदाहोऽन्ने सदनालस्यतृटक्लमाः ।
बलक्षयोऽरुचिः कासः कर्णक्ष्वडोऽन्त्रकूजनम् ॥ (Su.U.40/173)

9 प्राग्रूपं तस्य सदनं चिरात्पचनमम्लकं ॥
प्रसेको वक्त्रवैरस्यमरुचिस्तृट् क्लमोभ्रमः ।
आनद्धोदरता छर्दिः कर्णक्ष्वडोऽन्त्रकूजनम् ॥ (A.H.Ni.8/19-20)

10 अतिसृष्टं विब¼4a वा द्रवं तदुपदिश्यते । तृष्णारोचकवैरस्यप्रसेकतमकान्वितः ॥
शूनपादकरःसास्थिपर्वरुक् छर्दनं ज्वरः।लोहामगन्धिस्तिक्ताम्ल उद्गारश्चास्य जायते॥
(Ch.Chi15/53-54)

11 अथ जाते भवेज्जन्तुः शूनपादकरः कृशः।
पर्वरुग्लौल्यतृट्छर्दिज्वरारोचकदाहवान् ॥
उ¼fo½रेच्छुक्ततिक्ताम्ललोहधूमागन्धिकम् ।

प्रसेकमुखवैरस्यतमकारुचिपीडितः ॥ (Su.U.40/174-175)

12 सामान्यं लक्षणं कार्श्यं धूमकस्तमको ज्वरः ।
मूर्च्छा शिरोरुग्विष्टम्भः श्वयथुः करपादयोः ॥ (A.H.Ni.8/21)

13 कटुतिक्तकषाय..... पुनः पुनः सृजेत् वर्चः कासश्वासार्दितोऽनिलात् |
(Ch.Chi15/59-62)

14 वाताच्छ्लाधिकैः.....त्रिभ्यास्त्रिलक्षणैः। (Su.U.40/176)

15 तत्रानिलात्तालुशोषस्तिमिरं ..... पायुरुक्श्वासकासवान्।
(A.H.Ni.8/22-28)

16 कट्वजीर्ण विदाह्यम्लक्षाराद्धैः..... पूत्यम्लोद्गाहृत्कण्ठदाहरुचितृऽर्दितः॥
(Ch.Chi.15/53-65)

17 पित्तेन् नीलपीताभं ..... पूत्यम्लोद्गाहृत्कण्ठदाहरुचितृऽर्दितः ॥
(A.H.Ni.8/25)

18 तस्यान्नम पच्यते दुःखं ..... दौर्बल्यमालस्यं च कफात्मके ॥
(Ch.Chi.15/68-70)

19 श्लेष्मणा पच्यते दुःखमन्नं .....अकृशस्यापिदौर्बल्यं ॥
(A.H.Ni.8/26-28)

20 दुष्यत्याग्निः, स दुष्टोऽन्नं न तत् पचति लघ्वपि ।
अपच्यमानं शुक्तत्वं यात्यन्नं विषरुपताम् ॥ (Ch.Chi.15/44)

21 दुष्यति ग्रहणी जन्तोरग्निसादनहेतुभिः ॥ (Su.U.40/166)

22 ग्रहणीमाश्रितं दोषं विदग्धाहारमूर्च्छितम् ।
सविष्टम्भप्रसेकार्तिविदाहारुचिगौरवैः ॥ (Ch.Chi.15/73)

23 गुर्वातिस्निग्धशीतादिभोजनातिभोजनात् ।
भुक्तमात्रस्य च स्वप्नाद्धन्त्यग्निं कुपितः कफः ॥ (Ch.Chi.15/67)

24 लीनं पक्वाशयस्थं वाऽप्यामं स्राव्यं सदीपनैः ।
शरीरानुगते सामे रसे [illegible]नपाचनम् ॥ (Ch.Ch.i15/75)

25 ग्रहणीमाश्रितं दोषमजीर्णवदुपचारेत् ।
अतिसारोक्तविधिना तस्यामं विपाचयेत् ॥ (A.H.Chi.10/1)

