

**“CRITICAL ANALYSIS OF ANUPANA WITH SPECIAL  
REFERENCE TO YOGARAJA GUGGULU”**

**By**

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**In**

**KAYACHIKITSA**

**Under the guidance of**

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GULTEKADI, PUNE**

**2011**

**THE LATE VAIDYA P.G. NANAL DEPT. OF AYURVEDA  
TILAK MAHARASHTRA UNIVERSITY  
GULTEKADI, PUNE**

**CERTIFICATE**



This is to certify that **Dr.PRASHANTH A S** has conducted his research work entitled “**CRITICAL ANALYSIS OF ANUPANA WITH SPECIAL REFERENCE TO YOGARAJA GUGGULU**” under my immediate supervision and guidance. He carried out the work on Ayurvedic as well as modern lines, scientifically himself. His observations and results have been checked by me from time to time.

I am fully satisfied with the work which the candidate has presented for the degree of **Doctor of Philosophy (Ayurveda Vidyavachaspati)** in Tilak Maharashtra University, Gultekadi, Pune. The candidate has fulfilled all the requirements of ordinance laid down in the prospectus for the above degree. I feel that it will definitely be useful for the advancement of knowledge in the concerned field for further researchers.

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Place: PUNE.

Date:

Dr. Prashanth.A.S.

## **ABBREVIATIONS**

- A. H. - Ashtanga Hridaya
- A. S. - Ashtanga Sangraha
- B.P. – Bhavaprakasha
- B.R. – Bhaishajya Ratnavali
- Bh. - Bhela Samhita
- Ch. - Charaka Samhita
- Chakra. - Chakrapani
- Chi. - Chikitsasthana
- Dal. - Dalhana
- GN - Gadnigraha
- Ha. Sam. - Harita Samhita
- Ka. - Kashyapa Samhita
- M. N. - Madhava Nidana
- Ni. - Nidanasthana
- Pu. - Purva Khanda
- Sha. - Sharangadhara
- Si. - Siddhisthana
- Su. - Sushruta Samhita
- Su. - Sutrasthana
- Ut. – Uttartantra
- V.S.-Vanga Sena
- Vi. - Vimanasthana
- Y. R. - Yogaratnakara



## **ABSTRACT**

### **Introduction:**

The unique concept of Anupana is well explained as an adjuvant to therapeutic drugs in Ayurveda. Anupana is explained for food as well as for drugs or medicaments. The drug action depends upon Anupana.

In therapeutics it is noted that a single formulation is advocated in various diseases with specific Anupana. One such formulation, which is easily available and aptly administered in clinics with successful results, is Yogaraja Guggulu explained in Sharangadhara Samhita, Yogaratnakara and Bhaishajya Ratnavali in the context of Amavata. Detailed study about the Anupana in the therapeutics is essential to understand its importance.

### **Materials and Methods:**

150 subjects were studied in this series under the 5 groups named A, B, C, D and E, each containing 30 subjects in each group. Group A received Yogaraja Guggulu along with Rasnadi Kwatha as Anupana, Group B received Yogaraja Guggulu along with Punarnavadi Kwatha as Anupana, Group C received Yogaraja Guggulu along with Kana Kwatha as Anupana, Group D received Yogaraja Guggulu along with Madhu as Anupana and Group E received Yogaraja Guggulu along with Ushnodaka as Anupana in the management of Amavata. The effect of therapies was assessed based on improvement obtained in term of scores given to signs and symptoms. Finally the data was statistically analysed and the level of significance obtained.

**Results:**

ANOVA test of all subjective parameters between all the five groups provided statistically significant result which proved research hypothesis. So Anupana has a significance role in altering the action of the medicine. Out of all the five groups, Group A (Yogaraja Guggulu with Rasnadi Kwatha as Anupana) provided more relief in all the parameters.

**Conclusion:**

So it can be concluded that Yogaraja Guggulu along with various Anupana provides different results. Here in the present study it proved that Anupana told for Yogaraja Guggulu has significance in the management of Amavata. So it can be concluded that the Anupana has a significance role in altering the action of the medicine.

