COMPARATIVE STUDY OF EFFICACY OF SAPTAPARNA GHANA AND 777 OIL IN THE MANAGEMENT OF PSORIASIS

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CERTIFICATE OF THE SUPERVISOR

It is certified that work entitled **"COMPARATIVE STUDY OF EFFICACY OF SAPTAPARNA GHANA AND 777 OIL IN THE MANAGEMENT OF PSORIASIS"** is an original research work done by **Dr. Pooja Deepak Dhone** under my supervision for the degree of Doctor of Philosophy in **Ayurveda** to be awarded by Tilak Maharashtra Vidyapeeth, Pune. To best of my knowledge this thesis:

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Undertaking

I, **Pooja Deepak Dhone**, is the Ph. D Scholar of the Tilak Maharashtra Vidyapeeth in **Ayurveda** subject. Thesis entitled **"COMPARATIVE STUDY OF EFFICACY OF SAPTAPARNA GHANA AND 777 OIL IN THE MANAGEMENT OF PSORIASIS"** under the supervision of Dr **Dr. Nitin Madhav Kamat**, Solemnly affirm that the thesis submitted by me is my own work. I have not copied it from any source. I have gone through extensive review of literature of the related published / unpublished research works and the use of such references made has been acknowledged in my thesis. The title and the content of research is original. I understand that, in case of any complaint especially plagiarism, regarding my Ph.D. research from any party, I have to go through the enquiry procedure as decided by the Vidyapeeth at any point of time. I understand that, if my Ph.D. thesis (or part of it) is found duplicate at any point of time, my research degree will be withdrawn and in such circumstances, I will be solely responsible and liable for any consequences arises thereby. I will not hold the TMV, Pune responsible and liable in any case.

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ABSTRACT

Introduction-

A skin disease is a particular abnormal condition, a disorder of a structure or function that affects part or all of the skin. The commonest skin disorders is Psoriasis, in which, patients experience physical, emotional & socio-economic embarrassment in the society. In general it affects 2 to 4 % of the Indian population.

In Ayurveda, skin diseases can be considered in many topics such as Kushtha, Visarpa, Kilas, Shvitra, Masurika, Romantika, Shitpitta, Udarda, etc. Psoriasis is not described solely as one to one correspondence and can be correlated with Ekakushtha, Kitibha Kushtha, or Mandal Kushtha by many of the scholars in the field.

Psoriasis often develops between 11 and 45 years of age. It can occur on any part of the body although most commonly found on the elbows, knees, lower back and the scalp. The severity of psoriasis varies from just a minor irritation to a major impact on quality of the life. The exact etiology is still unknown. So no specific or complete cure is available with modern medical science. In Ayurveda if psoriasis is considered under types of Kushtha, Shodhana and Shaman are the choices of treatment which can be opted according to patient and disease. This treatment modality of Ayurveda can provide good results and a better life to patients.

Hence, a research in such a topic of psoriasis and Ayurveda treatment in it has to be evaluated.

Saptaparna is said to be used externally as well as internally in Kushtha. It has Vata Kaphaghna properties. So in present study, effects of Saptaparna Ghana and 777 oil will be studied in treating psoriasis.

AIM AND OBJECTIVES:

A. Aim-

To compare the efficacy of Saptaparna Ghana and 777 oil in the management of Psoriasis.

B. **Objectives-**

To evaluate the role of Saptaparna Ghana and 777 oil by comparing both in the management of Psoriasis.

MATERIALS AND METHODS:

Material-

A. Patients - Two groups were made according to the prevalence rate of psoriasis. Patients of age 20 to 40 years were selected and assigned group by RCT method. One was given trial drug Saptaparna Ghana orally and other 777 oil for external application. Pre diagnosed patients of Psoriasis showing Ekakushtha and or Kitibha Kushtha symptoms were included. Pregnant & lactating mothers, Pre diagnosed patients of Psoriasis showing Mandal kushtha symptoms, and patients suffering from other diseases were excluded.

B. Drug- Saptaparna Ghana vati was administered orally in dose of 500 mg Vyanodana (after meals) with Ushnodaka and 777 oil was applied on affected part as abhyanga in the pratahakal. Both the treatment was given for 3 months at each follow up of 15 days.

METHODS-

Type of design / study -

It is a simple randomized, parallel, comparative, open, Drug interventional clinical trial.

OBSERVATIONS-

Most of the patients were as follows-

1) Age - age group of 30-40years.
2) Gender - males.
3) Education -Secondary school or Graduates.
4) Occupation -Job or Farmer
5) Socio-Economical Status - Middle class
6) Religion - Hindu
7) Marital Status- Married
8) Habitat- Rural habitat
9) Addiction- Tobacco
10) Diet- Mixed
11) Rasa dominance diet- None
12) Diet habit -Viruddhashana
13) Emotional Makeup- Irritation
14) Nidra- Ratrijagaran
15) Sharir Akruti- Sthoola
16) Duration of work- less than 9 hrs
17) Nature of work- Moderate
18) Agni- Manda
19) Koshtha- Krura or Madhyam
20) Prakruti- Vata-Kapha

EFFECT OF THERAPIES:

In group A- results were found

- Significant in symptoms of Itching, sweating, dryness and PASI score.
- Insignificant in symptoms of- discoloration

In group B- results were found

- Significant in symptoms of Itching, dryness and PASI score.
- Insignificant in symptoms of- sweating and discoloration.

Comparative analysis**:**

- Group A is significant than Group B in Itching, Sweating and PASI score.
- Group A is not significant than Group B in Dryness

DISCUSSION AND CONCLUSION:

In trial drug a single drug of Saptaparna was used in Ghana form. Kitibha Kushtha and Ekakushtha being Vatakaphaja Kushthas, a drug of Kushthagna and Vatakaphaghna property was used. In control drug a Taila which acts on lesions directly, like 777 oil was used. It contains Kutaj and Narikel Taila, which are Kushthaghna and Kandughna.

- Psoriasis was more common in age group of 30-40 years, Males, Secondary school & Graduate level of education, patients doing service & farmers, middle class, Hindus, Married, Tobacco consuming, Non-Veg consuming, None of Rasa dominance, Viruddhashana diet, Patients with irritation, Ratrijagaran type of Nidra, Sthoola Sharir Akruti, work Duration of less than 9 hrs, Moderate Nature of work, Vishama & Manda Agni, Krura & Madhyam Koshtha, Vaat Kaphaj Prakruti.
- Overall statistical analysis shows that Saptaparna Ghana Vati is effective in psoriasis. It shows more effective results in following symptoms –
    1. Itching
    2. Sweating
    3. Erythema
    4. Induration
    5. Desquamation
    6. Area involved
    - 777 oil is effective in psoriasis. It showed more results in decreasing dryness.
    - Overall study shows that oral consumption of Saptaparna is significantly effective in psoriasis than external application of 777 oil.
    - Effect on discoloration of both the drugs couldn't be compared as both were insignificant statistically in psoriasis.
    - No adverse effect was found during & after the study.
    - Further scope of study-
        1. Separate type of Kushtha which resemble psoriasis can be studied with same drug.

2. Same trial drug can be studied with different control group.
3. Literary review on comparison of Kushtha and other skin diseases in Ayurveda.

INTRODUCTION-

The human skin is the outer covering of the body. In humans, it is the largest organ of the integumentary system. The skin has multiple layers of ectodermal tissue and guards the underlying muscles, bones, ligaments and internal organs.[1] A particular abnormal condition, a disorder of a structure or function, that affects part or all of the skin is called a skin disease.[2] Psoriasis is one of the commonest skin disorders, in which, patients experience physical, emotional & socio-economic embarrassment in the society. It affects 2 to 4 % of the Indian population in general as calculated from a study.[3]

In Ayurveda, skin diseases can be considered in many topics such as Kushtha, Visarpa, Kilas, Shvitra, Masurika, Romantika, Shitpitta, Udarda, etc. Psoriasis is not described solely as one to one correspondence but it is correlated with Ekakushtha, Kitibha Kushtha, or Mandal Kushtha by many of the scholars in field.

Psoriasis is a skin condition in which skin cells reproduce too quickly. It can start at any age, but most often develops between 11 and 45 years old. Our body produces new cells in our lowest skin level and these skin cells gradually move up through the layers of skin until they reach the outermost level. Then they die and flake off. This whole life cycle normally takes around 21 to 28 days. In psoriasis this process is speeded up so it only takes two to six days. As a result, cells build up rapidly on the surface of the skin, causing red, flaky, crusty patches covered with silvery scales which shed easily. It can occur on any part of the body although it is most commonly found on the elbows, knees, lower back and the scalp. It can also cause itching and burning. The condition is not contagious and most people are affected only in small patches of their body. The severity of psoriasis varies greatly just a minor irritation to a major impact on quality of life. Psoriasis is a chronic disease that can return at any time. It has time with no symptoms or very mild symptoms followed by times where the symptoms are severe. There is no cure for psoriasis but there is a range of treatments that can help improve the symptoms.

Hence it is the need of time to find out safe and effective medicine for Psoriasis and here comes the role of Ayurveda. In Ayurveda if psoriasis is considered under types of Kushtha, Shodhana and Shaman are the choices of treatment which can

be opt according to patient and disease. This unique treatment modality of Ayurveda provides long lasting results and a better life to patients.

Any knowledge system grows and develops through continuous researches and re-evaluations. Ayurveda classics always emphasized the need of advancements in the science to keep pace with the need of time. The pledged purpose of Ayurveda as a medical system is to ensure a healthier and longer life to the humanity. In the backdrop of the resurgence of Ayurveda as an alternative or even an ultimate anchor to the psychosomatic and life style related diseases, the time is ripe enough to seriously take up productive researches in such disorders where Ayurveda can offer a better hand than any other medical system. Many researches were conducted on this disease; still the complete cure of this is a mirage. Every research and many clinical trials would be less to such a disease. So my thesis would contribute to this research on same lines. In present study, a single drug, Saptaparna was selected to observe its effect in Psoriasis. It is compared with control group of 777 oil which is said to be effective in Psoriasis.

REVIEW OF LITERATURE-

AIM AND OBJECTIVES:

A. Aim-

To compare the efficacy of Saptaparna Ghana and 777 oil in the management of psoriasis.

B. Objectives-

To evaluate the role of Saptaparna Ghana and 777 oil by comparing both in the management of psoriasis.

LITERARY REVIEW

It comprises of -

1. Preview
2. Historical literature
3. Ayurveda literature
4. Modern medical literature

1. PREVIEW -

The research works carried out in various institutes on psoriasis are given as follows -

1. A clinical study of some Ayurvedic compound drugs in the assessment quality of life of patients with Eka Kushtha (psoriasis) - by Charmi S Mehta, Alankruta R. Dave and V. D. Shukla -Ayu. 2011 Jul-Sep; 32(3): 333–339.
2. An open clinical trial to analyze Samyak Snigdha Lakshana of Shodhananga Snehapana with Mahatikthakam Ghritam in psoriasis-by Rajkala Ramteke, G Vinodkumar, and T. Meharjan - Ayu. 2011 Oct-Dec; 32(4): 519–525.
3. Ayurvedic management of psoriasis (Ekakushta) with Panchakarma Chikitsa - by Singh Vijeyta, Srivastava Alok Kumar - International Journal of Ayurveda and Pharma Research, Vol 3, Issue 1: January 2015 > Vijeyta
4. Ayurvedic management of psoriasis - a case study by Dr. Manisha Talekar and Dr. Sisir Kumar Mandal - world journal of pharmacy and pharmaceutical sciences, Volume 4, Issue 08, 1100-1108.
5. Acquiescence of Ayurvedic principles and practices in Kitibha (psoriasis) and excellent clinical responses - A case study - by Mitra A, Banerjee M, Das B, Ravte RK, Hazra J, NISCAIR-CSIR, India-Oct-2011, Int. Cl.[8]: A01D 6/27, A01D 6/68.
6. Ayurvedic management of psoriasis: a comparative clinical study - by Dr. Dattatrya Nikam, Dr.Sameer Shinde, Dr.Dayashankar Mishra, Anc Sci Life. 2012 Dec; 32(Suppl 1): S73.

7. Ayurvedic management of chronic psoriasis - A Case Study - by Dnyaneshwar K Jadhav, Mukund M More, IJAM, ISSN-0976-5921, Vol 6, No 1 (2015) > Jadhav.
8. An analytical study on Panchavalkala Choorna - a poly herbal compound in the management of psoriasis - Prasanth Dharmarajan, Harisha , Raiby Paul , Anup B. Thakar, Switu Jani, Indian J. Pharm. Biol. Res. 2014; 2(4):9-14, ISSN: 2320-9267.
9. A comparative study on Vamana Karma by suing Shuddha Ghrita and Samskarita Ghrita as Abhyantara Snehapana in Ekakushtha w.s.r. to psoriasis, Dr.Hemang Ragvani, Vd.Satish V. Padshala, Dr.Nilesh N. Bhatt, Dr.Anup Thakar, IJBPA. 2013; 4(4): 678 – 682, ISSN 0976 – 3333.
10. A clinical study of Manahshiladi Lepa in psoriasis- Anjana Singh, Nripendra Singh, journal of Ayush, Vol 3, No 2 (2014) > Singh.

2. HISTORICAL LITERATURE -

A. VEDIC PERIOD -

Ayurveda is the oldest system of medicine in the world. It traces its roots to the Vedic period in ancient India. Ayurveda is considered as the Upaveda of Rig Veda and Atharva Veda. Ayurveda being a complete doctrine on its own, it is also considered as the fifth Veda by some school of thought.

Rigveda:

No complete description about the 'Kushtha Roga' is available in Rigveda. But some part of it indicates that Kushtha was prevalent in that period.

- The Charmaroga of Apala was cured by Lord Indra (R.V. 8-91-7).
- Ghosa was suffering from 'Kushtha Roga'. She was disliked by her husband because of her ugly looks due to Kushtha Roga. By administration of proper medication she got cured & ultimately accepted by her husband. (R.V. 1-1/7-7).

Yajurveda:

Shukla Yajurveda mentions various medicines having Kushthanashaka properties. - (Y.V. 1-23, 1-4, 1-24, 10 – 13/30, 8-10).

Atharvaveda:

In Atharvaveda, skin has been described as one of the chief sites of the diseases. Various diseases names have been illustrated, whereby Kushtha has been described as Kshetriya Roga. There is also a description of some herbs like Rama, Nili, Asuri, Shyama etc. for the treatment of Kushtha (Ath.1/23).

Mahabharata:

It has been mentioned that the individual suffering from 'Tvakadosha' was not fit to be a king. This reference highlights the fact that people suffering from 'Kushtha' were looked down by the society at that time.

Agnipurana:

Kushthaghna medicines are mentioned under the heading of "Nana Rogahara Aushadhani" (Ag.Pu. 120/3).

B. SAMHITA KALA (400-200 AD) -

Charaka Samhita:

For the first time, Charaka described the Kushtha Roga in detail with their etiology, pathogenesis & specific classification of 18 types under the heading of Kushtha. From these, seven are Mahakushtha, which are given in detail in the Nidana Sthana. In the Chikitsa Sthana, all types have been mentioned under 7 Mahakushtha & 11 Kshudrakushtha. Apart from the description of Kushtha as whole chapters - Ni. - 5 & Chi. - 7, there are some other references which are related to Kushtha which are as follows:

a) Kushtha is given as the Samanya Hetu of Nija Shotha (Ch. Chi. 12/5, 6).
b) Kushtha is counted as a Santarpanjanya Vyadhi (Ch. Su.23/ 6).
c) It is included in the disease caused by Rakta (Ch. Su. 28/11).

d) Use of Stambhana Dravyas in the initial stage of Raktapitta, Raktarsha Amatisara leads to Kushtha.

e) Kushtha is noted in Lekhan Yogya & Prachhana Yogya Vyadhi (Ch.Chi.25/58, 59).

f) Agnikarma is contraindicated in Kushthaja Vrana. (Ch.Chi.25/106).

g) Kandu, Mandala, Pidika, Vaivarnya which are present in Kushtha have been described in other disease conditions which are as follows:

- Dushivisha Lakshana
- Raktagata Jvara
- Raktavruta Vata
- Punaravartaka Jvara
- Purvarupa, Rupa & Updrava of Vatarakta.
- Mamsavrutta Vata
- Third vega of Visha.
- Sama Sannipataja jvara.

Sushruta Samhita:

The Anuvansika (Hereditary) & Krimija (Infectious) Nidana as a causative factor of Kushtha (Su.Su.5/21-26), has been described by Sushruta in Sushrut Samhita for the first time. The list of Aupasargika Roga given in Sushrut samhita, which means the disease that spreads from one person to the other, also includes Kushtha (Su. Ni. 5/32). The Dhatugatatva of Kushtha Roga has also been explained by Sushruta (Su. Ni. 5/26-31). Sushruta has described same no. of Kushtha as Charaka but Dadru has been mentioned under Mahakushtha & Sidhma under Kshudrakushtha. Two chapters for Chikitsa have been described by Sushruta i.e. Kushtha Chikitsa and Mahakushtha Chikitsa.

Ashtanga Hridaya:

The classification of Mahakushtha and Kshudrakushtha has been given in Sushruta (A.H.Ni. 14/6, 20-30). Ekakushtha is mentioned under Kshudrakushtha. (A.H.NI.14/19, 28).

Harita Samhita:

Kushtha has been described in Trutiya Sthana.

Bhela Samhita:

Kushtha Roga is described in both Nidana & Chikitsa Sthana of Bhela Samhita. Polluted water is given as an etiological factor of Kushtha.

Kashyapa Samhita:

18 types of Kushtha have been described in Kashyapa Samhita as Charaka, except Shvitra, Vishaja Kushtha & Sthulruksha instead of Charmkushtha, Alasaka & Visphotaka. The classification of Kushtha in Kashyapa Samhita is based on Sadhyata & Asadhyata. This way 9 Kushthas are described as Sadhya while other 9 are Asadhya.

C. SANGRAHA KALA -

Madhava Nidana:

Madhava Nidana has described the Nidana Panchaka of Kushtha as per Charaka & Vagbhata, but he described Dhatugatatva, Sadhya-Asadhyata & Sankramakata according to Sushruta.

Bangasena (1210 AD):

7 types of special causes of Kushtha has mentioned by Bangasena - Tila Taila, Kulattha, Valmika, Linga Roga, Mahisha Dugdha, Mathita Dadhi & Vruntaka.

Sharngdhara Samhita (13 AD):

Sharangdhara has described classification in Purvakhanda. He described that the fourth layer of skin - Tamra- is the site for all Kushthas. (Sh. Pu. 5/19-22).

Vasavarajiyam (15 AD):

He described some other types of Kushtha like Prasuti Kushtha, Galat Kushtha etc.

Bhava Prakasha (16 AD):

Detail description of Kushtha is given by Bhavprakasha. Classification & nomenclature is as per Charaka & the Dhatugatatva & Sadhyasadhyatwa is as per Sushruta.

Yoga Ratnakara (17 AD):

Yoga Ratnakara has described according to others as earlier classics.

Raja Martanda:

The treatment of Kushtha is discussed in Chapter 8. Bhojraja has suggested some remedies for bad body odour & to increase the lusture of skin.

Bhaishjya Ratnavali:

The following medicine is given for Kushtha - Rasamanikya and Marichyadi Taila.

Chikitsa Chandrodaya:

The correlation between skin disorders & different types of Kushtha is very well explained by Rajeshwar Dutta Shashtri. Psoriasis is correlated with Kitibha Kushtha.

AYURVEDA LITERATURE -

All skin diseases are said to be considered under one umbrella of kushtha, but considering other menifestations of skin disorders, other Rogas such as Visarpa, Kilas, Shvitra, Masurika, Romantika, Shitpitta, Udarda, etc., can also be taken under skin diseases. Skin diseases are said as Twak Rog in Ayurveda. Psoriasis is not described in ayurveda solely as one disease where just one name would corresponds to it but it can be said to be similar to Ekakushtha, Kitibha Kushtha, or Mandal Kushtha as studied by many of the scholars in the field.

Etymology of "Twak" -

"TVACHA" or "CHARMA' is the word that is used for skin in Ayurvedic texts (Ch. Sha. 7/16).

Nirukti / etymological interpretation -

1) "Twachate samvriyate dehe anayaa" and "twachati vaa deham"- as it covers the body it is called as Twacha.
2) "Sparsha graahake baahya indriyabhade saa cha dehavyapinii twachisthitaa suukshmaa vaayah satvaamshena upapannaa vaataadhishtaatr devataa" – sense of touch is perceived by skin. Vayu, the neurosensory element present here; is responsible for the spread of this sense of touch over the entire body, skin communicates to the mind within and the outside world.
3) "Dravyaadhyakshe twachaayoga manasaa jnaana Kaaranam"- the cause of knowledge of touch by the mind is due to proper contact between the skin and the world outside. Skin is the external material communicated to the mind within. And any improper contact (ayoga) is unhealthy and defective, needing a rectification, i.e. a therapy.

The Sanskrit synonyms for the term Twacha are,
1. Charma: shows dynamic nature of skin, resembles Derma in Greek
2. Sparshadhi sthana: to perceive sense of touch.
3. Tanu: thin and stretchable
4. Asrukdhar: the bearer through which blood flows

5. Twag: indicates the movements of skin in the form of pulsatility and responsiveness.

6. Skin formation: Acharya Sushtura has described the process of formation of Tvacha. Just like a cream developes on the surface of milk, Tvacha develops after fertilization. All layers of Twacha are formed like Santanika, which forms in layers & gradually increases in thickness, & lastly skin is formed on outer surface of foetus by joining all layers together (Su.Sh.4/3). As the Garbha developes, all layers of skin are differentiated. It is produced by TriDoshas, mainly by the Pitta Dosha. Acharya Charaka has included Tvacha in Matruja Bhava (Ch. Sha. 3/6) & stated that the six layers of skin are formed from mamsa dhatu. Ch.Chi.15/17-18. According to Vagbhata Tvacha is formed due to Rakta Dhatu Paka by its Dhatvagni. And After Paka, Tvacha, is formed just like the cream is formed over the surface of milk. (A.H. Sha. 3/8).

Layers of the skin:

Acharyas differ regarding the number of layers of skin:-

(a) Acharya Charaka has stated six layers of skin. But gave names of only two layers, & the rest four layers are in the form of diseases. (Ch. Sha. 7/4). Layers of skin as per Charaka is as follows-

1) Prathama is Udakadhara; it is also called as Bahya-Tvak
2) Dvitiya is Asrigdhara
3) Tritiya - is Sidhma, Kilas Sambhavadhishthana
4) Chaturtha - is Dadru, Kushtha Sambhavadhishthana
5) Panchami - is Alaji, Vidradhi Sambhavadhishthana
6) Shashthi- If it is injured the individual feels as if he has entered in darkness. Arunshi which is kashtasadhya that is difficult to treat is formed in this layer.

(b) Acharya Sushruta has given seven layers of skin. He has given specific names and also thickness of each layer. Layers of the skin according to Sushruta (Su. Sha. 4/4)

Name	Thickness	Disease
Avabhasini	1/18 of Vreehi (0.05 to 0.06 mm)	Sidhma, Padmakantaka
Lohita	1/16 of Vreehi (0.06 to 0.07 mm)	Tilakalaka,Nyachchha, Vyanga
Shweta	1/12 of Vreehi (0.08 to 0.09 mm)	Charmadala, Mashaka, Ajagallika
Tamra	1/8 of Vreehi (0.12 to 0.15 mm)	Kilasa, Kushtha
Vedini	1/5 of Vreehi (0.2 to 0.3 mm)	Kushtha, Visarpa
Rohini	1 Vreehi (1 to 1.1 mm)	Granthi, Arbuda, Apachi, Shleepada,Galaganda
Mamsadhara	2 Vreehi (2 to 2.1 mm)	Bhagandara, Vidradhi, Arsha

(c) Vagbhatta follows Sushruta for description of skin layers.

(d) Sharangdhara also stated seven layers of skin. The names are same as that of Sushruta except for the seventh layer, which is named as “Sthula” & is the site of Vidradhi (Sha. S. P. K. 5/18).

Dr. Ghanekar commentator of Sushruta Sharira Sthana has correlated the layers of skin with the anatomy of skin as under.

Ancient Term	Modern Term	Types of skin
Avabhasini	Stratum Corneum	
Lohita	Stratum Lucidum	Epidermis

Shweta	Stratum Granulosum	
Tamra	Malpighian layer	Dermis
Vedini	Papillary Layer	
Rohini	Reticular Layer	
Mamsadhara	Subcutaneous tissue and Muscular layer	

Different names of layers of skin given by different acharyas -

Sushruta	**Charaka Bhela**	**Vagbhatta**	**Arundatta**	**Sharangdhara**
Avabhasini	Udakdhara	-	Bhasini	Avabhasini
Lohita	Asrukadahra	Asrukadahra	Lohita	Lohita
Sweta	3rd	3rd	Shweta	Shweta
Tamra	4th	4th	Tamra	Tamra
Vedini	5th		Vedini	Vedini
Rohini	6th		Rohini	Rohini
Mamasadhara			Mamasadhara	Sthula

Different layers of skin according to Charaka and Sushruta –

EPIDERMIS				
LAYERS		**THICKNESS In mm**	**DISEASE**	
Charaka	**Sushruta**		**Charaka**	**Sushruta**
Udakdhara	Avabhasini	1/8(0.05– 0.06)		Sidhama padma Kantaka

Asrigdhara	Lohita	1/16(0.06 0.07)		Tilkalak, Nyachchha, Masaka
Tritiya	Sweta	1/12(0.07– 0.08)	Sidhma, Shvitra	Charmadala, Ajagali, Masaka
Chaturtha	Tamra	1/8(0.12– 0.15)	Dadru Kustha	Kilasa, Kustha
DERMIS				
Panchmi	Vedini	1/5(0.20– 0.50)	Alaji, vidradhi	Kustha, Visarpa
Shashthi	Rohini	1	Arunshika	Granthi, Apachi shlipada, Galagand
	Mamsa dhara	2 (2.0- 2.10)		Arsha, Bhagandrar, Vidradhi

Panchbhautikatwa of skin:

Romakupa, Swedavaha strotas	-	Aakash pradhan
Vatvahi nadi (nerves)	-	Vayu pradhan
Bhrajak pitta, prabha, kanti, etc.	-	Tej pradhan
Sweat, secretions, Rasadhatu etc	-	Aap pradhan
Subcutaneous fat, Epidermis, Roma, etc.	-	Prithvi pradhan

PHYSIOLOGICAL CONCEPTS RELATED TO SKIN IN AYURVED:

Dosha is a basic principle necessary in a living body, as it is rightly said, without dosha there is no life. Vayu is responsible for remote actions. Pitta stands for the chemical activities in general while kapha is that which brings about a physical activity such as cohesion or absorption at a surface in a localized place. The latter two

are essential and innervation of vata is responsible for the localized effect of both on other regions so the two are considered lame (pangu).

- **Twacha and Vata Dosha:** Twacha is known as sparsanendriya adhistana which means it perceives the sensation of touch, sparsh (touch) sense being the subject of sparshanendriya that is twacha, is controlled by vata dosha. Vyana vayu circulates important nutrients; also it takes part in normal colour formation.

- **Twacha and Pitta Dosha:** Charakacharya has described that Pitta dosha is responsible for Prakrut & Vaikrut Varna of Skin. (Ch.Su.12/11). Chakrapani, in its Tika has stated that Bhrajaka Pitta functions for regulation of body temperature & skin complexion. Acharya Sushruta has described Bhrajaka Pitta as a variety of Pitta and Bhrajaka Agni. The Sthana and Karma of Bhrajaka Pitta has also described by Acharya Vagbhatta.The skin colour is maintained by Pachaka Pitta and Ranjaka Pitta. Bhrajana means prakashana (skin luster) or deepana.

- **Twacha and Kapha Dosha:** Kapha dosha keeps skin snigdha & Mrudu. Also takes part in Ropana karma, Sandhan karma.

- **Twacha and Dhatu:** The Udakadhara is the first layer of Twacha & it maintains the Aap Mahabhuta in the body. Rasa Dhatu is Jala Mahabhuta pradhan dhatu so it proves the relation between Rasa and Twacha. Acharya Sushruta has described Dhatugatatva of Kushtha, early stages of which manifests in Twacha. Twaksarita, which is Rasasarita Kushtha, is described by Dalhana (Su. Ni.5/2). Twacha is updhatu of mamsa dhatu.

- **Twacha and Mala:** Purish, mutra & sweda are three malas excreated out of body. Sweda is the mala of Meda dhatu. Swedwahi strotas which is present in twacha, excretes sweda. Sweda keeps the skin snigdha & cools the body hence helps in heat regulation to some extent. Increase & decrease in sweda is considered as abnormal.

DISEASE REVIEW-

Introduction -

Psoriasis has being compared to many diseases in Ayurveda such as Ekakushtha, Mandalkushtha and Kitibha Kushtha by many scholars of the field. As all these diseases come under Kushtha, we would describe Kushtha in detail.

According to Sushruta, Kushtha is taken under Upasargika Roga or Sankramaka Roga. According to Vagabhatta, Kushtha is included under Sapta Mahavyadhi. In Charak Samhita, the disease is described after Prameha. In Cha.Ni.8, Acharya has quoted, "Havi prashanamehakushthayoh", It indicates that Kushtha is a Santarpanajanya Vyadhi. Thus, it is understood that the cause and pathogenesis of kushtha is same as santarpanajanya vyadhis. Also in Sutrasthana Adhyaya 25, it is quoted that –"Kushtha Dirgharoganam". It clearly shows the chronic nature of the disease.

Kushtha described in other diseases -

- Kushtha is given in Lekhan Yogya & Prachhana Yogya Vyadhi (Ch.Chi.25/58, 59).
- Agnikarma is contraindicated in Kushthaja Vrana. (Ch.Chi.25/106).
- Kandu, Pidika, Mandala, Vaivarnya present in Kushtha have been described in other disease conditions as follows:
    - Dushivisha Lakshana
    - Raktagata Jvara
    - Raktavruta Vata
    - Punaravartaka Jvara
    - Purvarupa, Rupa & Updrava of Vatarakta.
    - Mamsavrutta Vata
    - Third Vega of Visha.
    - Sama Sannipataja jvara.

ETYMOLOGY:

"Kushtha" is derived from –

"कुष निष्कर्षणे + क्त"

Meaning 'to destroy', 'to scrap out' or to 'deform'. The suffix 'kta' means firmness or certainty. So the meaning of word Kushtha means the disease that destroys with certainty.

Specific etimology of Eka kushtha or kitibha Kushta is not mentioned. So we will cosider etiology of same as of Kushtha.

DEFINITION OF KUSHTHA-

- **Siddhanta Kaumadi:**

  In Kushtha, different body organs, Dhatus & Upadhatus are destroyed.

  कुष्णाति नि:शेषण कर्षति विलेखनं करोति अंगप्रत्यंगानि धातु उपधातुनि इति कुष्ठम्।

- **Sabdakalpadrum:**

  Kushtha is the condition which causes contemptible situations.

  कुष्णाति रोगम्।

- **Halayudh Kosha:**

  In Kushtha Rakta Dosha gets vitiated & causes destruction of the body.

  कुष्णाति शरीरस्थ शोणितं विकृते।

- **Acharya Charak:**

  The condition which causes disfigurment in body is Kushtha.

  कुष्णाति वपु: इति कुष्ठम्।

- **Acharya Sushruta:**

  The Kushtha causes disfigurment of the organs.

  कुष्णाति अत्यंगम् इति कुष्ठम्। सु. नि. ५/२

- **Acharya Vagbhatta:**

  If left untreated in early stages then it disfigures the body & makes it contemptible.

  सिराः प्रपद्य तिर्यगः त्वगलसिका असृग विषम दे्षयन्ति श्लथीकृत्य निश्चरन्तःततो बही त्वचा कुर्वन्ति वैवर्ण्यम् दोषः कुष्ठम् ऊष्णाति तत्।

  अ. हृ. नि. १४/३

  कालेन् ऊपेक्षितम् यस्मात् सर्वम् कुष्यति तदवपुः।

- **Acharya Arundatta:**

  Kushtha causes discoloration of skin.

  त्वचा कुर्वन्ति वैवर्ण्यम् दुष्टः कुष्ठम् ऊत्स्नति तत्।

- **Bhela Samhita:**

  दोषाणाम् संचितान्तु त्वगमांस स्त्रव चारिणम् प्रदुषणम् हि सर्वेषाम् कुष्ठम् इति अभिधियन्ते। भे. स. चि. ६/३

- **Kashyap Samhita:**

  सर्वे तु कुष्ठम् त्वक लसिका रुधिरास्त्रयम् स्पर्शघ्नम् च्। का.सं. १२०

KUSHTHA CLASSIFICATION:

Kushtha is produced invariably by the vitiation of the seven factors i.e. 3 Doshas and 4 Dushyas. But different types of pain, colour, shape, specific manifestation etc. are found in Kushtha. There is no difference of opinion between any Acharya about the total number of Kushtha, but difference of opinion in symptoms & names of some of Kushtha exists. Kushtha is divided into seven, eighteen or infinite categories (Cha. Ni.5). In Samhitas, the kusththa is divided in 2 categories viz. Mahakushtha & Kshudrakushtha. No specific explanation has been given behind this division. But commentators explained it as Kshudrakushtha has Alpadosha involvement & Lakshanas in comparision to Mahakushtha (Ch. Ni. 5/4 Chakrapani). Dalhana explained it as Mahakushtha having Dosha involvement in Gambhir (deeper) Dhatus & Kshudrakushtha having only single Dosha involvement due to which Mahakushtha requires intensive treatment in comparision to Kshudrakushtha (Su. Ni. 5/5 Dalhana). Gayadas mentioned same thing as Chakrapani (Su. Ni. 5/5 Gayadas). Kanthadatta has given that there is quick (Shighra) involvement of Dosha to succiding Dhatu resulting in Mahakushtha which is not found in Kshudrakushtha (Ma. Ni. 49/10-16 Kanthadatta).

Thus we conclude the difference between both types of kushtha as follows.

Mahakushtha	**Kshudrakushtha**
Bahu Dosha Arambhata	Alpa Dosha Arambhata
Bahu Lakshana	Alpa Lakshana
Excessive discomfort	Less discomfort
Penetrates into deeper Dhatus	Less tendency to penetrate in deeper Dhatus
Mahat Chikitsa	Alpa Chikitsa
Chronic	Less affinity towards Chronicity
Loss of functions of skin like Supti (anesthesia)	Less functional deformities of skin

BASIS OF CLASSIFICATION OF KUSHTHA:

According to Acharya Charaka all the three Doshas are involved in Kushtha (Ch. Ni. 5/4). So there may be 7, 18 or Innumerable (Aparisankhyey) types of Kushtha. They are based on following factors 1)Amshaamshbhedha 2)Anubandhbedha 3)Sthanaanusaravedana 4)Varna 5)Samsthana/Akruti 6) Prabhava 7) Nomenclature and its treatment.

Acharya Chakrapani has explained as under-

1. Doshanamamshamsha Prati Vikalpoasmashaamshavikalpa:

Amsaamshakalpana means the types are done according to different Amshas of Doshas. For E.g- Vata Dosha is of Ruksha, Sheeta, Laghu, Sukshama, Vishad and Khara Gunas. So In different types of Kushtha, Ruksha guna is elevated, & in other elevation of Sheeta guna could be there.

2. Doshadushya Rupa Sthana Vibhagen Cha Vedanavishesho Bhavati :

There are Different types of pain/Vedana according to the involvement of different Dosha, Dushyas, Rupa and (Sthana) sites.

3. Tatra Vedana Vishesha:

These Types are according to different pain sensations e.g- Kapalam toda bahulam Ch.Chi.7.

4. Varna Vishesha:

It is On the basis of colour. E.g. - yat kakanantika varna- i.e. - Kakanak Kushtha resembles the colour of Gunja.

5. Prabhava:

Kushthas Sadhyasadhyata depends on its Prabhava.

6. Samsthana vishesha:

The names are given according to its appearance and shape. E.g - Kapal Kushtha. As per Acharya Vagbhatta there are 7 types of kushtha (Nidan Sthana 14) & all of

them are Tridoshaja. They are named as per the predominence of Dosha. Acharya Charak also says about it Chi.7/9 - “Na cha ekdoshaja kinchit kushtham samuplabhyate.”

A. Classification of Kushtha according to different Acharyas:

	Types of Kushtha	Ch.S.	Su.S.	A.H.	Ka. S.	BH.S.	M.N.	B.P.
(A) Mahakushtha								
1	Kapala	+	+	+	+	+	+	+
2	Audumbara	+	+	+	+	+	+	+
3	Mandala	+	-	+	+	+	+	+
4	Rishyajihva	+	+	+	+	+	+	+
5	Pundarika	+	+	+	+	+	+	+
6	Sidhma	+	-	-	+	+	+	+
7	Kakanaka	+	+	+	-	+	+	+
8	Dadru	-	+	+	-	-	-	-
9	Aruna	-	+	+	-	-	-	-

	Types of Kushtha	Ch.S.	Su.S.	A.H.	Ka. S.	BH.S.	M.N.	B.P.
(B) Kshudra Kushtha								
1	Ekakushtha	+	+	+	+	+	+	+
2	Kitibha	+	+	+	+	+	+	+
3	Charmadala	+	+	+	+	-	+	+
4	Pama	+	+	+	+	+	+	+
5	Vicharchika	+	+	+	+	+	+	+
6	Charmakhya	+	-	+	-	+	+	+
7	Vipadika	+	-	+	+	+	+	+
8	Alasaka	+	-	+	-	-	+	+
9	Dadru	+	-	-	+	+	+	+
10	Visphotaka	+	-	+	-	+	+	+

11	Sataru	+	-	+	+	+	+	+
12	Sidhma	-	+	+	-	-	-	-
13	Sthularushka	-	+	-	-	-	-	-
14	Mahakushtha	-	+	-	-	-	-	-
15	Visarpa	-	+	-	-	-	-	-
16	Parisarpa	-	+	-	-	-	-	-
17	Raksa	-	+	-	-	-	-	-
18	Svitra	-	-	-	-	+	-	-
19	Vishaja	-	-	-	+	+	-	-

B. <u>Dosha wise:</u>

On the basis of the dominance of the Dosha Kushtha can be categorized as follows.

Doshic Predominancy	**Name of kushtha**	
	Ch., A.H.	**Sushruta**
Vata	Kapala	Aruna
Pitta	Audambara	Audumbara Rushyajihva, Kapala, Kanknaka
Kapha	Mandala ,vicharachika	Pundrika, dadru
Vatakapha	Sidhma, kitibha,Vipadika, Charmakhya, Ekakushtha	
Vatapitta	Rushyajihva	
Kaphapitta	Pundrika, Dadru, Pama, Shataru, Charmadala, visphaotaka	
Vatapittakapha	Kanknaka	

Acharya Charaka and Sushruta also described predominance of Dosha in Symptoms (Ch. Chi. 7/34, 35, 36), (Su. Ni. 5/18)

Prominent Dosha	Symptoms	
	Charaka	**Sushruta**
Vata	Rukshta, shoha, toda,Shula, samkocha, Aayama, Kharata, Purushya, Harsa .	Tvakasankocha, vedanishedha, sopha, savropghata
Pitta	Daha,Raga, parisrava, Paka, Kleda, Angapatana, Avisragandha	Paka, Avadarna, Angulipatana, karna nasabhanga, krimi
Kapha	Shaitya, Kandu, Sthairya, utsedha, gaurav, sneha, kleda	Kandu, Varnabheda, sopha, srava, gaurav

C. <u>According to Dhatugatatva:</u>

Acharya Sushruta (Ni. 5/21 –26) & Madhavkara (49/ 25 –30) has described Dhatugatatwa of Kushtha.

<u>Twakgata Manifestation:</u>

When Kushtha invades the Rasadhatu there is loss of sensation of touch, itching, perspiration, dryness of skin & discolouration of skin.

<u>Raktagata manifestations:</u>

When Kushtha invades Raktadhatu there is anaesthesia of skin, excessive perspiration, itching with pus formation.

<u>Mamsagata menifestation:</u>

There is dryness of mouth, thickening of the skin, xerosis, pricking sensation, papule formation, and bullous eruptions in skin.

<u>Medogata manifestation:</u>

When Kushtha invades Medodhatu there is foul odour of perspiration i.e.Sweda as it is the mala of Medodhatu. Also there is maagots formation in the ulcer.

<u>Asthi-Majjagata manifestations:</u>

When Kushtha invades Asthi- Majja the symptoms are-

Saddle nose deformity, development of maggots in the ulcers, occular inflammation hoarseness of voice etc.

Shukragata manifestations:

The symptoms of Shukragata Kushtha are-

Inability to walk (due to Nerve involvement & limb deformity), deformity in the phalanges (neuropathic atrophy), destruction & exfoliation of body parts

D. According to Nidana:

Sushruta and Charaka have given following classsification

Kulajanidana:

According to Sushruta Kushtha is adibala pruvritta vyadhi (Su. Ni 5/27) i.e. it is caused due to defects of Shukra and or Shonita. The children born to Kushtha patients may also get affected of Kushtha. (Su. Ni.5/27).

Krimijanidana:

Acharya Charaka has stated that Rakta Krimi are the causative factor of kushtha (Ch. Vi. 7/11). Acharya Sushruta has stated that all types of kushtha are due to Vata, Pitta, Kapha and Krimi (Su. Ni 5/6).

Chikitsa vibharansajanya nidana:

In some disease like Raktarsha (Ch.Chi.14/17), Rakpitta (Ch.Chi 4/27), Amatisara (Ch. Chi19/16) if Stambhana is given in initial stage may cause Kushtha. Due to Stambhana there is Tirayaggati of Doshas which causes Kushtha.