26 आमदोषजानां पुनर्विकाराणामपतर्पणेनैवोपशमो भवति ।
तत्तु त्रिविधम् – लंघन लंघनपाचनमवसेचनं च ॥
तत्र लंघनमल्पदोषाणाम् ……..।
लंघनपाचनाभ्यां मध्यदोषो ……।
बहुदोषाणां पुनर्दोषावसेचनमेव कार्यम् । (A.H.Su.11/43-46)

27 स्नेहनं स्वेदनं शुद्धिलंघनं .....ग्रहणीरोगिभिः सेव्याः। (Ch.Chi15/196)

28 ग्रहणी दोषाणां तक्रं दीपनग्राहिलाघवात् ।
पथ्यं, मधुरपाकित्वान च पित्त प्रदूषणम् ॥
कषायोष्णविकासित्वाद्रूक्ष्त्वाच्च कफे हितम् ।
वाते स्व[illegible]म्लसान्द्रत्वात्स[illegible]कमविदाहि तत् ॥ (A.H.Chi.10/4-5)

29 तक्रं तु ग्रहणीदोषे ..... तक्रप्रयोगा ये जठराणां तथाऽर्शसाम् ॥
(Ch.Chi 15/117-119)

30 [illegible]त्सातिविषा पेयमामे साम्लां सनागराम् ।
पानाऽतीसारविहितं वारि तक्रं सुरादि च ।। (A.H.Chi.10/3)

Vasti Review

1 नाभिप्रदेशं कटिपार्श्वकुक्षिं गत्वा शकृद्दोषचयं विलोड्य ।
सस्नेह्य कायं सपुरीष्दोषः सम्यक् सुखेनैति च यः स वस्ति ॥
(Ch.Sid. 1/40-41)

2 बस्तिना दीयते बस्ति वा पूर्वमन्वेत्यतो बस्ति । (A.S.Su. 28/2)

3 त्रिंषन्मताः कर्मनु वस्तयो ..... पञ्चैव परादिमध्याः।
(Ch.Sid.1/47-48)

4 पक्वाश्याद्वस्तिवीर्यं खैर्देहमनुसर्पति। वृक्षमूले निषिक्तानामपां वीर्यमिव द्रुम[illegible] ।।
(Su.Chi.35/25)

5 आपादतलमूर्धस्थान दोषान् पक्वाशये स्थितः।
वीर्येण वस्तिरादत्ते खस्योऽर्को भूरसानिव ॥ (Ch.Sid.7/64)

6 बस्तिर्वयःस्थापयितासुखायुर्बलाग्निमेधास्वरवर्णकृच्च
..... सर्वान् विकारान् शमयेन्निरुहः ।। (Ch.Sid.1/27-28)

7 य एवानास्थाप्यास्त ..... प्रधानतममित्युक्तं मूले द्रुमप्रसेकवत् ।
(Ch.Sid.2/19)

8 य एवानास्थाप्यास्त ..... श्लिपदगलगण्डापचिक्रिमिकोष्ठिनिः ॥
(Ch.Sid.2/17)

9 यस्येह यामाननुवर्तते त्रीन् स्नेहो नरः स्यात् स विशु[illegible]हः ॥
(Ch.Sid.1/46)

10 शेषास्त्वास्थाप्याः,विशेषस्तु सर्वा[illegible]का[illegible]कुक्षि ..... वनस्पतिमूलच्छेदवत्॥
(Ch.Sid.2/16)

11 अनास्थाप्यास्तु- अजीर्ण्यतिस्निग्ध ..... तस्मादते नास्थाप्याः ॥
(Ch.Sid.2/14-15)

12 तत्र विंशतिमात्राणि .....यथायोग्य च शेषाणि कल्पयेत् ।
(A.S.Su.28/36)

13 माक्षिकं लवणं स्नेहं कल्कं क्वाथमिति क्रमात्। आवपेत निरुहणामेष संयोजनेविधिः॥
(A.S.Su.28/42) (A.H.Su.19/45)

14 प्रसृष्टिवन्मूत्रसमीर [illegible] .....तत् स्यात् सुनिरुद्दिल[illegible] ॥
(Ch.Sid.1/41)

15 स्याद्रु[illegible]रोहद्गुदवस्तिलि[illegible] ..... न सम्यक् च निरुहिते स्युः॥
(Ch.Sid.1/42)

16 लि[illegible] यदेवातिविरेचितस्य भवेत्तदेवातिनिरुहितस्य ॥ (Ch.Sid.1/43)