**Key Words:**

Anupana, Yogaraja Guggulu, Amavata, Rasnadi Kwatha, Punarnavadi Kwatha, Kana Kwatha, Madhu, Ushnodaka.

## LIST OF CONTENTS

• Acknowledgement.....	i - iii
• Abbreviations.....	iv
• Abstract.....	v - vi
• List of Tables, Graphs and Figures .....	vii - xiv
1. Introduction.....	001 - 005
2. Objectives of the Study.....	006
3. Previous works done.....	007 - 008
4. Review of Literature.....	009 - 113
Historical Review.....	008 - 009
Concept of Ama and Vata.....	021 - 025
Nirukti.....	026 - 027
Paribasha.....	028 - 029
Paryaya.....	030
Anupana – Conceptual Study.....	031 - 052
Disease Review – Nidana.....	053 - 058
Samprapti.....	059 - 066
Purva Roopa.....	067
Roopa.....	068 - 075
Bheda.....	076 - 077
Upadrava.....	078
Upashaya-Anupashaya.....	079
Sadhya-Asadhyata.....	080 - 081
Sapeksha Nidana.....	082 - 085
Pathya-Apathya.....	086 - 087
Chikitsa Siddhanta.....	088 - 097

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<b>Guggulu Kalpana.....</b>	<b>098 - 107</b>
<b>Grug Review.....</b>	<b>108 - 113</b>
<b>5. Material and Methods.....</b>	<b>114 - 122</b>
<b>6. Observations.....</b>	<b>123 - 128</b>
<b>7. Results.....</b>	<b>129 - 137</b>
<b>8. Discussion.....</b>	<b>138 - 153</b>
<b>9. Conclusion .....</b>	<b>154 - 156</b>
<b>10. Summary.....</b>	<b>157 - 159</b>
<b>11. Bibliography.....</b>	<b>160 - 162</b>
<b>12. References.....</b>	<b>163 - 169</b>
<b>13. Annexure</b>	
<b>a. Case Proforma with consent form.....</b>	<b>xv - xxx</b>
<b>b. Master chart.....</b>	<b>xxxi – xl</b>

## LIST OF TABLES

TABLE NO	CONTENTS	PAGE NO
01.	Anupana Based on Rasa	36
02.	Anupana Based on Guna	37
03.	Anupana Based on Ahara and Oushadha dravya – Samanya	37
04.	Anupana Based on Ahara and Oushadha dravya – Rogabhedena	38
05.	Anupana Based on Dravya Varga	38
06.	Anupana Based on Kalpanas	39
07.	Anupana Based on yogas	40
08.	Anupana Based on Kala	41
09.	Anupana Based on Vaya	41
10.	Anupana Based on Dosha	41
11.	Anupana based on Roga / Arstha	42
12.	Anupana Guna Karma	46
13.	Nidanas of Amavata According to Different Authors	56
14.	Rupa of Amavata in Ayurvedic Classics by Various Acharyas	72
15.	Rheumatoid Arthritis patterns of onset	73
16.	Joints affected in Rheumatoid Arthritis	74
17.	Different deformities in Rheumatoid arthritis	74
18.	Upashaya – anupashaya of Amavata	79
19.	Symptoms of Rheumatoid Arthritis, which may require differential diagnosis	84
20.	Sapeeksha Nidana Chart	85
21.	Different ousadha yogas according to different Acharya	90