Acharya Vangasena mentioned 7 specific etiological factors as follows Tila, Taila, Kulattha, Valmika, Linga Roga, Mahisha Dadhi and Vruntaak. Acharya Charaka has stated that the water of the rivers which originate from Vindhya, Sahya and Pariyatra hills may cause Kushtha (Ch. Su. 27/212)

E. <u>According To Sadhyasadhyata:</u>

Acharya Charaka, Sushruta and Vagabhata have given symptoms of curable and incurable as follows:-

Symptoms	**Ch.**	**Su.**	**A.H.**
Asadhya	Tridoshajanya, Trushna , daha Yukta, Balarahita Rugna, Shantagni	Asthi, Majja, and Shukragata kushtha	Tridoshajanya and Astimajjagata Kustha
Yapya		Medogata	Medogata
Kruchchasadhya	Kaphapittaja, Vatapittaja Kushtha		Pittaj, Dwandwaj Kushtha,
Sadhya	Vatakaphaj, Ekdoshaja Kushtha	Jitendriya Rugna, Rasa, Rakta and Mamsa Dhatu Gata Kushtha	Vatapradhan, Kaphaj, and Ekdoshaj kushtha

(Ch. Chi. 7/36), (Su. Ni. 5/28), (A.H.Ni. 14/31, 32, 33)

F. <u>According To Margas:</u>

According to Charakacharya and Vagbhatta Kushtha is Bahir Margaja Vyadhi. (Ch. Su 11/49, A.S. NI. 14/17 and A.H. Ni 14/4)

NIDANA OF KUSHTHA:

The Samanya Nidana of Kushtha can be categorized as follows-

1. Aharaja – diet and dietetic pattern
2. Viharaja – faulty lifestyle
3. Miscellaneous

Aharaja nidana:

- Ati Sevana: it can be categorized on the basis of following factors:

Items	**Ayurvedic Nidana**	**CH. S**	**Su. S**	**AH.**	**AS**	**M N**	**B.P.**	**Modern Implicaiton**
Rasa	Amla, Lavana, Katu and Kshara	+	+	--	--	+	+	Pujabi & Chinese food, Sauce, Pickle, jam
Guna	Guru and Snighdha Ahara	+	--	--	--	+	+	Cake, Chocolate, Ladoo, ghee, bread, sweets
Sweet Substance	Phanita, Madhu	+	--	--	--	--	--	Phanita, Honey,
Grains	Hayanaka, Navdhanya, Udalaka, Nishpava Etc	+	--	--	--	+	+	Bajra, Recent mellowing grains like wheat, Barley polished rice
Oil	Kusumbh, Tila, sarshapa	+	--	--	--	+	+	Sesame, castor oil
Pulses	Masha, Kulatha,	+	--	--	--	+	+	Peas, Black gram, Pigeon, Lentil
Vegetables	Kakmachi,	+	--	--	--	+	+	Raddish

	Mulaka , Lakuch,							
Anupa Mamsa	Matsya, Varaha etc	--	+	--	--	--	--	Bullock, Fish, Pig, Rhinoaros,
Prasaha Mamsa	Marjara, Jamdook, Lopaka etc	--	+	--	--	--	--	pigeon, peacock, Chicken, mutton, etc.
Dairy Product	Kshira,dadhi Takra,	+	--	--	--	+	+	Milk and its derivatives, like curd, buttermilk etc
Others	Pishta anna, Tila, Kola,	+	--	--	--	--	--	puri, kachoris etc.

Viruddha Ahara:

Nidana of Kustha	**Ch**	**Su**	**AH**	**MN**
Consumption of Gramya, Anupa, Audaka, Mamsa with milk	+	+	-	-
Consuming Hayanka, Yavaka, Chinaka, Uddalaka with Ksheer, Dadhi, Takra, Kola, Kulattha, Masha, Atasi, Kusumbha, Sneha	+	-	-	-
Consumption of Mulaka, Lashuna etc. with milk	+	-	-	-
Consuming Chilchim fish with milk	+	-	-	-

Mithya ahara:

Mithya ahara means Faulty food habbits, excessive intake of food.

	Mithya ahara	**Ch**	**Su**	**M.N.**	**B.P.**	**A.H.**
Foods	Vidahi, Vidagdha, Upaklinna, Puti Anna	+ 	- 	- 	- 	-
Faulty dietary sequence	Shitoshnaviparyaya Langhana, Santarpana Aptarpana	+ + +	- - -	- - -	+ + +	- - -
Psychological Disturbance During the meal	Santap	+	+	+	+	-
Food pattern	Ajirna bhojana, Asatmya bhojana, Atibhojana	+ - +	+ + +	+ - -	+ - -	- - -

VIHARA:

It can be divided into Kayika, Vachika, and Manasik

1. **Kayika (Physical):**

Factor	**Ayurvedic Nidana**	**Su.S**	**A.H.**	**Ch.S.**	**B.R.**	**M.N.**	**Modern aspect**
Over exertion	Ati Shrama, Vyayama	+	-	+	-	+	Over exertion & exercise
Prevention of natural urges	Kshavathu, Chhardi Mala, Mootra etc	+	-	+	+	+	Prevention of natural urge of urination, defecation etc.
Iatrogenic	Panchkarma Apacharaja, Snehapeetasya	+	-	+	+	+	As a complication of panchkarma

	Vyayam Vyavaya etc	-	-	+	+	+	therapy
Physiological factor	Ratrijagran Divaswapa	-	-	+	-	-	Late night sleeping, Day time sleeping
Exposure to Environmet	Atap sevan Anila sevan	-	-	+	+	+	Excessive exposure to sunlight, exposure to air

2. Vachika (Verbal):

Vachika nidan could be categorized as below:

Factor	**Ayurvedic Nidana**	**Su.S.**	**A.H.**	**Ch.S.**	**B.R.**	**M.N.**	**Modern aspect**
Nature	Suranam Nidan, Sahdu Nidan	+	-	-	-	-	Slander about noble Personality
Verbal	Vachansi Atathyani	-	-	+	-	-	Bragging and boasting, abusive language
Manner	Guru Gharshanam Vipra Gharshanam	+	+	-	+	-	Make quarrel dipute or mockery of elderly people

3. Manasik:

Any kind of misbehaviour, criminal activities comes under Acharaja Nidana. It causes psychogenic stress which plays important role in the pathogenesis of psoriasis. Raja and Tama gets vitiated leading to vitiation of Tridoshas & causes

Kushtha. Due to Chinta, Bhaya& Krodha Vata becomes vitiated. Swedavaha Srotasa Dushti occurs due to Bhaya, Krodha, Shoka (Ch. Vi. 5/22). Raktavaha Srotasa Dushti occurs due to Chinta.

MISCELLANEOUS:

Following are some other important hetus-

Acharya Bangsena:

He has given seven specific etiological factors: Tila Taila, Kulattha, Valmik Lingaroga, Mahisha Dadhi and Vrintak (Chikitsa Sara Sangraha Kushtha 8)

Acharya Harita:

He stated that Vititated water and Ratrijagrana causes Kushtha.

Kulaja Nidana:

As it is Adi Bala Pravritta Vyadhi, the diseases is inherited in the offspring if both Mother and Father are having Kushtha, as the Shonita and Shukra of mother & father are dushta i.e. vitiated. (Su. Ni. 5/27)

Sansargaja Hetu:

According to Sushruta (Su. Ni. 5/32-33) and Vagbhatta the Kushtha is a contagious disease.

Krimija Hetu:

According to Sushruta all types of Kushtha are due to Vata, Pitta, Kapha and Krimi. (Su. Ni. 5/5). It is found that in guttate psaoriasis Streptocoocal infections are very common. (84% according to Williams et. al.1976)

Chikitsa Vibhramsajanya Hetu:

In Raktaarsha (Ca. Chi. 14/179), Raktapitta (Ca. Chi. 4/27), and Amatisara (Ca. Chi 19/16) if Sthambhana is given in intial stage then it causes Kushtha. It causesTiryaka Gati of Dosha and hence cause Kushtha. As it is Rakta Pradoshaja Vyadhi and Santarpanajanya Vyadhi, Rakta dushti and Santarpaka Nidanas may cause

Kushtha. It is also caused by Dushivisha. Use of water coming from Vindhya, Sahya and Paryatra hills is also a causative factor for Kushtha.

PURVARUPA OF KUSHTHA:

The symptoms which occur before real manifestation of the disease are called purvaroopa.

Purvarupa	**Ch.S.**	**Su.S.**	**A.S.**	**A.H.**	**Bh. S.**	**H.S.**	**M.N.**	**B. P.**
Aswedanam	+	+	+	+	+	+	+	-
Atiswedanam	+	+	+	+	+	+	+	+
Parushyam	+	+	-	-	-	-	-	-
Atishlakshnata	-	-	+	+	-	+	+	+
Vaivarnyam	+	-	+	+	+	+	+	+
Kandu	+	+	+	+	-	-	+	+
Nistoda	+	-	+	+	-	-	+	+
Suptata	+	+	+	+	+	-	+	+
Pariharsha	+	-	+	+	+	-	+	+
Lomaharsha	+	+	+	+	+	+	+	+
Kharatvam	+	-	+	+	-	+	+	+
Ushmayanam	+	-	-	-	+	-	-	-
Gauravam	+	-	-	+	+	-	-	-
Syvayathu	+	-	-	-	-	-	-	-
Kothonnati	+	-	+	+	-	-	+	+
Shrama	+	-	+	+	-	-	-	-
Klama	+	-	-	-	-	-	-	-
Visarpagamanam	+	+	-	-	-	-	-	-
Kayachhidreshu Upadehana	+	-	-	-	-	-	-	-
Pakva-Dagdha-Dashta Bhanga-	+	-	+	+	-	-	-	-

Kshata-Upaskhalitesu, Atimatram Vedana								
Svalpam api vrananam dushti	+	-	+	+	-	-	-	-
Svalpam api vrananam asamrohananm	-	-	+	+	-	-	-	-
Asrujah krishnata	-	+	+	+	-	-	-	-
Vrananam shighrah utpatti chirah Sthiti	-	-	+	+	-	-	-	-

RUPA OF EKKUSHTHA

According to Bhavaprakasa, it is the prime among the Kshudra Kushtha so it is called as Ekakushtha.

“क्षुद्रकुष्ठ मुख्यत्वात एककुष्ठमिति ।”

The Rupa of EkaKushtha described by different Acharyas is as follows.

[1] Acharya Charaka:

अस्वेदनं महावास्तु यन्मत्स्यशकलोपमम्

तदेककुष्ठं..... (च. चि. ७/२१)

Chakrapani has commented,

महावास्तु इति महास्थानं।

मत्स्यशकलोपमम इति मत्स्यत्वक् सदृशं।

[2] Acharya Sushruta:

He said that Ekakushtha means in which body becomes Krushna Aruna i.e. blackish or reddish. Thus he described the specific colour of the lesion.

कृष्णारुणं येनभवेत् शरीरं तदेककुष्ठं प्रवदन्तिकुष्ठं। (सु. नि. ५)

[3] Acharya Vagbhatta:

एकारव्यं महाश्रयं अस्वेदनं मत्स्यशकलसन्निभम्।

[4] Acharya Kashyapa:

वैसर्पोद्भव नित्यविसर्पि स्त्रावववेदना कृमिमेककुष्ठम्। (का. सं.)

Acharya Kashyapa has described Visarpa as the cause of EkaKushtha. And also stated in symptoms that it is continuously spreading and having discharge, pain & krumi.

[5] Acharya Madhava:

अस्वेदनं महावास्तु यन्मत्स्यशकलोपमम्

तदेककुष्ठं..... (मा. नि.)

[6] Acharya Harita:

तथान्यमातंगकचर्म

Acharya Harita has correlated Ekakushtha with elephant skin.

Thus the Rupa of Ekakushtha can be compiled as:-

SYMPTOMS	REFERENCE
1. Aswedanam	Ch. Chi. 7/21, A.H.Ni. 14/19 M.N.
2. Mahavastum (Mahashryam)	Ch.Chi. 7/21, M.N. A.H.Ni. 14/19
3. Matsya shakalopamam	Ch. Chi. 7/21 A.H.Ni. 14/19, M.N.
4. Krishna Aruna Varna	Su. NI. S.
5. Vaisarpodbhavam	Ka.S.
6. Mandala	B.P.M.Kh.Chi Su/24 b
7. Abhrakapatrasama	B.P.M.Kh.Chi Su/24 b

1) Aswedanam:

Lack of or absence of sweating means Aswedanam. It may when

A. sweda is not formed in body or

B. Swedavaha Srotas Avarodh (obstruction)

When Sweda is produced but not excreted onto the skin through the Srotas due to obstruction of Swedavaha Srotas. Obstruction is caused either by some solid matter causing “Sanga”, or it may be due to “Sankocha” caused by Vata dosha. Vata (Sankocha) and Kapha (Sanga) are predominantly vitiated in Ekkushtha. It is also caused due to Kapha Avruta Samana (Ch. Chi. 28/226). Acharya Vaghbhatta stated that Aswedanam causes Twak Parushya. Anhydrosis is the term used for decreased or absence of sweating. It causes dryness & heat intolerance.

2) Mahavastum:

Acharya Chakrapani has given meaning of Mahavastum as Mahasthanam which means the large area of skin is involvd in lesion. (Ch. Chi. 7/21). The lesions spread rapidly due to Shighrakari Guna of Vayu (Dosha) and Rakta (Dushya).

3) Matshya shakalopomam; Abhrakapatrasama (B.P.):

Charaka, Madhava and Vagbhata have stated that the lesion is like fish scale and Bhavprakash has stated the lesion is like Abhrakapatrasama. It is similar to scaling known as Hyperkeratinisation in psoriasis.

RUPA OF MANDAL KUSHTHA:-

The Rupa of Mandala Kushtha described by different Acharyas is as follows.

1. **Acharya Charaka:**

श्वेतं रक्तं स्थिरं स्त्यानं स्निग्धमुत्सन्नमंडलम्।
कृच्छ्रमन्योन्यसंसक्तं कुष्ठं मण्डलमुच्यते॥ च. चि. ७/१६

Acharya Charaka has stated that the lesions of Mandala Kushtha is whitish reddish coloured, non spreading, compact, oily, raised oval shaped, mixed in each other & difficult to treat.

स्निग्धानि गुरुण्युत्सेधवन्ति श्लक्ष्णस्थिरपीतपर्यन्तानि शुक्लरक्तावभासानि शुक्लरोमराजीसन्तानानि बहूबहलशुक्लपिच्छिलस्त्रावीणि बहुक्लेदकण्डूक्रिमिणि सक्तगतिसमुत्थानभेदिनि परिमण्डलानि मण्डलकुष्ठानि विद्यात्॥ च. नि. ५/७–३ मा. नि. ४९/१२,१३

Acharya Charaka in Nidana Sthana has described that it is heavy & raised, having soft & yellow margin, whitish and reddish in colour, covered with whitish Roma (hair). Lesions have excessive, whitish & sticky discharge with excessive pruritis & Krimi. It is non spreading, oval shaped & it doesn't crack early.

2. **Ashtang Sangraha & Ashtang Hridaya:**

स्थिरं स्त्यानं गुरु स्निग्धं श्वेतरक्तमानुशगम्।
अन्योन्यसक्तमुत्सन्नं बहुकण्डुस्रुतिक्रिमि।
श्लक्ष्णपीताभपर्यन्तं मण्डलं परिमण्डलम्॥

अ. हृ. नि. १४/१६,१७, अ. सं. नि. १४/११

Ashtang Sangraha & Ashtang Hridaya have described that Mandala Kushtha is non spreading, compact, heavy, oily, whitish reddish in colour. Lesions are mixed in each other, having excessive pruritis, discharge & krimi. It is soft, oval shaped having yellow margins.

Thus the Rupa of Mandal Kushtha can be compiled as:-

Symptoms	**Meaning**	**Reference**
Snigdha	Glossy, Resplendent	Ch, Ma. Ni., A.S., A.H.
Guru	Great, Large, Extended, Long	Ch, A.S., A.H.
Shlakshna	slippery, smooth	Ch, Ma. Ni., A.S., A.H.
Utsedha	Elevation, thickness	
Sthir	firm, hard, solid, compact	
Peetparyantani	Yellow edges	Ch, Ma. Ni., A.S., A.H.
Shukla Rakta Avabhasani/ Shwetam, Raktam	White –red in appearance	Ch., Ma. Ni., A.S., A.H.
Shuklaromaraji santananai	White -row or line or streak of hair	
Bahubahal Shukla Picchil Stravini	abundant, thick, white, slimy discharge	
Bahukleda kandu krimini	Abundant –moisture, itching, worms	Ch, Ma. Ni., A.S., A.H.
Saktagati Samutthan Bhedini	Hindered –moving, rising, splitting	
Styan	grown dense, thick, bulky	
Utsanna	raised, elevated	Ch, Ma. Ni., A.S., A.H.
Krucchram	miserably, painfully, curable with difficulty	
Anyonya Sansakta	adhered or stuck together, uninterrupted, continuous, united	Ch, Ma. Ni., A.S., A.H.
Anaashugam	Slow moving, slow spreading	

RUPA OF KITIBHA KUSHTHA:

श्याव किणखरस्पर्शं परुषं किटिभं स्मृतम्। च. चि. ७/२१, मा. नि. कुष्ठनिदानम्/१८

Charakacharya and Madhavacharya have stated that in Kitibha kushtha, the lesions are greyish in colour, hard & rough to touch.

यत् स्त्रावि वृत्तं घनमुग्रकण्डु तत् स्निग्धकृष्णं किटिभं (मं) वदन्ति। सु. नि. ५/१३

Sushruta has stated that the lesions are having discharge, circular, dense, having intense itching, slimy & blackish.

किटिभं पुन । रुक्षं किणखरस्पर्शं कण्डुमत्परुषासितम्। अ. हृ. नि. १४/२०, अ. सं. नि. १४/१६

According to Vaghbhatta the lesions are dry, hard & rough to touch, itchy & blackish or greyish.

Symptoms	**Meaning**	**Reference**
Shyava	dark-brown, brown, dark-coloured	Ch, Ma. Ni., A.S., A.H.
Khara sparsha	hard, harsh, rough, sharp to touch	Ch, Ma. Ni., A.S., A.H.
Parusha	hard, stiff, rugged, rough, uneven, shaggy	Ch, Ma. Ni., A.S., A.H.
Stravi	Flowing, dripping, causing to flow (blood, matter etc.)	Su. Ni
Vrutta	round, rounded, circular	Su. Ni
Ghana	compact, solid, hard, firm, dense	Su. Ni
Kandu	feeling a desire to scratch, itching	Su. Ni, A.S., A.H.
Snigdha	Smooth, glossy	Su. Ni
Krushna or Asitam	black, dark in colour	Su. Ni, A.S., A.H.
Ruksha	rough, dry	A.S., A.H.

UPSAHAYA AND ANUPSHAYA (PATHYAPATHYA) -

According to Charaka Pathyapathya which is given in chapter of Kushtha Chikitsa is as follows. Following food items should not be consumed single or in combination-

Pickles, Jam, and Sauce
Laddu, Ghee, Sweets, Cake, Chocolate, Bread
Milk and its derivatives like Curd, Buttermilk, cheese, paneer etc.
Recent mellowing grains like Wheat, Polished rice, Bajara, Berely.
Black gram,Pigeon-peas, peas, Lentil
Guava, Pear, Banana, Pineapple, Mango, Cherry, Pomegranate, Orange, Sweet Lime etc.
Fish, Pig, Deer, Rhinoceros, Bullock
Chicken, Mutton, Pigeon, Peacock etc
Honey, Jaggery, Phanita
Sesame and Castor oil

Pathya:

Guna	Laghu, Hita
Shuka Dhanya	Godhuma, Yava, Shali
Shimbi Dhanya	Munga, Arahara, Masura
Shaka	Tikta Shaka
Mamsa	Mamsa
Aushadha	Priyangu, Bhallataka, Triphala, Nimba, Patola, Khadira, Vidanga, Bakuchi, Vasa, Brihati, Kakmachi, Lasuna, Meshasringi, Chakramarda, Chiktraka, Jatiphala, Nagakesara, Katutumbi, Karanja, Sarshapa Taila, Tila Taila, Devadaru, Agaru, Tuvaraka, Gomutra, Gandhaka etc. (Ch. Chi.7/82-83)

Vihara:

Mithya vihara is considered as causative factor of Kushtha (M.N. 2/2- Vidhyotini Tika) & it should be avoided.

Prevention of natural urges like urination, defecation, sleep etc.
Excessive exposure to sun light, lee, air conditioned work place contradicting with very hot and humid environment.
Over exercise
Heavy work, intercourse and sleeping soon after meal
Due to the complications of panchkamra therapy
Day sleep
Bragging and boasting, using abusive language
Make quarrel, dispute or mockery of elderly people

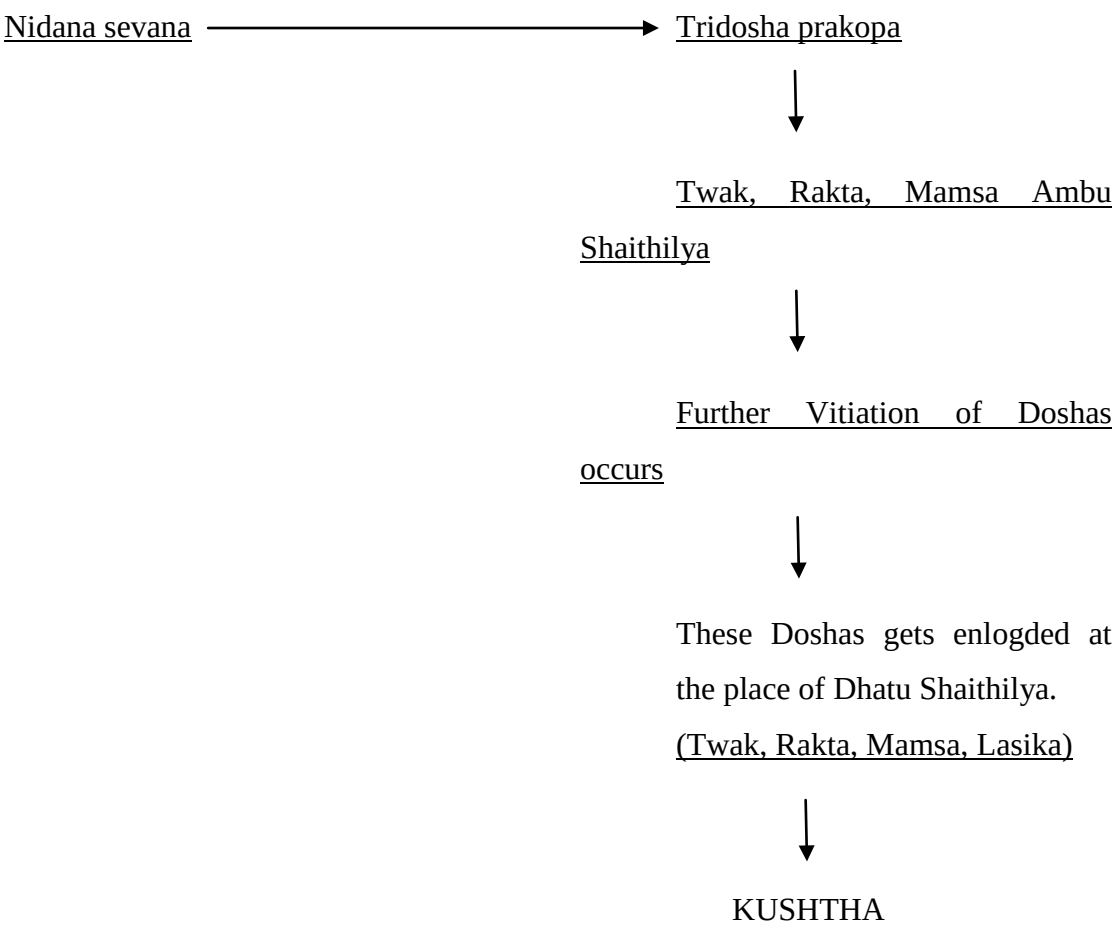
SAMPRAPTI OF KUSHTHA:

Hetusevana leads to vitiation of doshas. Dosha when gets Dushta; vitiates Dhatus & Malas which produces disease in the body. This process by which the disease is produced is known as Samprapti. Also called as Jati & Agati (A.H.Ni.1). All Acharyas have explained the Samprapti of Kushtha. But they have not mentioned the specific Samprapti for specific Kushtha. That is why the Samprapti of other Kushthas can be considered as per the common Samprapti of Kushtha given in the texts.

According to Charaka:

According to Charaka Nidana plays the dual part, i.e. it vitiates the Tridosha & causes Shaithilya in the Dhatus namely Twak, Rakta, Mamsa & Lasika. Thus the Shithila Dhatus are liable to get vitiated by the vitiated Tridoshas causing Kushtha in the body (Ch.Ni.5/6).

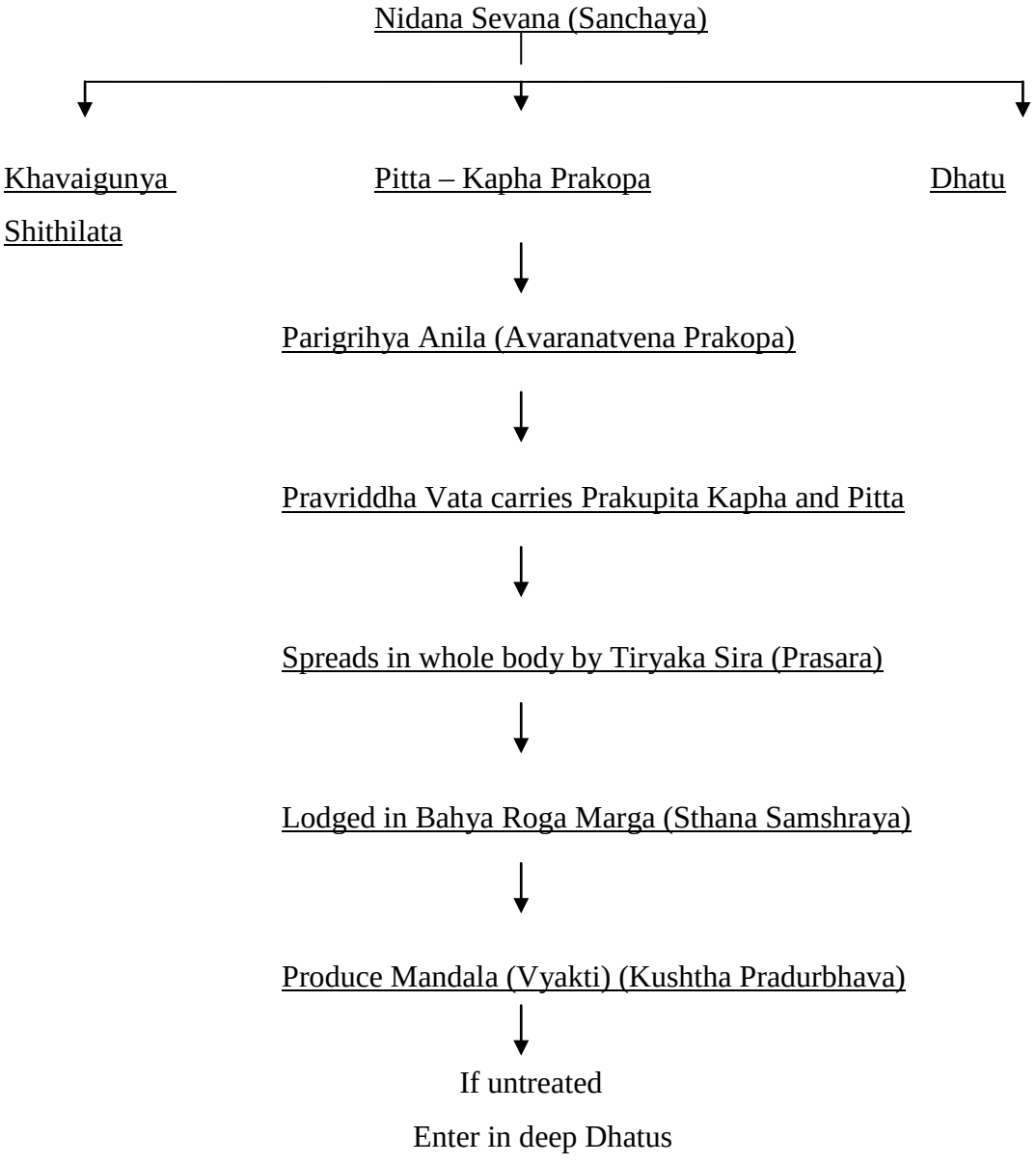
Sampratpti of Kushtha can be presented as below-



According to Sushruta:

Nidanasevana leads to Pitta and Kapha Prakopa; which produces Avarana of Vata causing Vata Prakopa. This Vitiated Vata Dosha along with Pitta & Kapha Dosha enters in the Tiryaka Sira; spread; causing further vitiation. Then it gets access to Bahya Rogamarga (Twak, Rakta, Mamsa, Lasika) and gets spread throughout the body. Thus producing Mandala at the site of enlodgement of Doshas. If untreated it may enter the deeper Dhatus of the body. (Su.Ni.5/3.)

Thus Sampratpti of Kushtha can be presented as below-



According to Vagbhata:

Doshaja & Karmaja Nidana vitiates Malas, & by entering Tiryak Siras it vitiates Twak, Lasika, Rakta & Mamsa, producing Shaithilyata in Twagadi Dhatus, which leads to Vaivarnyata producing Kushtha. (A.H.Ni.14/3.)

According to Madhava:

The Tridoshas gets vitiated due to Doshaja & Papakarmaja Nidana, & vitiates Twak, Rakta, Mamsa & Ambu producing Kushtha (M. N. 49/5-6).

According to Bhavaprakasha:

Acharya Bhavprakasha has described the Samprapti as per Acharya Charaka. He further described that Nishchala Guna of vitiated Doshas causes Shaithilyata of Dushya. (B. P. Mad. Kha. 54/14-15).

Kushtha – Rakta Pradoshaja Vyadhi

Nidana Sevana

(Ushna, Tikshna, Rakta Prakopaka)

↓

Blood gets vitiated (Ch. Su. 24/10)

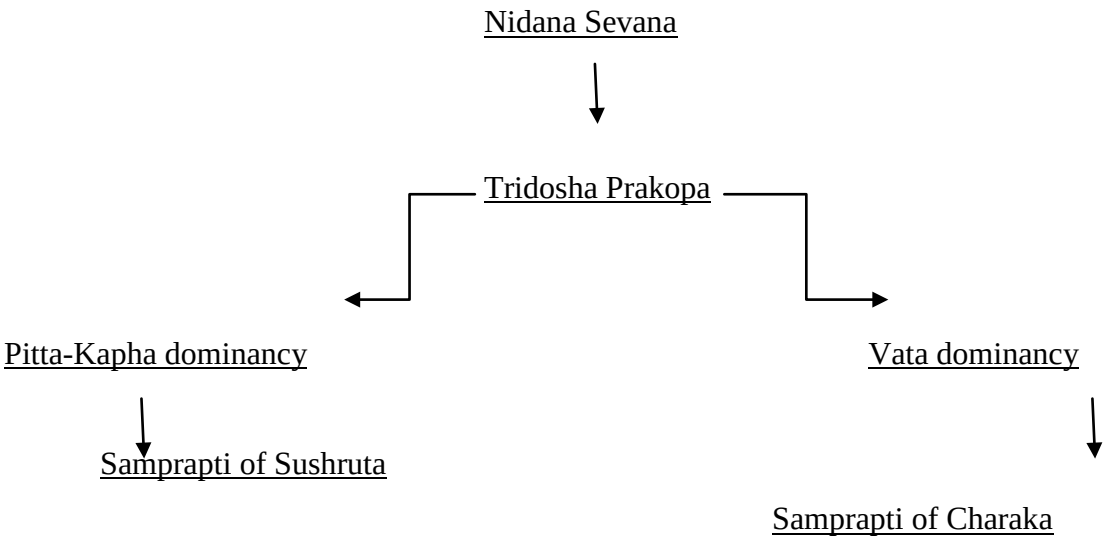
↓

Produce Blood born diseases

↓

Kushtha (Ch. Su. 24/16)

On the basis of above description of Samprapti, it can be divided in two types:



SAMPRAPTI GHATAKA:-

Samprapti Ghatakas are as follows:

Doshas: Kapha (Ch. & Vagh.) Pitta (Sushruta)	Vata	Vyana, Samana, Udana
	Pitta	Bhrajaka, Pachaka
	Kapha	Avalambaka, Kledaka
Dushyas	Twacha, Rakta, Mamsa, Lasika	
Agni	Jatharagni and Dhatvagnimandya	
Srotasa	Rasavaha,Raktavaha,Mamsavaha,Swedavaha	
Srotodushti	Sanga and Vimargagamana	
Marga	Bahyaroga Marga	
Udabhavasthana	Amashaya	
Sancharastahana	Tiryaka-gami sira	
Adhishthana	Twacha	
Swabhava	Chirakari	

DOSHA:

In Kushtha all the three doshas are vitiated. On the basis of predominance of Doshas they are classified as Vataja, Pittaja etc

DUSHYA:

Twak, Rakta, Mamsa & Lasika are the Dushyas involved in the manifestation of Kushtha ('Saptako dravya sangraha' Ch.Ni.5/3). Initially only four Dhatus get vitiated but later on as the disease progresses all other Dhatus get involved as stated by Acharya Chakrapani.

AGNI AND AMA:

Mandagni is the main etiological factor for all diseases, as per Acharya Vaghbhata (A. H. Ni.12/1). Mandagni leads to Aam Utpatti. As the Bhrajaka Agni is also involved, Aamvisha i.e. toxic materials are formed, which vitiates Doshas and Dhatus producing local symptoms.

UDBHAVA STHANA:

Dosha Sanchaya occurs in Amashya & Pakvashaya initially, which is Udbhava Sthana for this disease.

SANCHARA:

Sanchar occurs through the Tiryaga Sira.

ADHISTHANA:

The whole skin i.e. Tvacha is the Adhishthana.

VYADHIMARGA:

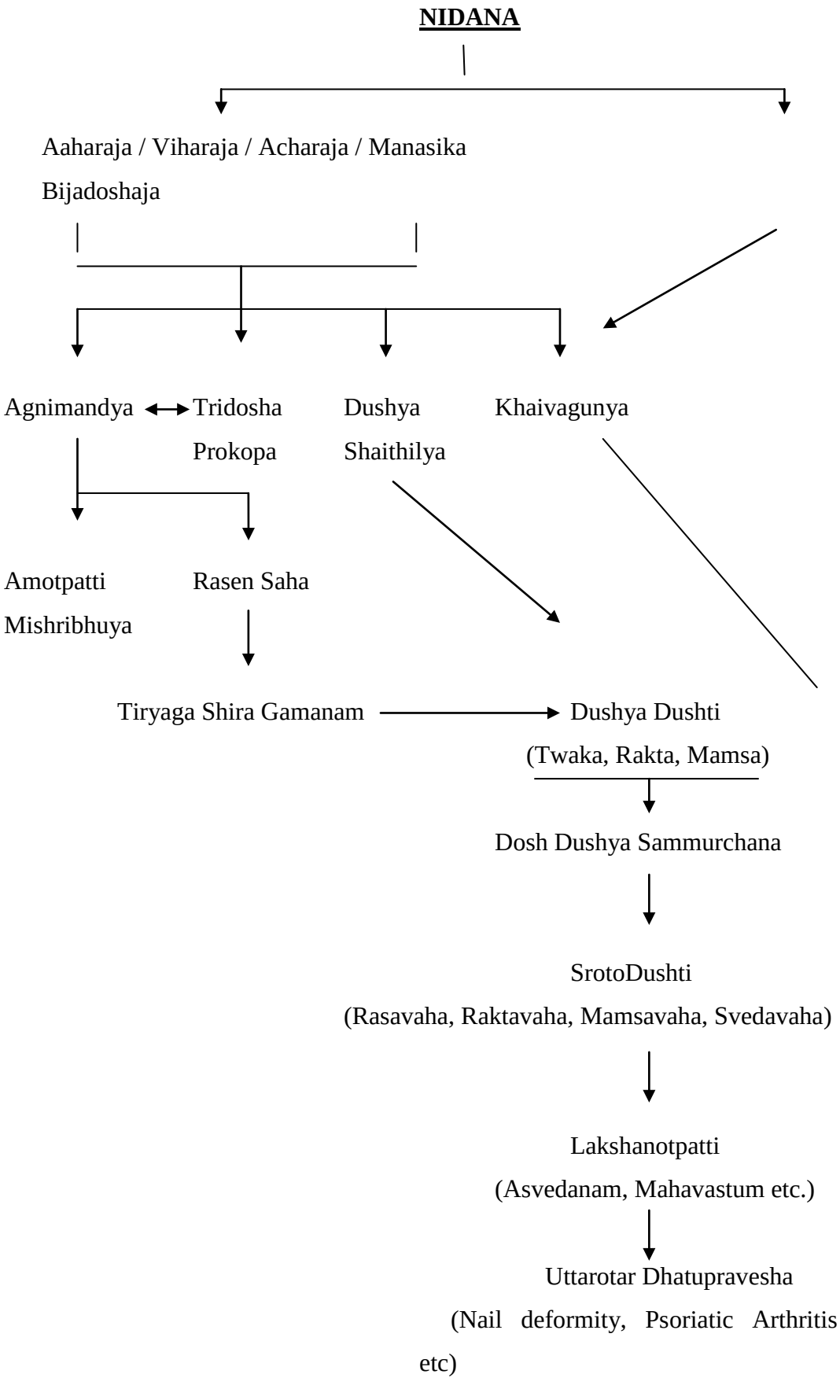
It is a Bahya Rogamargaja Vyadhi. (Ch.Su. 11/48).

SVABHAVA:

It is Chirakari in nature. Modern science also states it as a chronic relapsing disorder.

As per this description, Samprapti can be drawn as follows-

The below chart present the Sampratpti of Kushtha.



UPADRAVA:

Prasravana, Angabheda, Anga-Avayava Patanam, Trisha, Jvara, Atisara, Daha, Daurbalya, Arochaka, Avipaka.

SADHYATA AND ASADHYATA:

Acharya Charaka has stated that when all the symptoms are present in Kushtha also which is having complications like thirst, burning, Agnimandya & krumi is not curable. Kushtha which is Vata-Kaphaja Ekdoshaja Kushtha is easily curable. But Kapha-Pittaj or Vata-Pittaj Kushthas are kashtasadhya i.e. difficult to cure (Ch. Chi. 7/37-38).

As per Acharya Sushruta, in patients having control over his indriaya i.e.sense organs, when the disease is only limited upto Tvacha, Rakta or Mamsa is curable. When the disease reaches in Medo Dhatu it becomes Yapya. And Asthigata, Majjagata & Shukragata Kushtahas are not curable (Su.Ni.5/28).

Acharya Madhava has stated that, the Kushtha which are limitted to the Tvacha, Rakta or Mamsa & in which only Vata & Shleshma are vitiated is curable. Dwandaj (Vata-Pittaja or Pitta-Kaphaja) and Kushthas which are located in Medo Dhatu are Yapya. Asthi or Majja Dhatu Gata is Asadhya.

Also the prognosis of Kushtha depends upon nature of the disease, availability of all types of treatment options, Prakriti-Vaya-Avastha of the patient, Hetus, extent of vitiation of Doshas, involvement of Dhatus and Upadravas.

PATHYA – APATHYA:

पथ्यं पथोऽनपेतं यथच्चोक्तं मनसः प्रियम्। यच्चाप्रियमपथ्यं च नियतं तन्नलक्षयेत् ॥ च.सू.२५/४५

	Pathya:	**Apathya:**
Ahara		Viruddha Ahara, Ajeernashana, Adhyashana, Navanna, Pista Vikara
Shuka	Godhuma, Purana Dhanya, Yava, Shastika Shali	Nishpava, Masha, Kulattha, Tila

Kudhanya	Uddhalaka, Koradusha, Shyamaka	
Shimbi	Adhaki,Mudga, Masura	
Shaka	Tikta Shaka Patola etc	Mulaka
Ghrita	Bhallataka, Triphala & Nimba siddha	
Mamsa	Jangala Mamsa	Oudhaka mamsa, Anupa mamsa, Vasa
Mishra	Mudga mixed with Patola	
Dravadravya		Ksheera, Dadhi
Ikshu varga		Ikshu Vikara, Guda
Vihara		Vyayama, Vyavaya, Diwaswapna, Vegavarodha

Chikitsa of Kushtha -

"या क्रिया व्याधिहरणी सा चिकित्सा निगद्यते।

दोषधातुमलानां वा साम्यकृत स एव रोगहृत॥"

भा. पू. खं. मिश्र. ११

There are many definations of Chikitsa but it can be well summarised by the above verse. It says that Chikitsa is a procedure by which the disease is cured or Dosha, Dhatu & Mala are brought in Samyavastha.

Again there are many types of Chikitsa as Nidana Parivarjana, Shodhana, Shamana, Rogaprashamana, Apunarbhava etc. From all types & condition of the patient, a Bhishak has to select the exact Chikitsa by Yukti.

Chikitsa sutra of Kushtha according to different samhitas is given below

Charaka Samhita -

In this the importance is given to Dosha Chikitsa

"सर्वं त्रिदोषजं कुष्ठं दोषाणां तु बलाबलम्।"

च. चि. ७/३१

It says that all Kushthas are Tridoshaja, so Chikitsa is done by Bala & Lakshanas of Dosha. Chikitsa of more vitiated Dosha is done first. So according to the Dosha

"बहुदोषः संशोध्यः कुष्ठि बहुशोऽनुरक्षता प्राणान्।

च. चि. ७/४१

"वातोत्तरेषु सर्पिवमनं श्लेष्मोत्तरेषु कुष्ठेषु। पित्तोत्तरेषु मोक्षो रक्तस्य विरेचनं चाग्रे॥ वमनविरेचनयोगाः कल्पोक्ताः कुष्ठिनां प्रयोक्तव्याः। प्रच्छनमल्पे कुष्ठे महति च शस्तं सिराव्यधनम्॥" च. चि. ७/३९,४०

Charaka has described different Yogas for Vamana, Virechana, Asthapana, Anuvasana & Nasya. He has also described various conditions for use of Raktamokshana, Kshara, Agada, Pradeha & Yogas described in treatment of Raktapitta. Tikta Ghritas are used in Pittaja Kushtha.

Sushrut Samhita -

In Kushtha Chikitsa Sushruta has described different Yogas according to the Doshas. He has described Siravedha, Lepa, Vamana, Virechana & Pradeha.

Ashtang Hridaya -

He has described Chikitsa according to Doshas & also Snehana, Vamana, Virechana, Siravedha, Swedana, Lekhana, Kshara Agada.

Kalpas -

Kalpana	**Charaka**	**Sushruta**	**Vagbhatta**
Kwatha	Patoladi		Patolmuladi, Darvyadi, Nishadi, Mustadi
Choorna	Mustadi, Triphaladi		Bhunimbadi, Lakshadi, Mustadi

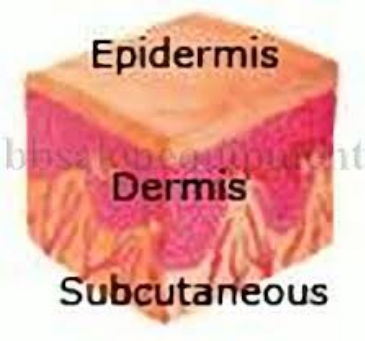
Asava	Madhwasava, Kanakbindwarishta		
Taila	Kushthadi, Shweta karaviradya, Shweta karavirpallawadya, Tiktekshwakwadi, Kanakakshiri	Dwipatrakadi, Krushnasarpa Bhasma Siddha, Vajraka, Kushthahara, Mahavajraka, Kushthahara, Lakshadi	Sikthakadi, Kushthadi, Tuvaraka, Vajraka, Mahavajraka
Ghruta	Tiktashatpala, Mahatiktaka, Mahakhadiara	Mahatiktaka, Mahaneela, Tiktaka, Neela	Tiktaka, Mahatiktaka, Vajraka, Mahavajraka, Danti Ghruta, Avartaki Ghruta, Nishadi
Lepa		Dadruhara, Sindhudbhutadi, Hemakshiryadi, Putikitadi, Shwitrahara kukkutapurisha, Kilasahara, Tutthadi, Tilwakadi, Gomutradi, Putikadi	Karaviradi, Shweta karaviradi, Vicharchikahara, Manashiladi, Karanjadi, Marichyadi
Vati			Saptasama, Nishadi, Chandrashakaladi
Avaleha			Sitadi, Shashankalekhadi

MODERN MEDICAL LITERATURE -

Anatomy and Phyisology of Skin -

Skin is an organ of the integumentary system, which also consists of hair, oil and sweat glands, nail and sensory receptors. This system helps maintain a constant body temperature, protects the body, and provides sensory information about the surrounding environment. Of all the body's organs, none is more easily inspected or more exposed to infection, disease and injury than the skin.