17 नातियोगौ क्लमाध्माने ..... चिकित्सां च निबोधते ॥
(Ch.Sid.7/6)

18 वीर्येण बस्तिरादत्ते दोषानापादमस्तकान्। पक्वाशयस्थोऽम्बरगो भूमेरर्को रसानिव॥
(Su.Chi.35/27)

Drug Review

1 विडङ्गैरण्डरजनीपटोलत्रिफलामृता । जातिप्रवालनिर्गुण्डीदशमूलाखुपर्णिकाः ॥
निम्बपाठासहचरश्म्पाककरवीरकाः। एषां क्वथेन विपचेत्तैलमेभिश्च कल्कितैः ॥
फलबिल्वत्रिवृत्कृष्णारास्नाभुनिम्बदारुभिः ।सप्तपर्णवचोशीरदार्वीकुष्ठकलिङ्गकैः ॥
लतागौरीशताह्वाग्निशटीचोरकपौष्करैः। तत कुष्ठानि क्रिमीन मेहानर्शांसि ग्रहणीगदम्॥
क्लीवतां विष्माग्नित्वं मलं दोषत्रयं तथा प्रयुक्तं प्रणुदत्याशु पानाभ्यङ्गानुवासनैः॥
(Ch.Sid. 4/18-22)

2 धान्यकं नागरं मुस्तं बालकं बिल्वमेव च ।
आमशूलविबन्धघ्नं पाचनं वह्निदीपनम् ॥ (Chakradutta Chi 3/21)

3 कषायानुरसं स्वादु सुक्ष्ममुष्णं व्यवायि च ।
पित्तलं बद्धविण्मूत्रं न च श्लेष्माभिवर्धनम् ॥
वातघ्नेषूत्तमं बल्यं त्वच्यं मेधाग्निवर्धनम् ।
तैल संयोगसंस्कारात् सर्वरोगापहं मतम् ॥ (Ch.Su.27/286-287)

4 विष्यन्दि लवणं सर्वं सुक्ष्मं सृष्टमलं मृदु ।

वातघ्नं पाकि तीक्ष्णोष्णं रोचनं कफपित्तनुत् ॥ (A.H.Su.6/143)

5 सर्वेषु तु मधुसैन्धवं कफविलयनच्छेदार्थं …… (Ch.K.1/15)

6 मधु तु मधुरं कषायानुरसं …… वातपित्तघ्नम्॥ (Su.U.45/132)

7 वातलं गुरु शीतं च रक्तपित्तकफापहम् । (Ch.Su.27/245)

8 नानाद्रव्यात्मकत्वाच्च योगवाहि परं मधु । (Ch.Su.27/249)

9 अत्यासनस्थानवचांसि यानं स्वप्नं दिवा मैथुन्वेगरोधान् ॥
शीतोपचारातपशोकरोषांस्त्यजेदकालाहितभोजनं च । (Ch.Sid.1/54-55)

10 पित्तश्लेष्मानिलाविष्टं क्षीरयूषरसैः क्रमात् । (Su.Chi.38/12)

11 त्रिभागहीनमर्धं वा हीनमात्रमथापि वा ।
यथाग्निदोषं मात्रेयं भोजनस्य विधीयते ॥ (Su.Chi.38/13)

12 विकारा ये निरुढस्य भवन्ति प्रचलैर्मलैः ।
ते सुखोष्णाम्बुसिक्तस्य यान्ति भुक्तवतः शमम् ॥ (A.H.Su.19/51)

13 धान्यनागरसिद्धं हि तोयं द|kf}h चक्षणः ।
व्युषिताय निशां कल्यमुष्णं वा केवलं जलम् ॥
स्नेहजीर्णं जरयति श्लेष्माणां तद्धिनत्ति च।
मारुतस्यानुलोम्यं च कुर्यादुष्णोदकं नृणाम् ।। (Ch.Sid. 4/43-44)

CASE PROFORMA

DEPARTMENT OF PANCHKARMA

RISHIKUL STATE AYURVEDIC (P.G.) COLLEGE & HOSPITAL, HARIDWAR

"A CLINICAL STUDY TO EVALUATE THE EFFICACY OF VASTI KARMA IN MANAGEMENT OF GRAHANI ROGA"