22.	<b>Some surgical procedures in Rheumatoid Arthritis</b>	96
23.	<b>Ingredients and its Rasa panchaka of Yogaraja Guggulu</b>	109
24.	<b>Ingredients and its Rasa panchaka of Rasnadi Kwatha</b>	111
25.	<b>Ingredients and its Rasa panchaka of Kanadi Kwatha</b>	112
26.	<b>Ingredients and its Rasa panchaka of Punarnavadi Kwatha</b>	113
27.	<b>Age wise distribution of 150 subjects of Amavata</b>	123
28.	<b>Sex wise distribution of 150 subjects of Amavata</b>	124
29.	<b>Nature of work wise distribution of 150 subjects of Amavata</b>	125
30.	<b>Medical exposure wise distribution of 150 subjects of Amavata</b>	126
31.	<b>Chronicity wise distribution of 150 subjects of Amavata</b>	127
32.	<b>RA Factor wise distribution of 150 subjects of Amavata</b>	128
33.	<b>ANOVA table for the ‘Pain in Joints (Sandhi Shoola)’</b>	129
34.	<b>ANOVA table for the ‘Swelling in Joints (Sandhi Shotha)’</b>	129
35.	<b>ANOVA table for the ‘Stiffness in Joints (Sandhi Stabdata)’</b>	130
36.	<b>ANOVA table for the ‘Tenderness in Joints (Sandhi Sparshaahishnuta)’</b>	130
37.	<b>ANOVA table for the ‘Redness in Joints (Rakta varnata of Sandhi)’</b>	131
38.	<b>ANOVA table for the ‘Warmthness in Joints (Sthanika Ushma Vruddhi of Sandhi)’</b>	131
39.	<b>ANOVA table for the ‘General Functional Capability’</b>	132
40.	<b>Percentage of Relief on the Parameters of Assessment in Group A</b>	132
41.	<b>Percentage of Relief on the Parameters of Assessment in Group B</b>	133

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42.	<b>Percentage of Relief on the Parameters of Assessment in Group C</b>	134
43.	<b>Percentage of Relief on the Parameters of Assessment in Group D</b>	134
44.	<b>Percentage of Relief on the Parameters of Assessment in Group E</b>	135
45.	<b>Increase in Haemoglobin in all 5 groups</b>	136
46.	<b>Reduction in Erythrocyte Sedimentation Rate in all 5 groups</b>	136
47.	<b>Rheumatoid Arthritis Factor</b>	137

**LIST OF GRAPHS**

<b>GRAPH NO</b>	<b>CONTENTS</b>	<b>PAGE NO</b>
<b>01.</b>	<b>Age wise distribution of 150 subjects of Amavata</b>	123
<b>02.</b>	<b>Sex wise distribution of 150 subjects of Amavata</b>	124
<b>03.</b>	<b>Nature of work wise distribution of 150 subjects of Amavata</b>	125
<b>04.</b>	<b>Medical exposure wise distribution of 150 subjects of Amavata</b>	126
<b>05.</b>	<b>Chronicity wise distribution of 150 subjects of Amavata</b>	127
<b>06.</b>	<b>RA Factor wise distribution of 150 subjects of Amavata</b>	128



**LIST OF ILLUSTRATIONS**

<b>FIGURE NO.</b>	<b>CONTENTS</b>	<b>PAGE NO</b>
<b>01.</b>	<b>Schematic Representation of Amavata Samprapti</b>	<b>61</b>
<b>02.</b>	<b>Pyramidal approach to therapy in Rheumatoid arthritis</b>	<b>97</b>

## LIST OF FIGURES

FIGURE NO.	CONTENTS
01.	Pathogenesis of Rheumatoid Arthritis
02.	Different pathological changes in Rheumatoid Arthritis
03.	Deformities of hand in advanced stage of rheumatoid arthritis
04.	Rheumatoid Nodule
05.	Episcleritis One Of The Ocular Manifestation Of Rheumatoid Arthritis
06.	Tenosynovitis In A Rheumatoid Hand
07.	Soft Tissue Swelling In Early Stage Of Rheumatoid Arthritis
08.	Frontal images of both the right (above) and left wrists (below) show advanced changes of rheumatoid arthritis with soft tissue swelling (yellow arrows), narrowing of the radiocarpal joint space (blue arrow), erosions (red arrows), and destruction of the ulnar styloid (green arrow). The intercarpal joints and metacarpal joints are destroyed in both hands
09.	Materials used in clinical trial

## **INTRODUCTION**

### **ANUPANA:**

A physician interacts or interferes with patient's biological system with chemical substances called drugs. Such interaction is applied to cure or amelioration of diseases. The unique concept of Anupana is well explained as an adjuvant to therapeutic drugs in Ayurveda. Anupana is explained for food as well as for drugs or medicaments. The basis being modification of drug action by logical reasoning. The drug action depends upon Anupana.