Structure of skin -



The skin, also known as cutaneous membrane, is the largest organ of the body in both surface area and weight and covers the external surface of the body. In adults, the skin covers an area of about 2 square meters and weighs 4.5 to 5 kg., about 7% of total body weight. It ranges in thickness from 0.5 mm on the eyelids to 4.0 mm on the heels. Over most of the body, it is 1 to 2 mm thick. The skin consists of two parts. The superficial thinner portion, which is composed of epithelial tissue, is the epidermis. The deeper, thicker connective tissue portion is the dermis, while the epidermis is avascular, the dermis is vascular. Below the dermis is the subcutaneous layer called hypodermis which consists of areolar and adipose tissues. This layer, which is not the part of the skin, serves as storage deport for fat and contains large blood vessels and nerve endings that supply the skin.

EPIDERMIS -

The epidermis is composed of keratinized stratified squamous epithelium. It contains four types of cells keratinocytes, melanocytes, Langerhans cells, and merkel cells.

(i) Keratinocytes –produce the protein keratin that helps waterproofing and protect the skin and underlying tissues.

(ii) Melanocytes –which produce the pigment melanin, comprise about 8% of epidermal cells.

(iii) Langerhans cell –they arise from bone marrow and migrate to the epidermis. They interact with white blood cells called helper T cells in immune responses and are easily damaged by UV radiation.

(iv) Merkel cell-are thought to function in the sensation of skin.

Four or five distinct layers of cells form the epidermis. In most regions of the body the epidermis is about 0.1 mm thick and has four layers. The epidermis is thicker (1 to 2 mm) and has five layers where exposure to friction is greatest, such as in the palms and soles. Constant exposure of thin or thick skin to friction or pressure stimulates formation of a callus, an abnormal thickening of the epidermis. The names of the five layers, from the deepest to the most superficial are as follows:

1. Stratum Basalae/ Stratum germinativum

This is the outer covering of skin in mammals. It is the deepest layer of the Epidermis which is composed of a single row of cuboidal or columnar keratinocytes. Some cells in this layer are stem cells that undergo cell division to produce new keratinocytes continually. The keratinocytes contain keratin intermediate filaments that form the tough protein of this epidermal layer. Keratin protects the deeper layers from injury. Melanocytes and Merkel cells with their associated Merkel discs are scattered among the keratinocytes of the basal layer.

2. Stratum Spinosum :

It is superficial to Stratum Basalae. This consists of numerous keratinocytes arranged in 8-10 layers. The keratinocytes have the ability to divide and they produce coarser bundles of keratin in intermediate filaments than those of basal layer. The cells of Stratum Spinosum are rounded and larger in living tissue but shrink and pull apart to appear to be covered with thorn like spines in microscopic examinations. At each spine like projections, bundles of keratin intermediate filaments insert into desmosomes which tightly join the cells to one another. This arrangement provides both strength and flexibility to skin. Langerhans cells and projections of melanocytes are also present in this layer.

3. Stratum Granulosum / Granular layer:-

The stratum granulosum is a thin layer of cells in the epidermis. Keratinocytes migrating from the underlying stratum spinosum are known as granular cells in this layer. These cells contain keratohyalin granules, which are filled with proteins that appear to bind the keratin filaments together. Therefore, the main function of keratohyalin granules is to bind intermediate keratin filaments together. At the transition between this layer and the stratum corneum, cells secrete lamellar bodies (containing lipids and proteins) into the extracellular space. This results in the formation of the hydrophobic lipid envelope responsible for the skin's barrier properties. Concomitantly, cells lose their nuclei and organelles causing the granular cells to become non-viable corneocytes in the stratum corneum.

4. Stratum Lucidum

The stratum lucidum (Latin for "clear layer") is a thin, clear layer of dead skin cells in the epidermis named for its translucent appearance under a microscope only in areas of thick skin like palms of the hands and the soles of the feet. Located between the stratum granulosum and stratum corneum layers, it is composed of three to five layers of dead, flattened keratinocytes. The keratinocytes of this layer do not feature distinct boundaries and are filled with eleidin, an intermediate form of keratin. The thickness of the lucidum is controlled by the rate of mitosis of the epidermal cells. In addition, melanosomes determine the darkness of the stratum lucidum. The cells of the layer are surrounded by an oily substance that is the result of the exocytosis of lamellar bodies accumulated while the keratinocytes are moving through the stratum spinosum and stratum granulosum.

5. Stratum Corneum-

The stratum corneum (Latin for 'horny layer') is the outermost layer of the epidermis, consisting of dead cells (corneocytes). This layer is composed of 15-20 layers of flattened cells with no nuclei and cell organelles. Their cytoplasm shows birefringent filamentous scleroprotein keratin. The stratum corneum is composed of three lipid components: ceramides, cholesterol, and fatty acids. The purpose of this layer is to form a barrier to protect underlying tissue from infection, dehydration, chemicals and mechanical stress. Desquamation, the process of cell shedding from the surface of the stratum corneum, balances proliferating keratinocytes that form in

the stratum basale. These cells migrate through the epidermis towards the surface in a journey that takes approximately fourteen days.

DERMIS -

The dermis is much thicker than epidermis, and this thickness varies from region to region in the body, reaching its greater thickness on palms and soles. The dermis is composed of dense irregular connective tissue containing collagen and elastic fibers. This has great tensile strength and ability to stretch and recoil. Few cells in dermis include predominantly fibroblasts, macrophages and adipocytes. It also contains no stripped muscles, blood vessels, nerves, hair, sweat gland and sebaceous glands and nerve corpuscles. The dermis is divided in thin superficial papillary region and a thick deeper reticular region. These layers provide skin with strength, extensibility and elasticity.

The papillary region is one fifth of the total thickness which consists of dense irregular connective tissue containing interlacing bundles of collagen and coarse elastic fibers. It has small nipple shaped structure called dermal papillae. Some papillae contain capillary loops, some contain tectile receptors and some may even have free nerve endings.

The reticular region is attached to the underlying organs, such as bone and muscle, by the subcutaneous layer, also called the hypodermis or superficial fascia. It consists of bundles of thick collagen fibers which are arranged in more netlike manner, scattered fibroblasts, and various wondering cells and adipose cells.

Skin performs the following functions:

1. **Protection**: Skin acts as an anatomical barrier from pathogens and damage between the internal and external environment in bodily defense; Langerhans cells in the skin are part of the adaptive immune system.
2. **Sensation**: Skin contains a variety of nerve endings that react to heat and cold, touch, pressure, vibration, and tissue injury; see somato-sensory system and haptics.
3. **Heat regulation**: Skin contains a blood supply far greater than its requirements which allows precise control of energy loss by radiation,

convection and conduction. Dilated blood vessels increase perfusion and heat loss, while constricted vessels greatly reduce cutaneous blood flow and conserve heat.

4. **Control of evaporation**: Skin provides a relatively dry and semi-impermeable barrier to fluid loss. Loss of this function contributes to the massive fluid loss in burns.
5. **Aesthetics and communication**: Skin is useful in assessing our mood, physical state and attractiveness.
6. **Storage and synthesis**: Skin acts as a storage center for lipids and water, as well as a means of synthesis of vitamin D by action of UV on certain parts of the skin.
7. **Excretion**: Sweat contains urea; however its concentration is 1/130th that of urine, hence excretion by sweating is at most a secondary function to temperature regulation.
8. **Absorption**: The cells comprising the outermost 0.25–0.40 mm of the skin are "almost exclusively supplied by external oxygen", although the "contribution to total respiration is negligible". In addition, medicine can be administered through the skin, by ointments or by means of adhesive patch, such as the nicotine patch oriontophoresis. The skin is an important site of transport in many other organisms.
9. **Water resistance**: The skin acts as a water resistant barrier so essential nutrients are not washed out of the body.

MODERN DISEASE REVIEW -

Psoriasis -

Although its location makes it vulnerable to damage from trauma, sunlight, microbes and pollutants in the environment, the skin’s protective features ward off such damage. But sometimes it irritates, clogs, or inflames your skin which can cause skin disease.

Definition -

Psoriasis is a chronic autoimmune skin disorder with polygenic predisposition combined with triggering environmental factors such as trauma, infection or medication characterized by erythematous scaly papules and plaques, pustular and erythrodermic eruption.

SYNONYMS -

Healthy man's disease, Schuppenflechte.

ETYMOLOGY -

The word psoriasis is derived from the Greek word "Psora" and "Iasis"
Psora means Itch or scale and Iasis means condition.

HISTORY -

Psoriasis showed up when Egyptian mummies were unearthed, kept under wraps for thousands of years. Greek "Father of Medicine" Hippocrates (460-377 B.C.) replaced superstition with knowledge in treating skin ailments by introducing tar into the mix—but he also prescribed topical arsenic. Noted physician Galen (133-200 A.D.) identified psoriasis as a skin disease through clinical observation and was the first to call it psoriasis. But, along with arsenic, he suggested applying broth in which a viper had been boiled. It was lumped together with similar skin disorders like leprosy, which was believed to be contagious and had social stigma, isolation and shunning. People with psoriasis, thousands in medieval Europe were forced to warn others of their arrival by ringing a clapper. In the past, possible culprits thought to cause psoriasis included poor nutrition, microbes, the blood stream, poor hygiene, allergies and malfunctioning internal organs. Numerous pre-19th-century, ill-conceived treatments were put forth to "cure" skin problems akin to psoriasis. Patients on the receiving end were subjected to remedies and recipes that included cat and dog dung, fresh oil, goose oil and semen, onions mixed with sea salt and urine, and other waste-product, ingredient-rich formulations. Hit-or-miss ideas included lubricating the skin and wrapping the body in sheets for days to create an occlusion (cover) to loosen scales. Popular applications sometimes included toxic ingredients such as nitrate, sulfur and mercury, causing side effects harmful enough to outweigh any benefits. Most solutions were smelly, irritating and time-consuming.

Here are some of the many historical "firsts" that contributed to progress in understanding psoriasis and treating it. At the Hospital Saint-Louis Paris in the early 19th century, Jean-Louis Ailbert classified skin diseases according to cause, appearance, duration, course and response to treatment. England's Dr. Robert Willan, around 1809, first recognized psoriasis as a specific clinical entity and described it accurately. Willan made the study of skin his life's work. In 1836, Henry Daggett Bulkley opened Broome Street dispensary in New York, the first in the United States for treating psoriasis and other dermatological disorders. Doctor Ferdinand von Hebra, founder of modern dermatology, in the 1840s eliminated the word "lepra" from the clinical description of psoriasis, separating it from leprosy for all time. In the 1960s, investigation of psoriasis as an autoimmune condition began. Psoriatic arthritis was finally identified as a clinical entity in its own right. Twentieth-century recognition of the underlying mechanisms by which psoriasis manifests itself led to treatments based on evidence of effectiveness for each person, according to individual needs rather than trial and error. These include topical (applied to the skin), laser and phototherapy, and systemic (oral, injected or IV medications that suppress the immune system). Although known for its healing properties since biblical times, Israel's Dead Sea began to be touted as an effective therapy source in the 1970s. The early 1990s produced the Human Genome Project, sparking the systematic search to identify the genes that determine psoriasis. Biologic medications, introduced in the latter part of the 20th century, became the cutting edge for psoriasis research and treatments. These agents are made from substances found in living cells and act on the body's immune system. They treat psoriasis by targeting overzealous immune cells, which cause the disease.

EPIDEMIOLOGY -

Prevalance:

There are a growing number of population-based studies providing worldwide prevalence estimates of psoriasis. Prevalence of psoriasis varies in different parts of the world. In Western populations the prevalence of psoriasis is around 2-3%. The National Psoriasis Foundation found prevalence of 2.1% in Americans. As per study around one-third of people reported family history of psoriasis.

In the Canada, the prevalence of psoriasis was estimated to be around 4.7%. Data from Europe show little variation in countries with a range from 1.4% (Norway), 1.55% (Croatia) and 1.6% (UK). In East Africa, the figure was 0.7% and in the Henan district of China only 0.7% was found affected.

Prevalence studies from India are mostly hospital-based. Okhandiar et al. [10] collected a comprehensive data from various medical colleges located in Dibrugarh, Calcutta, Patna, Darbhanga, Luckhnow, New Delhi and Amritsar. They found that the incidence of psoriasis among total skin patients ranged between 0.44 and 2.2%, with overall incidence of 1.02%. They noted that the incidence in Amritsar (2.2%) was higher as compared to other centers in Eastern India and speculated that it may be related to different environmental conditions (extremes of temperature), dietary habits, and genetic differences. The ratio of male to female (2.46:1) was very high which could not be clearly accounted for. Highest incidence was noted in the age group of 20-39 years and the mean age of onset in males and females was comparable.

In a study from tertiary health care center from North India, psoriasis patients accounted for 2.3% of the total dermatology outpatients. Of the total psoriasis patients, 67% were men and 33% were women, male to female ratio being 2.03:1. Ages of patients ranged from infancy to eighth decade, mean age being 33.6 years. Children accounted for 4.4% of total psoriasis patients. Women had slightly lower mean age of onset (27.6 years) compared to the men (30.9 years).

So, it can be inferred that in India the prevalence of psoriasis varies from 0.44 to 2.8%, it is twice more common in males compared to females, and most of the patients are in their third or fourth decade at the time of presentation.

Mortality/Morbidity:

The mortality is exceedingly rare in psoriasis. Systemic corticosteroid therapy provokes pustular flares in psoriasis which can be fatal. Morbid conditions in psoriasis include pruritus, dry and peeling skin, fissuring, and causes great discomfort to the patient.

Race:

Persons of any race can be affected by Psoriasis. Studies show a higher prevalence in western European and Scandinavian populations, in which, 1.5-3% of the population is affected by psoriasis.

Sex:

Both sexes are equally affected by Psoriasis. Adult males and females are equally affected.

Age:

The disease can occur at any age. But most commonly it occurs between the ages of 15 and 25 years. Onset before the age of 40 indicates a greater genetic susceptibility and a more severe or recurrent course of psoriasis.

Family history:

In a study one-third of people reported a family history of the disease. Genetic loci have been found by researchers associated with the condition. A Study in cases of monozygotic twins suggested that there is a 70% chance of a twin developing psoriasis if the other twin has psoriasis. The concordance is around 20% for dizygotic twins. It suggests the genetic predisposition of the disease.

Severity -

The grading in Psoriasis is done as mild (less than 3% of the body is affected), moderate (3-10% of the body is affected) or severe. There are several scales which can be used for measuring the severity of psoriasis. The severity of psoriasis depends on the total affected area of body surface; other signs such as degree of plaque, redness, thickness and scaling; previous treatments taken & its effectiveness; and also the social & psychological burden on person.

Most widely used measurement tool for psoriasis is PASI score i.e. Psoriasis Area Severity Index. The body is divided into four sections {head (H) (10% of a person's skin); arms (A) (20%); trunk (T) (30%); legs (L) (40%)}. Each of these areas is scored by itself, and then the four scores are combined into the final PASI. For each section, the percent of area of skin involved, is estimated and then transformed into a grade from 0 to 6. Within each area, the severity is estimated by three clinical

signs: erythema (redness), induration (thickness) and desquamation (scaling). Severity parameters are measured on a scale of 0 to 4, from none to maximum.

The sum of all three severity parameters is then calculated for each section of skin, multiplied by the area score for that area and multiplied by weight of respective section (0.1 for head, 0.2 for arms, 0.3 for body and 0.4 for legs).

ETIOLOGY AND TRIGGERS OF PSORIASIS -

The cause of Psoriasis was thought to be linked to Leprosy by various authors. Some authors have postulated that the cause is unknown and appears to be multifactorial due to its appearance. It is now clear that psoriasis gets inherited & runs in families but it does not follow a classical autosomal Mendelian profile.

The factors that contribute to psoriasis are listed below:

A. Genetic Factor:

As stated by Solomons in 1988, there is 30% familial incidence in psoriasis. Hunter in 1995 described that there is a 15% chance of developing psoriasis in an off spring if one of his parent is affected. And it is increased to 50% if both parents are affected. The studies show that the Major Human Leucocytes Histocompatibility (HLA) are associated with disease. These antigens are surface antigens & they are inheritable. The corresponding chromosomal region is called as the Major Histocompatibility (MHC). It lies on the short arm of sixth chromosome. HLA B13, B17, B37 CW6, DR7 are HLA types most frequently associated with the Psoriasis.

B. Biochemical:

Hunter, Savin and Dahl (1989) have described that in psoriasis there is altered Arachidonic acid metabolism which results in decreased Cyclic Nucleotides, raised Polyamines and raised Proteases. Hunter (1995) described that the increased levels of prostaglandins, leukotrienes and hydroxyeicosatetraenoic acids in the epidermis leads to increased epidermal proliferation.

C. Immunological:

Hunter (1995, p. 949) has described that "The inflammatory reaction may be part of an immunological response to as yet unknown antigens".

D. Dermal:

Hunter (1995) has stated that increased replication and metabolism of dermal fibroblasts causes increased epidermal cell proliferation in Psoriasis.

TRIGGERING FACTORS -

Factors which may trigger psoriasis falls under two groups i.e. local factor and systemic factor.

A. Local Triggering Factors:

These factors play a key role in the pathogenesis of the psoriatic lesion. For example psoriatic lesion following an injury of the skin. In about one-half of all psoriatic patients it occurs at some time during the course of their disease (Hellgren, 1967). It is known as Koebnear phenomenon & it is elicited at the site of trauma, postoperative wounds, sun burn, vaccination site. Climate might act as a triggering factor. Yasuda et al (1971) stated that the prevalence of psoriasis in high in the cold season & also Farber and Nall (1974) described that 89% of their patients showed a worsening of symptoms in cold weather and 80% improvement in sunlight.

Clinical and experimental elicitors of the Koebnear response in Psoriasis (From Shelley and Arthur, 1958)

Clinical Stimuli	**Experimental stimuli**
- Bites (insects, animals)	- Scarification
- Burns	- Electrodesiccation
- Dermatitis	- Tape stripping
- Drug reactions	- Primary irritants
- Excoriations etc	- Liquid nitrogen

B. Systemic Factors:

These are as follows

1. **Infection**: -

   Infection plays an important role in the pathogenesis of psoriasis. Following table shows presence of different infections in psoriasis.

Infection	Manifestation
Fever	Psoriasis Vulgaris
Viral Infection	Guttate Psoriasis
Tonsillitis	Psoriasis Psutulosa
Revaccination and Febrile tonsillitis	Generalized Psoriasis Vulgaris
Tonsillitis + Penicillin	Guttate or Erythrodermic Psoriasis
Diphtheria Vaccine	Relapse over whole body
Catarrhal infection	Guttate Psoriasis
Pharyngitis	Guttate Psoriasis
Bronchitis, Tonsillitis	Guttate Psoriasis
Cystopyelitis + Penicillin	Erythrodemic Psoriasis

2. **Endocrine Factors:**

   The following harmones are found to be abnormal in psoriasis patients.

   - Dehydroepiandrosterone (Holzmann et al, 1976)
   - Aldosterone (Van de Kerkhot, 1982)
   - Somatotrophic hormone (Weber et al, 1981)

3. **Metabolic Factors**:

   Improper protein digestion is followed by disturbance in the formation of cAMP thereby increases the rate of cell proliferation. Also low serum calcium levels in patients with hypoparathyroidism exacerbates psoriasis.

4. **Light**:

   Though Sunlight is beneficial but it is obsereved that sunlight exposure may aggravate the lesions in psoriasis in 10% of patients.

5. **Drug:**

   Many drugs are found to aggravate lesions of psoriasis, particularly beta blockers such as propranolol.

   Following are some other drugs which may worsen the condition

   - Beta blockers - Nadolol, Propranolol
   - Antimalarial - Mepacrine , Chloroquine , Quinine
   - Clonidine
   - Corticosteroids (Rebound phenomenon when stopped)

- Digoxin
- Gold
- Indomethacin
- Lithium (Probably by effect on cyclic AMP levels)
- Potassium Iodide

6. **Climate**:

   Psoriatic lesions tend to flare up in winter season; & it resolves in warm weather.

7. **Smoking**:

   Smoking is associated with increased risk of chronic plaque psoriasis.

8. **Alcohol**:

   Alcohol is considered as a risk factor for psoriasis.

9. **Dialysis**:

   Dialysis may precipitate Psoriasis.

10. **Psychological upsets / Emotional disturbances**:

    (Solomons, 1988; Hunter, 1995; Habif, 1996; Psoriasis Association, 1999). Stress may increase the severity of psoriatic lesions.

Immunological factor:

According to the studies done, psoriasis can be triggered when an antigen(e.g. streptococcal) is presented to the cutaneous T cells by HLA DR antigen presenting cells, which may be lengerhens cells or possibly keratinocytes.

PATHOGENESIS-

Development of lesions:

Many cellular events are taking place in both newly appearing and established psoriatic lesion of involved & uninvolved skin. Detailed light, electron microscopic, immunohistochemical & molecular studies of skin provide useful information for inferring cause & effect relationship between these cellular events.

Uninvolved psoriatic skin:

The normal appearing skin of psoriatic patient manifests subclinical morphologic & biochemical changes, involving lipid biosynthesis, predominantly found in stratum corneum. It includes changes in the levels & composition of phospholipids, free α-amino acids, hydrolytic enzymes & several dehydrogenases. It is known as histochemical parakeratosis.

Initial lesion:

Marked edema & mononuclear cell infilterates are found in upper dermis in initial macular lesion. It is usually confined to one or more papillae. Overlying epidermis becomes spongiotic with loss of granular layer. The venules in upper dermis dilate & becomes surrounded by mononuclear cell infilterete.

Developing lesion :

Studies of margins of larger lesion (0.5-1cm) show approximate 50% increase in the epidermal thickening in the skin, adjucent to lesion. There is increase in metabolic activity in epidermal cells, increased DNA synthesis, increase in no. of mast cells & dermal macrophages, and increased mast cell degranulation. Also there is increase no. of dermal T cells & dendritic cells. Towards the centre is the marginal zone with increasing dermal thickness, increasing parakeratosis & capillary elongation with perivascular infilteration of lymphocyte and macrophages. Rete ridges begin to develop in marginal zone. Extracellular spaces becomes enlarged.

Mature lesion:

It is characterized by uniform elongation of rete ridges with thinning of epidermis overlying the dermal papillae. Epidermal mass is increased 3 to 5 times. The basal keratinocyte cycling value rises to 100% in psoriatic skin which is only about 10% in normal skin. Widening between extracellular space persists but is less prominent than in developing lesion. The tips of rete ridges are fused with adjacent ones with thin, elongated, edematous papillae containing dilated, tortuous capillaries. The inflammatory infilterate around blood vessels becomes dense. Lymphocytes now observed in epidermis. Neutrophills accumulate in stratum corneum (Munro's microabcesses) & less frequently in spinous layer (spongiform pustule of Kogoji). Collection of serum is also seen in epidermis and stratum corneum.

Cellular participants in Psoriasis:

T cells:

In 1984, it was demonstrated that the eruption of psoriatic skin lesions coincided with epidermal influx & activation of T cells. Also further it was shown that resolution of psoriasis was preceded by depletion of T cells from epidermis. Several studies found that CsAs to be effective in psoriasis through blockade of T cells rather than keratinocytes. Also psoriasis was triggered or cured by bone marrow transplantation. In 1996, it was shown that psoriasis process could be induced by injecting activated T cells into mice. Responses of T cells are antigen specific as CD4+T & CD8+T cells have been found in psoriatic lesions.

Natural killer cells:

NK cells are major producer of INF-γ (cytokines). Nk cells are present in psoriasis & can trigger formation of psoriatic lesion. NK cells are regulated by killer immunoglobulin like receptors (KIRs) which are family of ~15 closely linked genes located on chromosome 19q13.4. KIR genes have been associated with psoriasis & psoriatic arthritis.

Dendritic cells:

Several subsets of DCs are found markedly increased in psoriatic lesions, the specific role of which is still unclear.

Langerhans cells:

LCs have a well defined role as antigen presenting cells (APCs) in contact dermatitis, but their role in psoriasis is unclear.

Dermal dendritic cells:

Immunophenotyping studies have revealed that the population of dermal Dcs is quiet complex and that psoriasis lesions demonstrate a marked increase in no. & maturation state of dermal DCs. These are of three types

1. Resident dermal DCs - account for 10 to 15% of DCs in psoriatic lesions.
2. Mature DCs - forms large aggregates with T cells in dermis.
3. Inflammatory DCs – account for 80 to 90% of DCs in psoriatic lesions.

Inflammatory Dendritic Epidermal cells:

Thought to be variant of inflammatory myeloid DCs that migrate into epidermis. Absent in normal skin & no. is markedly increased in psoriatic lesion.

Plasmacytoid dendritic cells:

It is absent in normal skin. It is significantly increased in uninvolved & involved psoriatic skin. Inhibition of PDCs was shown to prevent development of psoriasis in a mouse xenograft model.

Mast cells:

These are observed in initial & developing lesions with prominent mast cell degranulationin both eruptive psoriasis & in relapses after discontinuation of topical corticosteroid therapy.

Macrophages:

These are prominent in initial & developing psoriasis lesions. These play a key role in pathogenesis via production of tumor necrosing factor TNF-α & iNOs & IL-23.

Neutrophills:

Commonly seen in upper epidermis of psoriatic lesions, appear late during development of lesions, there no. is quiet variable & their role is unclear.

Keratinocytes:

These are major producer of proinflammatory cytokines, chemokines & growth factors. Psoriatic keratinocytes are engaged in an alternative pathway of keratinocyte differentiation called regenerative maturation, which is activated in response to immunologic stimulation in psotriasis.

Other cell types:

Endothelial cell & fibroblast

Endothelial cells are strongly activated in developing and mature lesions of psoriasis. It increases blood flow 7 controlls the flux of leukocytes & serum proteins into lesions. Fibroblast supports keratinocyte proliferation & this process is exaggerated in psotriasis.

Signailing molecules in psoriasis:

Cytokines & Chemokines:

The cytokine network in psoriasis is extremely complex, involving the actions & interactions of multiple cytokines, chemokines & growth factors & their receptors in addition to other mediators produced by multiple cell types.

The most prominent cytokines involved are INF-γ, TNF-α, IL-2, IL-6, IL-8, IL-15, Il-17, IL-18, IL-19, IL-20, IL-21, IL-22, IL-23 & chemokines are MIG/CXCL9, IP-10/CXCL10, I-TAC/CXCL11 & MIP-3α/CCL20

Innate immune mediators:

Several mediators of innate immunity are abnormally expressed in psoriasis which are the antimicrobial peptides human β-defensin-2 (hBD-2) & cathelicidin (LL-37). Both of these are much more highly over expressed in psoriasis.

Eicosanoids:

Its role is unclear. Levels of free arachidonic acid, leukotreine B4, 12-hydroxyeicosatetraenoic acid & 15- hydroxyeicosatetraenoic acid are increased in lesional skin.

Growth factors:

Multiple growth factors are overexpressed in psoriasis. Members of epidermal growth factor (EGF) family induce their own production in keratinocytes, including transforming growth factor-α, amphiregulin (AREG) & heparin binding EGF like growth factor. Nerve growth factor (NGF) is also overexpressed by keratinocytes in psoriatic skin & NGF receptors are increased in peripheral nerves of lesional skin.

Paracrine growth factors produced outside epidermal compartment may also play an important role in stimulating epidermal hyperplasia in psoriasis, including insulin like GF-1 & keratinocyte GF.

Protease & their inhibitors:

Multiple classes of proteinases by both keratinocytes & leukocytes are overexpressed in psoriatic lesions. Metallopoteinases release TNF-α, several EGF like GFs & many other cytokines. Serine proteases activate protease activated receptors. Each of these mechanisms stimulates keratinocytes proliferation. The protease inhibitors elasin, serpin B3 & serpin B13 are most markedly overexpressed in psoriatic lesions.

Integrins:

Severalobservations suggest an early role for α5 integrins & their ligand fibronectin in psoriasis. Fibronectin is increased in psoriatic epidermis. Fibronectin receptors are weakly expressed in normal skin but are strongly expressed in uninvolved as well as involved psoriatic skin. And fibronectin selectively increases keratinocyte proliferation.

Signal transduction:

Multiple signal transduction mechanisms are dysregulated in psoriatic epidermisincluding receptor tyrosin kinase, Akt, STAT, Src family kinase, Wnt & NFkB pathways. These abnormalities affect immunocyte activation & trafficking as well as keratinocyte responses of proliferation, differentiation & survival.

Psoriasis: Integrating Genetics & Immunology:

HLA-CW6:

As has been made clear by fine mapping, genetic linkage & association studies, HLA-C is the major genetic risk factor for psoriasis. Because it presents antigen to CD8+T cells, HLA-CW6 is an excellent cadidiate for functional involvement in psoriasis.

Non MHC Genes:

Most of the non MHC associations identified fall into four axes

1. IFN-γ / IL-23 / IL-17 signailing
2. NF-kB signailing
3. Inflammatory Dc function &
4. Keratinocyte differentiation.

CLINICAL FEATURES:-

History:

Onset at younger age & family history of psoriasis is associated with more widespread & recurrent disease. In acute disease there is sudden outbreak of lesions in short time, whereas in chronic form of disease lesions may persists unchanged for years. In some patients disease relapses frequently, weekly or monthly; while in some patients it is more stable.

Cutaneous lesions:

Classically the lesion of psoriasis presents as well demarcated, raised, red plaque with a white scaly surface. Size of the Lesion varies from pinpoint plaque to a larger one that covers large area of body surface. The skin under the scale is erythematous & bleeds when the scale is removed (Auspitz sign). The lesions are symmetrical.

Clinical patterns of skin presentation:

Psoriasis vulgaris, chronic stationary psoriasis, plaque type psoriasis:

It is the most common form of psoriasis. It is seen in almost 90% of patients. The lesions are red, scaly, symmetrically distributed plaques. These are characteristically localised to the extensor aspect of extremities, particularly the elbow & knees, scalp, buttock. Also the umbilicus & intergluteal cleft. Single small lesions may become confluent forming plaques which resembles a land map (psoriasis geographica). Some lesions may extend laterally & becomes circular (psoriasis gyrata). & sometimes lesions are ring like (annular psoriasis). Rupioid psoriasis means Cone or limpet shaped lesions, while ostraceous psoriasis refers to lesions resembling oyster shells. Elephantine psoriasis is characterised by thick scales, large plaques on lower extremities.

Guttate (Eruptive) psoriasis:

Latin gutta means “a drop”. It manifests in young adults. It is characterised by eruptions of small papules (0.5 – 1.5 cm in diameter) over the upper trunk & proximal extremities. Streptococcal throat infection precedes the onset of guttate psoriasis & it has strong association with HLA Cw6.

Small plaque psoriasis:

Clinically it resembles Guttate psoriasis, but can be distinguished by certain characteristics. It typically manifests in old age. It is chronic & lesions are larger (1-2 cm), thicker & scalier.

Inverse (Flexural) psoriasis:

The lesions may be localised in major skin folds like axillae, the genitor-crural region, and neck. There is minimal scaling or it may be absent. Lesions are erythematous & sweating is impaired at the affected sites.

Erythrodermic psoriasis:

It is generalised form of the disease & affects all body sites i.e. face, hands, feet, nails, trunk & extremities. Besides other symptoms of psoriasis erythema is most prominent & scaling is superficial. Hypothermia is present because of vasodilation. Due to occlusion of sweat glands skin is hypohydrotic. Edema is present over lower extremity. Cardiac failure, Hepatic & Renal impairement may occur.

Pustular psoriasis:

There are some clinical varients of pustular psoriasis

- Generalised pustular psoriasis (von Zumbusch type)
- Annular pustular psoriasis
- Impetigo herpetiformis.

Two forms of localised pustular psoriasis are

- Pustulosis Palmaris et plantaris
- Acrodermatitis continua of Hallopeau

In childrens complication like lytic lesion of bones occurs.

Generalised pustular psoriasis (von Zumbusch):-

It is acute form of psoriasis, occurring in waves of fever & pustules, characterised by attacks of fever & sudden eruptions of generalised pustules (2-3cm diameter) over trunk & extremities including nail beds, palms & soles. As disease advances fingertips may become atrophic & erythema spreads leading to erythroderma. The

complications are life threatening & includes hypocalcaemia, bacterial superinfection, sepsis & dehydration.

Exanthematic pustular psoriasis:-

It follows a viral infection. It consists of widespread pustules with generalised plaque psoriasis.

Annular pustular psoriasis:-

It is a rare variant, presents in annular or circinate form. Lesions have tendency to spread & form enlarged rings. Characteristically lesions are pustules on ring like erythema.

Sebopsoriasis:

It presents with erythematous plaques with greasy scales localised to seborrheic areas i.e. scalp, nasolabial folds, perioral areas etc.

Napkin psoriasis:-

It begins at the ages of 3-6 months. It first appear in the diper area as a red area. After few days red papules appear on trunk & limbs having typical white scales. It may also appear on face. It disappears after the age of 1 year.

Linear psoriasis:-

It's a very rare form. Linear lesions commonly presents on limbs.

<u>Physical findings related to psoriasis:-</u>

Nail changes in psoriasis:

It is frequently found in 40% of patients. Nail involvement increases with age, extent & duration of disease and presence of psoriatic arthritis.

The changes are as follows

Nail segment involved	Clinical signs
Proximal marix	Pitting, Onychorrhexis, Beau lines
Intermediate matrix	Leukonychia
Distal matrix	Focal onycholysis, thinned nail plate, erythema of the lanula
Nail bed	"Oil drop" sign or "Salmon patch", subungal hyperkeratosis, Onycholysis, splinter haemorrhages
Hyponychium	Subungal hyperkeratosis, Onycholysis
Nail plate	Crumbling & destruction
Proximal & lateral nail folds	Cutaneous psoriasis

Differential Diagnosis:-

DDs	Most Likely	Consider	Always Rule Out
Psoriasis Vulgaris	• Discoid/ nummular eczema • Cutaneous T-cell lymphoma • Tinea corporis	• Pityriasis rubra pilaris • Seborrhic dermatitis • Systemic lupus erythematosus • Erythrokeratoderma • Inflammatory linear verrucous epidermal navus • Hypertrophic lichen planus • Lichen simplex chronicus • Contact dermatitis • Chronic cutaneous lupus erythromatosus/discoid lupus erythematosus • Hailey-Hailey disease	• Bowens disease • Extramammary Paget's disease

		• Intertrigo • Candida infection	
Guttate	• Pityriasis rosea • Pityriasis lichenoides chronic • Lichen planus	• Small plaque psoriasis • PLEVA • Lichen planus • Drug eruption	• Secondary syphilis
Erythrodermic	• Drug induced erythroderma • Eczema • CTCL/Sezary syndrome • Pityriasis rubra pilaris		
Pustular	• Impetigo • Superficial candidiasis • Reactive arthritis syndrome • Superficial folliculitis	• Pemphigus foliaceus • Immunoglobulin A pemphigus • Sneddon-Wilkinson disease • Migratory necrolytic erythema • Transient neonatal pustular melanosis • Acropustulosis of infancy • Acute generalised exanthematous pustulosis	

Complications:-

Severe and long duration of psoriasis disease is associated with an increased morbidity and mortality from cardiovascular events. Younger patients with severe psoriasis have increased risk of myocardial infarction. Metabolic syndromes are 2.9 fold more frequent and most common are hypertension and hyperlipidemia.

Also there is increased risk of Rheumatoid arthritis, Crohn's disease, ulcerative coollitis, Hodgkin's lymphoma and cutaneous T cell lymphoma.

It is emotionally disabling, which arise from concerns about appearance. It results in lowered self esteem, embarrassment, social rejection, embarrassment & sexual problems. All this leads to depression & anxiety. Thus though it is not life threatening, it significantly impairs quality of life.

Prognosis and Clinical Course:-

Guttate psoriasis is self limiting & lasts from 12 to 16 weeks without treatment. One third or two third of these patients later develop chronic plaque type of psoriasis which is lifelong disease and has unpredictable intervals. Spontaneous remission may occur and the duration ranges from 1 year to several decades.

Erythrodermic and Generallised pustular psoriasis tend to be severe & persistent and have poorer prognosis.

Obesity, smoking, infection (streptococcal throat infection, HIV etc), certain drugs (antimalerials, β-blockers, NSAIDs, ACE-inhibitors) are the modifying factors for the disease.

Laboratory tests:-

Histopathological examination is rarely necessary but helpful in difficult cases to confirm diagnosis. Lipid profiles are altered. Serum uric acid level is increased in upto 50% of patients. C reactive protein, ESR, and serum immunoglobulin Ig A level is also increased.

Treatment of Psoriasis:-

Both topical and systemic treatment is available for psoriasis.

Topical treatment of psoriasis -

	Topical Steroids	Vitamin D Analogs	Tazarotene	Calcineurin Inhibitors
Mechanism of action	Bind to glucocorticoid receptor, inhibiting the transcription of many different AP-1 and NF-κB dependant genes, including IL-1 & TNF-α	Bind to vit D receptors influencing the expression of many genes. Promote keratinocyte differentiation	Metabolised to tazarotenic acid, which binds to retinoic acid receptors. Normalizes epidermal differentiation, antiproliferative effect.	Bind to FK-506 binding protein & inhibit calcineurin, decreasing the activaton of transcription factor, NF-AT, with resultant decrease in cytokine transcription, including IL-2
Dosing	Applied twice daily for 2-4 wks then intermittently (weekends)	Calcipotriene, 0.005% twice daily (weekdays), used alternating with topical steroids (weekends)	0.05% & 0.1%, apllied every night	Applied twice daily
Efficacy	Very effective as short term treatment	Efficacy increased by combination with topical steroids	Efficacy increased by combination with topical steroids	Effective for facial & flexural psoriasis.
Safety	Suppression of	Irritation at the	Irritation	Burning sensation

	hypothalamic-pituitary-adrenal axis, atrophy of epidermis & dermis. Formation of striae. tachyphylaxis	site of application, hyper-calcemia		at the site of application. Lymphoma.
Contraindications	Hyper-sensitivity, Active skin infection	Hyper-calcemia, vit D toxicity	Pregnancy, Hyper-sensetivity	Childrens under the age of 2 yrs.
Remarks/long term use	Increases risk of side effects	Well tolerated	UV doses should be reduced by one-third	malignancy
Pregnancy category	C	C	X	C

Systemic treatment for Psoriasis:-

	Cyclosporine A	Methotrexate	Acitretin	Fumaric Acid Esters
Mechanism of action	Binds cyclophilin blocking calcineurin, reducing effect of NF-AT, resulting in inhibition of IL-2 & other cytokines	Blocks dihydrofolate reductase, inhibiting purin & pyrimidine synthesis. Blocks AICAR transformylase, leading to accumulation of antiinflammatory adenosine.	Binds to retinoic acid receptors. Normalizes keratinisation & proliferation of epidermis	Interferes with intracellular redox regulation, inhibiting NF-κB translocation
Dosing	High dose approach:	Starting with	25-50 mg daily	Maximum dose

	5 mg/kg daily, then tapered Low dose approach: 2.5mg/kg daily increased upto 5mg/kg daily	2.5mg & increased upto 10-15mg wkly, max. 25-30mg wkly.		is 1.2g/day
Efficacy	Very effective, 90% patients shows marked improvement	Reduces severity upto 50%	Effective as monotherapy	Shows 80% reduction in area & severity
Safety	Nephrotoxicity, HTN, Immunosuppression, malignancy	Hepatotoxicity, long term- hepatic fibrosis, fetal abnormalities, myelosuppression, pulmonary fibrosis, skin reactions.	Hepatotoxicity, lipid abnormalities, fetal abnormalities, alopecia, hyperostosis	GI symptoms, diarrhoea, flushing headache, lymphopenia, acute renal failure.
Contraindications	Absolute: Uncontrolled HTN. Renal impairment, malignanacy	Absolute: Pregnancy, lactation, bone marrow dysfunction, alcohol abuse Relative: Hepatitis, renal insufficiency, severe infection	Absolute: pregnancy	Absolute: Chronic disease of GI tract, renal disease, pregnancy, malignancy.
Remarks/long term use	Intermittent short course treatments appear to be safer than long term use.	Safe for long term use	-	-
Pregnancy	C	X	X	C

category				
Monitoring	B.P., CBC, magnesium, uric acid, lipids. Repeat tests every 2-4 wks, then mnthly	CBC & LFTs wkly, then every 4-8wks.	CBC, LFTs, Lipids mnthly.	CBC, uric acid, monthly for first 6 mnths then after each 2 mnths.

	Hydroxyurea	6-Thioguanine	Mycophenolate Mofetil	Sulfasalazine
Mechanism of action	Inhibits ribonucleotide diphosphate reductase, inhibiting DNA synthesis in proliferating cells	Interferes with purin biosynthesis, inducing cell arrest & apoptosis	Inhibits ionosin monophosphate dehydrogenase blocking purin synthesis, selectively cytotoxic (lymphocytes)	Inhibits 5-lipoxygenase.
Dosing	500mg daily, increased to 1-1.5gm daily	Starting with 80mg twice wkly, increasing 20mg every 2-4 wks. Max dose- 160 mg three times wkly	500-750mg bid increased to 1-1.5gm bid.	500mg tid, if tolerated increased to 1gm tid.
Efficacy	Satisfactory	Upto 90% improvement in about 80% patients	Moderately effective	Moderately effective
Safety	Bone marrow suppression, macrocytosis, teratogenicity.	Bone marrow suppression, nausea, diarrhoea, hepatic	Constipation, nausea, vometting, diarrhoea, GI	Headache, nausea, vometting, rash, pruritis, haemolytic anaemia

		dysfunction	bleeding, myelosupression, HTN, peripheral edema	
Contraindications	Absolute: Bone marrow depression, pregnancy, lactation Relative: Renal abnormalities	Absolute: Thiopurin methyltransferrase deficiency, pregnancy, liver disease	Absolute: Severe infection, malignancy	Absolute: Hypersensetivity, G6PD deficiency
Remarks/long term use	-	Can be given Upto 33 mnths	-	-
Pregnancy category	D	D	C	B
Monitoring	CBC, LFTs repeat wkly for 4 wks, then every 3mnths	CBC, LFTs repeat wkly, then wvery 2 wks	CBC, repeat wkly for 6 wks then mnthly	CBC, G6PD Repeat wkly for 1 mnth. Then mnthly for 3 mnths, then every 3 mnths.