Scholar: Suneeta Singh **Co-guide:** Dr.Ashok Kumar Sharma

Guide: Prof. Dr. Uttam Kumar Sharma

IDENTIFICATION OF THE PATIENT

Name of Patient : **Age & Sex :**

Father's Name: **Religion:**

Occupation:

Economical status: High/ High medium/Medium/Low

Education: Illiterate/Literate - Primary school /High school/GD/PG/Ph.D

Address:

Desha: Jangle/Anoop/Sadharana **Marital Status:** M/UM/W/D

OPD No.: **IPD No.:**

Date of Admission: **Date of Discharge:**

1. Chief complaints with duration	**Duration**
Muhubaddha / Muhudrava Mal pravriti	
Arochaka (Anorexia)	
Trishna (Thirst)	
Praseka (Salivation)	
Shoonpaadkaraha (Swelling of limbs)	
Asthiparvaruk (Pain in bone & joints)	
Chhardan (Nausea/Vomiting)	
Udara Shool(Abdominal pain or Discomfort)	
Shleshma malapravriti	
Atopa (Gas / Flatulence)	
Alasya	
Jwar (Hyperthermia)	
Lohaamagandhi-tiktaamla Udgaar	

2. History of present illness:

Time of Onset– Childhood/ Adult

Duration of disease ……

Factors aggravating the disease / Chief complaints :

Drug ☐ Diet ☐ climate change ☐ Occupational ☐

Treatment given so for : Ayurvedic medicne ☐ Modern medicine ☐ Mixed ☐

3. **History of past illness :** Yes/ No
4. **Family history:** Present/Absent
5. **Personal history:**

5.1 **Dietetics:**

a) Appetite: Excessive ☐ Less ☐ Normal ☐

b) Diet: i) **Nature:** veg. ☐ Mixed ☐

ii) **Pattern :** Regular ☐ Irregular ☐

Dietary Habit: Vishamasana/ Adhyasana/ viruddhasana/ Samsana

c)Supplementary: Tea ☐ Coffee ☐ Milk ☐ Cold drink ☐

5.2 **Addiction:** Tobacco/ Alcohol/ Cigarette/ Bidi/ Drugs

5.3 **Physical exercise:** Regular/Irregular/No exercise

5.4 **Occupation History:**

a) Physical / Mental

b) Day / Night /Shifting c) Hours of work ……/ day

5.5 **Sleep:** Proper/Less/Excess/Disturb …… hrs/day …… hrs/night

5.6 **Bowel :**

Nature: Muhurbaddha/Muhurdrava Mala/ Durgandhita/ Shleshmala

Colour: Avishesh/ Vishesh

Habit: Regular/ Irregular

Frequency……. Times/day

5.7 **Micturation:**

Colour: Avishesh/ Vishesh

Frequency……. Times/day…… Times/night

5.8 **Psychological condition**

Anxiety/ Stress/ Depression / Normal

5.9 **Menstrual history:** Regular/Irregular

5.10 **Obstetric history**:

6. Physical Examination

- Pulse …… ○Resp. rate……/min.
- B.P……..... mm of Hg ○Temperature ……...
- Height (in cm.) ○ Weight (in Kg.)
- Tounge ○Vertebral Column
- Pallor ○ Joints
- Jaundice ○ Oedema
- Lymphadenopathy ○ Skin, Hair,Nails
- Clubbing

7. Systemic Examination

7.1 Digestive System:

7.2 Respiratory System

7.3 CVS

7.4 CNS

8. Asthavidha Pariksha (Eightfold examination)

8.1 Nadi -

8.2 Mutra Pravrutti -

8.3 Mala Pravrutti -

8.4 Jihva – Sama/Nirama/any other symptoms

8.5 Sabda -

8.6 Sparsha – Sheeta/Ushna, Snigdha/Ruksha

8.7 Drikka –

8.8 Akruti –

9. Dashavidha Pariksha (Tenfold examination)

9.1 Prakuti

Dosha- V/P/K/VP/PK/KV/VPK

Manas – S/R/T/SR/RT/TS.

9.2 Vikruti

Dosha…… Dushya ……. Kala…….