In therapeutics it is noted that a single formulation is advocated in various diseases with specific Anupana. This determines that Anupana has the capacity to judge the action of a formulation. For e.g. In Snehana therapy, Ghrita has been prescribed with Ushnodaka as Anupana, similarly Manda for Taila. Most drugs produce effect by combining with biological receptors. The receptor theorem of Goldstein, Arnov, and Kalman states that: in general, a drug produces a particular effect by combining chemically with some specific molecular constituent (receptor) of the biological system upon which it acts. The function of the receptor molecule is thereby modified to produce a measurable effect. Drugs need to act selectively on specific receptors; otherwise they may damage the host. Anupana may modify the affinity of drug to a target tissue.

Concomitant with actions on biological systems, drug and Anupana interacts with each other producing a change in the effects of one or the other or both. When the effects are additive or supra-additive, the terms Summation and Potentiation (or Synergism) are applied.

Anupana increases the therapeutic index i.e. increases the gap between therapeutic efficacy and adverse effect. Untoward reaction to drugs occurs essentially for 4 reasons; allergy, intolerance, idiosyncrasy or adverse drug reaction. Selection of Anupana as reviewed in classics reveal that sheeta veerya dravya are advised along with Ushna veerya dravya or vice versa to counteract its adverse effects e.g. shodhita bhallataka with Ksheera. Pharmacological antagonism is evolved in the form of Anupana.

The factors that influence drug absorption involve diffusion and active transport through biological barriers majority of which are lipid in nature. Hence the degree of lipid solubility decides the degree of absorption. Factors governing the rate of absorption are; site of application and local blood flow, chemical alteration of the drug, use of a supporting media as Anu/ Sahapana. Ionized form of a drug is less lipid soluble and more water soluble than the non-ionized form. This may explain the rationale behind the prescription of Anupana of kashayas with guggulu kalpas.

#### **Possible Drug- Anupana Interactions when orally administered;**

- Influence on GI motility
- Direct interaction in blood and adjacent compartments
- Interference with the distribution or storage of drug.
- Interaction at the receptor.
- Modification of the metabolism of the drug by enzyme induction or inhibition of metabolism.
- Modification of excretion of one drug by another.
- Synergism or antagonism
- Anupana modifies Palatability, appetite, consumption of the drug.

And hence, Minor chemical modification in the form of Anupana of a drug may produce profound changes in its pharmacological activity.

Anupana is an integral part in the drug administration, which carries the drug to the site of action. Acharya Vagbhata commenting on Anupana explains that it restores Urja, produces contentment, spreads into the body fast and produces apt results. It aid's in digestion and improves Agni karmukata. By this we can presume that Anupana by and large act on their guna pradhanyata or karma pradhanyata or veerya pradhanyata.

Not alone liquid dosage forms have been selected as Anupana but in classics we find various lehas, choornas that can be prescribed as Anupana. So this becomes a moot point to judge what exactly the Anupana and its role in therapeutics mean.

Till date there are no detailed data available on the study of role of Anupana in therapeutics. Many such formulations are available in classics for which more than one Anupana has been explained. One such formulation, which is easily available and aptly administered in clinics with successful results, is Yogaraja Guggulu explained in Sharangadhara Samhita, Yogaratnakara and Bhaishajya Ratnavali in the context of Amavata.

Detailed study about the Anupana in the therapeutics is essential to understand its importance. Hence the study has been undertaken.

### **AMAVATA:**

Among the joint disorders Amavata is considered to be most serious, owing to its chronicity, crippling nature and pain. Amavata is distressing and frustrating ailment both for the patient and the physician as well. Due to exacerbation and remission, the serious nature of the disease is not appreciated initially which

ultimately leads to the deformities. Thus it has posed a challenge and has created a universal interest among physicians and research workers.

Amavata was first described as an independent disease in Madhava Nidana. It is a disease of Madhyama Roga Marga as it affects Sandhis and Hridaya Marma. Though Ama and Vata are the predominant pathogenic factors but the disease represents Tridoshic vitiation. The affliction of Sandhis by Vata dosha in association with Ama reflects the equal role of both Dosha and Dushya in the causation of this disease. Moreover, the chief pathogenic factors, being contradictory in nature pose difficulty in planning the line of treatment.