Phototherapy for Psoriasis:

	Narrowband UVB (NB-UVB; 310-331nm)	Broadband UVB (BB-UVB)	Psoralene & UVA light (PUVA)	Excimer Laser (308nm)
Dosing	Initially 50% of MED followed by 3-5 treatments	Initially 50% of MED followed by 3-5 treatments	Initial dose- 0.5-2.0 J/cm², twice wkly. Increase 40% /wk not	According to skin type & plaque thickness, twice wkly

	wkly.	wkly.	exceedinf 15 J/cm²	
Efficacy	>70% improvement after 4 wks. More effective than BB-UVA	47% improvement after 4 wks. More effective	Induces remission in 70-90% patients	High response rate.
Safety	Photodamage, polymorphic light eruption, skin ageing & cancer	Photodamage, polymorphic light eruption, skin ageing & cancer	Photodamage, skin ageing, melanoma, ocular damage	Erythema, blisters, hyperpigmentation
Contraindications	Absolute: Photosensetivity disorder Relative: melanoma	Absolute: Photosensetivity disorder Relative: melanoma	Absolute: Lactation, melanoma Relative: <10yrs, pregnancy	Absolute: Photosensetivity disorder Relative: melanoma
Remarks/long term use	Effective as monotherapy	-	<200 total treatments are recommended	Normal skin may be spared.

Biologic treatment for Psoriasis:

	Alefacept	Ustekinumab	Etanercept	Infliximab	adalimumab
Mechanism of action	Binds CD2 on T cells, blocks CD2-LAF3 interaction, thus interfere with T cell activation	Binds p40, blocks Th1 & Th17 differentiation & proliferation	Binds TNF-α & ueutralises its activity	High specificity for TNF-α	Targets TNF-α

Dosing	15mg IM once wkly for 12 wks	<100 kg 45 mg, >100 kg 90 mg subcute inj at 0,4 & then every 12 wks	25-50mg SC inj twice wkly.	5-10mg/kg at wks 0, 2 & 6 IV over 2 hrs	80 mg followed by 40 mg
Safety	Lymmphopenia, malignancy, serious infections	Serious infections, malignancy	Serious infection, pancytopenia, malignancy	Serious infections, malignancy	infections, cytopenias.
long term use	Upto 9 courses over 4-5 yrs with incremental benefits.	Safe uoto 76 wks	Safe	As intermittent therapy	-
Pregnancy category	B	B	B	B	B
Monitoring	CD4+T cell counts every 2wks	-	-	-	-

DRUG REVIEW

Introduction -

In Ayurveda, Aushadha is considered as one of the four fold constituents of Chikitsa Chatushpada and defined as the article that reverses or breaks the Samprapti without producing any side effects which has been looked upon as ideal drug. Ayurvedic literature contains infinite number of herbs. Their action has been explained on the basis of theories of Rasa, Guna, Vipaka Virya, and Prabhava. The right choice of a drug for described disease plays a vital role in the treatment of that particular disease. After the Physician (Bhishaka), the drug have second place in Chikitsa Chatushpada.

The word drug is derived from the French word "drouge", means a dry herb. A drug is defined as any predicament used for the purpose of prevention, diagnosis, relief or cure of the disease. According to W.H.O. 'A drug is any substance or product that is used or intended to be used to explore or to modify physiological or pathological states for the benefits of the recipient'. These definition tallies with Aushdha of old age Ayurveda, which aims at preservation of better health apart from treating of disease. Ayurveda classics speaks about the importance of drugs as ‘Nothing in world exists which does not have the therapeutic utility.’(A.H.9/10) Taking this fact into consideration Ayurvedic physicians have formulated single as well as compound drug for cure as well as prevention of various ailments.

Selection of the drug:

Psoriasis has been compared mostly to Ekakushtha, Kitibha & Mandala Kushtha by many of the scholars of the field. From these three Kushthas we are taking Ekakushtha, Kitibha in the inclusion criteria & Mandala kushtha is being excluded. The Ekakushtha, Kitibha both are Vatakaphaja Kushthas. Saptaparna is mentioned as Kushthaghna in Charaka Samhita & also it is said to be Vatakaphaghna. So considering all these points we have selected Saptaparna as trial drug in our study with the control drug 777 oil which is said to give good results in psoriasis.

SAPTAPARNA

HISTORICAL BACKGROUND -

VEDA:

There is no reference about the Saptaparna in Vedic literature.

PURANA:

REFERENCES MENTIONED IN RAMAYANA

It has been mentioned in many chapters with the names like Saptachada or Saptaparna.

SANSKRIT LITERATURE:

Raghuwansha Mahakavya written by Kalidasa contains a poetic description of Saptaparna. The Mada gandha of Pushpa and Ksheera of Saptaparna is similar in smell of the pheromones of the excited elephant so when the elephants of the King Raghu came in contact with the flowers of Saptaparna they began to secrete pheromones as if competing with each other & the elephants turned around and fled from the battle field & were uncontrolled by their mahouts.

SAMHITA:

In various Samhitas Saptaparna is described in detail. Achryas have described about its Synonyms, indications, uses & Kalpas. It will be studied in detail below.

NIGHANTU KALA:

In almost all Nighantus, synonyms and action of Saptaparna is mentioned.

MODERN ERA:

Taxonomy, External Morphology and chemical constituents are described.

DETAIL DESCRIPTION OF SAPTAPARNA -

Synonyms-

Saptaparna, Saptachchada, Saptavaha, Saptavha, Ayugmaparna, Gandhiparna, Guchapatra, Guchapushpa, Guchapushpaka, Gudhapushpa, Guhashayana, Chatraparna , Chatri, Triparna, Patravarna , Parni, Pruthakapatra, Bahuchada, Bahucheda , Bahutwaka, Bahuparna, Bruhat-twaka, Bruhat-patra, Madagandha, Munichada, Yugmapatra, Yugmapushpa, Vankibhumita, Vishalatwaka, Vishamachada, Vidyneya, Sharada, Shalmalichada, Shalmalipatraka, Shalmaliparnaka, Shuktipatra, Shuktiparna, Saptanga, Saptachada, Saptaparna, Sapthavaha, Sudirgha, , Suparnaka, Suvarna, Sthulapatra, Sharadiya, Madagandhi, Shiroruja.

Classification of Saptaparna -

Churna, Pradeha, Kushthaghna Mahakashaya, Udardprashamana Mahakashaya, Santarpana Samuthita vyadhihara, Vaman Dravya, Tikta Skandha, Kashaya Skandha, Shirovirechana Dravya, Aragwadadi Gana, Lakshadi Gana, Adhobagahara Dravya, Pratisaraniya Kshara, Chandanadi Varga, Chandanadi Varga, Ekapada Varga, Doshaghna Varga, Vatadi Varga, Aushadhi Varga, Vatadi Varga, Chandanadi Varga, Vatadi Varga, Kutajadi Varga.

Parts used -

Mula, Twaka, Sara, Swarasa, Kshara, Ksheera, Phala, Pushpa, Patra, Beeja.

Therapeutic indications of Saptaparna -

Prameha, Kushtha, Apasmara, Grahani, Shwasa, Visarpa, Kaphaja Mutrakricha, Stanyadushti, Vrana, Bhagandara, Prameha Pidaka, Kaphaja Vruddhi/ Granthi, Sthaulya, Danta Kashtha gata Visha, Dundubhi, Kshara Agada, Jwara, Sa-Krimi Vrana, Karnaroga, Krumidanta, Mukhapaka, Dustha Vrana, Mushaka, Visha, Krimi, Gulma, Vrana, Raktamaya, Shula, Raktarujaapaha

Pradhana Yoga of Saptaparna -

Kanakakshiri Taila, Vajraka Taila, Mahavajraka Taila, Syandana Taila, Chandanadya, Ghrita, Panchagavya Ghrita, Mahakhadir Ghrita, Mahatiktak Ghrita,

Mahapanchagavya, Ghrita, Lakshadi Churna, Mustadi Churna, Pathadi Churna, Vachadyadi Churna, Triphaladi Churna, Kshara Agada, Duralabhadya, Kshara, Yogaraja Rasayana, Siddharthaka Snana, Saptachchadadi, Yavagu, Panchtikta, Pancha Prasutic Basti.

Gunakarmas of Saptaparna -

No.	Rasapanchaka		Dh.Ni.	M.Ni.	Kai.Ni.	Bha.Ni.	Raj.Ni.	Sha.Ni.
1	**Rasa**	Kashaya			+	+		+
		Tikta					+	+
2	**Guna**	Snigdha			+	+		+
		Sara	+	+	+	+		+
		Surabhi	+					
		Madagandhi					+	+
3	**Veerya**	Ushna			+	+	+	+
4	**Vipaka**	Katu*						
5	**Karma**	Deepana	+		+	+	+	+
		Hridaya	+	+			+	+

Acharya Priyavat Sharma has mentioned Katu Vipaka of Saptaparna in his textbook on Dravyaguna. It is not mentioned in the Nighantus.

Modern Era:

Taxonomic Position:

- Kingdom - Plantae
- Division - Phanerogam
- Subdivision - Angiosperm
- Class - Dicotyledon
- Sub-Class - Gamopetalae
- Group - Bicarpetatae
- Natural Order - Gentianales
- Family - Apocynaceae
- Sub family - Plumieroideae
- Genus - Alstonia
- Species - Scholaris

Vernacular Names:

Indian -

Assam	-	Chatian, Satiana
Bengal	-	Chatian, Chatwan, chhatim
Bombay	-	Satvin
Gujarati	-	Saptaparna, Satvana
Hindi	-	Chatian, Saitankajhad, Satium, Satni, Satwin
Kannada	-	Hale, Maddale
Konkani	-	Santon
Khond	-	Chotina
Kumaon	-	Chatiun
Kolami	-	Bimudu, Chatin
Magahi	-	Chaile Chalain
Malay	-	Pulai
Malaya	-	Chhatnia
Malayalam	-	Daivapala, Elilampala, Kotapala, Mangalappala, Mukkampala.

Marathi	-	Saptaparni, Satuin, Satvin, Satwin
Punjabi	-	Sathi, Satanna
Tamil	-	Elilappalaim, Maranallari, Mukkanbalai, Palai, Vadirasi.
Nagori	-	Catianidaru
Telugu	-	Edakulapala, Edakulaponna, Edakularati, Elaramu, Devasuppi, Palagaruda.
Oriya	-	Chhotina, Kumbaro, Soptorposi

Foreign -

English	-	Ditabark, Devil Tree
Annam	-	Cay Sua
Burma	-	Lettok, Lettop, Toungmeok, Toungamayobeng
Cachar	-	Sattni
Cagayan	-	Andarayan
Combodia	-	Popeal he
French	-	Alstonie des ecoliers, Dita, Dito
Hasada	-	Catinidaru
Ilocano	-	Dalipaoen, Dallaparen, Laya
Lepcha	-	Purbho
Macassar	-	Gaboes, Poele, Poelepandak
Nepal	-	Chatiwan
Philippines	-	Ditta, Oplay
Sinhalese	-	Rukattana
Tagalog	-	Dita
Tiawan	-	Pasnit
Tulu	-	Palembu
Visayan	-	Bita, Dita

General Description:

Distribution and habitat -

It is found throughout India from sea level to about 2000 feet. It is commonly seen in most of the deciduous and evergreen forests.

Habit and general features -

It is a large evergreen tree, sixty to eighty feet or more in height. The branches are in three or more tiers arranged in whorls. The trunk is thick, dark gray to greyish brown in colour, rough and uneven.

External Morphology -

Leaves:

Leaves are smooth & shining, pinnately parallel. They are simple, short, petioled in whorls of four to seven elliptic oblong, oblanceolate or oblong lanceolate. It is 4" to 8" long 1" to 2 ½" broad, base is acute. Apex is obtuse rounded or obtusely acuminate or rarely emarginated. Bright green and shining upper surface, while the lower surface is paler and with whitish bloom. Midrib is prominent with nearly sixty pairs of fine, slender, subdued, closely parallel, transverse nerves connected distally to an intra marginal nerve. Petiole is stout.

Flowers:

Flowers are very strongly scented, numerous, small 1/2" long, greenish white in colour & in corymbose umbellate cymes at the ends of the branches of erect terminal or subterminal panicles 3" to 5" long .They are sessile, bisexual, pubescent, and regular. Peduncle 1" to 3" long often occurs in groups of 3 or 4, gamosepalous, Calyx 1/10" long pubescent, oblong obtuse ciliate lobes which are imbricate in bud.

Flowering season - November - January (Sharad Ritu).

Corolla:

It is 1/3" to 1/2" in diameter, five lobed, cylindrical, and dilated, opposite to the stamens and devoid of scales; throat- villous or hairy within; lobes rounded twisted in bud.

Stamens:

They are 5 in number. Disc is annular or two lobed, the lobes alternating with carpels. They are included within the tube near the upper end with very short epipetalous filaments and ablong lanceolate acute anthers, which are cordate at the base.

Pistil:

It is bicarpillary; ovaries distinct, hirsute with a common filiform style ending in an oblong or cylindric bifid stigma.

Ovules:

Many seriate in each carpel.

Fruit:

It is 1 to 2 feet long and about 1/8" thick. It is a pair of pendulous, very narrow, terete, linear, follicular mericarps.

Fruiting season - May - July.

Seeds:

They are many and 1/3" long, linear, oblong, peltately attached, flattened, slightly grooved, little rough and with tufts of fine silky brownish hairs at each end.

Testa:

It is generally papillose, thin, rough, albumin scanty, radicle superior and cotyledons oblong.

Bark:

The mottled effect is gained by patches of lichens on the entire bark, which masks dark slate gray to greyish brown. The external surface is seen uneven and rough as there is formation of vertical fissures of varying lengths, prominent transverse lenticles bordered by partial exfoliation of the outer rind in flakes of different size and thickness and a cream coloured spongy tissue. According to the age and size of the branch or trunk, the thickness of the entire bark varies from 1/4" to

1/2" or more. When its fresh, its inner surface is cream white in colour but it gradually turns pale brown on exposure. The outer bark is easily pilled off. It is slightly hard & brittle, 1/10" to 1/4" thick, tasteless & has no specific smell. Transverse section of the rind shows that it is faintly lamellated & light cream yellow in colour. Officinal tissue can be differentiated into

1. cream white to light yellowish brown region which is nearest to the rind,
2. intermediate gritty region which is broad with numerous light brown spots
3. inner region is whitish leathery exuding latex when it is cut.

Cultivation:

It is planted in gardens & cultivated as an avenue tree, easily raised through seeds.

Diseases affecting Saptaparna :

Sacc. Sordaria humana (Fuckel) wint, collectotrichum glocosporioides (Penz) can affect this tree producing disease. The parasites which affect are dendrophthoe falcate & angiospermic parasite

Therapeutic uses:

Therapeutic uses of the different parts of Saptaparna are as follows,

Leaves:

- In dropsy leaves are boiled in oil & is given internally (The treatise on Indian medicinal plants.)
- In eastern Malaysia its Decoction is used in beriberi.(Wealth of India I-A)
- Decoction is used in congestion of liver. (Wealth of India I-A)
- Poultices used in non healing ulcers, having foul smell & discharge (Indian medicinal plants.)

Bark:

- It is used in leprosy; extract prepared from fresh bark is given with milk. (Indian medicinal plants.)
- It is used in chronic paludism with enlargement of the spleen, dyspepsia and also used as antihelmintic and as an astringent tonic.
- It is used in malaria as it decreases the temperature steadily in a short time. (Indian Pharmaceutical Codex)
- Used in chronic diarrhoea and dysentery. (Indian Pharmaceutical Codex)

Latex:

- Used as eardrop with oil. (The treatise on Indian medicinal plants.)
- It is applied in sores & rheumatic pains (The treatise on Indian medicinal plants.)

Wood:

- It is used to treat wounds. (The treatise on Indian medicinal plants.)

Root:

- It is used in liver disorders.

Fruit:

- It is used in epilepsy, syphilis & insanity.

ALKALOIDS OF ALSTONIA SCHOLARIS -

Echitamine1, 2, (as chloride), N6-Demethylechitamine, Scholarine, Akuammicine -N6-oxide, Akuammicine -N6-methiodide, Echitamidine, Tubotaiwine, Pseudo akuammigine3, Picrininc4,5, Picralinal6, Stricatamine5, Akuammidine7, (rhazine), Tetrahydroaslstonine5, Nareline8, Ditamine9, Echitenine9.

CHEMICAL CONSTITUENTS:

Flowers	-	Alkaloids: picrinine, strictamine
Leaves	-	Alkaloids: betulin, ursolic acid, β-sitosterol, Picralinol, picrinine, and scholarin
Bark	-	glucoside triterpenes, α-amyrin acetate, glycoside- venoterpine, echitamine
Roots	-	tubaitowine akuammigine, akuammigine *(Data base, Vol.-I).*

PROPAGATION AND CULTIVATION:

It can grow in any climatic condition such as drier and sub-alpine. It is also found in areas where the rainfall is about 125 cm. It is found in deciduous and evergreen forests & also in tropical region of western Himalaya, through the sub-Himalayan tract, in eastern India, on the West Coast and Andaman. It is propagated and raised through seeds. Also is planted in gardens for ornamentals. It is often cultivated as an avenue tree. (Wealth of India, Vol.-I, 1985).

PART USED:

Leaves, Bark, latex (Data base, Vol.-I)

DOSES:

Decoction:	20 to 30 ml
Bark powder:	4 to 8 gm (Data base, Vol.-I)

PHYSICAL CONTENTS:

- Foreign matter - not more than 2%,
- Water soluble extractive - not less than 12 %
- Alcohol soluble extractive - not less than 4%
- Total Ash - not more than 11%
- Acid insoluble ash - not more than 3%

(Data base, Vol.-I)

SUBSTITUTE AND ADULTERANT:

Trachelospermum fragrans Hook.

Trachelospermum lucidom

Therapeutic uses in modern medicine-

Anti-tumour, Antiviral, Antihelminitic, Antimicrobial, Antifilarial, Antileishmanial, Antifertility, Anti-inflammatory and analgesic, etc.

777 OIL-

Dr.JRK's 777 oil is prepared with Wrightia tinctoria which is Kutaj and Oleum cocos nucifera which is Narikel.

A. KUTAJ DRUG REVIEW -

There are two types of Kutaj. Punkutaj and streekutaj whereas punkutaj is sweta kutaj and streekutaj is krushna kutaj. Sweta kutaj is Writhnia tintoria (W.T.) while krushna Kutaj is Holarrhena Antidysenterica (H.A). The seed is called as Indrayava.

Morphological characters-

H.A.-

It's a small deciduous tree. Leaves-elliptical, oblong, ovate or ovate oblong. Flowers- in corymbose cymes, white fragrant. Fruits- follicks, slander, parallel, terete, coriaceous, with long white spots. Seeds- narrowly linear-oblong glabrous. Flowers come from April to July and fruits from August to October.

W.T.-

It's a small tree. Bark-scaly, smooth. Branchlets- yellow or light brown. Leaves- variable, 7.5-1.5 by 2.5-5.7 cm, elliptic lanceolate or ablong lanceolate, acuminate, glabrous or young leaves puberulous beneath, base acute or rounded, main nerves 6-12 pairs, petioles 3-4 mm long. Flowers- white, fragrant, in lax terminal cymes which are sometimes 12.5 cm in diameter with slender spreading dichotomous branches, bracts minute, ovate. Calyx- glaborus, glandular inside, segments 2.5 mm long, oblong, rounded at the apex and membranous margins. Corolla-tube short, 3mm long, lobes-8mm long, oblong, obtuse, corona- of numerous linear scales, some inserted with filaments and some on corona lobes. Fruits- of 2 distinct pendulous, slender follicles, cohering at the top. Seeds- linear, plabrous.

	H.A.	**W.T.**
Flower	odourless	White jasmine like with a fragrant odour

Bark	Thicker, dirty white or buff colour, markedly bitter taste	Reddish brown smooth appearance
Seeds	Resembles oats, very bitter, have tuft of hair on end most remote the foot stalk	Tuft is on end next to the foot stalk

Distribution-

H.A.-

Common in tropical parts of India and in sub Himalayan tract, Assam, UP, Travancore.

W.T-

Found almost throughout India, Western Peninsula, Coromandal coast, Coimbatore & Godavery districts.

Classification -

Vaman, Arshoghna, Kandughna, Stanyashodhana, Asthapaniya, Aragvadhadi, Pippalyadi, Haridradi, Lakshadi, Haritakyadi, Bruhatyadi, Urdhvabhaghara

Family - apocyanaceace

Synonyms

Kutaj-

Kutaj, Kautaj, Shakra, Vatsah, Girimalliha, Kallinga, Mallihapushpa, Pravrushya, Sangrahi, Pandurdruma, Pravrushyena, Mahagandha, Kaut, Indravruksha, Vrukshaka, Kohi, Girimallika, Vatsaka, Kutaji, Nilayashtika, Vashkutaji, Kotivruksha, Shakrabhurika.

Indrayava-

Shakravha, Shakrabeeja, Vatsak, Bhadrayava, Vatsakbeej, Bhadraja, Kutajaphala, Kutaja, Kalingabeeja, Kalingaka, Niryava, Indraha, Indraphala, Puruhuta.

Vernacular names of kutaj-

- Eng. - Kurchi, Conessi, Tellicherry bark.
- Hin. - Karchi, Kura.
- Punj. - Kewar, Kura.
- Beng. - Kurchi, Kureya.
- Guj. - Indrajawanu
- Mar. - Kuda
- Telagu - Kakakodise, Indravrakshamu
- Tamil - Kashappu-vetapalarishi
- Kannada - Korasigina Gida

Vernacular names of Indrayava -

Language	**Shweta**	**Asita**
Hindi	Indrajawa	Meetha Indrajawa
Guj.	Indrajawa	Kaalikari
Bengali	Indrayawa	-
Marathi	Kudyache beej	Goda indrajawa, Kalakuddi
Karnataka	Kodasi gaya beej	-
Farsi	Jaban kunchiska	Aharesirin, indrajau
Arabi	Lesanut askir	lasunlasafir
Telagu	-	Amakudu, pallumili

Tamil	-	Neelpalai, Wepali
English		

Guna -

Kutaja -

Rasa - Katu, Kashaya, Tikta

Virya - Ushna (sheeta according to Dhanwantari Nighantu & Kaiyadev Nighantu)

Vipaka - Katu

Guna - Ruksha, Laghu, Deepana, Aam pachana

Uses - Atisara, Kushtha, Raktaja & Pittaja Arsha, Raktapitta, Trushna

Indrayawa -

Rasa - Katu, Tikta

Virya - Sheeta (Ushna - Dhanwantari Nighantu. Ishat Ushna – Kaiyadev Nighantu)

Vipaka - Katu

Guna - Tridoshaghna, Grahi, Deepana, Pachana

Uses - Raktapiitta, Daha, Atisara, Jwara, Shoola Raktarsha, Vamana, Krimi, Visarpa & Kushtha

Kutaja Twaka -

Uses – Kaphapittahara & Raktasangrahi.

Parts used -

Bark, Seed, Flower & leaves

Kalpa -

Kutajashtaka Kwatha, Kutajawaleha, Kutajashtak Avaleha, Kutajarishta, Indrayawadi Kwatha, Vatsakadi Kwatha, Kutajadi Ghruta, Kutaja Putapaka, Kutaja Ghanawati.

Therapeutic uses-

H.A-

Amoebic dysentery and diarrhoea, piles, intestinal worms, chronic chest infection, dyspepsia, external rheumatism, toothache,

W.T.-

Piles, fever, diarrhoea, round worms, coli

Major chemical constituents -

H.A-

Conessidine, connessimine, conkurchine, holadiene, holarrhenine, holarrhimine, kurchine, holarrhine, kurchicine, holadysine, holadysamine, holantosines A&B, kurchaline, kurchiphyllamine, holacetine.

W.T.-

Isoricinoleic acid, β-sitosterol, β-amyrin, lupeol, rutin, cycloartenine, cycloeucalenol, wrightiadione.

NARIKEL DRUG REVIEW -

Botanical Name - Cocos nucifera Linn.

Family - Arecaceae.

Vernacular names -

- Hindi - Narial, Shreephala, Khopra
- English - Coconut tree
- Telugu - Kobbari chettu, Nari kadamu, Tenkocha, Nalikarammu, Mangali
- Tamil - Tengai, Tenna, Idegaam, Keli, Nalikeram
- Bengali - Narkola, Narikela, Daab, Nariyal
- Marathi - Naral
- Gujrathi - Nalier, narel
- Konkani - Maad

Synonyms -

Nalikera, Trunaraja, Tunga, Langali, Drudhaphala, Skandaphala, Shreephala, Trunaraj, Sadaphala, Sadapushpa, Mahaphala, Neeltaru, Toyagarbha, Narikela, Narikelo, Rasaphala, Sutunga, Kurchashekhar, Taalvruksha, Dakshinatyaka, Chocha, Tryaksha, Putodaka

Morphological characters -

It is a tree, 30 meter high with large leaves arranged at the end of the stem.

Habitat -

Cultivated in Southern India & Ceylon

Distribution -

Hot & humid parts, specially sea coast & river banks. Eastern Bengal, Burma, Malabar & Coromandal coasts & islands of Indian Archipelago.

Varga - Phalavarga, Amradi

Properties - Antifungal

Major chemical constituents -

Shell fibres	-	Phenol, p-cresol, caproic acid
Shell	-	Crotonaldehyde, furfural
Fresh Kernel	-	Albumin, Globulin, 41.6% oil, nitrogenous substances, fat, lignin, ash, palm sugar (glucose & cane sugar) & inorganic substances.
Dry Kernel	-	57 - 75% oil.
Milk water	-	sugar (mannitol), gum, albumin, tartaric acid & mineral
Ashes of leaves	-	potash
Oil	-	free caprylic acid, glycerides of lauric, myristic, palmitic & stearic acids.
Enzyme	-	investine, oxydase & catalase.

Rasapanchaka -

Rasa	-	Madhur
Virya	-	Sheeta
Vipaka	-	Madhur
Guna	-	Guru, Snigdha,

Coconut water

Rasa	-	Madhur
Virya	-	Sheeta
Guna	-	Laghu, Balya
Virya	-	Sheeta

Karma -

Vatapittahara, Kaphavardhaka, Keshya, Bastishodhana, Balya, Bruhana, Durjara, Vishtambhi, Veeryavardhaka, Ruchya, Hrudya, Madakarak, Shramanashaka, Kaamshaktivardhaka.

Karma of Taila –

Vajikarana, Guru, Balya, Vatapittaghna, Mootraghaat, Prameha, Shwasa, Kasa, Raajyakshma, Smrutivardhaka, Kshatahara. According to Unani Madhur, Balavardhaka, Mootrala, Kriminashaka, Keshya, Katishoola, Arsha, Kandu, Shotha, Dadru, Pittavatahara, keshya, Guru, Kaphavardhaka, Sheeta.

Indication -

- Flower - Raktatisara, Gulma, Jwara, Daha,
- Coconut water - Mutrakrucchra, Trushna, Pitta Vikara, Pinasa, Shrama, Daha, Shosha, Hrudya, Jwara,
- Coconut water of riped fruit - Pittakara, Ruchikara, Madhura, Deepana, Balya, Guru, Vrushya, Veeryavardhaka
- Fruit - Amlapitta, Mamsashukravardhaka, Vishtambhi, Chirpaaki, Hrudya, Vatapittarakta vikara
- Milk - Vatagulma, Kapha, Kaas, Balavardhaka, Ruchikaraka, Madhur vipaki, Kshaya,
- Root - Ashmari, Prameha, Atyartava

Parts used - Fruit kernel, Fruit shell, Fruit juice, Flower, Oil, Root, Ash.

Dosage - Fruit kernel - 10-20gm, Kshara – 1-2gm

Formulations - Narikela Lavana, Narikela Khanda, Vishwamitra Kapal Taila, Narikela Amrut.

Properties -

Taila- Bruhana, Balavarhaka, Keshya, Pittavatahara, Dantya, Madhura, Vranaropaka, Kshayaghna

Pushpa – Grahi

Properties of oil prepared from different parts of Narikela -

1. Fruit shell (Unani & Ayurveda)- Kushthanashaka. (tarry oil used externally for Ringworm)
2. Kernel (Unani)- Keshavardhaka, Kruminashaka, Vranaropaka, Kaphaghna, Shothaghna, Kaasaghna, Kshayaghna, Vranaropaka, Jwarajanya Kkhalitya, Medoroga
3. Milk - in baldness & burns
4. Fresh pulp - substitute for cod liver oil in wasting & pulmonary diseases of childrens.

Final Drug Photos-

Image 1-Saptaparna Ghana Vati

Image 2 - 777 oil

RESEARCH METHOLOGY

MATERIAL -

A. Patients –

- 100 patients of Psoriasis are selected randomly irrespective of sex & religion under the age of 20 to 40 years from Kayachikitsa department of the hospital and camps arranged by the hospital.
- Two study groups are made each consisting of 50 patients screened for Psoriasis according to inclusion and exclusion criteria.
- Trial drug was given orally to Group A, and control drug was given for external application to the Group B.
- Written consent was taken from patients after explaining the risk.

Inclusion criteria:

1. Pre diagnosed patients of Psoriasis.
2. Psoriatic lesions showing classical symptoms & signs of Eka Kushtha as described in Ayuvedic Samhitas as - Charak Chikitsasthan 7/21

   अस्वेदनं महावास्तु यन्मत्स्यशकलोपमम् तदेककुष्ठं ।

   - Aswedanam means no sweating on the skin.
   - Mahavastum the area of involvement of the lesion is vast.
   - Mastyashakalopamama means the lesion like fish scale
3. Psoriatic lesions showing classical symptoms & signs of Kitibha Kushtha as described in Ayuvedic Samhitas as - Charak chikitsasthan 7/22

   श्यावं किणखरस्पर्शं परुषं किटिभं स्मृतम् ।

   - Shyava means grey in colour.
   - Kinakharasparsha means hard & rough to touch.
   - Parusha means dry in nature.

4. Patients between the ages of 20 to 40 years.
5. Patients from all socio-economic status.

Exclusion criteria:

1. Pregnant & lactating mothers.
2. Psoriatic lesions showing classical symptoms & signs of Mandal kushtha as described in Ayuvedic Samhitas as - Charak chikitsasthan 7/16

श्वेतं रक्तं स्थिरं स्त्यानं स्निग्धमुत्सन्नमण्डलम् ।

कृच्छ्रमन्योन्यसंसक्तं कुष्ठं मण्डलमुच्यते ॥

- Shweta Rakta - white or red coloured
- Sthira - fixed, Styana - smooth, Snigdha - oily
- Utsannamandalam - pustules raised above the skin
- Krucchram - Kashtasadhya, Anyonyasansakta – lesions grouped & mixed in each other.

3. Patients suffering from diabetes mellitus, cancer, AIDS, other skin diseases or any other systemic disorder.
4. Age less than 20 and more than 40 years of age.

Case paper -

Special case paper Performa carrying all points required for history taking as Parikshana, observation, and consent form attached to this was used. Every 15 days follow up was maintained for 3 months in the case record form & follow up for 1 month was taken without drug administration.

Under supervision of guide, clinical trials were taken of Saptaparna Ghana Vati with Ushnodaka as Anupana at specific Aushadhi Sevankala & Matra for trial group & external application of 777 oil was done for control group and observation scores were carried out accordingly.

B. DRUG -

Protocol of drug standardization is collection of drugs from genuine market source, Authentification, Standardization of ingredients & final product.

1. **Trial Drug -**

Saptaparna Ghana Vati -

Reference –

-------- सप्तपर्णस्य इति षट् कषाययोगाः कुष्ठघ्नः---- ।

च. चि. ७/९८

METHODS -

PREPARATION OF TRIAL DRUG -

Though in literature Kashaya of Saptaparna is said to be used for the treatment of Kushtha, for the convenience purpose we used it in Ghana form.

Use of Ghana -

- Large quantity of the drug can be prepared at a time having more shelf life than Kwatha.
- More portable so can be carried anywhere and more palatable.
- Easy to make and repeated Kwath preparation can be avoided.
- Require less time to prepare so useful in busy life.
- Dose pattern can be fixed.

As the drug was available in the market we purchased it from reputed pharmaceutical company.

The method of preparation of Saptaparna Ghana Vati is as follows.

- Part used - Bark
- Latin Name - *Alstonia scholaris* Linn.

Formulation: Saptaparna Ghana

I. **Preparation of Saptaparna Kwatha** –

It can be done as per scientific, authentic preparation method of Kwatha Kalpana as mentioned in Sharangdhar Samhita:-

"पानीयं षोडशगुणं क्षुण्णे द्रव्यपले क्षिपेत्।
मृत्पात्रे क्वथयेत् ग्राह्यमष्टमांशावशोषितम॥"

–शा. सं. म. खं. २/ १

Content –

Saptaparna bharad	-	1 part
Water	-	16 parts

Procedure -

Mix above contents. Keep it on medium flame. Boil till its 1/8th part remains. Filter and take the filtrate for further procedure.

Steps in preparing Ghana form of Kwatha - Sha. Sam. Ma. Kha. 8/1

1. Kwatha heated till it forms Awaleha form.
2. It is further heated to form solid form.
3. It will be kept in oven to dry.

2. **Control Drug –**

777 oil -

PREPARATION OF CONTROL DRUG -

As the drug was available in the market we purchased it from reputed pharmaceutical company.

INGREDIENTS -

Ingredient	**Quantity**
Cocos Nucifera (coconut) Oil	50% w/v
Wrightia Tinctoria (Swetha Kutaja) Oil	50% w/v

METHODS-

- Coconut oil is used as base
- The leaves and bark of Wrightia tinctoria are used
- The oil is prepared through the process of insolation also called as SOORIYA PUDAM in Siddha System of Medicine.
- It is sneha kalpana made by use of sunlight.

TYPE OF DESIGN / STUDY -

It is a simple randomized, parallel, comparative, open, Drug interventional clinical trial.

A. CRITERIA FOR ASSESSMENT-

Parameters -

A. Subjective Parameters

1. Itching
2. Sweating
3. Discoloration
4. Dryness

Aswedanam(Sweating)

Normal sweating	0
Mild sweating	1
Mild sweating after exercise	2
No sweating after exercise	3

KANDU (Itching)

No itching	0
Mild itching	1
Moderate (tolerable) in frequent	2
Severe itching	3
Severe itching disturbing sleep & activity	4

KRUSHNA ARUNA VARNA (Discoloration)

Normal color	0
Near to normal this looks like normal color to distant observer	1
Reddish color	2
Slight black reddish discoloration	3
Deep black reddish discoloration	4

RUKSHATA (Dryness)

No line on scrubbing with nail	0
Faint lines on scrubbing by nail	1
Lines & even words can be written on scrubbing by nail	2
Excessive rukshta leading to kandu	3
Rukshta leading to crack formation	4

B. <u>Objective Parameters</u>

1. Indurations
2. Desquamation
3. Area involved

The Objective features were studied as per PASI scoring using following online software - http://pasi.corti.li/

<u>Pasi scale</u> -

The body is divided into four sections (head (H) (10% of a person's skin); arms (A) (20%); trunk (T) (30%); legs (L) (40%)). Each of these areas is scored by itself, and then the four scores are combined into the final PASI. For each section, the percent of area of skin involved, is estimated and then transformed into a grade from 0 to 6:

- 0% of involved area, grade: 0
- < 10% of involved area, grade: 1
- 10-29% of involved area, grade: 2
- 30-49% of involved area, grade: 3
- 50-69% of involved area, grade: 4
- 70-89% of involved area, grade: 5
- 90-100% of involved area, grade: 6

Within each area, the severity is estimated by three clinical signs: erythema (redness), induration (thickness) and desquamation (scaling). Severity parameters are measured on a scale of 0 to 4, from none to maximum.

The sum of all three severity parameters is then calculated for each section of skin, multiplied by the area score for that area and multiplied by weight of respective section (0.1 for head, 0.2 for arms, 0.3 for body and 0.4 for legs).

The PASI score stands for Psoriasis Area and Severity Index. This tool allows researchers to put an objective number on severity of psoriasis.

C. METHOD OF DRUG ADMINISTRATION -

Drug used	**Saptaparna Ghana Vati**	**777 oil**
Route of Administration	Oral	External
Dose	Dose of 500 mg	As per required.
Bhaishajya Kal	Vyanodana(after meals)	abhyanga in the pratahakal (morning).
Anupana	Ushnodaka	-
Duration	3 months	3 months
Follow up	Every 15 days	Every 15 days
Follow up after study	1 month	1 month

External application was done on lesions of psoriasis.

D. Pathyapathya - explained to every patient.

E. Written consent - was taken from patients after explaining the risk.

F. Proforma - was prepared and regular observations before, during and after treatment was noted.

ANALYSIS AND INTERPRETATION

OBSERVATIONS-

120 patients of psoriasis irrespective of sex, religion etc. were selected for the study mainly diagnosed on the basis of symptomatology of psoriasis and Kitibha and Ekakushtha. Out of these 20 patients were drop outs due to various reasons. 50 patients formed group A and were given Saptaparna Ghana orally. 50 patients formed group B and were given 777 oil for external application. And effects were observed for 3 months.

Table no. 1 - Age wise distribution

Age Group in years	**Group (A)**		**Group (B)**		**Total**	
	No. of patients	**Percen tage**	**No. of patients**	**Percen tage**	**No. of patients**	**Percen tage**
20 to 30	11	22.00%	20	40.00%	31	31.00%
30 to 40	39	78.00%	30	60.00%	69	69.00%
Total	**50**	**100 %**	**50**	**100 %**	**100**	**100 %**

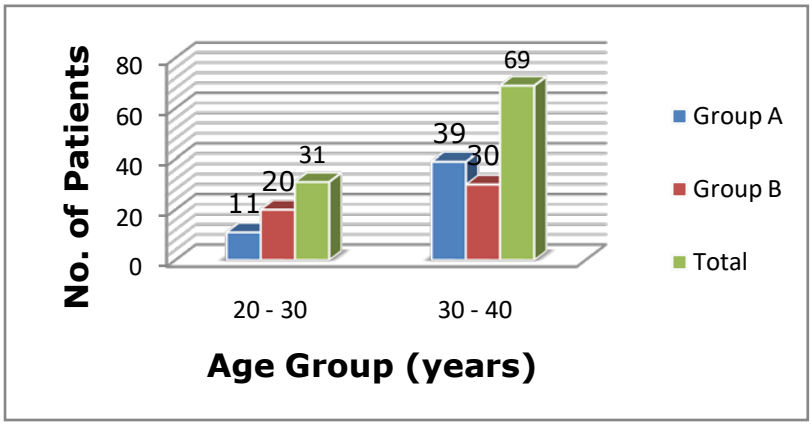
The above table reveals that -

In Group A - Majority of the patients i.e. (39) 78 % were reported in age group 20 to 30 years, and (11) 22 % patients observed in the age group 30 to 40 years.

In Group B - Majority of the patients i.e. (30) 60 % were reported in age group 30 to 40 years, and (20) 40 % patients observed in the age group 20 to 30 years.

Total - of 31% patients were from age group 20 to 30 yrs. Total of 69% patients were from age group 30 to 40 yrs.

Graph no. 1 A- Age wise distribution



Graph NO. 1B- Age wise distribution (Total)

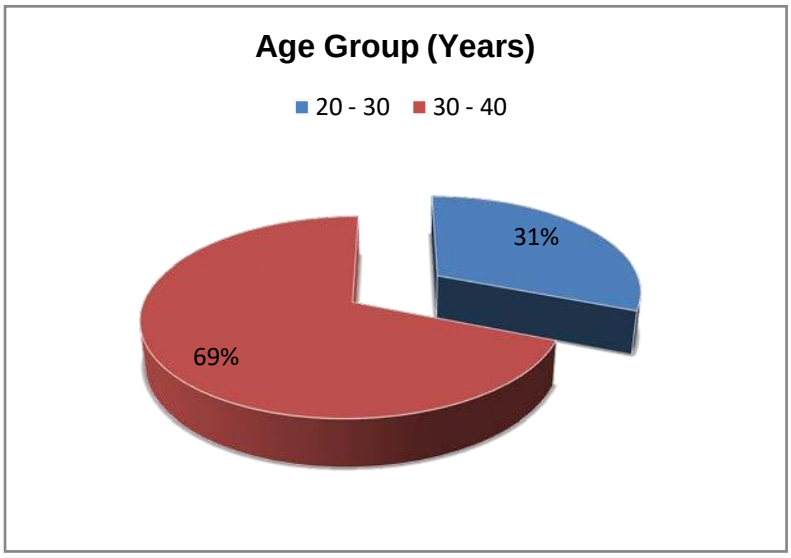


Table no. 2 – Gender wise distribution

Gender	Group (A)		Group (B)		Total	
	No. of patients	Percen Tage	No. of patients	Percen tage	No.of patients	Percen tage
Female	12	24.00%	8	16.00%	20	20.00%
Male	38	76.00%	42	84.00%	80	80.00%
Total	**50**	**100 %**	**50**	**100%**	**100**	**100 %**

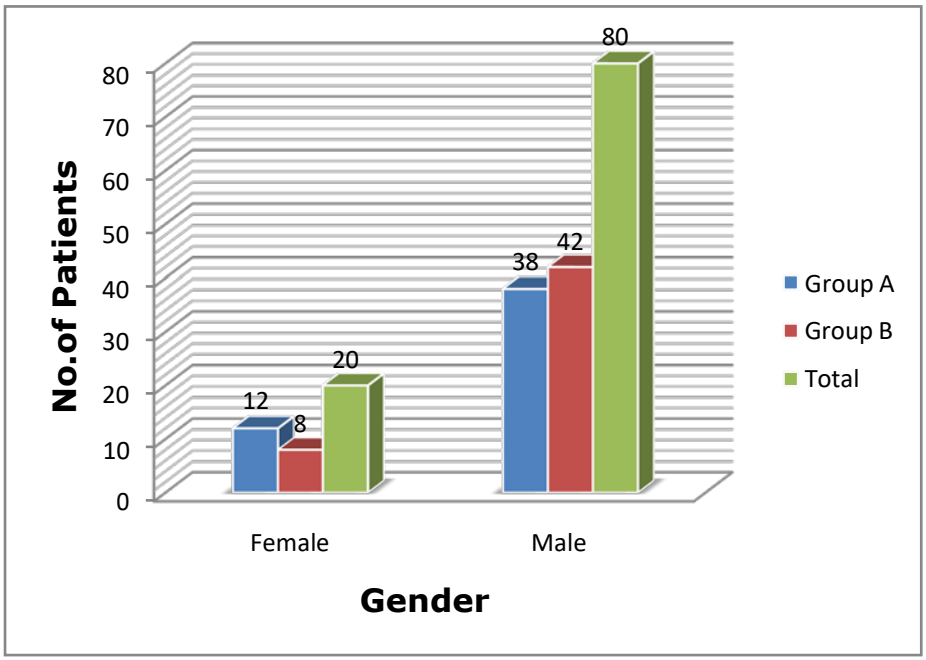
The above table shows that -

In Group A - Maximum (38) 76 % patients were Male and (12) 24 % patients were Female.

In Group B - Majority of patients i.e. (42) 84 % were Male and (8) 16 % patients were Female.

Total - 80% patients were males and 20.% patients were females.