9.3 Sara: Pravara/Madhya/Avara

9.4 Samhanan: Pravara/Madhya/Avara

9.5 Pramana: Sama / Vishama

9.6 Satva: Pravara/Madhya/Avara

9.7 Satmya: Pravara/Madhya/Avara

9.8 Ahar Shakti:

Abhayaharana Shakti: P/M/A

Jarana Shakti: P/M/A

9.9 Vyayama Shakti: P/M/A

9.10Agni: Samagni/Mandagni/Tikshani/Vishamagni

Agnibala	BT	AT
Abhayaharana Shakti		
Jarana Shakti		
Vyayama Shakti		
Agni		

Nidaana Pariksha-

Aaharaj-Atisevana of Katu, Vidahi, Snigdha, Amla, Guru,Sheet, Ruksha,-aahara,

Vishamasana, Adhyashana

Viharaj- Vega vidharana, Diva Svapa, Ratri jagarana, Ati Vyayama,

Manasika- Krodha, Shoka, Chinta, Bhaya

Srotas Pariksha:

a) Rasavaha Srotas: Aruchi/ Agni mandhya/ Klama /Angamarda /Hrillasa/ Trishna /

Aalasya / Shrama / Asyavairasya / Hritshoola/ Angasada / Jrimbha/ Hritdrava / Nidra /Utklesh

b) Annavaha Srotas: Arochaka / Avipaaka/ Aadhmaana/ Udara Shoola Sthivana/

Madhura Udgara / Hrit Kantha daaha/ Amla- Katu-Udgara / Kantha-asya shosha

f) Purishavaha Srotas: Muhu Baddha/ Drava Mal privriti/ Kukshishoola/ Aatopa/

Adhovata Ati Pravritti / Gaurava/ Sasabda malapravriti/ Adhovata Sanga/ Atisaara

g) Others.

For Assessment of Grahani roga according to prominent dosha :

S.No.	Vaatik	Paittik	Kaphaj
1.	Kharangata	Pita mala	Hrillas
2.	Kantthasyashopha	Saryate dravam mala	Aasyopdeh madhurya
3.	Karshya	Amlo-udgaar	Stthivam

4.	Daurbalya	Hrit-kantha daha	Udarstimitam
5.	Chiraad dukham,fenwat mala		Akrishasyapi daurbalyam
6.	Punah-2 srujet varchah		Alasya

16. Progress chart:

S.No.	**Sign & Symptoms**	**BT**	**AT**
1.	Muhubaddha / Muhudrava Mal pravriti		
2.	Arochaka		
3.	Trishna		
4.	Praseka		
5.	Shoonpaadkaraha		
6.	Asthiparvaruk		
7.	Chhardan		
8.	Udara Shool		
9.	Shleshma malapravriti		
10.	Atopa		
11.	Alasya		
12.	Jwar		
13.	Lohaamagandhi-tiktaamla Udgaar		

Investigation:

- **Routine investigation:**

S.NO.	INVESTIGATION	BT	AT
1.	Hb%		
2.	TLC(/cmm)		
3.	DLC(%)		
4.	ESR (mm1sthr)		
5.	Urine<R&M		
6.	Stool<R&M		

10. Diognosis.....

10. Medical Management ……..

11. Prognosis……

12.Result ……

Signature of Guide **Signature of Co-Guides**

Patient's Consent Form

I …….exercising my free power of choice, here give my consent to be included as a patient in the clinical study namely:-

"A CLINICAL STUDY TO EVALUATE THE EFFICACY OF VASTI KARMA IN MANAGEMENT OF GRAHANI ROGA"

I have informed to my satisfaction by the attending research scholar for the purpose of clinical trial and the nature of treatment and follow up including the laboratory investigations to monitor and safe guard my body functions.

I have been given the opportunity to question Dr. Suneeta Singh of study and have understood the advice and information given as a result. I understand that the in-charge of this study may stop the study or stop my participation in the study at any time for any reason without any consent. I am also aware of my right to leave the trial at any time during the course of trial without having to give reasons for doing so.

I hereby give permission to the research scholar of the study to release information regarding or obtained as a result of my participation in this study to government, semi-government, private agencies and to allow them to inspect all my medical records.

Signature of Patient **Date**

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"A book must be an ice-axe to break the seas frozen inside our soul."
(Franz Kafka)

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