As Amavata is rasavaha, srotojanya vikara & Mandagni is considered as an important contributory factor for its Aetiopathogenesis, the principal treatment of Amavata as described in classics is based on “Langhan”, “Deepan”, & “Pachana” of apakwa Amarasa.

The changes in lifestyle, food habit, pace of life etc. have kept on contributing a number of new diseases, which have become a challenge for the human race. Similarly diseases that were not that common have become the burning problem of society as well as the medical community. Rheumatoid arthritis is one of such diseases.

Rheumatoid Arthritis is one of the commonest joint disorders. It is a chronic systemic inflammatory disorder that affects many tissues and organs – skin, blood vessels, heart, lungs, muscles, but principally it affects the joints producing the non-suppurative proliferative synovitis that often progress to destruction of the articular cartilage and ankylosis of the joints. Although the cause for Rheumatoid Arthritis

remains unknown it is believed that auto-immunity play a pivotal role in its chronicity and progression.

Rheumatoid Arthritis is a common clinical entity afflicting nearly 1% of world's population. The reported prevalence of Rheumatoid Arthritis in adults varies from 0.5% - 3.8%, with an annual incidence 5% of women and 2% of men. *Rheumatoid Arthritis* can be compared with *Amavata* as described in ayurvedic classics. Amavata is a one among such disease that was not dealt with that importance in the ancient classics but described in detail since 7<sup>th</sup> century A.D.

No doubt modern system of medicine has got an important role to play in overcoming agony of pain, restricted movement and disability caused by the articular diseases. Simultaneously prolonged use of modern medicines are not only giving rise to many side effects, toxic symptoms and adverse reactions but also more serious complications like organic lesions etc. are caused by them.

*Ayurveda* today is recognized worldwide as a system of medicine that provides sound mind in sound body. This traditional system of medicine of India has an un-enviable position in the field of providing remedies for the ailments, as it provides satisfactory answers to all the problems the world is facing today. The development of science greatly depends upon experimentation to reveal the mysteries of nature and to confirm the previous innovation. To confirm the efficacy of the drug, though experimental study plays an important role, yet a study remains incomplete unless it is supported by clinical trials. Thus the data obtained from the clinical study is useful in ascertaining the beneficial effect seen in experimental study. In addition certain sign and symptoms like the sense of well-being and dejection can be assessed only in human beings. Hence the clinical study adds and confirms the findings of the experimental study.

## **OBJECTIVES OF THE STUDY**

1. Critical analysis of the concept of Anupana.
2. Administration of Yogaraja Guggulu with different Anupanas in Amavata.
3. Assessing the significance of Anupana.

### **Hypothesis:**

- a) Null Hypothesis:** The Anupana told for Yogaraja Guggulu is not having any significance in the management of Amavata.
- b) Alternative Hypothesis:** The Anupana told for Yogaraja Guggulu has significance in the management of Amavata.



## **PREVIOUS WORKS DONE**

1. Amavata mein Ama ka Mahatva evam uski Shuddha Guggulu se Chikitsa ka Adhyayana (Ph.D. Thesis) Vyas S.N. I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar. 1983
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## **HISTORICAL REVIEW**

### **ANUPANA**

#### **Itihasa:**

*“The further back you look, further forward you see”.*

*Winston Churchill*

#### **Vedic Period:** (2000B.C -1000B.C)

Vedas are the oldest known literature available today and have been a rich source of knowledge for varied sciences.

References regarding Anupana are found in the commentary on Chandogyopanishad<sup>1</sup> where it is considered to be a drink, to be had near at hand. In the context of describing various Dravya-Gunas, Anupana is dealt under Hitahita Anupanavidhi<sup>2</sup>.

#### **Samhita Period:** (1000 B.C – 500 A.D)

#### **Charaka Samhita**<sup>3</sup>:

Charakacharya deals about Anupana in the context of Annapanavidhi in Sutrasthana. After Krutanna varga, in Aharayogi varga the description, qualities, mode of action, criteria for selection of specific Anupanas are vividly dealt. The action of Anupana is related in accordance with the Ahara upayogitva here .However while describing the selection of Anupanas based on disorders like Sthoulya, Tandra and Alpagni, specific Anupanas are prescribed too.