Graph no. 2 A- Gender wise distribution



Graph No. 2 B- Gender wise distribution (Total)

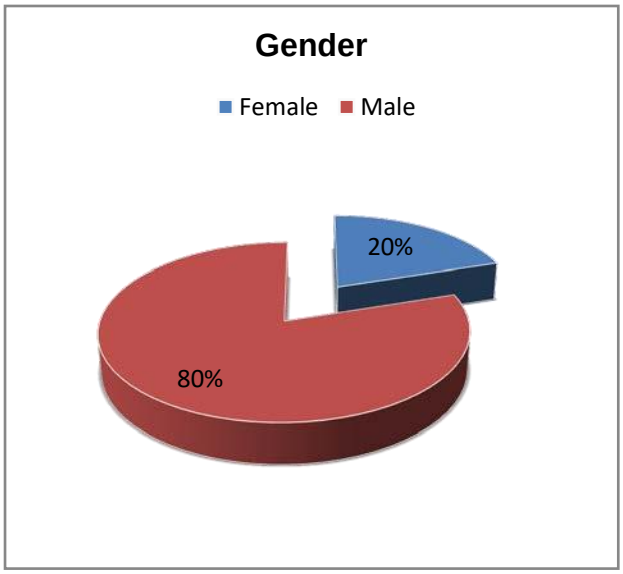


Table no. 3 – Educational Status wise distribution

Educational Status	Group (A)		Group (B)		Total	
	No. of patients	Percentage	No. of patients	Percentage	No.of patients	Percentage
Primary school	1	2.00%	0	0.00%	1	1.00%
Secondary school	22	44.00%	13	26.00%	35	35.00%
Higher Secondary	10	20.00%	9	18.00%	19	19.00%
Graduate	13	26.00%	23	46.00%	36	36.00%
Post Graduate	4	8.00%	5	10.00%	9	9.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

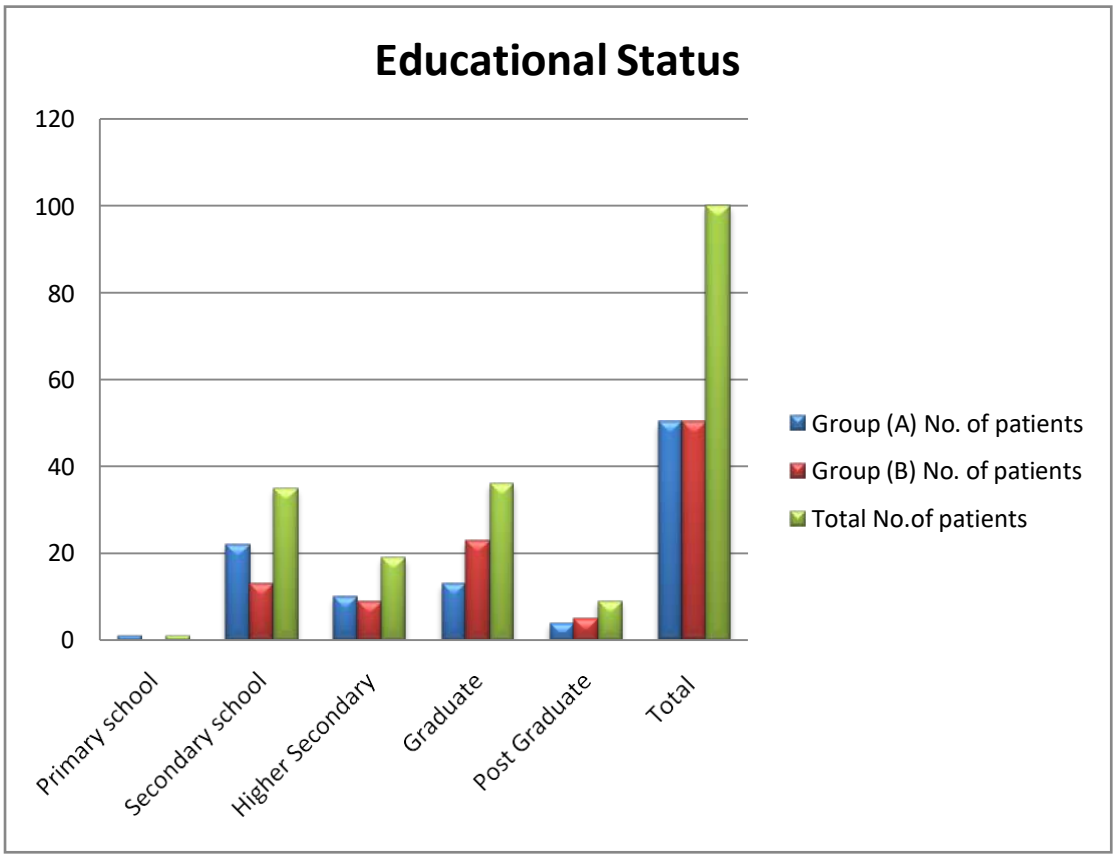
The above table shows that -

In Group A - Maximum (22) 44 % patients were studied up to Secondary school, followed by (13) 26 % patients were Graduate, (10) 20 % patients were studied up to Higher secondary, (4) 8 % patients were Post Graduate, and (1) 2 % patient were studied up to Primary school.

In Group B - Maximum (23) 46 % patients were Graduate, followed by (13) 26 % patients were studied up to Secondary school, (9) 18 % patients were studied up to Higher secondary, and (5) 10 % patients were Post Graduate.

Total - Maximum 36 % patients were Graduate, followed by 35 % patients were studied up to Secondary school, 19 % patients were studied up to Higher secondary, and 9 % patients were Post Graduate and and 1 % patient were studied up to Primary school.

Graph no. 3 A - Educational Status wise distribution



Graph no. 3 B - Educational Status wise distribution (Total)

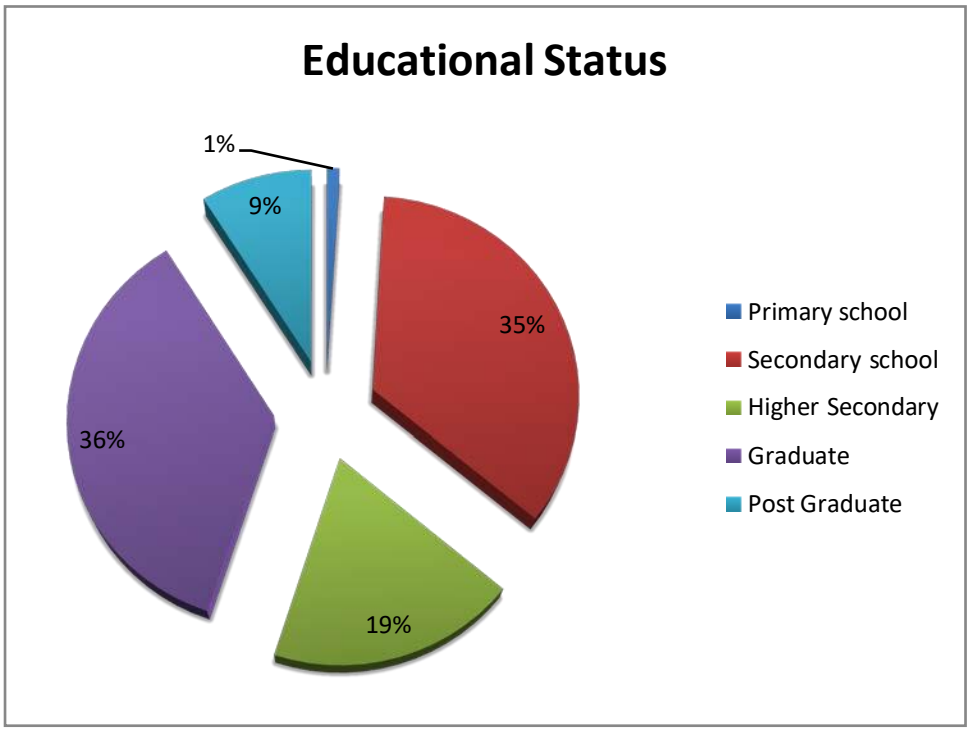


Table no. 4 – Occupation wise distribution

Occupation	Group (A)		Group (B)		Total	
	No. of patients	Percentage	No. of patients	Percentage	No.of patients	Percentage
Student	1	2.00%	10	20.00%	11	11.00%
House wife	11	22.00%	6	12.00%	17	17.00%
Job	20	40.00%	15	30.00%	35	35.00%
Farmer	14	28.00%	18	36.00%	32	32.00%
Bussiness	4	8.00%	1	2.00%	5	5.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

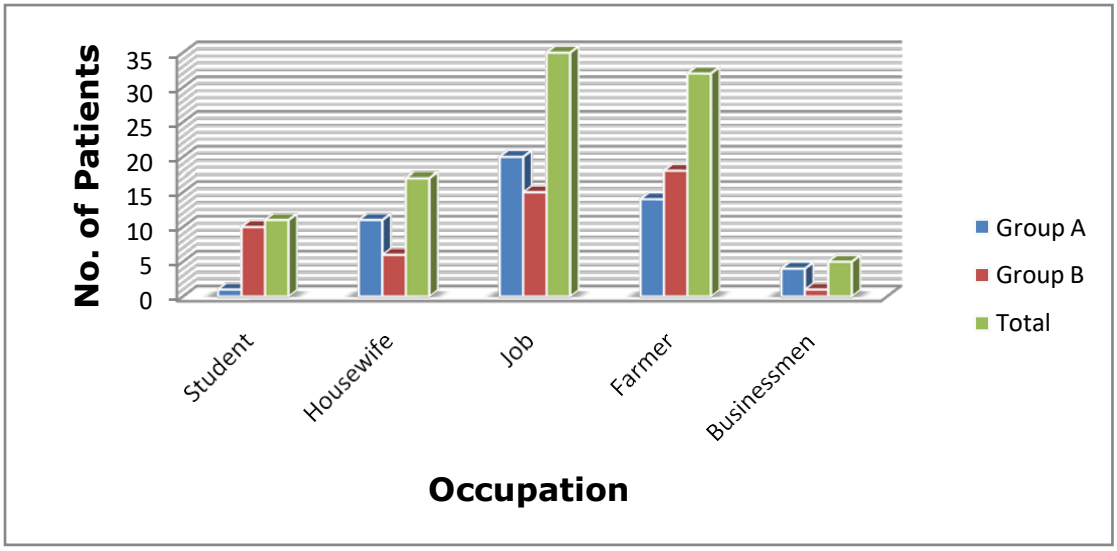
The above table shows that -

In Group A - Majority of patients i.e. (20) 40 % were doing Job, followed by (14) 28 % patients were farmers, (11) 22 % patients were house wives, (4) 8 % patients were Businessmans, and (1) 2 % patient were students.

In Group B - Maximum (18) 36 % patients were farmers, followed by (15) 30 % patients were doing Job, (10) 20 % patients were Students, (6) 12 % patients were house wives, and 1 (2 %) patients were bussinessman.

Total - Maximum 35 % patients were servicemen and 32 % were farmers, followed by 17 % patients were house wives, 11% were Students, 5% patients were businessmen.

Graph no: 4 A - Occupation wise distribution



Graph- 4 B - Occupation wise distribution (total)

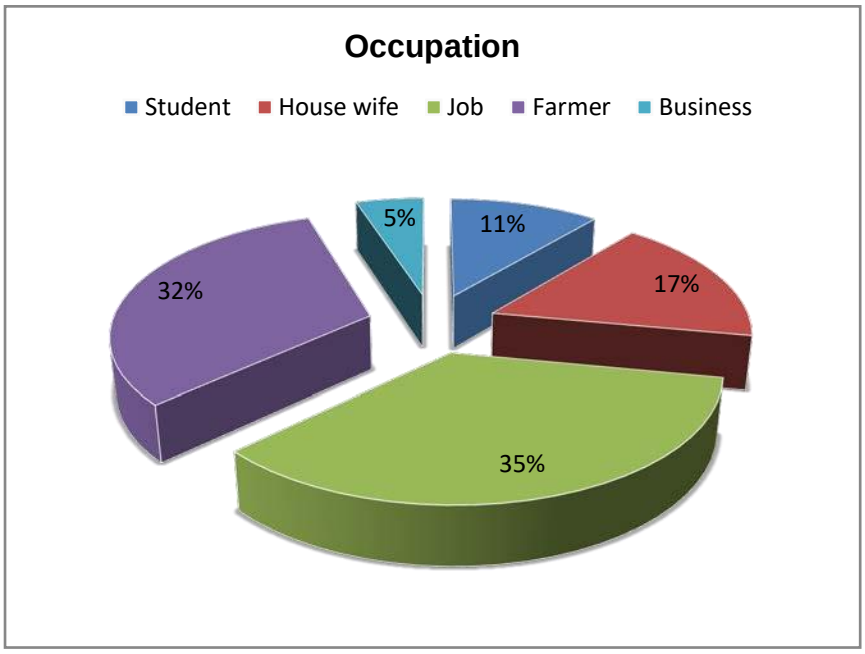


Table no. 5 - Distribution according to Socioeconomic Status (B G Prasad Socio Economic Status scale)

Economical Status	Group (A)		Group (B)		Total	
	No. of patients	Percentage	No. of patients	Percentage	No.of patients	Percentage
Poor/lower class	2	4.00%	0	0.00%	2	2.00%
Lower Middle class	23	46.00%	15	30.00%	38	38.00%
Middle class	25	50.00%	35	70.00%	60	60.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

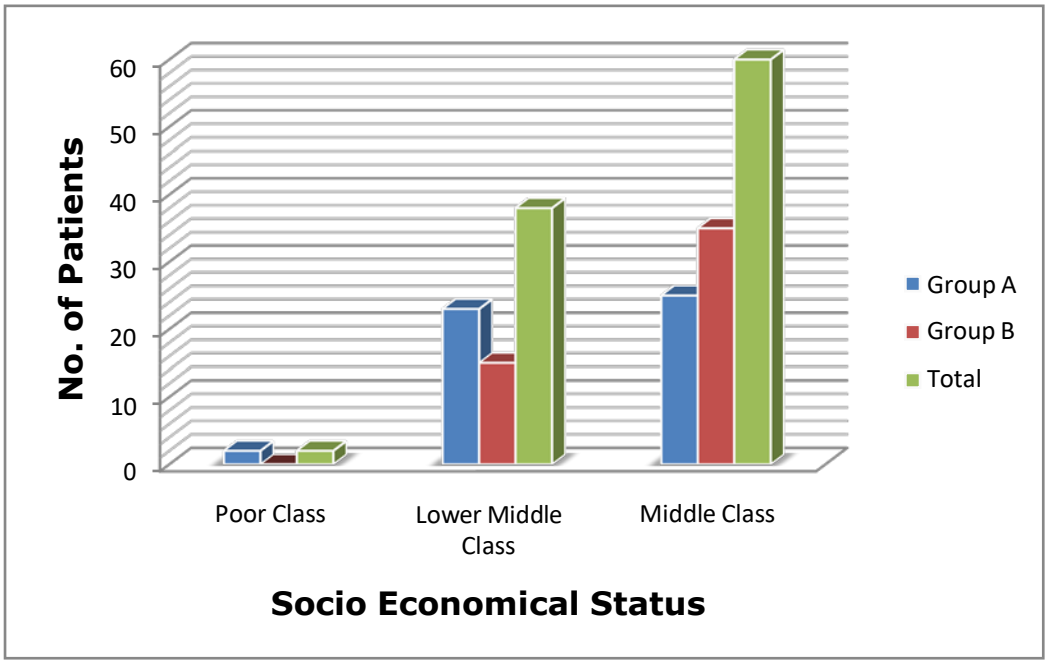
The above table shows that -

In Group A - (25) 50 % patients belonged to Lower Middle class, (23) 46 % patients belonged to Middle class and remaining (2) 6.67 % patients belonged to Poor class.

In Group B - Maximum (35) 70 % patients belonged to Middle class, and (15) 30 % patients belonged to Lower Middle class.

Total - Maximum 60 % patients belonged to Middle class, 38 % patients belonged to Lower Middle class and only 2% of patients belonged to lower class.

Graph no. 5A - Distribution according to Socioeconomic Status



Graph no. 5 B - Distribution according to Socioeconomic Status (total)

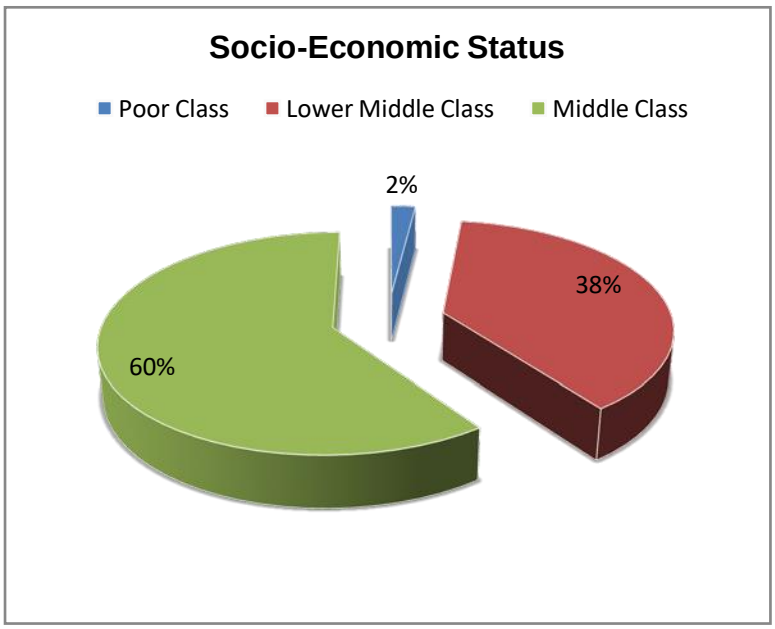


Table no. 6 - Religion wise distribution

Religion	Group (A)		Group (B)		Total	
	No. of patients	**Percen tage**	**No. of patients**	**Percen tage**	**No.of patients**	**Percen tage**
Hindu	47	94.00%	48	96.00%	95	95.00%
Muslim	3	6.00%	0	0.00%	3	3.00%
Jain	0	0.00%	1	2.00%	1	1.00%
Buddhist	0	0.00%	1	2.00%	1	1.00%
Total	**50**	**100%**	**50**	**100 %**	**100**	**100 %**

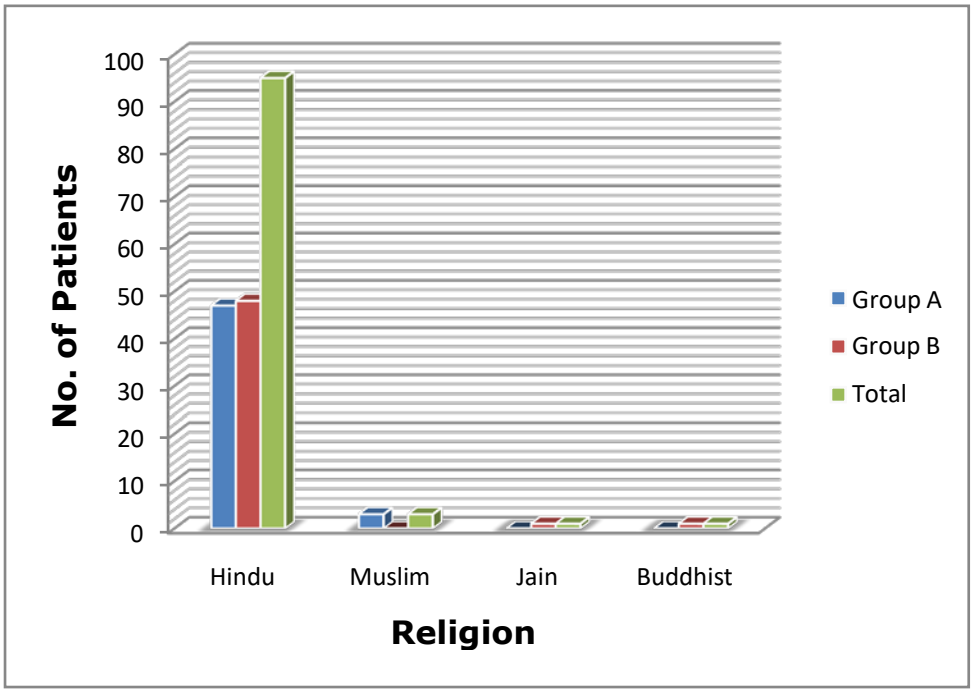
The above table shows that -

In Group A - Maximum (47) 94 % patients were Hindu, and (3) 6 % patients were Muslim.

In Group B - Maximum 48 (96 %) patients were Hindu, 1 (2 %) patient was Jain, and another 1 (2 %) patient was Buddhist.

Total - Maximum 95 % patients were Hindu, 3% were Muslim, 1% patient was Jain, and another 1% patient was Buddhist.

Graph no. 6 A - Religion wise distribution



Graph no. 6 B - Religion wise distribution (total)

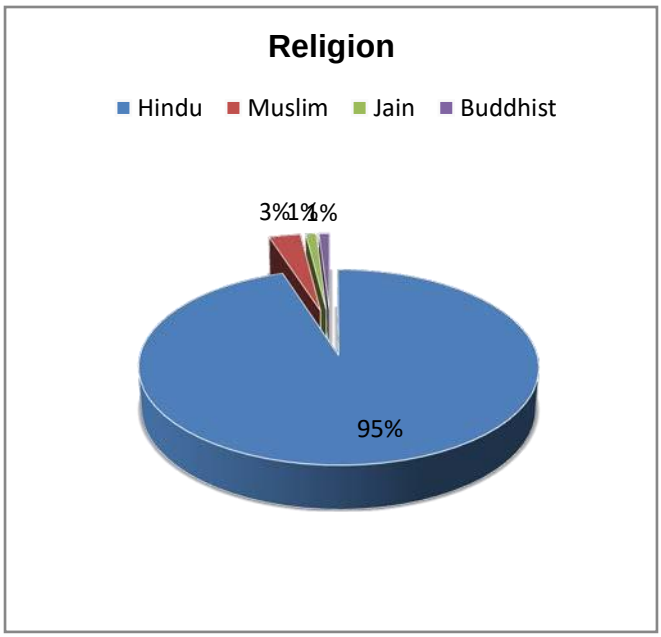


Table no. 7 - Marital Status wise distribution

Marital Status	Group (A)		Group (B)		Total	
	No. of patients	Percen tage	No. of patients	Percen tage	No.of patients	Percen tage
Unmarried	6	12.00%	13	26.00%	19	19.00%
Married	44	88.00%	37	74.00%	81	81.00%
Total	**50**	**100%**	**50**	**100 %**	**100**	**100 %**

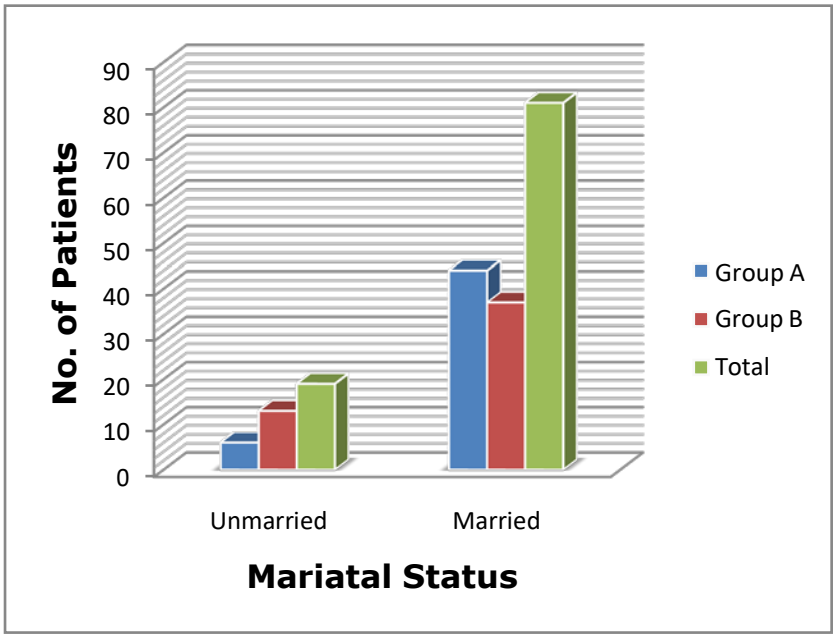
The above table shows that -

In Group A - maximum patients i.e. 44 (88 %) were Married and 6 (12 %) patients were Unmarried.

In Group B - maximum patients i.e. 37 (74 %) were Married and 13 (26 %) patients were Unmarried.

Total - maximum patients i.e. 81% were Married and 19% patients were Unmarried.

Graph no. 7 A - Marital Status wise distribution



Graph no. 7 B - Marital Status wise distribution (total)

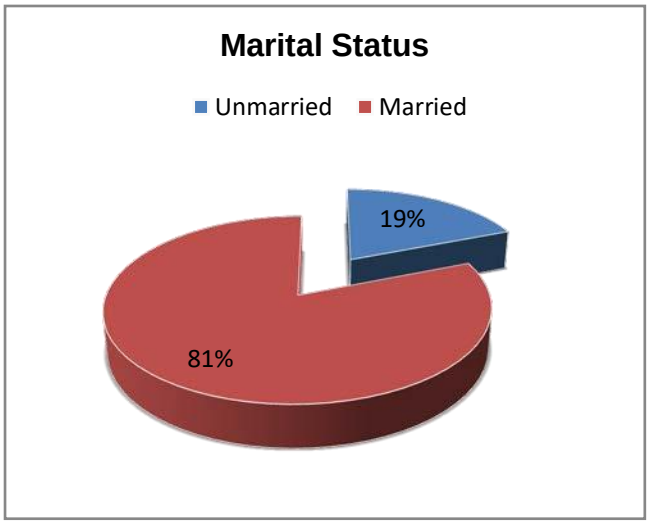


Table no. 8 - Habitat wise distribution

HABITATS	Group (A)		Group (B)		Total	
	No. of patients	Percen tage	No. of patients	Percen tage	No.of patients	Percen tage
RURAL	49	98.00%	50	100.00%	99	99.00%
URBAN	1	2.00%	0	0.00%	1	1.00%
Total	50	100%	50	100%	100	100%

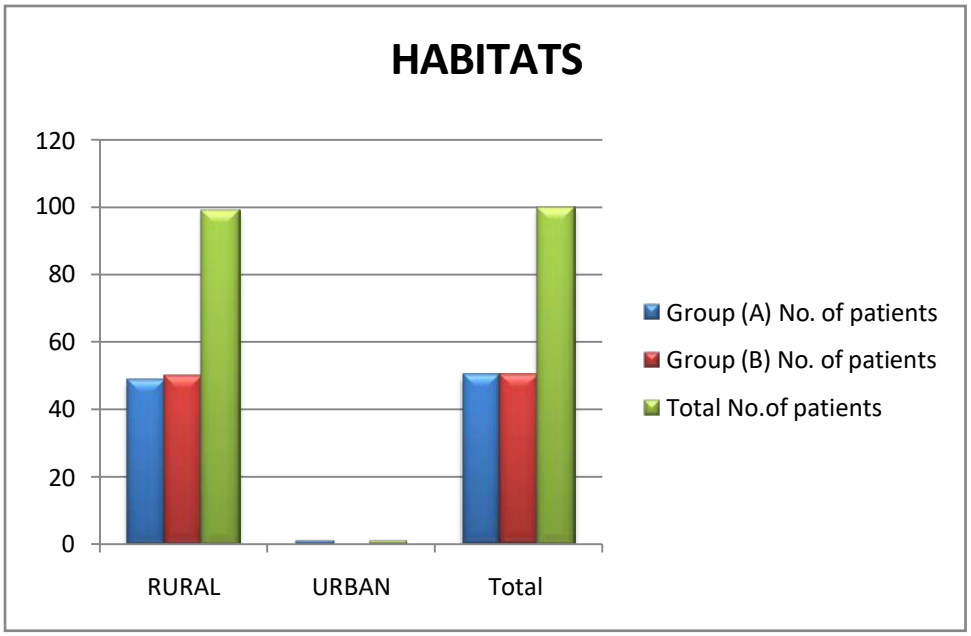
The above table shows that -

In Group A – (49) 98% of patients were from rural habitat and only (1) 2% of patient were from urban habitat.

In Group B – (100) 100% of patients were from rural habitat and no patient was from urban habitat**.**

Total – 99% of patients was from rural habitat and only 1% of patient was from urban habitat.

Graph no. 8 A - Habitats wise distribution



Graph no. 8 B - Habitats wise distribution (total)

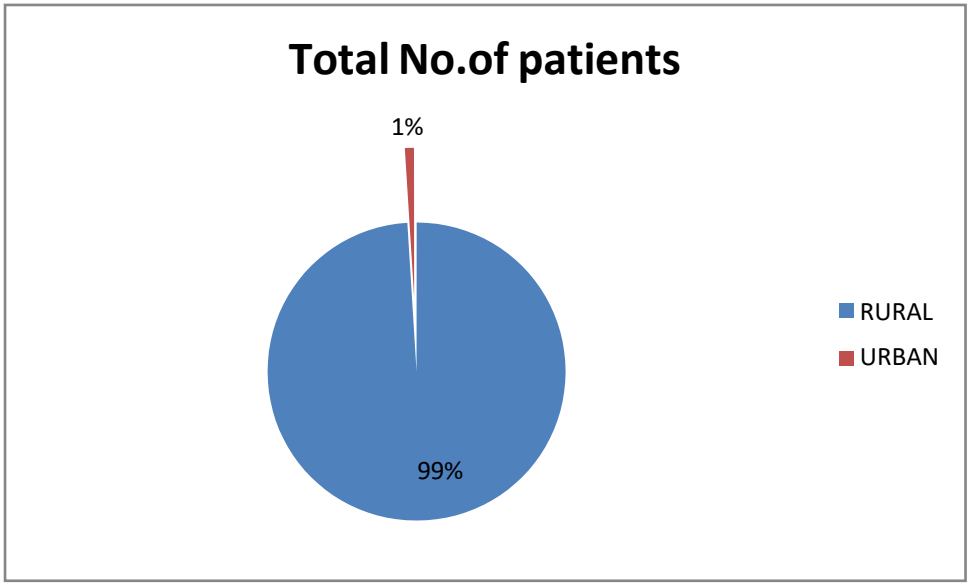


Table No. 9 - Addiction wise distribution

Addiction	Group (A)		Group (B)		Total	
	No. of patients	Percen Tage	No. of patients	Percen tage	No.of patients	Percen Tage
Tea	3	6.00%	0	0.00%	3	3.00%
Tobacco	13	26.00%	10	20.00%	23	23.00%
Smoking	0	0.00%	7	14.00%	7	7.00%
Alcohol	0	0.00%	5	10.00%	5	5.00%
Tea, Tobacco	0	0.00%	1	2.00%	1	1.00%
Tobacco, Smoking	5	10.00%	0	0.00%	5	5.00%
Tobacco, Alcohol	0	0.00%	3	6.00%	3	3.00%
Tea, Smoking, Alcohol	1	2.00%	0	0.00%	1	1.00%
No	28	56.00%	24	48.00%	52	52.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

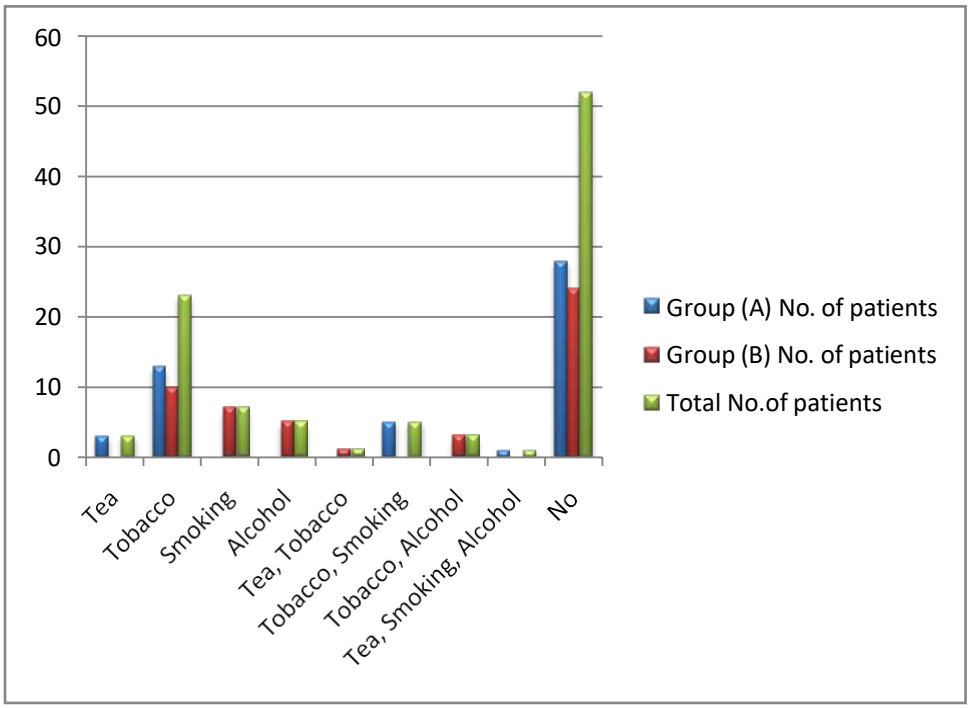
The above table shows that -

Group A - Maximum (28) 56 % patients were not having any type of addiction, followed by (13) 26 % patients were having addiction of Tobacco, (5) 10 % patients were having addiction of Tobacco-Smoking, (3) 6 % patients were having addiction of Tea, and (1) 2 % patient was having addiction of Tea-Smoking-Alcohol.

Group B - Maximum (24) 48 % patients were not having any type of addiction, followed by (10) 20 % patients were having addiction of Tobacco, (7) 14 % patients were having addiction of Smoking, (5) 10 % patients were having addiction of Alcohol, (3) 6 % patient were having addiction of Tobacco-Alcohol, and (1) 3.33 % patient was having addiction of Tea-Tobacco.

Total - Maximum 52% patients were not having any type of addiction, followed by (23) 23% patients were having addiction of Tobacco, 7% patients were having addiction of Smoking, 5 % patients were having addiction of Alcohol, 5% patient were having addiction of Tobacco-Smoking, and 1 % patient was having addiction of Tea-Tobacco and again 1% was having addiction of Tea, Smoking, Alcohol.

Graph no. 9 A - Addiction wise distribution



Graph no. 9 B - Addiction wise distribution (total)

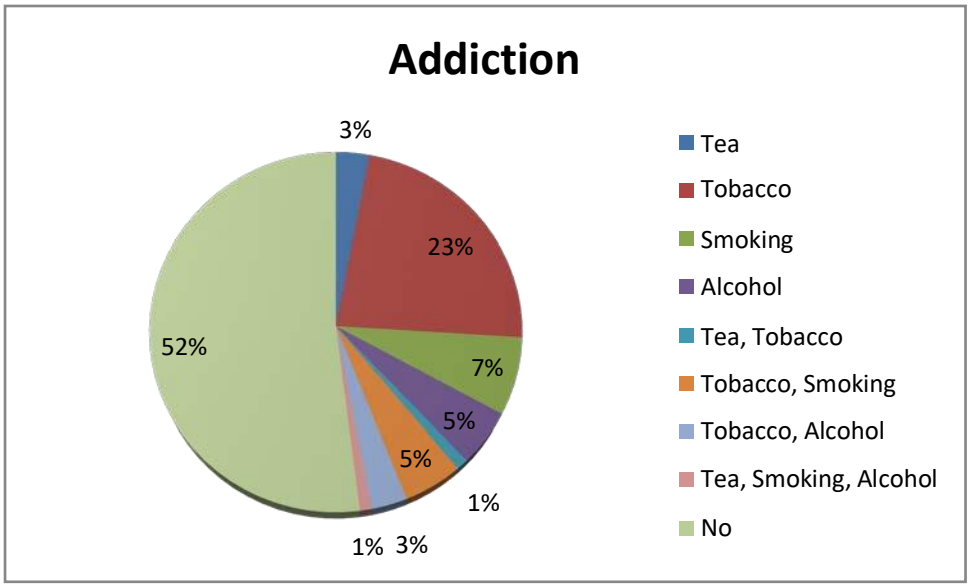


Table no. 10 – Addiction wise distribution (Individual criteria)

Addiction	Group (A)		Group (B)		Total	
	No. of patients	Percen Tage	No. of patients	Percen tage	No. of patients	Percen Tage
Tea	4	7.02%	1	1.85%	5	4.50%
Tobacco	18	31.58%	14	25.93%	32	28.83%
Smoking	6	10.53%	7	12.96%	13	11.71%
Alcohol	1	1.75%	8	14.82%	9	8.11%
No	28	49.13%	24	44.44%	52	46.85%

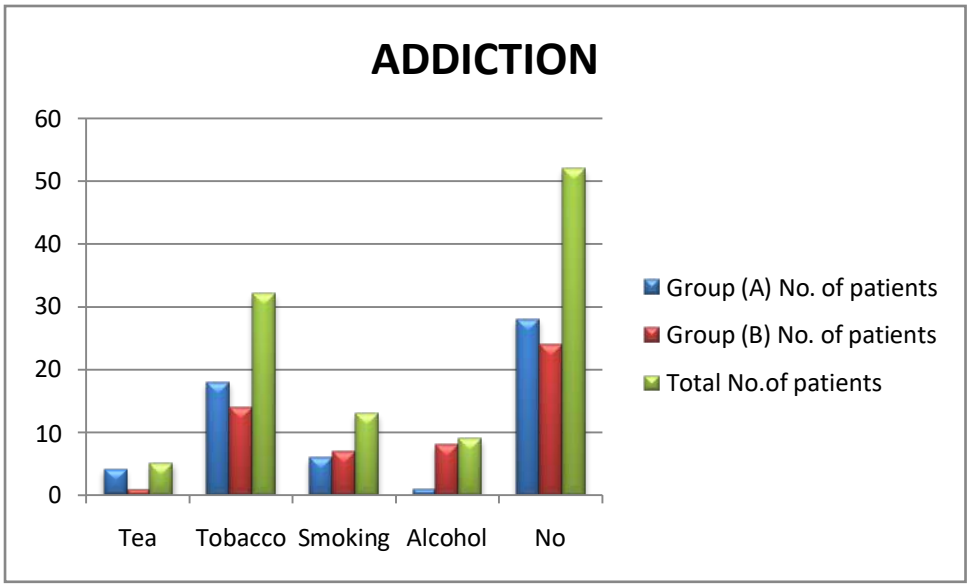
The above table shows that -

In Group A - (28) 49.13% of the patients had no addiction, (18) 31.58 % of the patients had tobacco as addiction, (6) 10.53% of patients had smoking as addiction, (4) 7.02% of patients had tea as addiction and (1) 1.75% of patients had alcohol as addiction.

In Group B - (24) 44.44% of the patients had no addiction, (14) 25.93 % of the patients had tobacco as addiction, (8) 14.82% of patients had alcohol as addiction, (7) 12.96% of patients had smoking as addiction, (1) 1.85% of patients had tea as addiction.

Total - 46.85% of the patients had no addiction, 28.83% of the patients had tobacco as addiction, 11.71% of patients had smoking as addiction, 8.11%of patients had alcohol as addiction and 4.50% of patients had tea as addiction.

Graph no. 10 A - Addiction wise distribution(individual criteria)



Graph no. 10 B - Addiction wise distribution(individual criteria)(total)

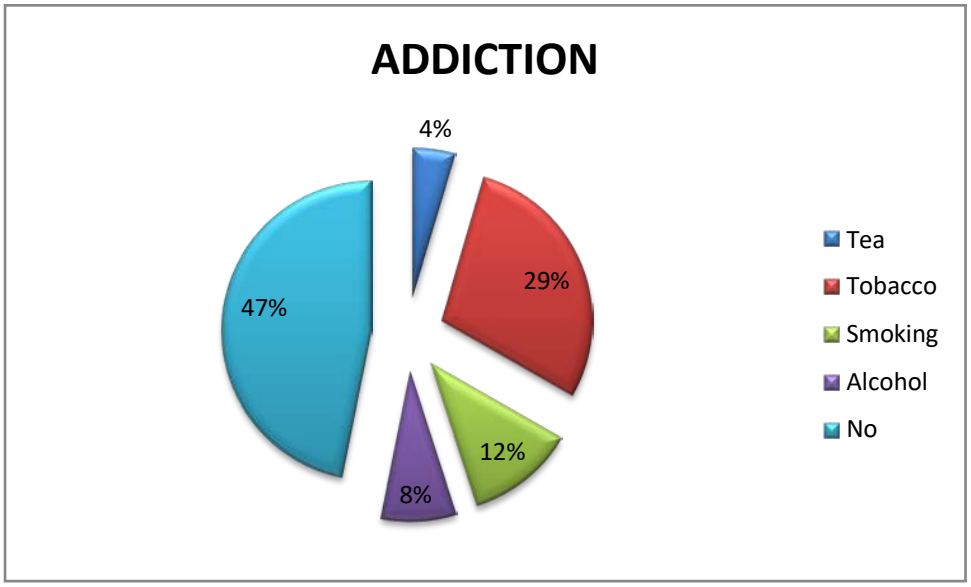


Table no. 11 – Diet wise distribution

Aahar	**Group (A)**		**Group (B)**		**Total**	
	No. of patients	**Percentage**	**No. of patients**	**Percentage**	**No.of patients**	**Percentage**
Pure Vegetarian	10	20.00%	9	18.00%	19	19.00%
Mixed	21	42.00%	22	44.00%	43	43.00%
Non Vegetarian	19	38.00%	19	38.00%	38	38.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

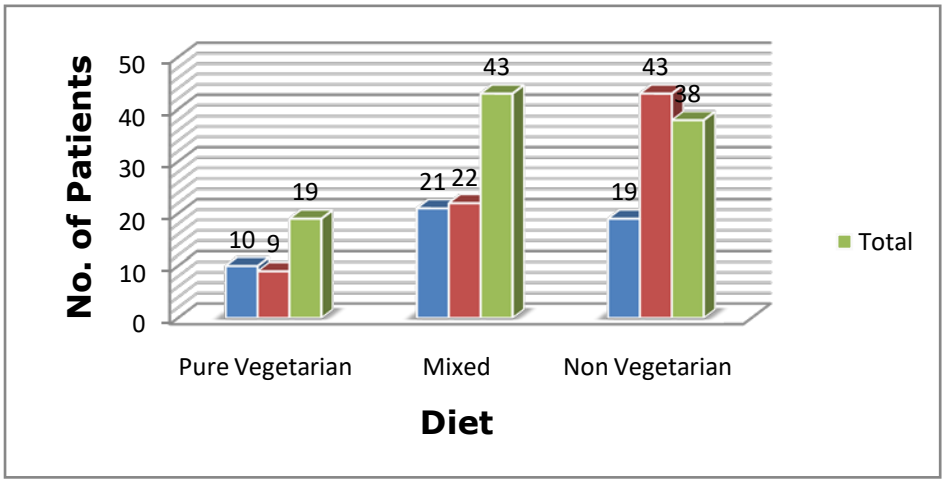
The above table revels that -

In Group A - Maximum (21) 42 % patients were having Mixed type of diet, (19) 38 % patients were having Non vegetarian diet, and (10) 20 % patients were Pure vegetarian.