Further, the author says if the prescribed Anupana is not available then based on the habitat, suitable Anupanas are to be considered. From the list of 84 Asavas and

other Peyas like Jala are advised to be evaluated and then considered for administration.

#### **Sushruta Samhita**<sup>4</sup>:

Following the description of Manda-peyadi pathya kalpanas in Krutanna varga and various delicacies in Bhakshya varga, Anupana is distinguishedly dealt in a Varga. in Sutrasthana, Annapana vidhi adhyaya of this treatise. Under this varga, list of various Anupana dravyas, specific Anupana: for set of drugs belonging to a particular varga, specific to a drug, dosha and disorders are detailed. Benefits, properties, action of Anupana are also stated in this context.

#### **Kashyapa Samhita**<sup>5</sup>:

Unlike the earlier treatises, Kashyapa has not separately expounded about Anupana. However applications of Anupana are extensively found in this text. For instance, in Snehadhyaya of Sutrasthana specific Anupanas for snehas viz., Ghrita, Taila, Vasa and Majja – Ushnodaka, Yusha and Manda are indicated respectively.

#### **Bhela Samhita**<sup>6</sup>:

Treading the common footsteps, Bhela too elaborates Anupana in association with Ahara and Ahara dravyas. Wholesome Anupanas for specific Mamsa, Dhanyas, fruits, Ganas, Snehas and so on are mentioned. Guna karma of Anupanas like Pachana, Rochana and Satmyatam prayacchana are stated in this context.

#### **Sangraha Kala:** (500 A.D – 1700 A.D)

#### **Ashtanga Hrudaya**<sup>7</sup>:

In Sutrasthana, Matrashiteeyadhyaya, describing Ahara vidhana, Bhojana vyavastha, Bhojya padarthas, Anupana Pramana and Samaya concept of Anupana is

dealt. General and specific qualities of Anupana, indication w.r.t. dosha, roga, drug selected and constitution are described here. Anupana ayogya roga and rogi are also discussed here.

**Ashtanga Sangraha<sup>8</sup>:**

This treatise too discusses about Anupana in the context of Annapana vidhi adhyaya of Sutrasthana, subsequent to Ahara kalpana vidhi and Bhojanavidhi. Following Anupana, Bhojanottara kartavya, Ahara parinamakara bhava, Viruddha aharadi topics are dealt. Anupana is discussed with regards to its properties and action. Apart from this, methods of selection of Anupana based on Roga, Rogi, Dosha, kalpana, Rasa, Kala, Vayah and such factors are incorporated here.

Madhava dravya guna, one of the earliest Nighantu in its 28<sup>th</sup> chapter discusses about Anupana under the heading Anupanavidhi. List of Anupana dravya like Toya, Asava, Yusha and so on are advocated in accordance with the suitability. Mode of action of Anupana is depicted with the illustration of oil spreading swiftly when dropped on water surface. Here, the oil drop is compared to the Pradhana oushadha while water simulates the role of Anupana. Further various selection criterias for Anupanas based on drugs, formulations, disease condition and so on are dealt with besides the importance and uses of Anupanam.

Chakrapanidatta<sup>9</sup> in his work Dravya guna sangraha has dedicated a complete Varga for Anupana emphasizing its importance in Ayurveda. He details regarding the Anupana dravyas, directions for selecting the Anupanas, contraindications for the usage of Anupana, Samanya Anupana Karma and based on time of administration and the dosage of Anupana.

Kaiyyadeva Nighantukara<sup>10</sup> under Viharavarga inducts Anupana. His description appears to be taken from Sushruta's treatise.

Information of Anupana is found in Mishraka varga of Madanapala nighantu<sup>11</sup> and is similar to the description of Kaiyyadeva.