In Group B - Maximum (22) 44 % patients were having Mixed type of diet, (19) 38 % patients were having Non vegetarian diet, and (9) 18 % patients were Pure vegetarian.

Total - Maximum 43% patients were having Mixed type of diet, 38 % patients were having Non vegetarian diet, and 19% patients were Pure vegetarian.

Graph no. 11 A - Diet wise distribution



Graph no. 11 B - Diet wise distribution (total)

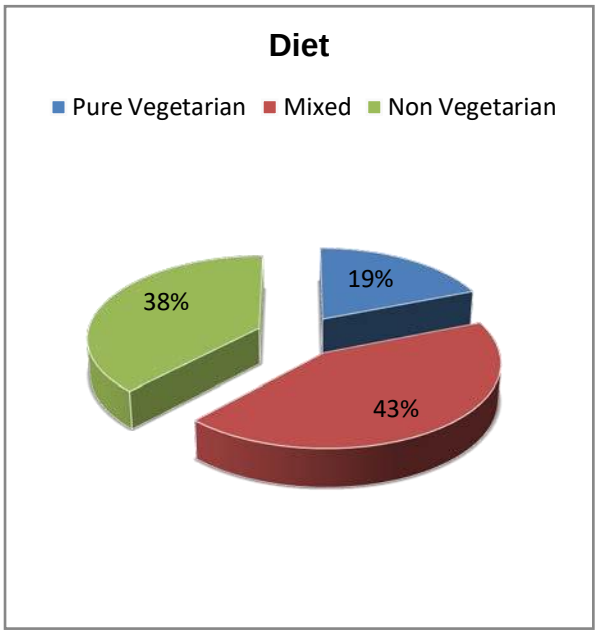


Table no. 12 - Diet – Rasa wise distribution

RASA	Group (A)		Group (B)		Total	
	No.of patients	Percentage	No.of patients	Percentage	No.of patients	Percentage
NOT SPECIFIC	34	68.00%	35	70.00%	69	69.00%
MADHUR	7	14.00%	8	16.00%	15	15.00%
KATU	6	12.00%	3	6.00%	9	9.00%
KASHAYA	1	2.00%	1	2.00%	2	4.00%
AMLA LAVAN	1	2.00%	0	0.00%	1	2.00%
AMLA	0	0.00%	2	4.00%	2	4.00%
LAVAN	0	0.00%	1	2.00%	2	4.00%
AMLAKATU	1	2.00%	0	0.00%	1	2.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

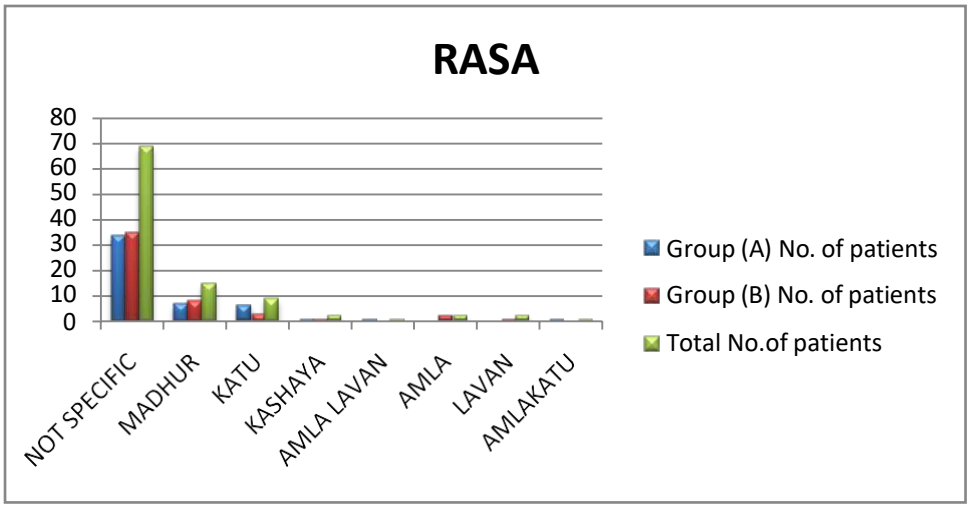
The above table revels that -

In group A - (34) 68% of patients were not having any rasa dominant diet, it was followed by (7)14 % madhur rasa dominance, (6) 12% of katu dominance, (1) 2% of kashaya dominance, (1) 2% of amla-lavan dominance, (1) 2% of amla-katu dominance.

In group B - (35) 70% of patients were not having any rasa dominant diet, it was followed by (8) 16 % madhur rasa dominance, (3) 6% of katu dominance, (2) 4% of amla dominance, (1) 2% of lavan dominance.

Total - 69% of patients were not having any rasa dominant diet, it was followed by 15% madhur rasa dominance, 9% of katu dominance, 4% of kashaya dominance, 4% amla dominace,4% lavan dominance, 2% of amla-lavan dominance and amla-katu dominance.

Graph no. 12 A - Rasa wise distribution



Graph no. 12 B - Rasa wise distribution (total)

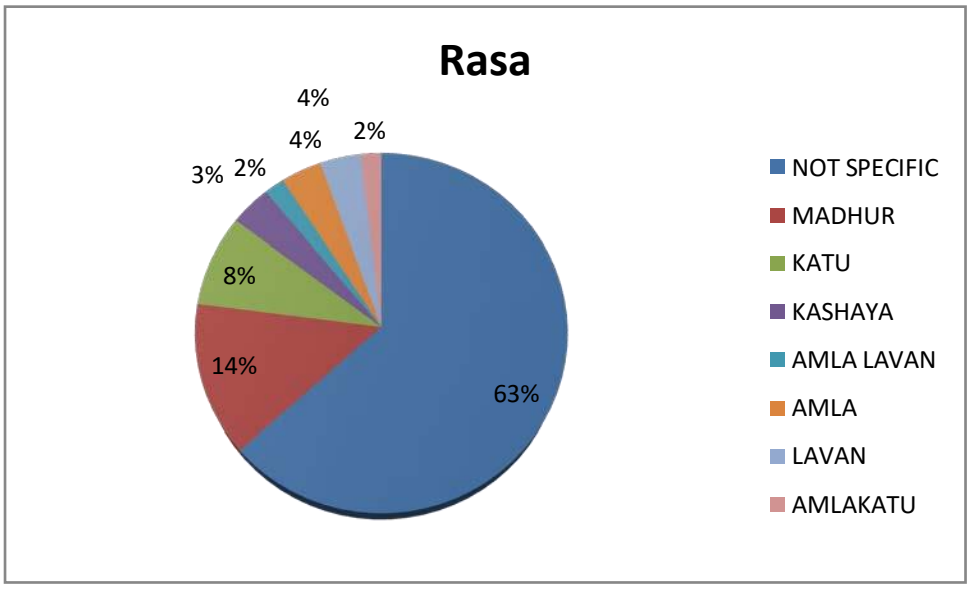


Table no. 13 - Diet-Habit wise distribution

HABITS	Group (A)		Group (B)		Total	
	No. of patients	Percen tage	No.of patients	Percen Tage	No.of patients	Percen tage
Adhyashana	4	5.33%	6	8.70%	10	6.94%
Ajeernashana	12	16.00%	7	10.15%	19	13.19%
Anashana	13	17.33%	4	5.80%	17	11.81%
Samashana	10	13.33%	9	13.04%	19	13.19%
Viruddhashana	22	29.33%	32	46.38%	54	37.50%
Vishamashana	14	18.67%	11	15.94%	25	17.36%

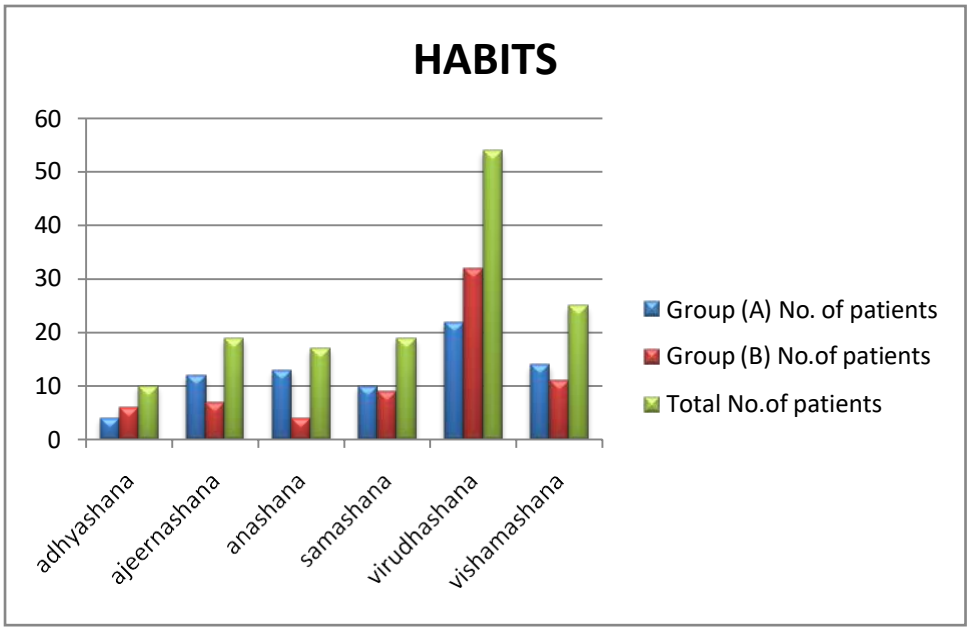
The above table revels that -

In group A - (22) 29.33% of patients were habitual to Viruddhashana. (14) 18.67% of patients were habitual to Vishamashana. (13) 17.33% patients were habitual to Anashana. (12) 16.00% patients were habitual to Ajeernashana. (10) 13.33% patients were habitual to Samashana. (4) 5.33% patients were habitual to Adhyashana.

In group B- (32) 46.38% of patients were habitual to Viruddhashana. (11) 15.94% patients were habitual to Vishamashana. (9) 13.04% of patients were habitual to Samashana. (7) 10.15% of patients were habitual to Ajeernashana. (6) 8.70% of patients were habitual to Adhyashana. (4) 5.80% of patients were habitual to Anashana.

Total- 37.50% of patients were habitual to Viruddhashana. 17.36% patients were habitual to Vishamashana. 13.19% of patients were habitual to Samashana. 13.19% of patients were habitual to Ajeernashana. 11.81% of patients were habitual to Anashana. 6.94% of patients were habitual to Adhyashana.

Graph no. 13 A – Diet-Habit wise distribution



Graph no. 13 B – Diet-Habit wise distribution (total)

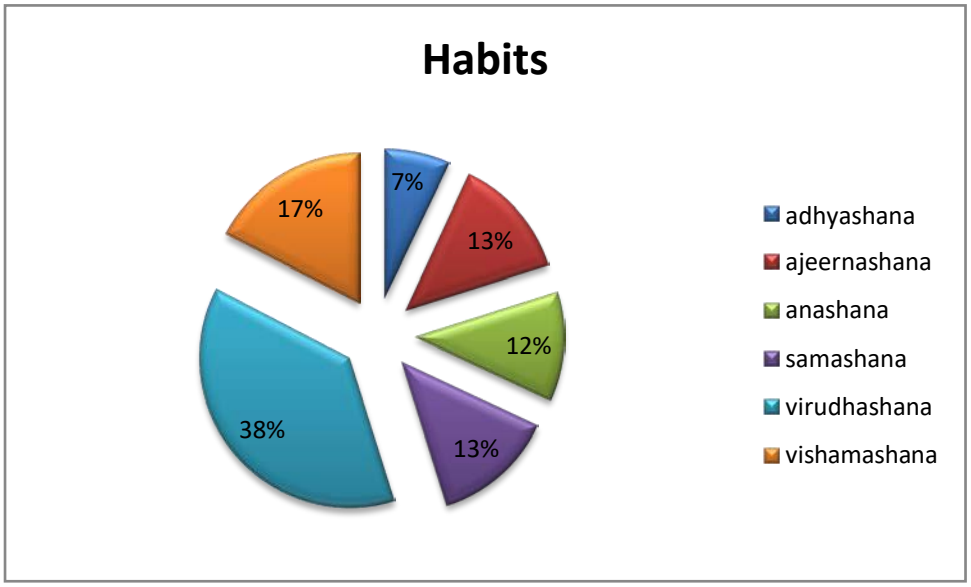


Table no. 14 – Emotional Makeup wise distribution

EMOTIONAL MAKEUP	Group (A)		Group (B)		Total	
	No. of patients	Percentage	No.of patients	Percentage	No.of patients	Percentage
NOT SPECIFIC	3	5.08%	1	1.67%	4	3.39%
ANGER	11	11.64%	8	13.33%	19	16.10%
ANXIETY	11	11.64%	8	13.33%	19	16.10%
DEPRESSION	4	6.78%	6	10.00%	10	8.47%
FEAR	2	3.39%	6	10.00%	8	6.78%
IRRITATION	14	23.73%	11	18.33%	25	21.19%
TENSION/STRESS	8	13.56%	12	20.00%	20	16.95%
OTHER	5	8.47%	7	11.67%	12	10.00%
JOVIAL	0	0.00%	1	1.67%	1	0.85%

(* Not specific- do not find any mental state. Others- patients had some kind of mental state but couldn't explain)

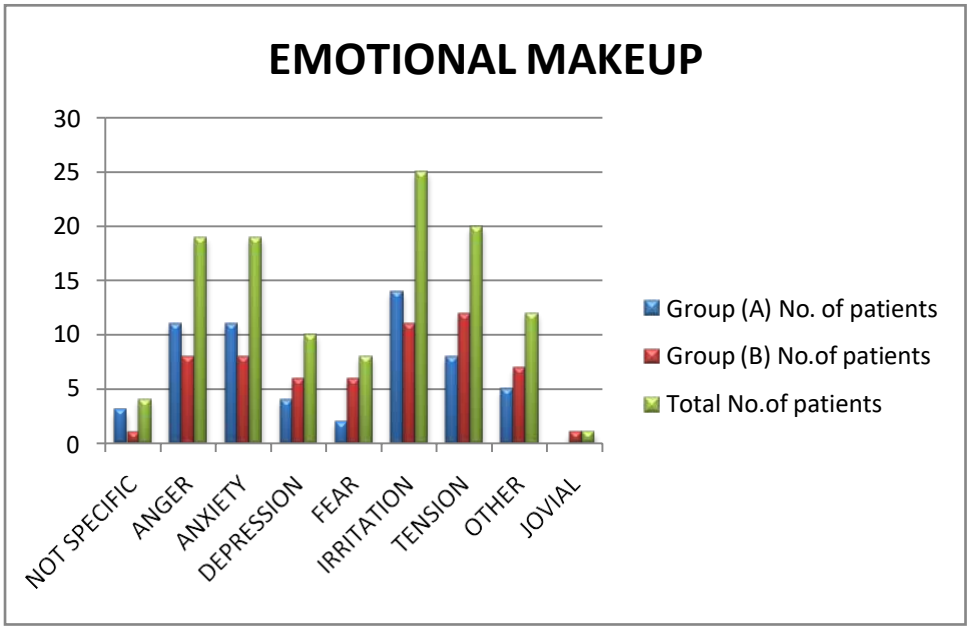
The above table revels that -

In group A - (14) 23.73% of patients were having irritation. (11) 11.64% of patients were having anxiety. (11) 11.64% of patients were having anger. (8) 13.56% of patients were having stress. (5) 8.47% of patients were having other states of mood which they couldn't explain. (4) 6.78% of patients were having depression. (3) 5.08% of patients were having non specific mental state. (2) 3.39% of patients were having fear. None of the patient had jovial state.

In group B - (12) 20.00% of patients were having stress. (11) 18.33% of patients were having irritation. (11) 11.64% of patients were having anger. (8) 13.33% of patients were having anger. (8) 13.33% of patients were having anxiety. (7) 11.67% of patients were having states of mood which they couldn't explain. (6) 10.00% of patients were having depression. (6) 10.00% of patients were having fear. (1) 1.67% of patients were having no specific mental state. (1) 1.67% of patients were of jovial.

Total - 21.19% of patients were having irritation. 16.95% of patients were having stress. 16.10% of patients were having anger. 16.10% of patients were having anxiety. 10.00% of patients were having states of mood which they couldn't explain. 6.78% of patients were having fear. 3.39% of patients were no specific mental state. 0.85% of patients were of jovial.

Graph no. 14 A - Emotional Makeup wise distribution



Graph no. 14 B - Emotional Makeup wise distribution (total)

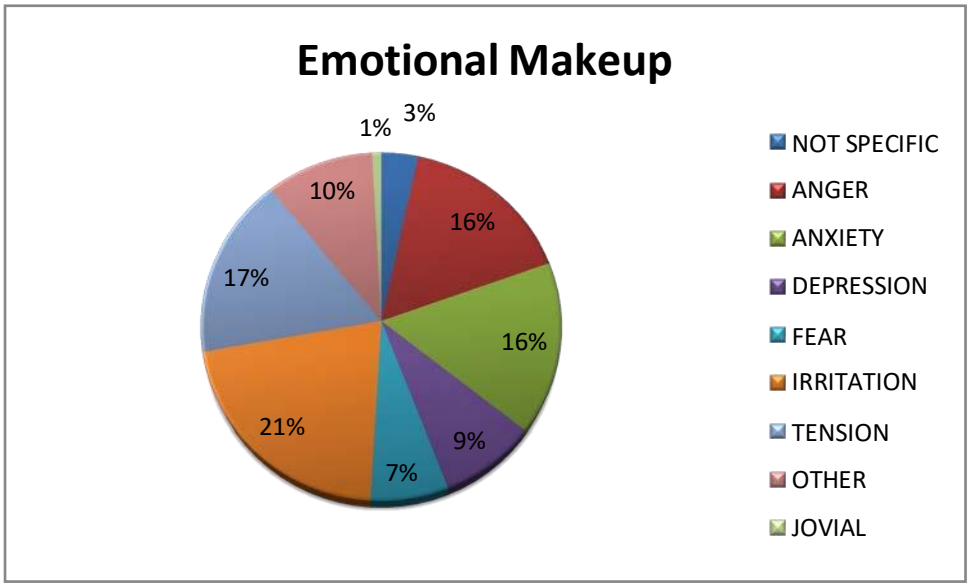


Table No. 15 - Nidra wise distribution

NIDRA	Group (A)		Group (B)		Total	
	No. of patients	Percentage	No.of patients	Percentage	No.of patients	Percentage
Ratrijagaran	31	62.00%	29	58.00%	60	60.00%
Swabhavik	15	30.00%	16	32.00%	31	31.00%
Divaswapna	4	8.00%	5	10.00%	9	9.00%

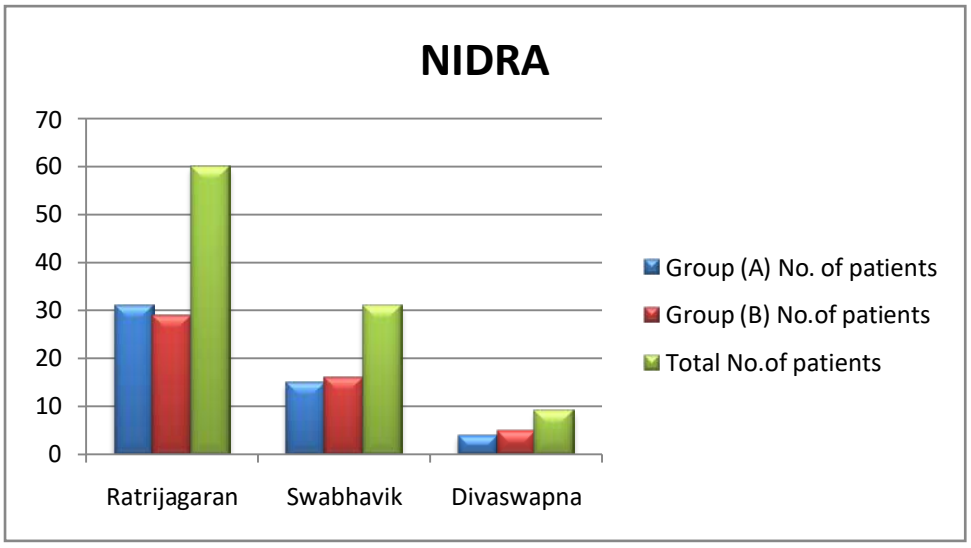
The above table shows that -

In Group A - Maximum 31 (62 %) patients were having Ratrijagaran type of Nidra, another 15 (30%) patients were having Swabhavik Nidra, 4(8%) patients were having Divaswapna type of Nidra.

In Group B - Maximum 29 (58 %) patients were having Ratrijagaran type of Nidra, another 16 (32%) patients were having Swabhavik Nidra, 5(10%) patients were having Divaswapna type of Nidra.

Total - Maximum 60% patients were having Ratrijagaran type of Nidra, another 31% patients were having Swabhavik Nidra, 9% patients were having Divaswapna type of Nidra.

Graph no. 15 A - Nidra wise distribution



Graph no. 15 B - Nidra wise distribution (total)

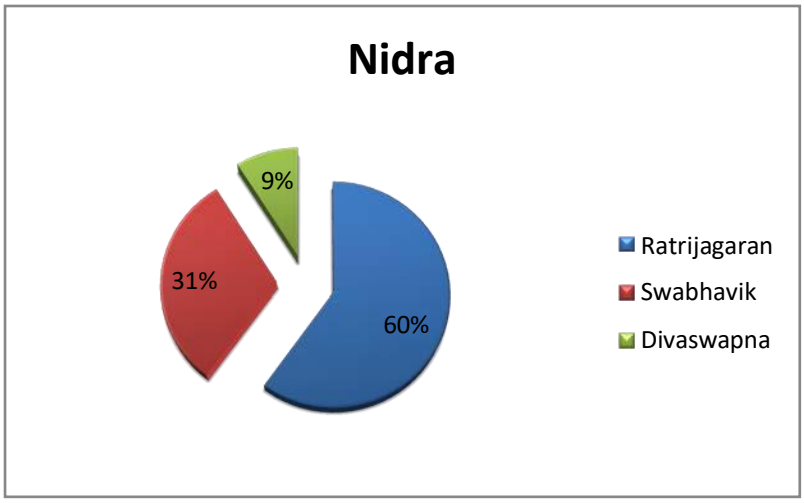


Table no. 16 – Sharir Akruti wise distribution

SHARIR AKRUTI	Group (A)		Group (B)		Total	
	No. of patients	**Percentage**	**No.of patients**	**Percentage**	**No.of patients**	**Percentage**
KRUSHA	3	6.00%	0	0.00%	3	3.00%
MADHYAM	28	56.00%	20	40.00%	48	48.00%
STHOOL	19	38.00%	30	60.00%	49	49.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

- After calculating BMI of the patients, we divided the criteria of underweight range as krusha, healthy weight range as madhyama and overweight range or obese range as Sthoola.

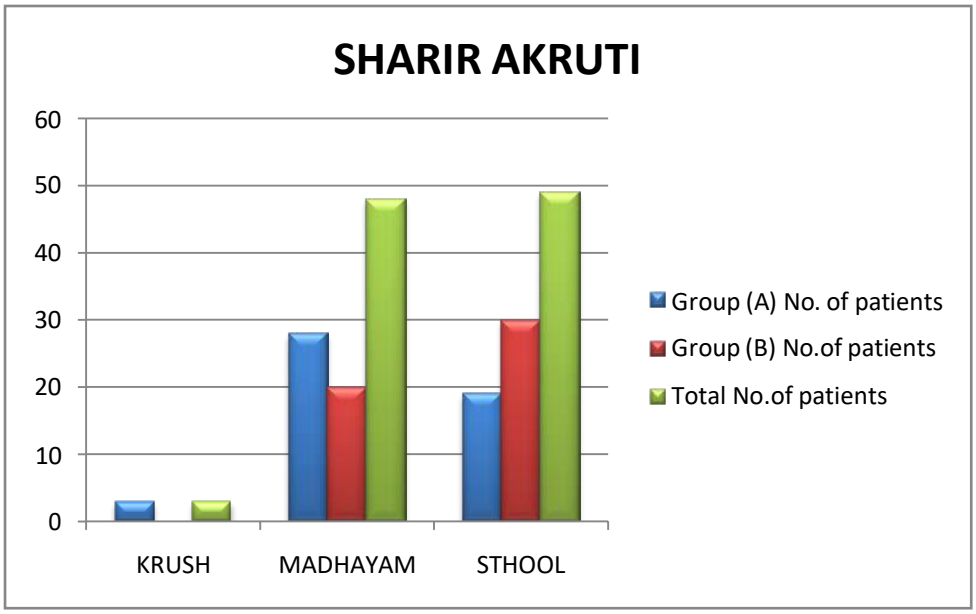
The above table shows that –

In group A - (28) 56% of patients were Sthool by Shsrir Akruti, (19) 38% of patients were Madhyam by Shsrir Akruti and (3) 6% patients were Krusha by Sharir Akruti.

In group B - (30) 60% of patients were Sthool by Shsrir Akruti, (20) 40% of patients were Madhyam by Shsrir Akruti and none of patients were Krusha by Sharir Akruti

Total - 49% of patients were Sthool by Shsrir Akruti, 48% of patients were Madhyam by Shsrir Akruti and 3% patients were Krusha by Sharir Akruti

Graph no 16 A - Sharir Akruti wise distribution



Graph no. 16 B - Sharir Akruti wise distribution (total)

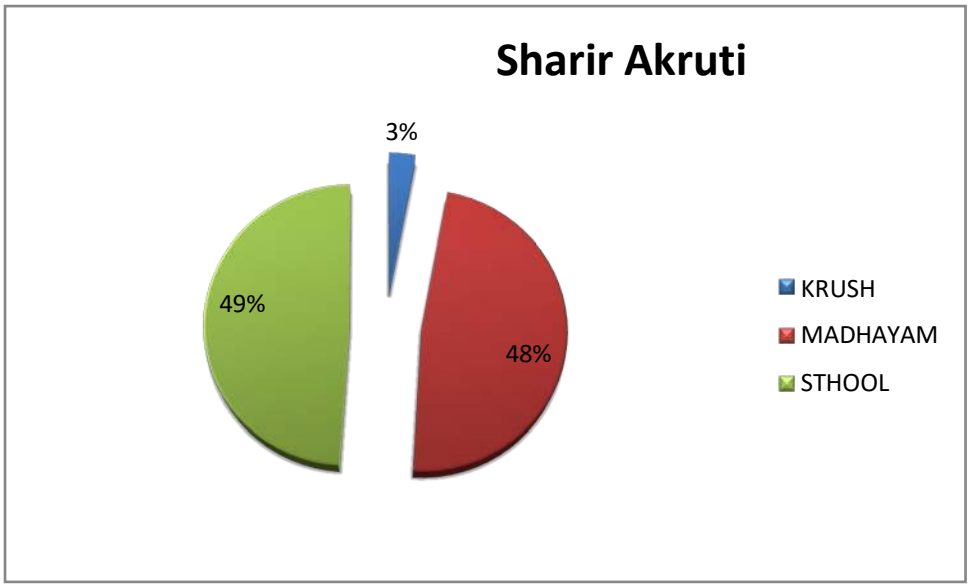


Table no. 17 – Duration of work wise distribution

Duration of work	Group (A)		Group (B)		Total	
	No. of patients	Percen tage	No. of patients	Percen tage	No.of patients	Percen tage
< 9 hrs	29	58.00%	25	50.00%	54	54.00%
9 to 12 hrs	21	42.00%	24	48.00%	45	45.00%
> 12 hrs	0	0.00%	1	2.00%	1	1.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

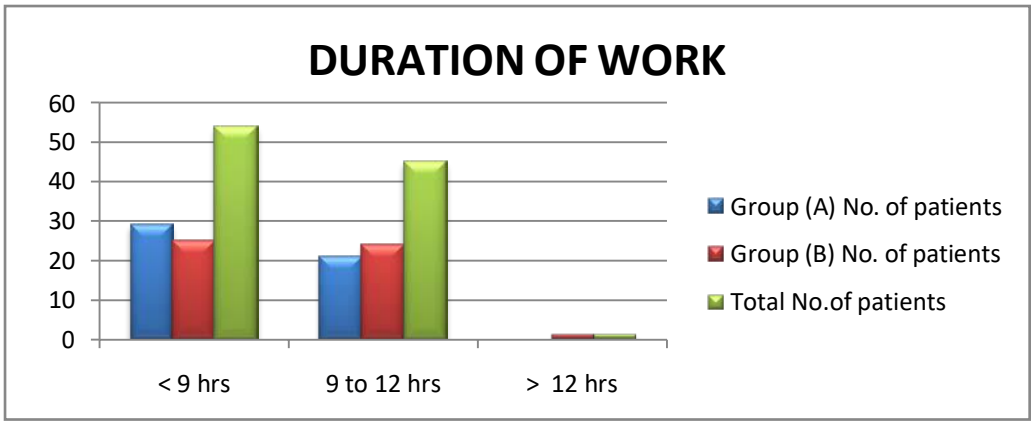
The above table shows that -

In group A - (29) 58% of patients worked for less than 9 hrs, (21) 42**%** of patients worked for 9 to 12 hrs.

In group B - (25) 50% of patients worked for less than 9 hrs**,** (24) 48% patients worked for 9 to 12 hrs and (1) 2% of patients worked for more than 12 hours.

Total - 54% of patients worked for less than 9 hrs**,** 45% patients worked for 9 to 12 hrs and 1% of patients worked for more than 12 hours

Graph no. 17 A - Duration of work wise distribution



Graph no. 17 B - Duration of work wise distribution (total)

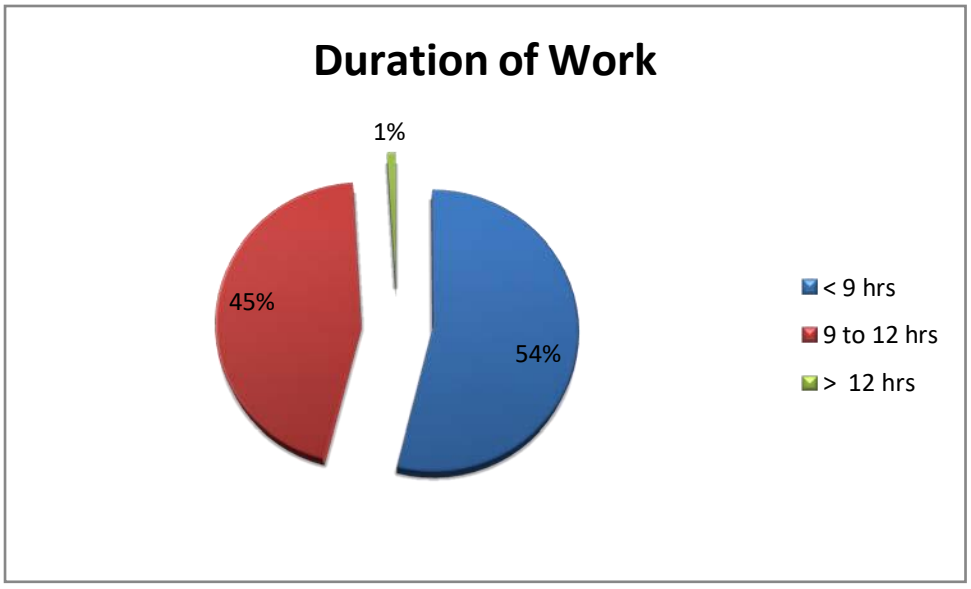


Table no. 18 - Agni wise distribution

Agni	Group (A)		Group (B)		Total	
	No. of patients	**Percen Tage**	**No. of patients**	**Percen Tage**	**No.of patients**	**Percen tage**
Visham	24	48.00%	19	38.00%	43	43.00%
Tikshna	0	0.00%	0	0.00%	0	0.00%
Manda	22	44.00%	24	48.00%	46	46.00%
Sama	4	8.00%	7	14.00%	11	11.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

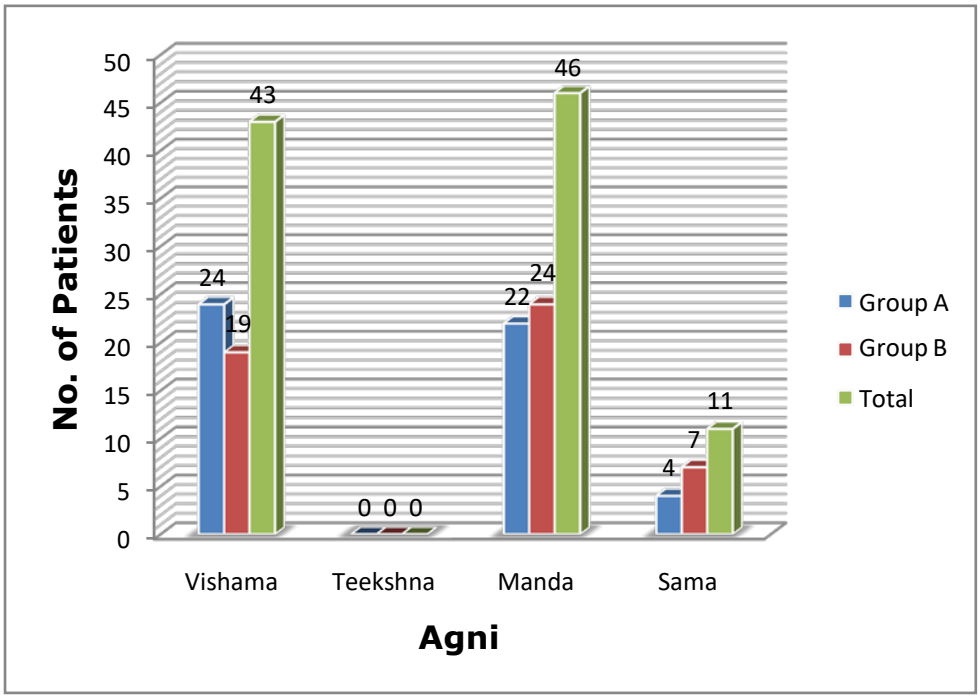
The above table shows that -

In Group A - maximum 24 (48 %) patients were having Vishama type of Agni, followed by 22 (44 %) patients were having Mandagni, and 4 (8 %) patients were having Samagni.

In Group B - majority of patients i.e.24 (48 %) were having Mandagni, 19 (38 %) patients were having Vishama Agni, and 7 (14 %) patients were having Samagni.

Total - majority of patients i.e. 46% were having Mandagni, 43% patients were having Vishama Agni, and 11% patients were having Samagni.

Graph no. 18 A- Agni wise distribution



Graph no. 18 B - Agni wise distribution (total)

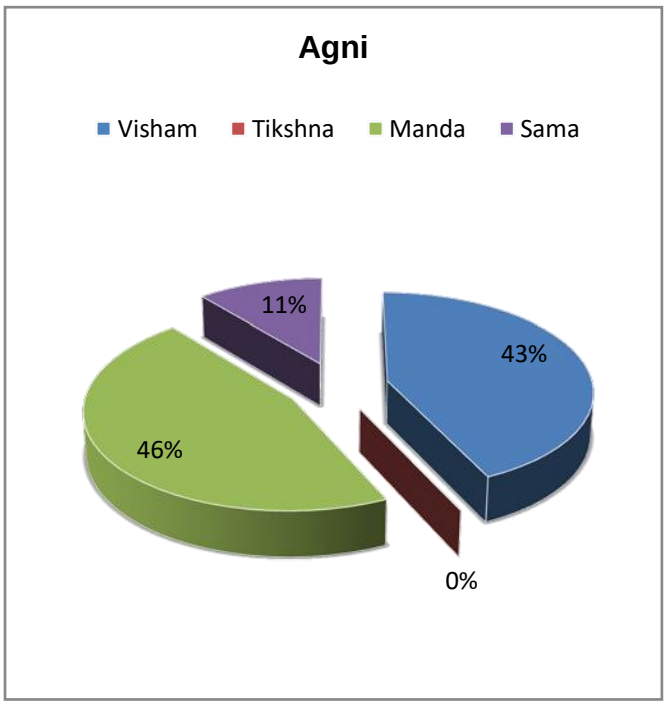


Table no. 19 - Koshtha wise distribution

Koshtha	Group (A)		Group (B)		Total	
	No. of patients	Percentage	No. of patients	Percentage	No.of patients	Percentage
Krura	27	54.00%	23	46.00%	50	50.00%
Mrudu	0	0.00%	0	0.00%	0	0.00%
Madhyam	23	46.00%	27	54.00%	50	50.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

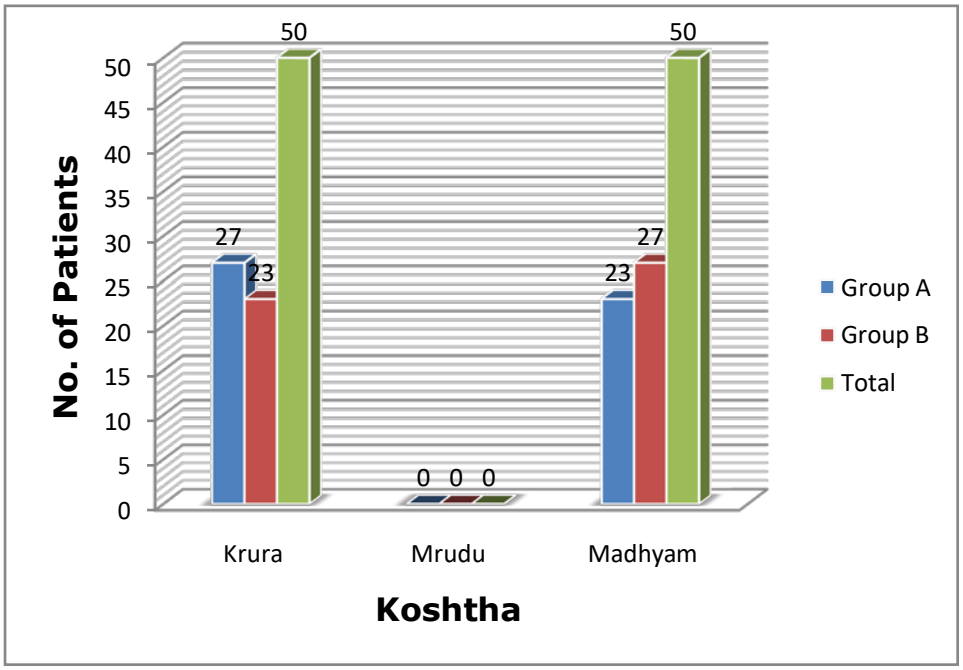
The above table shows that –

In Group A - maximum 27 (54 %) patients were having Krura Koshtha, and 23 (46 %) patients were having Madhyam Koshtha.

In Group B - maximum 27 (54 %) patients were having Madhyam Koshtha, and 23 (46 %) patients were having Krura Koshtha.

Total - 50% patients were having Madhyam Koshtha, and 50% patients were having Krura Koshtha.

Graph no. 19 A - Koshtha wise distribution



Graph no. 19 B - Koshtha wise distribution (total)

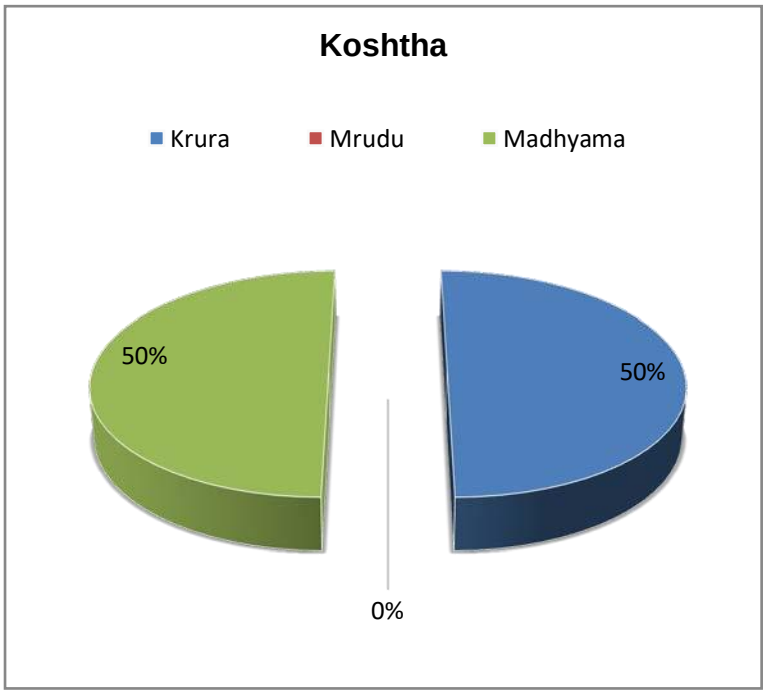


Table no. 20 - Prakruti wise distribution

Prakruti	Group (A)		Group (B)		Total	
	No. of patients	Percentage	No. of patients	Percentage	No.of patients	Percentage
VP	2	4.00%	7	14.00%	9	9.00%
VK	15	30.00%	16	32.00%	31	31.00%
PV	4	8.00%	2	4.00%	6	6.00%
PK	4	8.00%	6	12.00%	10	10.00%
KV	14	28.00%	13	26.00%	27	27.00%
KP	11	22.00%	6	12.00%	17	17.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

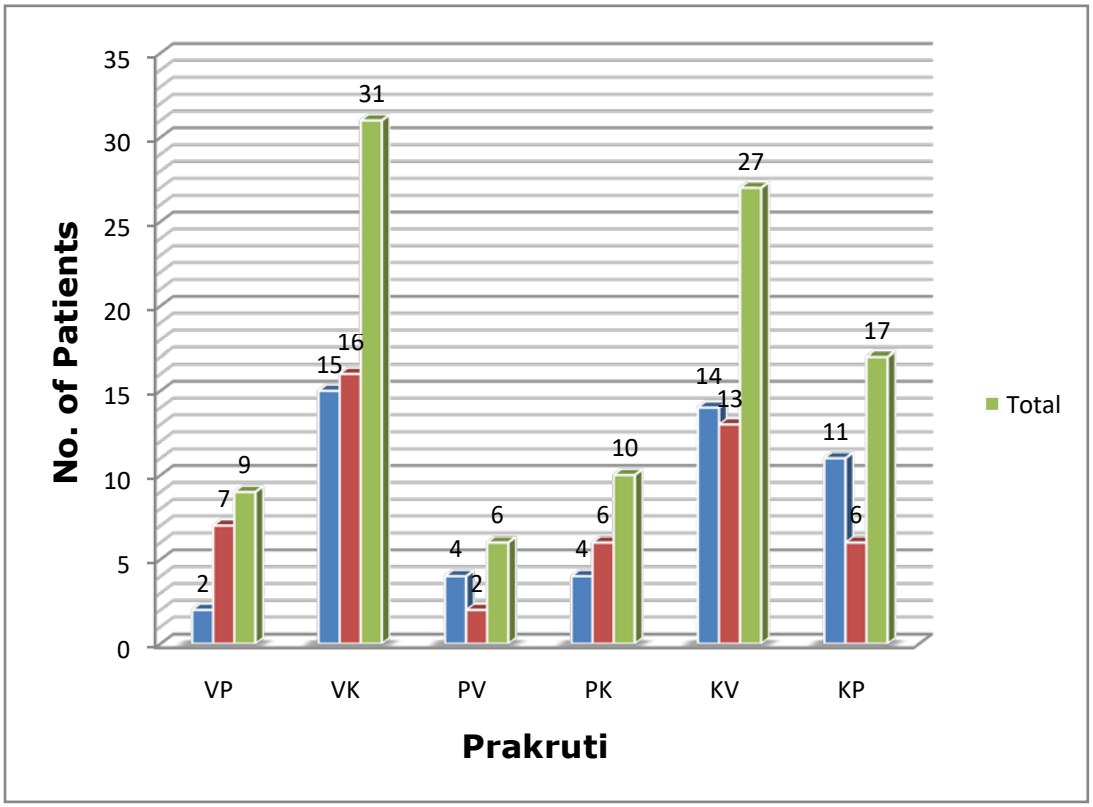
The above table shows that -

In Group A - majority of patients i.e.15 (30 %) patients were having Vata-Kapha Prakruti, followed by 14 (28 %) patients were having Kapha-Vata Prakruti, 11 (22 %) patients were having Kapha-Pitta Prakruti,4 (8 %) patients were having Pitta-Vata Prakruti, another 4 (8 %) patients were having Pitta-Kapha Prakruti,and 2 (4 %) patients were having Vata-Pitta Prakruti.

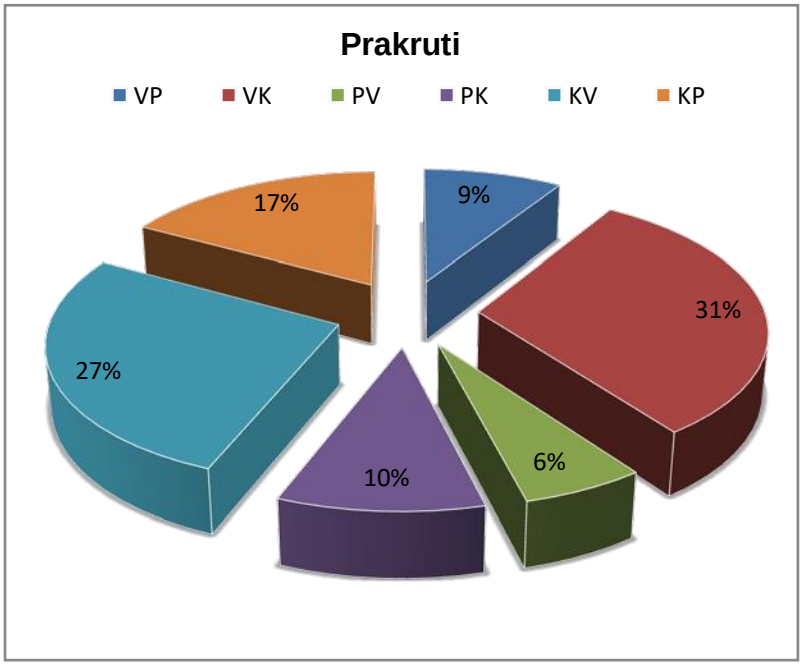
In Group B - maximum 16 (32 %) patients were having Vata-Kapha Prakruti, followed by 13 (26 %) patients were having Kapha-Vata Prakruti, 7 (14 %) patients were having Vata-Pitta Prakruti, 6 (12 %) patients were having Pitta-Kapha Prakruti, another 6 (12 %) patients were having Kapha-Pitta Prakruti and 2 (4 %) patients were having Pitta-Vata Prakruti.

Total - maximum 31% patients were having Vata-Kapha Prakruti, followed by 27% patients were having Kapha-Vata Prakruti, 17% patients were having kapha-Pitta Prakruti, 10% patients were having Pitta-Kapha Prakruti, another 9% patients were having Vata-Pitta Prakruti and 6% patients were having Pitta-kapha Prakruti.

Graph no. 20 A - Prakruti wise distribution



Graph no. 20 B - Prakruti wise distribution (total)



Nature of work-

The Social Security Administration (SSA) classifies work into five different levels: sedentary, light (mild), medium (moderate), heavy and very heavy (loborious).

Table no.21-**Nature of work**

Nature of Work	**Group (A)**		**Group (B)**		**Total**	
	No. of patients	**Percen tage**	**No. of patients**	**Percen tage**	**No.of patients**	**Percen tage**
sedentary	5	10.00%	6	12.00%	11	11.00%
mild	8	16.00%	5	10.00%	13	13.00%
moderate	22	44.00%	23	46.00%	45	45.00%
heavy	7	14.00%	7	14.00%	14	14.00%
laborious	8	16.00%	9	18.00%	17	17.00%
Total	**50**	**100%**	**50**	**100%**	**100**	**100%**

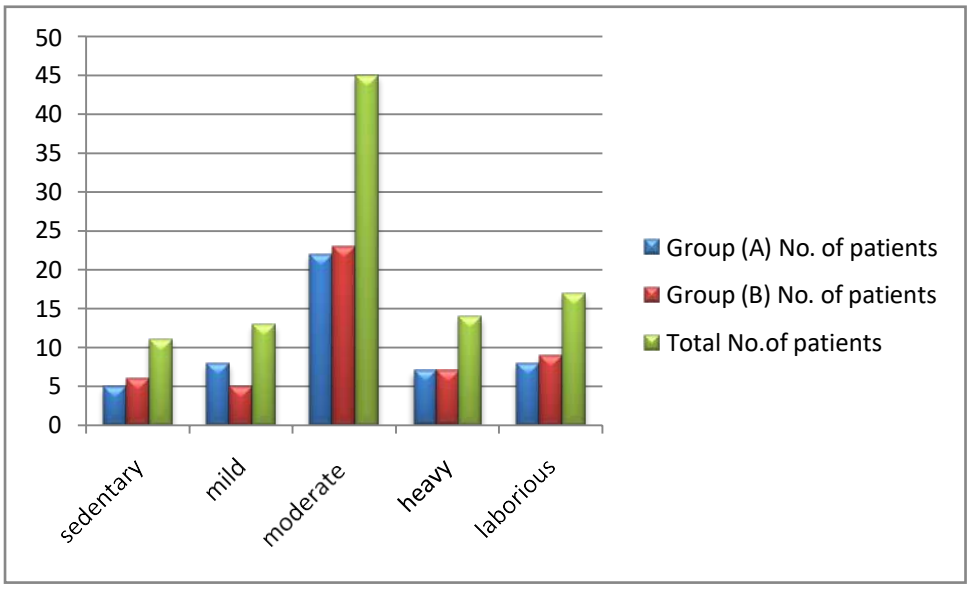
The above table shows-

In group A- Maxium of (22) 44% of patients had moderate type nature of work, (8) 16% had laborious type of nature of work, (8) 16% of patients had mild type of nature of work, (7) 14% of patients had heavy type of nature of work and (5) 10% of patients had sedentary type of nature of work.

In group B- Maxium of (23) 46% of patients had moderate type nature of work, (9) 18% had laborious type of nature of work, (7) 14% of patients had heavy type of nature of work, (6) 12% of patients had mild type of nature of work and (5) 10% of patients had sedentary type of nature of work.

Total- Maxium of 45% of patients had moderate type nature of work, 17% had laborious type of nature of work, 14% of patients had heavy type of nature of work, 13% of patients had mild type of nature of work and 11% of patients had sedentary type of nature of work.

Graph 21A - Nature of work



Graph 21 B - Nature of work (total)

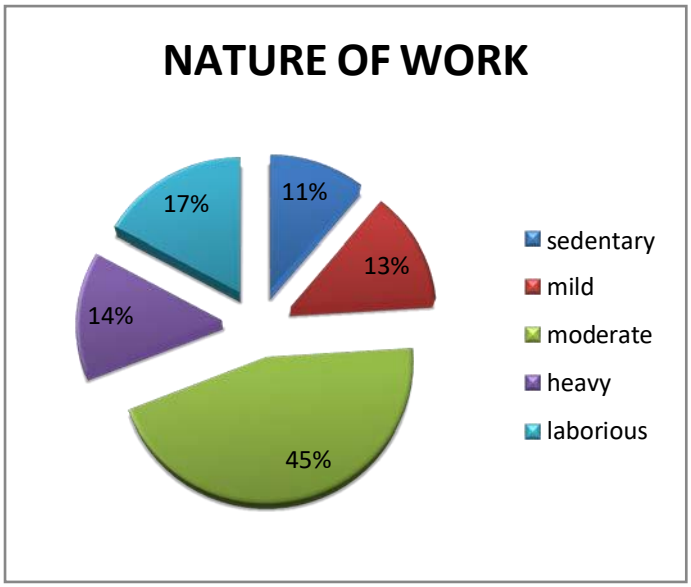
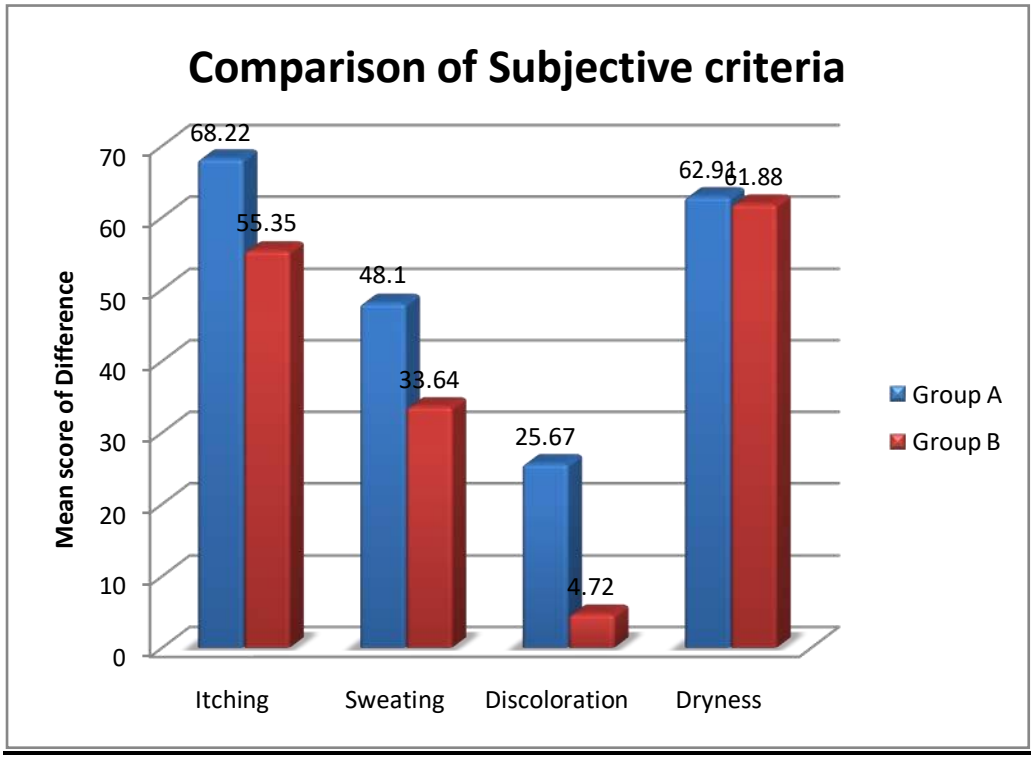


Table no. 22 - COMPARISON OF EFFECT OF THERAPIES

Criteria	Percentage Relief	
	Group A	Group B
Itching	68.22%	55.35%
Sweating	48.10 %	33.64 %
Discoloration	25.67 %	04.72 %
Dryness	62.91 %	61.68 %

Graph no. 22 – Comparison of subjective criteria



A. <u>Effect of Group A:</u>

In this group, 50 patients of Psoriasis completed the full course of treatment and so the effect of group A therapy quoted from here onwards.

Statistical Analysis -

The null hypothesis, H_0:

The effect of treatment on all symptoms in Group A is not significant.

The alternative hypothesis, H_a:

The effect of treatment on all symptoms in Group A is significant.

All the values in following tables are calculated by using Wilcoxon sign rank test and Paired t test for subjective and objective criteria respectively. Statistical analysis of every symptom is described separately in the following tables.

Table no. 23- significance calculation for itching in Group A

Symptom	**Itching**
Mean Score, B.T.	2.14
Mean Score, A.T.	0.68
S.D (±), B.T.	0.926
S.D (±), A.T.	0.683
S.E. (±), B.T.	0.131
S.E. (±), A.T.	0.096
W	990
Z	-5.01
P	P<0.05
Result	Significant

As the p value is lower than the significance level alpha = 0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a for Itching in Group A.

Table no. 24- significance calculation for sweating in Group A

Symptom	**Sweating**
Mean Score, B.T.	1.58
Mean Score, A.T.	0.82
S.D (±), B.T.	0.859
S.D (±), A.T.	0.66
S.E. (±), B.T.	0.121
S.E. (±), A.T.	0.093
W	561
Z	-3.62
P	P<0.05
Result	Significant

As the p value is lower than the significance level alpha = 0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a for Sweating in Group A.

Table no. 25- significance calculation for Discolouration in Group A

Symptom	**Discoloration**
Mean Score, B.T.	2.96
Mean Score, A.T.	2.2
S.D (±), B.T.	0.902
S.D (±), A.T.	1.616
S.E. (±), B.T.	0.127
S.E. (±), A.T.	0.228
W	458
Z	-1.58
P	P>0.05
Result	Insignificant

As the p value is greater than the significance level alpha = 0.05, we should accept the null hypothesis H_0 and reject the alternative hypothesis H_a for Discoloration in Group A.

Table no. 26- significance calculation for Dryness in Group A

Symptom	**Dryness**
Mean Score, B.T.	1.78
Mean Score, A.T.	0.66
S.D (±), B.T.	1.183
S.D (±), A.T.	0.798
S.E. (±), B.T.	0.167
S.E. (±), A.T.	0.112
W	903
Z	-4.87
P	<0.05
Result	Significant

As the p value is lower than the significance level alpha = 0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a for Dryness in Group A.

Table no. 27 - significance calculation for PASI score in Group A

Symptom	**PASI score**
Mean Score, B.T.	2.282
Mean Score, A.T.	0.602
S.D. (±)	2.197
S.E. (±)	0.31
T	5.405
P	<0.05
Result	Significant

As the t value calculated is greater than the t tabulated value at p=0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a for PASI score in Group A.

CONCLUSION:

The effect of **Group A** is significant at $p<0.05$ for subjective criteria such as Itching, Sweating, Dryness of Psoriasis.

Group A is found to be statistically significant for objective criteria such as PASI score.

It is insignificant for discolouration.

B. Effect of Group B:

In this group, 50 patients of Psoriasis completed the full course of treatment and so the effect of group B therapy quoted from here onwards.

Statistical Analysis -

The null hypothesis, H_0:

The effect of treatment on all symptoms in Group B is not significant.

The alternative hypothesis H_a:

The effect of treatment on all symptoms in Group B is significant.

All the values in following tables are calculated by using Wilcoxon sign rank test and Paired t test for subjective and objective criteria respectively. Statistical analysis of every symptom is described separately in the following tables.

Table no. 28- significance calculation for Itching in group B

Symptom	**Itching**
Mean Score, B.T.	2.24
Mean Score, A.T.	1
S.D (±), B.T.	0.77
S.D (±), A.T.	0.78
S.E. (±), B.T.	0.109
S.E. (±), A.T.	0.11
W	1081
Z	-5.40
P	P<0.05
Result	Significant

As the p value is lower than the significance level alpha = 0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a for Itching in Group B.

Table no. 29 - significance calculation for sweating in group B

Symptom	**Sweating**
Mean Score, B.T.	2.14
Mean Score, A.T.	1.42
S.D (±), B.T.	0.808
S.D (±), A.T.	0.537
S.E. (±), B.T.	0.114
S.E. (±), A.T.	0.076
W	666
Z	3.81
P	P<0.05
Result	Significant

As the p value is lower than the significance level alpha = 0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a for Sweating in Group B.

Table no. 30- significance calculation for Discoloration in Group B

Symptom	**Discoloration**
Mean Score, B.T.	2.54
Mean Score, A.T.	2.42
S.D (±), B.T.	0.706
S.D (±), A.T.	0.784
S.E. (±), B.T.	0.099
S.E. (±), A.T.	0.111
W	21
Z	-1.35
P	P>0.05
Result	Insignificant

As the p value is greater than the significance level alpha = 0.05, we should accept the null hypothesis H_0 and reject the alternative hypothesis H_a for Discoloration in Group B.

Table no. 31- significance calculation for Dryness in Group B

Symptom	**Dryness**
Mean Score, B.T.	2.14
Mean Score, A.T.	0.82
S.D (±), B.T.	1.05
S.D (±), A.T.	0.96
S.E. (±), B.T.	0.148
S.E. (±), A.T.	0.136
W	1225
Z	-6.09
P	<0.05
Result	Significant

As the p value is lower than the significance level alpha = 0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a for Dryness in Group B.

Table no. 32- significance calculation for PASI score in Group B

Symptom	**PASI score**
Mean Score, B.T.	1.62
Mean Score, A.T.	1.468
S.D. (±)	0.0646
S.E. (±)	0.009
T	16.6
P	<0.05
Result	Significant

As the t value calculated is greater than the t tabulated value at p=0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a for PASI score in Group B.

Conclusion:

The effect of **Group B** is significant at $p<0.05$ for subjective criteria such as Itching, Sweating and Dryness of Psoriasis. It is insignificant for subjective criteria like Discoloration in psoriasis.

Group B is found to be statistically significant for objective criteria such as PASI score.

C. COMPARATIVE ANALYSIS:

Statistical Analysis -

- The null hypothesis, H_0:

  One Sided -

  There is no significant difference between two groups.

  Two Sided -

  The effect of treatment on all symptoms in Group A is not significant than in Group B.

- The alternative hypothesis H_a:

  One Sided -

  There is a significant difference between two groups.

  Two Sided -

  The effect of treatment on all symptoms in Group A is significant than in Group B.

All the values in following tables are calculated by using Mann – Whiteny test for subjective criteria and Unpaired t test for the objective criteria. Let us see the statistical analysis for every symptom separately.

Table no. 33- Comparative significance in Itching

Symptom	**Itching**
Mean of Group A	1.46
Mean of Group B	1.24
S.D (±) of Group A	0.838
S.D (±) of Group B	0.591
S.E. (±) of Group A	0.118
S.E. (±) of Group B	0.083
U	1060
U ‘	1440
P	<0.05

Mean of Group A is more than mean of Group B and p value is lower than the significance level alpha = 0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a, i.e. Group A is significant than in Group B for Itching.

Table no. 34 - Comparative significance in Sweating

Symptom	**Sweating**
Mean of Group A	0.76
Mean of Group B	0.72
S.D (±), of Group A	0.686
S.D (±), of Group B	0.453
S.E. (±), of Group A	0.097
S.E. (±), of Group B	0.064
U	1229
U ‘	1371
P	<0.05

Mean of Group A is more than mean of Group B and p value is lower than the significance level alpha = 0.05, we should reject the null hypothesis H_0 and accept the alternative hypothesis H_a, i.e. Group A is significant than in Group B for Sweating.

Table no. 35 - Comparative significance in Dryness

Symptom	**Dryness**
Mean of Group A	1.12
Mean of Group B	1.32
S.D (±), of Group A	0.718
S.D (±), of Group B	0.512
S.E. (±), of Group A	0.101
S.E. (±), of Group B	0.072
U	1029
U ‘	1471
P	>0.05

Mean of Group B is more than mean of Group A and p value is greater than the significance level alpha = 0.05, we should accept the null hypothesis H_0 and reject the alternative hypothesis H_a, i.e. Group A is not significant than in Group B for Dryness.

Table no. 36 - Comparative significance in PASI score

Symptom	**PASI score**
Mean Difference Score, Group A	1.68
Mean Difference Score, Group B	0.152
Combined S.D. (±)	1.554
S.E. (±)	0.31
Unpaired t	4.914
P	<0.05
Result	Significant

As the t value calculated is greater than the t tabulated value at p=0.05, where df = 58, we should reject the null hypothesis and accept the alternative hypothesis i.e. Group A is significant than Group B for PASI score.

Conclusion:

The effect of Group A is significant than Group B for subjective criteria – Itching, and Sweating.

The effect of Group A is not significant than Group B for subjective criteria – Dryness.

The effect of Group A is significant than Group B for objective criteria – PASI Score.

DISCUSSION

The human skin is the largest organ of the integumentary system and forms the biological barrier system of the body. Protection of the inner structure of the body is the basic function of the skin. A beautiful skin manifests good personality. So branches like dermatology, cosmetology, and esthetics work to protect and take care of such an important organ. The impairment of such an organ leads to many diseases of skin. Skin and skin-related diseases are the most prevalent diseases a human seeks for health care and cause a global health burden.

Psoriasis is such a skin disease marked by red, itchy, scaly patches. It affects 2 to 4 % of the Indian population in general. Psoriasis has been shown to affect health-related quality of life to an extent. Its ugly appearance influences once personal, familial and social life pattern causing a major problem amongst the society. It can lead to distress causing significant depression and social isolation. There is no cure to psoriasis in modern medicine; however, various treatments can help control the symptoms. So it's necessary to study effective, safe and cheap medications in Ayurveda for use in society.

No disease in Ayurveda can be exactly correlated with Psoriasis. Many research scholars have tried to attribute psoriasis with one or other type of Kshudrakushtha, specifically with Kitibha, Sidhma, Ekakushtha or Mandalkushtha. We have considered Kitibha and Ekakushtha for the study. Vamana, Virechana, Asthapana, Anuvasana, Nasya, Raktamokshana are the Panchkarma treatments described in classics. Kshara, Agada, Pradeha, Lepa are the other treatments given in texts. Many Kalpas are described in classical texts. The oral medication being palatable, convenient, and useful for all types of patients is preferable in basic treatments to start with. And a drug containing a single content would be cheap too. Such is the trial drug, Saptaparna Ghana Vati.

Discussion of the Drug -

Saptaparna is described in the Kushtha Chikitsa of Charak Samhita. It is described in the Kushthahara 8 Yogas used as Kashaya Kalpana. We have taken only Saptaparna to study its specificity. Ghana is the concentrated form of Kwatha and easily palatable and portable. It can be used in fixed doses and Ghana is more concentrated so effective quantity of drug may be administered. So Gana Kalpana is

used in the study. Main properties of Saptaparna are Kushthagna and Vatakaphaghna. Kitibha Kushtha and Ekakushtha, both are Vatakaphaja Kushthas. So a drug that would suit exactly in disease condition is selected.

Skin is the outer most layer of human body. Sthanik Chikitsa is said to be essential and fast in action as it acts directly on the part affected. In psoriasis the skin is mostly dry and rough. In such a condition, Taila application is best suited known as Abhyanga. 777 oil is said to be effective Taila used in psoriasis by the previous studies. 777 oil contains Kutaj and Narikel Taila. Kutaj is Kushthaghna. Narikel Taila is Kandughna and Kushthaghna. So a control group of the same is taken with this.

When a best suited control group and a single drug is taken for any study, a better comparison can be done.

Discussion of mode of action of Saptaparna:

In psoriasis, the symptoms seen are mostly of Vataja & Kaphaja type of Kushtha and also of Twakgata, Mamsagata & Raktagata Kushtha. In Kushtha Twacha, Rakta & Mamsa are the main Dushyas. The symptoms of psoriasis are also similar to Kitibha & Ekakushtha which are Vatakaphaja Kushtha. This type of Kushtha seems Sadhya as it is Vatakaphaja & Rasa, Rakta and Mamsagata type of Kushtha, which are all conditions in Sadhya Kushtha. So a single drug is safe to be taken for trial.

Here the trial drug Saptaparna is Vatakaphaghna, Kushthaghna. Nighantu have termed it as Raktamaya and Raktarujapaha. It is also Tikta Rasatmaka, Deepana & Hrudya. That's why it acts on Rasa Dushti. It is said to act on Vrana which has Rakta Dushti. And it is said to act on Prameha, which has Mamsa Dushti. So Saptaparna can be said to act on Rasa, Rakta & Mamsa Dhatu.

Hence considering all above points Saptaparna can be said to act on Psoriasis.

Discussion of mode of action of 777 oil:

777 oil is a Taila mainly used in Siddha Chikitsa.

Psoriasis is compared to Kushtha which is Bahirmargaja Vyadhi as said in Charaka & Vagbhata. Taila depletes morbid Vata & Kapha and replenishes all the Dhatus. After 300 Matras from massage, commenced oil reaches up to Romakupa (hair follicles) & then progressively reaches up to deeper tissues. By the time of 500

& 600 Matra, Sneha penetrates Rakta & Mamsa Dhatu also (Dalhana Sa. Chi. 24/30). Taila Abhyanga removes Doshas accumulated in micro channels by virtue of its Sukshma, Ushna, Vyavayi Guna of Taila. Massage renders Vyana & Udana to normal functional states and thus all Strotas fills with apllied Sneha after digestion by Bhrajaka Pitta.

777 oil contains Shweta Kutaja & Narikela oil. Indrayava is the seed of Kutaja which has many references in Kushtha Chikitsa. It is Kandughna, Kushthaghna & Tridoshaghna. It is mainly used in Pittaja & Raktaja Vyadhi and Pittaja & Raktaja type of kushtha.

Narikela oil will be presenting the properties of Narikela itself. It is Vatapittaghna, Kushthaghna & Vranaropana. It is Keshya, so it can be said to act on Romakupa.

So oil containing both the contents can be said to act on psoriasis.

According to studies done, 777 oil improves keratinocytes multiplication. It interferes in co-stimulatory molecules communications (interlukins & cytokines) & sorts, isolates & attenuates neoplastic keratinocytes. It delays cell death & prolongs cell cycle turnover time.

Discussion of Observations:

After focusing the observations made and analyzing the data; the result obtained was following

1. **Age:**

   In present study, majority of the patients were reported in age group 30 to 40 years in both the groups. Total of 69% of the patients were from 30-40 years of age remaining 31.00% were from the age group of 20 to 30 yrs of age **(**Table no. 1). Patients of Psoriasis range from infancy to eighth decade. They can be divided in early onset i.e. before age of 40 & late onset i.e. 57-60 years. As the former i.e. patients before 40 years can be easily distinguished clinically, and patients after 20 years of age are cooperative and highest incidence was noted in the age group of 20-39 years, we have chosen the age limit of study as 20-40 years. This age group also shows clear presentation of the lesions as suggested in many studies. Ayurveda exhibits youth or Yovana in 20–30 years, maturity or Sampoornata in 30–40 years. A

Vayasthapana (antiaging) effect nourishes layers of skin preventing it from damage and having immunity. So we can say in age group of 30 to 40 yrs, where Dhatus have reached its maturity, aging could be the cause of prevalence of formation of skin diseases.

2. Gender:

The study reported more number of male patients in both the groups than female. Total of 80% patients were males and 20% patients were females. Psoriasis is more prevalent in males than in females. Our study supports the same finding. **(**Table no. 2)

3. Educational status:

More of the patients i.e. 71% studied up to graduate and secondary school level. And remaining 29% of the patients were studied up to primary school, higher secondary and post graduate (table 3). Maximum patients of our study are from rural habitat (table 8). Literacy rate in rural areas is less than urban population in India. Education is encompassed by socio economic status. Maximum patients were from middle and lower middle class (table 5). Socioeconomic status can encompass quality of life attributes as well as the opportunities and privileges afforded to people within society. Strong association is formed between poor psoriasis control and lower education[2]. These all supports that lower education leads to less awareness of the disease and they take fewer steps to control it.

4. Occupation:

The study reported to have maximum of servicemen and farmers in both the groups. It reflected total of 32% farmers and 35% servicemen. And remaining 33% are housewives, students and businessmen (table 4). An occupational disease is defined as one that is caused or worsened by working. Moroni in 1998 used the term of occupationally-induced psoriasis, reported 1.2% of all occupational dermatoses as work-related psoriasis. Pressure, trauma, and work-related friction may cause psoriasis of hands and fingers. Local psoriatic lesions can be triggered by exogenous mechanical or irritant factors and also the exposure to pesticides, which is more likely to occur in

farmers. Injuries i.e. Upaghata causes Aguntik Vyadhi and Vata Dosha vitiation. Both are the character of psoriasis, more prevalent in farmers is explained. Psoriasis was prevalent in working people including stressful activity such as servicemen.

5. **Socio-Economical status:**

The study reported more patients i.e. 60% in middle class. The remaining 40% is in poor and lower middle class and no upper class. (table 5). Psoriasis was associated with increased health care costs. This explains patients with lower socioeconomic status are more prone to severe psoriasis. Ayurveda also explains the character of a good patient who can get cured soon as Adhyarogi i.e. a rich patient has all resources to cure his diseases.

6. **Religion:**

Most of the patients 95% were found to be of Hindu community. And remaining 5% were of Muslim, Jain and Buddhist (table 6). The religion does not seem to have any significant relationship with the disease. Only geographical proportion of Hindus in the city or region may be the reason.

7. **Marital status:**

Most of the patients i.e. 81% were married and remaining 19% were unmarried (table 7). This would be because the age group selected for the study is between second and third decade but no direct relation was found in disease and marital status.

8. **Habitat**- Total of 99% of patients was from rural habitat and only 1% of patients were from urban habitat. This was only because of the selection of sample and conduction of camps from rural area.

9. **Addiction:**

Though 52% of the patients didn't have any addiction but in 48% most of the patients had smoking or alcohol as one of the addictions or both (table 9). Both are the major risk factors in developing psoriasis. Smoking may also play a role in the initial development of the disease. Studies also show that

Addictions are more prevalent in patients with psoriasis[1]. Our findings support the same. Excess of alcohol consumption causes Tridosha Prakopa and Rasa, Rakta, Annavaha Shrotoavrodha. This in turn causes further Dhatus to form in lower qualities or Shaithilya. This in turn can cause skin disease like psoriasis.

10. Diet:

Both the groups showed maximum of non vegeterians or mixed ones. Total of 81% of the patients were reported to have non-vegetarian diet. And 19% were patients having vegetarian diet (table 9). No specific non-veg food was reported. Vegetarian foods are low in non inflammatory substances whereas non vegetarian foods are high in same. Inflammation can be a cause in psoriasis. Fish is said to be a major cause of skin diseases in Ayurveda

11. Rasa Dominance-

Both the groups showed no specific rasa dominance in their diet. But next Rasa which was found dominant was Madhur Rasa. Total of 15% patients were having a Madhur Rasa dominant diet (table 12). Madhur Rasa is made from the elements Earth & Water. This Rasa improves complexion which means it has Gati towards skin. It also aggravates Kapha and alleviates Vata & Pitta. When an excess of sweet food is consumed it leads to heaviness, unctuousness and lethargy. It reduces the Agni (Digestive acids), increases mucous and congestion. This lead to the formation of Ama (toxins) in the body. Lasika which is a Dhatu Dushta in Kushtha, has been described as Mala of Rasa Dhatu. When Agni becomes Manda due to Madhur Rasa, the later Dhatu also don't get formed well or gets vitiated. Ekakushtha and Kitibha are the Kushthas of Kapha Dushti which also gets vitiated by Madhur Rasa. Modern studies have shown that sweet diet is the cause for flaring up skin diseases.

12. Diet Habits :

37.50% of total patients had habit of Viruddhashana as one type of diet. It was also prominent in both the groups. While Vishamashana formed 17.36% in total patients and also second important in both groups. It was followed by total of 13.19% of Samashana, 13.19% of Ajeernashana, 11.81%

of Anashana and 6.94% of Adhyashana (table 13). Viruddhashana causes Raktadusthi which in turn causes Raktapradoshaj Vyadhhi like Kushtha. As per Acharya Sushruta, all other are the factors in creating the Agnimandya. Agnimandya is the cause of all diseases. These Aharaja habits cause formation of Dushivisha which is responsible for decrease in immunity. Psoriasis is said to be autoimmume disease. So we can say psoriasis is prevalent in patients having faulty diet habits.

Saptaparna is Deepana and Pachana due to its Laghu, Ushna, properties, Tikta Rasa and Katu Vipaka. So it can be said to act on Agnimandya. Thus it disturbs the Samprapti caused by faulty diet habits in group A. whereas external application of the drug 777 oil in control group **B** surpasses this type of Samprapti.

13. Emotional Makeup :

Psoriasis may have a high prevalence of several mental disorders and thus called psychocutaneous diseases. 21.19% of total patients were having irritation and 16.95% of patients were having stress (table 14) as one of the major mental states. Mental stress causes the body to release chemicals that boost the inflammatory response and it can impact the immune system which can cause psoriasis. Irritation is also a state of stress where a patient is impatient response to stressful situations. Thus it causes skin disease like psoriasis. 16.10% of patients were having anger or anxiety (table 14). Patients of psoriasis suffer from pain, discomfort, psychological and social difficulties like stigmatization, embarrassment, and social inhibition which lead to anxiety and depression[12].

In Ayurveda, if patient's Satva is weak he is not able to take treatment properly as he can't be Bhijakvashya which causes flare-ups of the disease.

14. <u>Nidra:</u>

The study reported to have maximum of patients having Ratrijagaran in both the groups followed by Swabhavik Nidra. Negligible patients in both groups were found to have Divaswapna. Total of 60% of patients were found to have Ratrijagaran, 31% Swabhavik and 9% Divaswapna. (table 15)

Itching and pain in Psoriasis can be a cause of poor quality of sleep. In general Nidra is classified into two types: 1. Swabhavika (natural sleep). 2. Aswabhavika (abnormal sleep). Acharya Charaka has described that the person who has consumed Samuchit Nidra is benefited with the following; Pushti (good physique), Varna (complexion), Bala(strength), Utsaah(enthusiasm), Agni-dipan (digestive power), Dhatu-saamya (proper structure and functioning of Dhatu). Asamuchit Nidra (inadequate sleep) can be said as Diwaswaap (sleeping during the day) and Raatrijaagran (late night awakening). Acharya Sushruta has mentioned about inadequate sleep Diwaswaap (sleeping during the day) causes vitiation all Tridoshas. Raatrijaagran (late night awakening) causes vitiation of both Vata and Pitta Dosha. Acharya Vagbhata described Karshnya (Hyperpigmentation/darkening of skin) in Vata Vruddhi Lakshana (Vitiated symptoms), which is found in psoriasis. Twacha is a Sthana/seat of Vata.

Considering all these points we can say that Asamuchit Nidra can be the cause of Vata vitiation in psoriasis and it can also be the result of the same.

15. Sharir Akruti-

Total of 49% of patients were Sthool by Sharir Akruti, 48% of patients were Madhyam by Sharir Akruti and 3% patients were Krusha by Sharir Akruti (table 16). Inflammatory state is found in obese individuals. Excess weight increases the risk of inverse psoriasis. Also, plaques associated with all types of psoriasis often develop in skin creases and folds found in such overweight people. This shows a higher prevalence of psoriasis in overweight or obese patients.

In pathogenesis of Sthaulya, Kledaka Kapha, Samana & Vyana Vayu, Meda (fat /lipid) and Medodhatvagni Mandyata are main responsible factors. Kledaka Kapha, Samana & Vyana Vayu are the Samprapti Ghatakas of Kushtha. And when Mansa is vitiated it also disturbs the further formation of dhatus like Meda. Thus we can say that obesity and psoriasis are associated.

16. Duration of work –

54% of total patients worked for less than 9 hrs**,** 45% patients worked for 9 to 12 hrs and only 1% of patients worked for more than 12 hours (table 17). This observation would be usually due to 99% of patients was from rural habitat and very negligible patient number was from urban habitat (table 8). Maximum 35 % patients were servicemen and 32 % were farmers, followed by 17 % patients were house wives, 11% were Students, 5% patients were businessmen (table 4). Rural job timings do not usually exceed the normal 8 hr shifts. And people who worked more than 8 hr shift pattern would be mostly farmers as they work only in sunlight and take breaks in afternoons. Other who does not have control over their work times is housewives, students and businessmen. No other specific relation was found.

17. <u>Agni & Koshtha:</u>

89% patients were reported to have Mandagni or Vishamagni (table 18) and 50% of total patients had Krura & Madhyam Koshtha(table 19). All the aspects are related to improper digestion and are cause of development of any disease in Ayurveda. In the course of Roga Utpatti, Agni is always impaired. Thus it causes the disease flare-ups.

Saptaparna is Deepana and Pachana due to its Laghu, Ushna, properties, Tikta Rasa and Katu Vipaka. So it can be said to act on Agnimandya. Thus it disturbs the such Samprapti caused in group A. Whereas external application of the drug 777 oil in control group **B** surpasses this type of Samprapti.

18. <u>Prakruti:</u>

All The patients in the study were of Dwandwaja type of Prakruti. No patient was reported with Ekdoshaja or Sama Prakruti. Maximum of 31% of patients belong to Vatakaphaja Prakruti followed by 27% of the patients with Kaphavataja Prakruti. And remaining 42% patients were of other Dwandaja Prakruti (table 13). This observation supports the tendency of Vata & Kapha disorders where both are present in maximum of Psoriasis patients.

Saptaparna is Vataghna and Kaphaghna. So it adds in the action of cutting the samprapti. Whereas external application of the drug 777 oil in control group **B** surpasses this type of Samprapti.

19 Nature of work-

The Social Security Administration (SSA) classifies work into five different levels: sedentary, light (mild), medium (moderate), heavy and very heavy (loborious). This classification is in decreasing order of work requiring quantitative time and effort. Total of 45% had moderate, 17% laborious, 14% heavy, 13% mild, 11% sedentary type of nature of work (table 21).

The above nature of work was recorded as told by patient. Inability to work due to psoriasis increases with psoriasis as it affects work performance and can decrease the efficiency[14]. Also maximum of patients worked for less than 9 hrs which is also normal working hours (table 17). So we found a maximum of moderate type of nature of work in patients.

EFFECT OF THERAPIES -

1. Itching:

Effect of trial drug in group A and control drug in group B shows significant result on itching.

In Psoriasis itching is caused due to inflammation which can be caused due to Kapha & Rakta dushti. In Kushtha these are the Dushyas. Also the Kandu is the symptom of Kaphaja & Raktaja Kushtha. Saptaparna due to Kashaya & Tikta Rasa & Ushna Veerya, is Kaphaghna & Due to Kushthaghna it has to work on Raktadushti. Consequently it must be acting on inflammation hence decreasing itching.

2. Sweating:

Effect of trial drug in group A showed significant result and control drug in group B showed insignificant result on sweating.

In Psoriasis skin is diseased which causes sweat gland damage causing hypohydrosis. Aswedana is caused due to Strotorodha of Swedawaha Strotas

which is a result of Vata & Kapha by Sanga & Sankocha respectively. Saptaparna is Kaphavataghna so it relieves the Swedavaha Strotas Avarodha causing relief in Aswedana.

3. Discolouration:

Effect of trial drug in group A and control drug in group B showed insignificant result on discolouration.

a. In Psoriasis Il-17 & TNF α are responsible for inflammation & discoloration. Both proteins inhibit melanogenesis. Thus causing dispigmentation. There can be hypo or hyper pigmentation in post inflammatory conditions.

b. Discoloration in Ayurveda is called Vaivarnya which is a Purvaroop in any Kushtha. As discussed before, Saptaparna acts in inflammation so it can be said that it acts on discoloration as discussed above.

4. Dryness:

Effect of trial drug in group A and control drug in group B showed significant result on dryness.

According to Modern medicine complete or diminished absence of sweating is called anhydrosis which leads to dryness of skin. It may be due to either blocking of sweat glands or their destruction. In Ayurveda sweat is said to be Aap Pradhan Dravya & if it declines will cause dryness of skin. According to Ayurveda dryness of skin is symptom of Vata Dushti, twakgata Kushtha & Mamsagata Kushtha.

5. PASI score:

Effect of trial drug in group A and control drug in group B showed significant result on PASI scoring.

PASI score is Psoriasis area & severity index. It combines the assessment of the severity of lesion & the area affected into a single score in the range 0 i.e. no disease to 72 i.e. maximum diseases. The severity is

estimated by three clinical signs i.e. erythema (redness), induration (thickness) & desquamation (scaling).

a. **Erythema:** It is caused by dilatation & irritation of superficial capillaries; the augmented flow of blood through them imparts a reddish hue to the skin. It is caused due to any skin injury, infection or inflammation. As discussed in itching part, inflammation is reduced by Saptaparna.

   Erythema can be compared to Lalima which is a symptom of Pittaja Kushtha. When Pitta becomes Dushta, Rakta also gets vitiated. Saptaparna is said to be Kushthaghna & so must be acting on Rakta Dushti. Hence we can say Saptaparna is acting on erythema.

b. **Desquamation & Induration:** This process is caused due to keratinisation. It is a process by which epithelial cells are filled with Keratin, they die & form tough resistant structures of skin. This skin is shed off & gets converted to scales i.e. fish like skin and over a period its thickness increases. Mastyashakalopama is fish like scales is a symptom in Ekakushtha which is Vataja Kushtha. Saptaparna is Vataghna. Twacha is formed from Rakta Dhatu Paka by its Dhatwagni. This process can be said to be hampered in this Kushtha so a drug which acts on Rakta Dhatu as Saptaparna is thus decreasing the symptom.

c. **Acquire large area:** In Ayurveda this term is called Mahavastu. According to Chakrapani, Mahavastam means Mahasthanam which means area of involvement of the lesion is vast (Cha.Chi.7/21). As per Charak Samhita Shithilata is caused in whole Twaka due to Dushyas, where Doshas gets lodged. (Cha.Ni. 5/6). Lesions are spread on surface of body by Shighrakari Guna of Vayu & Rakta. This indicates uninvolved skin is also abnormal. This was supported by some experimental evidence of high level of plasminogen activator activity. (Fraki et al, 1983) & (Koneger et al 1981). So it concludes vast area of involvement of skin is due to Vata & Rakta. As discussed before Saptaparna acts on both.

Comparative results of therapies –

The aim of the present study was to evaluate the efficacy of Saptaparna Ghana Vati orally and 777 oil externally in patients of psoriasis and compare their results.

a. It was found Group A is significant statistically at the level of $p<0.05$ than in Group B for Itching, sweating and PASI score in both the groups.
b. It was found Group B is significant statistically at the level of $p<0.05$ than in Group A for Dryness.
c. As both the groups were insignificant statistically for discolouration, they can't be compared.

Anupana -

The conditions, in which specific Anupana is not mentioned, Ushnodaka is to be used as Anupana. Ushnodaka is easy to prepare (Sha. Ma. Kha. 2/159). It has Deepana property. It acts in Kaphaja & Vataja diseases. So by all these characteristics it acts well in psoriasis. Also when Ushnodaka is used as Anupana no add-on therapy is made by it. So we can assess the action of study drug alone.

Kala -

Kushtha is said to be caused by Vyana Vayu Dushti (Vaghbhata Ni. 16/24). The Aushadhi Sevana Kala for diseases caused by Vyana Vayu is after morning meal (Sha. Pu. Kha. 2/6). As the dose of Kwatha is 40-80 ml, we had to take the maximum dose and given in divided doses. So we have considered one more Kala of evening meal also.

Matra / Pramana -

The dose for Vati is one Karsha which is 10 gm. This dose is not applicable in today's lifestyle. So 4-8 Gunja is practically given. One Gunja is 120 mg so 8 Gunja i.e. nearly 1 gm daily divided in two doses i.e. 500 mg twice is administered.

The Pramana for decoction is 40-80 ml. Ghana is prepared from Kwatha by heating it to remove all water soluble content. The water soluble extract value for Saptaparna is not less than 12 (as per API). Thus the extract value of 40 ml Kwatha by 12.5% would be 500 mg by calculating it wt/vol

$$40\times12500/1000=500 \text{ mg}$$

That means we get 500 mg of Ghana when 40 ml of decoction is taken.
Hence we have taken this as one time dose i.e. 500mg

CONCLUSION

The clinical study ***"COMPARATIVE STUDY OF EFFICACY OF SAPTAPARNA GHANA AND 777OIL IN THE MANAGEMENT OF PSORIASIS."*** is concluded with following observations.

- Psoriasis was more common in age group of 30-40 years, Males, Secondary school & Graduate level of education, patients doing service & farmers, middle class, Hindus, Married, Tobacco consuming, Non-Veg consuming, None of Rasa dominance, Viruddhashana diet, Patients with irritation, Ratrijagaran type of Nidra, Sthoola Sharir Akruti, work Duration of less than 9 hrs, Moderate Nature of work, Vishama & Manda Agni, Krura & Madhyam Koshtha, Vaat Kaphaj Prakruti.
- Overall statistical analysis shows that Saptaparna Ghana Vati is effective in psoriasis. It shows more effective results in following symptoms –
    1. Itching
    2. Sweating
    3. Erythema
    4. Induration
    5. Desquamation
    6. Area involved
- 777 oil is effective in psoriasis. It showed more results in decreasing dryness.
- Overall study shows that oral consumption of Saptaparna is significantly effective in psoriasis than external application of 777 oil.
- Effect on discolouration of both the drugs couldn't be compared as both were insignificant statistically in psoriasis.
- No adverse effect was found during & after the study.

Further scope of study -

1. Separate type of Kushtha which resemble psoriasis can be studied with same drug.
2. Same trial drug can be studied with different control group.
3. Literary review on comparison of Kushtha and other skin diseases in Ayurveda.

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1. A Clinical study of Ekakushtha (Psoriasis) and its management with Shodhana and Shamana Yoga - Dr P.R.Joorawan, 2000.

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Annexure I-Case Report Form

TILAK MAHARASHTRA VIDYAPEETH, PUNE

Late P.G Nanal DEPT. OF AYURVEDA

TITLE OF THESIS

"COMPARATIVE STUDY OF EFFICACY OF SAPTAPARNA GHANA AND 777OIL IN THE MANAGEMENT OF PSORIASIS"

Canditate: Dr. P.D.Dhone GUIDE: Prof. Dr. N.Kamat

CLINICAL CASE PROFORMA

Name of the Patient:

Age: Sex: Male / Female

Address:

Occupation:

Educational Status:

Marital Status: M / UM / W / D

Socio-Economic Status: VP / P / LM / M / UM / R

Religion: H / M/ S / C / O

Habitat: R / SU / U

OPD No: IPD No:

Ward / Bed No:

D.O.A.: D.O.D.:

D.O. Commencement: D.O. Completion:

CHIEF COMPLAINTS: (WITH DURATION)-

- Twak vivarnata
- Twak kandu
- Twak raukshya
- Aswedana
- Twak sparsha- Khara/Kina/Parusha

ASSOCIATED COMPLAINTS: (WITH DURATION)-

Nail problems —

- Pits in the nails
- crumbling nail
- Nail falls off

HISTORY OF PRESENT ILLNESS

HISTORY OF PAST ILLNESS:

FAMILY HISTORY:

TREATMENT HISTORY:

Drug	Dosage	Duration	Details

PERSONAL HISTORY:

1. Ahara

Samisha
Niramisha
Mixed

Rasa:	Madura	Katu
	Amla	Tikta
	Lavana	Kashaya
Kala:	Regular	
	Irregular	
Ahara Vidhi:	Samashana	
	Adhyashana	
	Vishamashana	
	Virudhashana	
	Anashana	
	Ajeernashana	
Pramana:	Alpa	Pramita
	Athi	Sama

2. Vihara

Nidra:	Prakrutha	
	Vaikruta	
	Alpa	
	Athi	
		Day : ……. Hours
		Night : …….Hours
Vyasana:	Tea / Coffee / Smoking / Tobacco / Supari / Alcohol / Sleeping Pills / Analgesics / Purgatives / Contraceptives	
	Since: …….. Years / Months	

Qty / Day: ……..

Agni: Sama / Mandha / Vishama / Teekshana

Vyayama: No / Light / Heavy / Regular / Irregular / Occassional

Koshta: Mrdu / Madhya / Krura

Mala Pravruthi:

Frequency / Day …….

Colour …….

Consistency …….

Ass. Problem …….

Mootra Pravruthi:

Frequency / Night …….

Frequency / Day …….

Colour …….

Associated Problem. …….

Emotional Make Up:

Anxiety / Tension / Depression / Jovial / Anger / Irritation / Jealous / Fear / Others

OCCUPATIONAL HISTORY:

Nature of Work: Mild / Moderate / Heavy / Sitting / Standing / Laborious / Travelling / Sedentary.

Working Hours: Hours

GENERAL EXAMINATION:

ASHTA STHANA PAREEKSHA:

Nadi:
Mala:
Mootra:
Jihwa:
Shabda:
Sparsha:
Drik:
Akruthi:

DASHA VIDHA PAREEKSHA:

Prakruthi:	Shareera:	Manasika:
Vikruthi:		
Sarataha:	Pravara / Madhyam / Avara	
Samhanana:	Pravara / Madhyam / Avara	
Pramana:	Pravara / Madhyam / Avara	

Satmaya:	Pravara / Madhyam / Avara
Satwa:	Pravara / Madhyam / Avara
Ahara Shakti:	Pravara / Madhyam / Avara
Vyayama Shakti:	Pravara / Madhyam / Avara
Vayaha:	Balya /Madhyama /Vruddha

VITAL EXAMINATION:

Pulse:	/ Min	Weight:	Kg
Temperature:	° F	Height:	Cm
B. P.:	mmhg		
Resp. Rate:	/ Min		
Heart Rate:	/ Min		

SYSTEMIC EXAMINATION:

1. R.S -

2. CVS -

3. CNS-

4. GUS-

5. GIT -

6. P / A -
   - O / I
   - O / P
   - O / A

SPECIAL EXAMINATION:

Examination of Lesion-

- Distribution of skin lesions-
  a. head-
  b. arms-
  c. trunk-
  d. legs-
- Characteristics of lesions-
  a. Raised patches
  b. Skin lesions covered with scales
  c. Presence of flakes of dead skin

d. Itchy/dryness/discomfort

- Lesion colour-
    a. Black
    b. White
    c. Red
- Photos-Before and after treatment will be clicked.

TREATMENT:

1. Saptaparna Ghana vati-500 mg –Vyanodana (after meals) with Ushnodaka.
2. 777 oil -abhyanga in the pratahakal (morning) on lesions.

- STARTED ON:
- COMPLETED ON:
- FOLLOW-UP COMPLETED ON:

OBSERVATION AND RESULT:

PATHYA:

APATHYA:

SIGNATURE OF THE GUIDE: **SIGNATURE OF THE PH.D SCHOLAR:**

लिखित संमती पत्रक

"***COMPARATIVE STUDY OF EFFICACY OF SAPTAPARNA GHANA AND 777OIL IN THE MANAGEMENT OF PSORIASIS***"

रुग्ण क्र: रुग्णनाम:

वय: लिंग:

१] मी या पत्रकाद्वारे असे नमुद करतो/करते कि, मी दिनांक रोजी या प्रक्रियेसंदर्भातील सर्व माहिती वाचली असून त्याबद्दल उपस्थित झालेल्या सर्व श्शंकांचे निरसन करण्यासाठी प्रश्न विचारण्याची संधी मला मिळाली आहे. त्यामुळे सर्व मुद्दे मला समजले असुन शंकानिरसन पूर्ण झाले आहे.

२] तसेच मला देण्यात येणाया औषधाविषयी सर्व माहिती मला देण्यात आली असुन ती घेण्यास मी स्वखुशीने तयार आहे.

३] तसेच मी हे देखील जाणून आहे की ह्या प्रक्रियेमधला माझा सहभाग कोणत्याही क्षणी रद्द करु श्शकतो/श्शकते. त्याकरिता मला कोणतेही कारण देण्याची गरज नाही व त्यामुळे माझी कोणतीही वैद्यकिय सेवा किंवा कायदेशीर न्यायविषयक अधिकार यांचे हनन होणार नाही.

४] मला अभ्यासक, अभ्यासकाठी काम करणारे इतर लोक व परीक्षक ह्या लोकांना, माझे संबंधित नोंदी पहाण्यासाठी माझी संमती घेण्याची आवश्यकता नसेल. मी प्रक्रियेमधून माझा सहभाग काढून घेतल्यानंतर देखील या प्रबंधासाठी किंवा इतर सबंधित अभ्यासासाठी माझ्याशी संबधित नोंदी माझ्या संमती शिवाय पडताळल्या जाऊ श्शकतात याची मला जाणीव असून माझी पूर्ण संमती आहे.

५] तसेच मला याची कल्पना आहे कि, माझी ओळख पूर्णता गोपनीय राखली जाईल. माझ्या नोंदी इतर कोणत्याही अभ्यासविषयक कामासाठी किंवा प्रकाशनास देताना माझी ओळख पूर्णत: गोपनीय राखली जाईल. या नोंदी कोणत्याही शास्त्रीय दृष्टिकोणातून वापरण्यात मी अडवणूक करणार नाही.

वरील सर्व गोष्टी मला समजल्या असून मी स्वखुशीने संमती देत आहे.

रुग्ण सही साक्षांकिताची सही व नाव

शोध प्रबंधकाची सही

संमती पत्र

मै स्वेच्छा से इस औषध उपचार के लिये संमती देता/देती हू। औषध उपचार से होनेवाले सभी उपद्रव एवं लाभ कि जानकारी मेरे समज आये इस भाषा मे संबधीत डॉक्टरने मुझे दी है। उपचार् के लिये लगनेवाली सभी जांच करने के लिये मै तैयार हू। मुझपर होनेवाले उपचार स्थगित करने का मेरा अधीकार मै सुरक्षीत रखता/रखती हू।

रुग्ण नाम: दिनांक:

सही:

WRITTEN INFORMED CONSENT

Full title of the protocol**:-**

"***COMPARATIVE STUDY OF EFFICACY OF SAPTAPARNA GHANA AND 777OIL IN THE MANAGEMENT OF PSORIASIS.***"

Name of the Subject :

Date of Birth :

Age/Sex :

Full Address :

Telephone Number :

I) Purpose of the Trial

1) To compare study of efficacy of Saptaparna Ghana and 777oil in the management of psoriasis.

II) Expected duration of subject's participation:-

The expected duration of subject's participation for this trial will be of 4 months.

III) No. of Subjects:-

Total No. of subjects participating in the trial will be 100.

IV) Procedures to be followed:-

In this trial you will be examined by at regular intervals as per research Protocol. Physical examination and other investigations will be done before and also whenever required.

V) Risk:-

If any adverse reaction occurs and become intolerable, the dose will be reduced or stopped.

VI) Benefits:-

The medicine is being studied as a treatment in psoriasis. Your participation in this trial will contribute in increasing the medical science.

VII) Confidence and records:-

Your medical records related to your trial will be kept confidential.

VIII) Payment to the subject participating in the trial:-

The subjects participating in the trial will not have to pay for the investigations mentioned. Subjects will not be paid for their participation in the trial.

X) Obtaining Information:-

You can ask any quarries related to participation in trial. Your will be given copy of this agreement.

XI) Right to withdraw from the trial:-

I am fully aware of my right to withdraw from the study at any time without giving any reasons for doing so and it will not affect the further management of my disease in any way in future.

Signature of Patient

Master Chart Group A General

Sr. No.	Age	Gender	Education	Occupation	Economical status	Religion	Marital Status	Addiction	Diet	Nidra	Agni	Koshtha	Prakruti	Habitat	Rasatah	Habits	Emotional Makeup	Nature of Work	Duration of work	Sharir Akruti
1	40	M	secondary	farmer	lower middle	hindu	married	tobacco	non veg	Ratrijagaran	vishama	krura	vatakaphaja	Rural	-	ajeernashana	anger	moderate	9	sthoola
2	40	M	secondary	farmer	lower middle	hindu	married	tobacco	veg	Ratrijagaran	vishama	krura	kaphavataja	Rural	madhur	ajeernashana	depression anxiety	laborious	9 to 10	sthoola
3	40	M	primary	farmer	lower middle	hindu	married	tobacco	non veg	Ratrijagaran	manda	krura	kaphavataja	Rural	katu	ajeernashana anashana	anger irritation	laborious	9 to 10	sthoola
4	39	M	graduate	business	middle	hindu	married	smoking, tobacco	mixed	Ratrijagaran	vishama	madhyam	vatakaphaja	Rural	-	vishamashana anashana	depression anxiety	heavy	12	madhayama
5	32	M	postgraduate	job	middle	hindu	married	tobacco	mixed	Ratrijagaran	vishama	madhyam	kaphavataja	Rural	-	adhyashana virudhashana	anxiety	mild	8	madhayama
6	36	M	secondary	job	middle	hindu	married	tobacco	mixed	Ratrijagaran	manda	madhyam	pittavataja	Rural	-	vishamashana	other	laborious	8	krusha
7	32	M	graduate	job	middle	hindu	married	tobacco	mixed	Ratrijagaran	vishama	madhyam	vatakaphaja	Rural	-	virudhashana	depression	mild	8	sthoola
8	36	M	higher secondary	farmer	middle	muslim	married	nil	non veg	Ratrijagaran	manda	krura	vatakaphaja	Rural	madhur	ajeernashana	fear	laborious	10	madhayama
9	40	F	secondary	housewife	lower middle	hindu	married	nil	non veg	Swabhavik	vishama	madhyam	kaphavataja	Rural	katu	vishamashana virudhashana ajeernashana	anxiety	moderate	10 to 11	sthoola
10	40	M	higher secondary	job	lower middle	hindu	married	tea	non veg	Divaswapa	sama	krura	pittakaphaja	Rural	madhur	anashana	anxiety	moderate	8 to 9	madhayama
11	30	F	secondary	housewife	lower middle	hindu	married	nil	non veg	Ratrijagaran	vishama	madhyam	kaphapittaja	Rural	kashaya	samashana anashana	anxiety	heavy	10	krusha
12	25	M	higher secondary	job	lower middle	hindu	unmarried	tea,smoking,alcohol	mixed	Swabhavik	manda	madhyam	kaphavataja	Urban	madhur	anashana	tension	moderate	8	madhayama
13	35	M	higher secondary	business	lower middle	hindu	married	nil	mixed	Swabhavik	sama	madhyam	kaphapittaja	Rural	-	virudhashana	anger	sedentary	2 to 3	madhayama
14	30	M	postgraduate	job	middle	hindu	married	smoking, tobacco	mixed	Swabhavik	vishama	krura	pittavataja	Rural	-	virudhashana	irritation	moderate	8	madhayama
15	28	F	secondary	housewife	lower middle	hindu	married	nil	veg	Ratrijagaran	vishama	madhyam	kaphapittaja	Rural	-	samashana vishamashana	irritation	moderate	10 to 11	krusha
16	32	F	higher secondary	housewife	lower middle	hindu	married	nil	mixed	Ratrijagaran	vishama	krura	kaphapittaja	Rural	-	anashana	irritation	moderate	10 to 12	madhayama
17	32	F	secondary	housewife	lower middle	hindu	married	nil	non veg	Ratrijagaran	vishama	krura	kaphapittaja	Rural	-	virudhashana	anger	heavy	9	madhayama
18	40	F	secondary	housewife	lower middle	hindu	married	nil	veg	Ratrijagaran	vishama	krura	kaphapittaja	Rural	-	vishamashana anashana	anxiety	moderate	9	madhayama
19	25	M	graduate	job	lower middle	hindu	married	nil	non veg	Swabhavik	manda	krura	vatakaphaja	Rural	-	vishamashana virudhashana	irritation	moderate	8	madhayama
20	39	M	graduate	job	middle	hindu	married	tobacco	mixed	Swabhavik	manda	madhyam	kaphavataja	Rural	-	virudhashana ajeernashana	depression	moderate	8	madhayama
21	26	F	secondary	housewife	middle	muslim	married	nil	non veg	Ratrijagaran	vishama	krura	vatakaphaja	Rural	katu	samashana anashana	-	moderate	10 to 11	madhayama
22	20	F	graduate	student	middle	hindu	unmarried	nil	non veg	Divaswapa	sama	madhyam	kaphapittaja	Rural	-	samashana	tension	mild	7 to 9	sthoola
23	30	F	secondary	housewife	lower middle	hindu	married	nil	non veg	Ratrijagaran	vishama	krura	vatakaphaja	Rural	katu	samashana virudhashana	anger irritation	laborious	11 to 12	sthoola
24	23	M	secondary	farmer	lower middle	hindu	unmarried	nil	veg	Swabhavik	vishama	madhyam	kaphapittaja	Rural	madhur	adhyashana	anxiety	moderate	8 to 9	madhayama
25	27	F	secondary	housewife	middle	hindu	married	nil	non veg	Swabhavik	vishama	madhyam	pittakaphaja	Rural	-	samashana virudhashana	other	laborious	8 to 10	madhayama
26	39	M	graduate	job	middle	hindu	married	nil	mixed	Ratrijagaran	manda	krura	vatakaphaja	Rural	-	virudhashana ajeernashana	tension	moderate	8	madhayama
27	40	M	secondary	farmer	middle	hindu	married	tobacco	veg	Swabhavik	manda	krura	kaphavataja	Rural	-	vishamashana anashana	-	heavy	6 to 8	madhayama
28	40	M	secondary	farmer	middle	hindu	married	tobacco	veg	Ratrijagaran	manda	madhyam	vatapittaja	Rural	-	virudhashana ajeernashana	-	moderate	7 to 8	madhayama
29	38	M	secondary	business	lower middle	hindu	married	nil	mixed	Swabhavik	manda	krura	vatapittaja	Rural	-	ajeernashana	irritation	mild	10 to 11	madhayama
30	37	M	secondary	job	poor	hindu	married	smoking, tobacco	mixed	Swabhavik	manda	madhyam	pittakaphaja	Rural	amla lavan katu	anashana	other	heavy	10 to 12	sthoola
31	35	M	graduate	job	middle	hindu	married	nil	mixed	Ratrijagaran	manda	krura	kaphavataja	Rural	-	adhyashana virudhashana	anger	moderate	8	sthoola
32	40	M	graduate	job	middle	hindu	married	nil	mixed	Ratrijagaran	manda	krura	kaphavataja	Rural	-	samashana	irritation	sedentary	8	madhayama
33	40	M	graduate	job	middle	hindu	married	nil	mixed	Swabhavik	manda	krura	vatakaphaja	Rural	-	vishamashana virudhashana	fear	sedentary	8	sthoola
34	35	M	secondary	job	lower middle	hindu	married	nil	non veg	Swabhavik	manda	madhyam	pittakaphaja	Rural	katu	vishamashana	tension	moderate	2 to 3	madhayama
35	40	M	graduate	job	middle	hindu	married	tobacco	veg	Ratrijagaran	vishama	krura	kaphavataja	Rural	-	adhyashana virudhashana	anger irritation	mild	5	madhayama
36	30	M	secondary	farmer	lower middle	hindu	married	nil	veg	Divaswapa	vishama	madhyam	vatakaphaja	Rural	-	samashana anashana	tension	moderate	6	madhayama
37	32	F	secondary	housewife	middle	muslim	married	nil	non veg	Ratrijagaran	manda	krura	kaphavataja	Rural	-	vishamashana virudhashana	anxiety	laborious	9 to 10	sthoola
38	36	M	postgraduate	job	lower middle	hindu	married	nil	mixed	Ratrijagaran	vishama	krura	kaphapittaja	Rural	-	vishamashana	irritation	mild	8	madhayama
39	32	F	secondary	housewife	lower middle	hindu	married	nil	non veg	Divaswapa	manda	krura	vatakaphaja	Rural	-	samashana anashana	anger irritation	heavy	7 to 8	madhayama
40	38	M	secondary	farmer	middle	hindu	married	tobacco	veg	Ratrijagaran	manda	madhyam	kaphavataja	Rural	-	ajeernashana	anger	moderate	5 to 6	sthoola
41	40	M	higher secondary	farmer	middle	hindu	married	smoking, tobacco	non veg	Ratrijagaran	vishama	madhyam	vatakaphaja	Rural	-	vishamshana anashana	anger	laborious	5	madhayama
42	28	M	higher secondary	farmer	lower middle	hindu	unmarried	smoking, tobacco	non veg	Ratrijagaran	manda	krura	kaphavataja	Rural	-	virudhashana	irritation	heavy	9	sthoola
43	20	M	secondary	business	poor	hindu	unmarried	tea	non veg	Ratrijagaran	manda	krura	kaphavataja	Rural	-	virudhashana	irritation	moderate	8	sthoola
44	40	M	higher secondary	farmer	middle	hindu	married	tobacco	mixed	Ratrijagaran	manda	krura	vatakaphaja	Rural	-	virudhashana	anxiety, tension	moderate	10	madhayama
45	25	M	graduate	job	middle	hindu	married	nil	non veg	Swabhavik	vishama	madhyam	vatakaphaja	Rural	amlakatu	ajeernashana anashana	tension, anger	mild	10	sthoola
46	27	M	graduate	job	middle	hindu	unmarried	nil	mixed	Ratrijagaran	manda	krura	vatakaphaja	Rural	madhur	vishamashana virudhashana	irritation	sedentary	8	madhayama
47	36	M	postgraduate	job	middle	hindu	married	nil	mixed	Ratrijagaran	vishama	madhyam	kaphapittaja	Rural	-	virudhashana	other	sedentary	8	sthoola
48	34	M	graduate	job	middle	hindu	married	nil	mixed	Ratrijagaran	vishama	madhyam	pittavataja	Rural	-	vishamashana virudhashana	tension	moderate	8	sthoola
49	40	M	higher secondary	farmer	lower middle	hindu	married	tobacco	veg	Ratrijagaran	vishama	madhyam	pittavataja	Rural	katu	samashana anashana	anxiety	moderate	9	sthoola
50	37	M	higher secondary	farmer	lower middle	hindu	married	tea	mixed	Swabhavik	sama	krura	kaphapittaja	Rural	madhur	ajeernashana	other	mild	2 to 3	sthoola

Master Chart Group B General

Sr. No.	Age	Gender	Education	Occupation	Economical status	Religion	Marital Status	Addiction	Diet	Nidra	Agni	Koshtha	Prakruti	Habitat	Rasatah	Habits	Emotional Makeup	Nature of Work	Duration of work	Sharir Akruti
1	35	F	secondary	housewife	middle	hindu	married	nil	mixed	Ratrijagaran	manda	krura	vatakaphaja	Rural	-	samashana virudhashana	fear	moderate	10	sthoola
2	38	M	higher secondary	farmer	lower middle	hindu	married	tobacco	mixed	Swabhavik	manda	krura	vatakaphaja	Rural	lavana	samashana virudhashana	other	heavy	9	sthoola
3	32	F	higher secondary	housewife	middle	hindu	married	nil	non veg	Ratrijagaran	vishama	madhyam	kaphapittaja	Rural	kashaya	anashana	fear	laborious	10	madhyama
4	38	M	higher secondary	farmer	middle	hindu	married	tobacco	veg	Ratrijagaran	vishama	madhyam	kaphavataja	Rural	madhura	virudhashana	other	laborious	9 to 10	madhyama
5	34	M	graduate	job	middle	hindu	married	smoking	mixed	Ratrijagaran	manda	krura	kaphavataja	Rural	-	virudhashana	anxiety	moderate	8	sthoola
6	40	M	graduate	job	middle	hindu	married	smoking	mixed	Ratrijagaran	vishama	madhyam	kaphavataja	Rural	-	adhayashana virudhashana	irritation	heavy	8	sthoola
7	30	M	graduate	job	middle	hindu	married	tobacco	mixed	Ratrijagaran	manda	krura	vatakaphaja	Rural	-	vishamashana	tension	moderate	8	sthoola
8	35	F	higher secondary	housewife	lower middle	hindu	married	nil	veg	Ratrijagaran	manda	madhyam	vatakaphaja	Rural	-	samashana ajeernashana	depression	heavy	9	sthoola
9	25	M	graduate	job	middle	hindu	unmarried	smoking	non veg	Swabhavik	vishama	madhyam	kaphapittaja	Rural	-	virudhashana	-	moderate	8	madhyama
10	22	F	graduate	Student	middle	hindu	unmarried	nil	non veg	Ratrijagaran	manda	krura	vatakaphaja	Rural	-	virudhashana ajeernasana	tension	sedentary	4 to 5	madhyama
11	24	M	graduate	Student	middle	hindu	unmarried	nil	non veg	Ratrijagaran	manda	krura	kaphavataja	Rural	-	vishamashana	depression	moderate	6	madhyama
12	31	M	graduate	job	middle	hindu	married	tobacco	mixed	Swabhavik	manda	krura	vatakaphaja	Rural	amla	virudhashana	anxiety tension	moderate	9	sthoola
13	40	M	higher secondary	farmer	lower middle	hindu	married	tobacco	mixed	Swabhavik	manda	krura	pittakaphaja	Rural	madhura	virudhashana	anger irritation	laborious	9	sthoola
14	25	M	secondary	buisness	middle	jain	unmarried	tobacco	non veg	Ratrijagaran	vishama	madhyam	vatakaphaja	Rural	-	adhayashana virudhashana	other	mild	15 to 16	sthoola
15	24	F	higher secondary	housewife	middle	hindu	unmarried	nil	non veg	Ratrijagaran	sama	madhyam	kaphavataja	Rural	-	samashana anashana	anxiety	heavy	11	madhyama
16	29	M	higher secondary	farmer	middle	hindu	married	nil	mixed	Ratrijagaran	sama	madhyam	vatakaphaja	Rural	katu	virudhashana	anger irritation	heavy	10	sthoola
17	30	M	secondary	farmer	middle	hindu	married	nil	mixed	Swabhavik	vishama	madhyam	kaphavataja	Rural	-	samashana	anxiety	moderate	10	madhyama
18	38	M	graduate	farmer	lower middle	hindu	married	nil	veg	Swabhavik	vishama	madhyam	kaphapittaja	Rural	madhura	virudhashana	depression	laborious	10	sthoola
19	29	M	graduate	farmer	lower middle	hindu	married	nil	veg	Divaswapa	manda	madhyam	kaphavataja	Rural	madhura	vishamashana	anger irritation	heavy	10	sthoola
20	36	M	graduate	job	middle	hindu	married	tobacco	mixed	Ratrijagaran	vishama	madhyam	vatapittaja	Rural	-	anashana	tension	moderate	8	sthoola
21	34	M	secondary	farmer	middle	hindu	married	tobacco	mixed	Ratrijagaran	manda	madhyam	pittakaphaja	Rural	madhura	adhayashana virudhashana	irritation	moderate	10	sthoola
22	21	M	graduate	Student	middle	hindu	unmarried	nil	mixed	Ratrijagaran	manda	krura	pittavataja	Rural	-	vishamashana	tension	moderate	5	madhyama
23	30	M	secondary	farmer	lower middle	hindu	married	tobacco	non veg	Swabhavik	vishama	madhyam	pittakaphaja	Rural	katu	adhayashana ajeernashana	anxiety tension	moderate	9	madhyama
24	28	M	higher secondary	farmer	lower middle	hindu	married	tobacco, alcohol	non veg	Divaswapa	manda	krura	vatakaphaja	Rural	katu	adhyashana vishamashana	anger irritation	laborious	10	madhyama
25	21	F	graduate	Student	middle	hindu	unmarried	nil	non veg	Ratrijagaran	manda	krura	pittavataja	Rural	-	virudhashana	fear	sedentary	9	madhyama
26	40	M	higher secondary	farmer	middle	buddhist	married	nil	non veg	Swabhavik	sama	madhyam	vatapittaja	Rural	-	vishamashana	other	moderate	8	sthoola
27	27	M	graduate	job	middle	hindu	married	nil	non veg	Ratrijagaran	vishama	madhyam	vatapittaja	Rural	-	virudhashana	fear	moderate	8	sthoola
28	38	M	secondary	farmer	lower middle	hindu	married	tobacco, alcohol	veg	Ratrijagaran	manda	krura	pittakaphaja	Rural	-	virudhashana	anger	laborious	9	sthoola
29	32	F	secondary	housewife	lower middle	hindu	married	nil	non veg	Swabhavik	sama	madhyam	kaphavataja	Rural	madhura	samashana anashana	depression	mild	8	madhyama
30	32	F	secondary	housewife	lower middle	hindu	married	nil	veg	Swabhavik	vishama	madhyam	pittakaphaja	Rural	-	samashana ajeernashana	irritation	moderate	10	madhyama
31	30	M	postgraduate	job	middle	hindu	married	nil	non veg	Ratrijagaran	vishama	krura	pittakaphaja	Rural	-	virudhashana	anxiety	heavy	8	madhyama
32	25	M	graduate	Student	middle	hindu	unmarried	nil	mixed	Swabhavik	sama	madhyam	kaphapittaja	Rural	-	virudhashana	tension	mild	8	sthoola
33	24	M	graduate	Student	middle	hindu	unmarried	nil	mixed	Swabhavik	sama	madhyam	kaphapittaja	Rural	-	virudhashana ajeernasana	tension other	moderate	6	sthoola
34	38	M	secondary	farmer	middle	hindu	married	tobacco, alcohol	veg	Swabhavik	manda	krura	vatapittaja	Rural	-	samashana virudhashana	other	moderate	8	sthoola
35	40	M	secondary	farmer	middle	hindu	married	alc	non veg	Ratrijagaran	manda	madhyam	vatapittaja	Rural	-	virudhashana	irritation	moderate	9	sthoola
36	24	M	graduate	Student	middle	hindu	unmarried	nil	mixed	Divaswapa	manda	krura	vatakaphaja	Rural	-	vishamashana virudhashana	tension	sedentary	4	sthoola
37	26	M	graduate	farmer	middle	hindu	married	alcohol	mixed	Swabhavik	vishama	madhyam	vatapittaja	Rural	-	vishamashana	anger other	moderate	10	madhyama
38	34	M	postgraduate	job	middle	hindu	married	alcohol	mixed	Swabhavik	vishama	krura	vatakaphaja	Rural	madhura	samashana	tension	sedentary	8	sthoola
39	32	M	secondary	farmer	middle	hindu	married	alcohol	veg	Divaswapa	manda	krura	kaphavataja	Rural	-	virudhashana	anxiety	laborious	10	sthoola
40	30	M	secondary	farmer	lower middle	hindu	married	tobacco, tea	non veg	Ratrijagaran	manda	madhyam	vatakaphaja	Rural	-	virudhashana	irritation	laborious	10	madhyama
41	27	M	graduate	job	lower middle	hindu	married	alcohol	non veg	Swabhavik	vishama	krura	kaphapittaja	Rural	-	virudhashana	anger irritation	moderate	8	sthoola
42	29	M	graduate	job	middle	hindu	married	smoking	non veg	Ratrijagaran	manda	krura	vatapittaja	Rural	-	ajeernashana	jovial	mild	8	madhyama
43	32	M	postgraduate	job	middle	hindu	married	nil	veg	Ratrijagaran	manda	madhyam	kaphavataja	Rural	-	virudhashana	fear	mild	8	sthoola
44	24	M	graduate	Student	lower middle	hindu	unmarried	nil	non veg	Ratrijagaran	manda	krura	kaphavataja	Rural	madhura	vishamashana ajeernashana	tension	sedentary	6	sthoola
45	30	M	graduate	job	middle	hindu	married	nil	non veg	Ratrijagaran	vishama	krura	vatakaphaja	Rural	-	virudhashana	anxiety	moderate	8	sthoola
46	34	M	secondary	farmer	lower middle	hindu	married	smoking	mixed	Ratrijagaran	sama	madhyam	kaphavataja	Rural	-	vishamashana	irritation	laborious	9	sthoola
47	24	M	graduate	Student	middle	hindu	unmarried	smoking	mixed	Divaswapa	vishama	madhyam	vatakaphaja	Rural	amla	vishamashana virudhashana	tension depression	moderate	6	madhyama
48	30	M	postgraduate	job	middle	hindu	married	smoking	mixed	Ratrijagaran	vishama	krura	kaphavataja	Rural	-	virudhashana	anger	moderate	8	madhyama
49	34	M	postgraduate	job	middle	hindu	married	tobacco	mixed	Ratrijagaran	vishama	madhyam	vatakaphaja	Rural	-	virudhashana	fear	moderate	8	sthoola
50	22	M	graduate	Student	lower middle	hindu	unmarried	nil	mixed	Ratrijagaran	manda	krura	vatakaphaja	Rural	-	adhayashana virudhashana	depression	sedentary	9	madhyama

Master Chart Group A Gradation

Sr. No.	Itching		Sweating		Discoloration		Dryness		PASI score	
	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	1	0	1	1	3	0	1	0	0.6	0.2
2	2	0	2	1	3	4	2	0	1.6	0.8
3	1	0	1	1	3	0	1	0	1.2	0.3
4	3	1	3	1	4	4	3	1	2	1.2
5	1	0	1	1	2	0	1	0	1.2	0.3
6	4	2	1	1	3	1	1	0	9.2	1.6
7	1	0	1	0	2	0	1	0	0.8	0.1
8	2	1	1	1	3	1	2	1	1	0.2
9	3	0	3	2	4	3	1	0	1.6	0.3
10	2	0	1	1	4	4	3	1	4	1.1
11	2	0	1	1	1	0	1	0	0.4	0
12	3	1	1	0	2	0	1	0	0.4	0.1
13	2	1	3	0	2	3	1	1	16.6	3.3
14	2	0	1	0	2	3	2	0	4	1.6
15	1	0	1	1	3	0	1	0	1.2	0.4
16	1	0	1	1	3	0	1	0	1.8	0.5
17	1	0	1	0	2	3	1	0	1.6	0.2
18	3	1	2	1	3	0	2	1	2.4	0.6
19	1	0	1	0	3	1	1	0	0.4	0
20	1	1	1	0	1	3	1	0	0.2	0
21	2	1	1	1	3	0	1	0	1.5	0.1
22	2	0	3	0	4	0	1	1	2	0
23	2	0	1	1	4	3	1	0	1.2	0.1
24	1	1	1	0	1	0	1	0	0.2	0
25	2	0	1	0	3	3	2	1	0.4	0
26	2	1	1	0	3	3	2	1	0.8	0
27	3	1	1	1	4	4	4	2	8.4	3.1
28	3	1	1	1	3	1	3	2	3	1.2
29	3	2	2	1	2	1	1	0	7.9	2.6
30	4	1	0	0	4	1	1	0	2.6	0
31	3	1	1	0	3	4	4	2	4.8	2.1
32	2	1	1	0	4	3	1	0	1	0.2
33	3	1	3	2	4	4	4	2	1.2	0.3
34	1	1	1	1	3	1	2	1	0.3	0
35	3	0	3	2	3	4	4	2	1.2	0.2
36	3	0	3	2	4	4	4	1	2	1.2
37	2	1	2	1	3	4	1	1	1.2	0.4
38	3	1	2	1	4	4	1	1	4	1.5
39	1	1	1	0	3	4	1	1	0.8	0.1
40	4	2	2	1	3	4	4	2	1.6	0.2
41	2	1	2	1	3	4	2	1	2	0.3
42	2	1	2	1	4	2	1	0	1.2	0.4
43	2	0	2	1	3	3	1	0	1.2	0.6
44	4	3	3	2	3	3	4	3	1.6	0.3
45	2	1	3	2	2	3	0	0	1.6	0.5
46	1	1	1	1	1	3	1	1	0.2	0
47	2	1	2	1	4	3	3	2	0.4	0
48	3	0	3	2	4	4	4	1	4	0.7
49	2	0	2	1	4	3	2	0	0.8	0
50	1	1	0	0	2	0	0	0	2.8	1.2
	107	34								
	2.14	0.68								

Master Chart Group B Gradation

Sr. No.	Itching		Sweating		Discoloration		Dryness		PASI score	
	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	2	0	2	1	3	3	3	1	1.6	1.4
2	3	2	3	2	4	3	4	3	4	3.9
3	2	1	1	0	1	0	1	0	0.6	0.5
4	2	0	2	1	3	3	2	0	1.2	1
5	3	2	2	1	3	3	3	2	2	1.8
6	3	2	3	2	3	3	4	3	2.4	2.1
7	2	1	1	1	3	3	1	0	0.4	0.3
8	3	1	3	2	3	3	4	2	1.6	1.3
9	2	0	3	2	3	3	3	1	2	1.9
10	3	1	3	2	3	3	3	1	1	0.9
11	1	0	1	1	3	3	2	0	0.6	0.5
12	3	2	3	2	3	3	3	2	2	1.9
13	1	1	2	1	2	2	1	0	0.9	0.8
14	3	1	3	2	3	3	3	1	2.4	2.2
15	2	0	2	1	3	3	2	0	1	0.9
16	3	1	3	2	3	3	3	1	1	0.9
17	3	1	3	2	3	3	2	0	1.6	1.4
18	2	1	2	1	2	2	1	0	1.6	1.5
19	3	1	2	1	2	2	2	0	1.6	1.5
20	3	2	3	2	2	2	3	2	2.4	2.3
21	2	1	3	2	2	2	2	1	0.8	0.7
22	3	2	3	2	3	3	4	3	1.6	1.4
23	3	1	3	2	3	3	4	2	0.8	0.7
24	2	2	2	1	3	3	1	1	0.6	0.5
25	1	0	1	1	2	2	1	0	0.9	0.7
26	1	0	1	1	1	0	1	0	0.4	0.3
27	2	0	2	1	3	3	2	0	1.6	1.5
28	2	2	1	1	2	2	1	0	1.2	1.1
29	3	1	3	2	2	2	2	0	2	1.8
30	2	1	2	1	2	2	1	0	1.6	1.4
31	3	1	3	2	3	3	3	1	4	3.8
32	2	0	2	1	3	3	2	0	2	1.9
33	1	0	1	1	1	0	1	0	0.4	0.3
34	3	2	2	1	2	2	2	1	2.4	2.3
35	2	1	1	1	2	2	1	0	0.8	0.7
36	3	1	3	2	2	2	4	2	6.4	6.1
37	2	1	2	1	2	2	2	1	0.8	0.6
38	2	1	2	1	2	2	2	1	0.6	0.5
39	2	1	2	2	2	2	1	0	0.8	0.7
40	2	1	2	2	3	3	2	1	0.8	0.6
41	3	2	3	2	2	2	3	2	4	3.8
42	4	3	3	2	3	3	3	2	5.6	5.4
43	2	1	1	1	2	2	1	0	0.6	0.5
44	1	0	1	1	2	2	1	0	0.8	0.6
45	1	0	1	1	3	3	1	0	0.8	0.5
46	2	2	3	2	3	3	3	2	2	1.8
47	1	0	1	1	2	2	1	0	0.8	0.7
48	3	2	3	2	2	2	3	2	2.4	2.3
49	2	1	2	1	4	3	1	0	1.2	1
50	1	0	1	1	4	3	1	0	0.4	0.2

टिळक महाराष्ट्र विद्यापीठ
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The Late Vd. P. G. Nanal Dept. of Ayurveda

Ref. No. : Ayu/15/ 50

Date: 10th July 2015

Protocol Approval Letter

Vd. Pooja Dhone

You are here by inform that your protocol titled '**Comparative study of efficacy of Saptaparna ghana and 777 oil in the management of Psoriasis**' is submitted for Ph. D. Ayurveda 2014-15 has been accepted by PhD / Ethical committee subject to Ethical clearance from the organization from where the work is proposed. This certificate submitted to Dept. of Ayurveda within 1 month.

You shall submit your six month report in month **December and June** of every year.

Dr. Abhijit H. Joshi
Dept. Head

CERTIFICATE OF ANALYSIS

Product Name : SAPTAPARNA GHANVATI	Analytical Report No. : SG-15/0101
Mfg. Date : SEP - 15	Batch No. : 101
Exp. Date : SEP - 18	Batch size : 18KG

Sr. No.	PARAMETERS	RESULTS	LIMITS
1	Description: Color Odour taste	 Complies Complies Complies	 Blackish Characteristics Pungent , slightly Bitter
2	pH	5.60	5.00 To 6.00
3	Disintegration time	35 mnts	25-40 mnts
4	Hardness	6kg	4-9 kg
5	Weight of each tablet	compies	400mg (+/- 0.05mg)
6	PH of 1% w/v Solution	5.3	4.50 TO 7.50
7	Identification (By TLC)	complies	Comparable with std
8	Assay of Alkaloid	complies	Not less than 15 00%

Remark: This product complies as per I.H.S

I.H.S: IN HOUSE STANDARD

ANALYSED BY	CHECKED BY
Miss. Swati kanade	Dr. Punarvasu Agnihotri

COMPARATIVE STUDY OF EFFICACY OF SAPTAPARNA GHANA AND 777 OIL IN THE MANAGEMENT OF PSORIASIS

A Thesis

SUBMITTED TO THE

TILAK MAHARASHTRA VIDYAPEETH PUNE

FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

In AYURVEDA – KAYACHIKITSA

Under the Board of Ayurveda Studies

BY

Pooja Deepak Dhone

Registration No. 05614007228

UNDER THE GUIDANCE OF

Dr. NITIN MADHAV KAMAT

DEPARTMENT OF AYURVEDA

AUGUST 2023

RECOMMENDATION

Conclusion -

The clinical study ***"COMPARATIVE STUDY OF EFFICACY OF SAPTAPARNA GHANA AND 777 OIL IN THE MANAGEMENT OF PSORIASIS."*** is concluded with following observations.

- Psoriasis was more common in age group of 30-40 years, Males, Secondary school & Graduate level of education, patients doing service & farmers, middle class, Hindus, Married, Tobacco consuming, Non-Veg consuming, None of Rasa dominance, Viruddhashana diet, Patients with irritation, Ratrijagaran type of Nidra, Sthoola Sharir Akruti, work Duration of less than 9 hrs, Moderate Nature of work, Vishama & Manda Agni, Krura & Madhyam Koshtha, Vaat Kaphaj Prakruti.
- Overall statistical analysis shows that Saptaparna Ghana Vati is effective in psoriasis. It shows more effective results in following symptoms –
    1. Itching
    2. Sweating
    3. Erythema
    4. Induration
    5. Desquamation
    6. Area involved
- 777 oil is effective in psoriasis. It showed more results in decreasing dryness.
- Overall study shows that oral consumption of Saptaparna is significantly effective in psoriasis than external application of 777 oil.
- Effect on discolouration of both the drugs couldn't be compared as both were insignificant statistically in psoriasis.
- No adverse effect was found during & after the study.

Further scope of study and recommendation -

1. Separate type of Kushtha which resemble psoriasis can be studied with same drug.
2. Same trial drug can be studied with different control group.
3. Literary review on comparison of Kushtha and other skin diseases in Ayurveda.