In Kalyanakaraka<sup>12</sup>, Anupana is contented in Anupanadhikara. Anupana for various Rasas are given importance in this text rather than other criterias. Such drugs are advocated whose Rasa is liked by the patient apart from being wholesome and beneficial. In the previous pariccheda, Anupana for various food items, time of administration and its benefits are told. For Rasayana purpose, Kwatha prepared from the ingredients of the Rasayana yoga is specially indicated in this text

Under Churna kalpana, Anupana and its dosage for Churnadi yogas is dealt by Sharangadhara in his Madhyama khanda<sup>13</sup>. More information regarding this context is provided by the commentators Adhamalla and Kashirama. They write the Nirukti, Paribhasha, dosage and state Jala as the foremost among Anupanas apart from clarifying the mode of action of Anupana with the oil-water illustration.

We find that Bhavamishra<sup>14</sup> has not elaborated like other authors regarding Anupana. However, in the context of Bhesaja vidhanaprakarana, Sharangadhara's opinion of dosage and mode of action are found to be followed by this author.

Raja Nighantukara<sup>15</sup> Narahari Pandit is the only person who has mentioned about 2 types of Anupana viz. Kramana and Pachana Anupana. Apart from this, not much details regarding Anupana are available.

**Adhunika Kala:** (1700 A.D onwards)

In Yogaratnakara, the last topic discussed by the author after Rasayanadhikara is Anupanam. He has given importance to the Anupanas specific to particular diseases

like Kirata, Musta, Parpata in Jwara and so on. Interestingly, we find many dravyas apart from the commonly prescribed Anupanas like: Svarna, in Gara; Guggulu in Vatavyadhi and so on. All other authors till now mentioned have advocated Anupana to be administered through oral routes only but author of Yogaratnakara has prescribed diversified routes of administration of Anupana. . To mention a few, Virechana as Anupana in Udara, Nidra in Ajirna, Aruchi, Toshana in Bhaya, Nasya in Urdhvajatruroga, Sheeta vidhi in Murccha, Raktamokshana in Vidradhi and so on. Further, the author says Anupana influences on the prime drugs' strength and effectivity.

Bhaishajya Ratnavali, Vangasena, Gada nigraha and other works incorporate descriptions of various Yogas to be administered with particular Anupanas to derive the desired effects in specific indications.

Incidentally, diversified applications of Anupanas are found in the Rasashastreeya literature among all other Ayurvedic texts. Rasashastra a non-conventional branch of Ayurveda evolved into a branch by itself, and rose to its zenith in development more recently. In the course of evolution, the scientists involved, tried to squeeze the basic concepts available in our science and adopt them to the fullest extent in the development of this science. Probably, during this process, Anupana could be one such concept worked upon for which we find its extensive references in these texts. For instance, usage of Rasasindoor with various Anupana like Chitraka, Sharkara in Kapharoga, Pittaroga and so on is found in Ayurveda Prakasha<sup>16</sup>. Rasa Taranginikara<sup>16</sup> has vividly described the mode of action of Anupana as that which disintegrates the Paramanus of the Yoga thus aids in carrying it swiftly in the body. He adds, Rogaghna Bhaishajya as synonym to Anupana. In Rasa jala nidhi<sup>17</sup>,

Gandhaka and its diversified utility due to usage of various Anupanas and many such formulations are mentioned.

Few books are dedicated to the concept of Anupana alone and constitute a compilation of numerous Rasaoushadhas in majority and few Kashtoushadhas in minority and their specific Anupanas. However critical analysis of Anupana is not elaborated in these texts. To mention a few: Anupanamanjari by Vishrama; Anupanatarangini by Raghunath Prasad; Anupana Kalpataru by Jagannath Prasad Shukla; Anupana Vidhi by Shyam Sundara Acharya Vaidya and Anupana darpana by Jnarasara Sharma.

In modern lexicons like Monier Williams and Stedmans Medical dictionary, Anupana is a fluid vehicle taken with or after medicine or eating. Monier Williams described it as:

- that which aids or assists the action of main ingredient
- a synergist, an adminiculum
- a vehicle to enhance antigenicity -Immunology
- in adjuvant therapy- use of another form of treatment in addition to primary surgical therapy as in Oncology<sup>18</sup>.



**MODERN PHARMACOLOGICAL TEXTS:**

Based on the information in lexicons, the term Adjuvant can be incorporated under the concept of Anupana. While doing so, concept of Adjuvant along with other relevant concepts will be dealt in parlance with Anupana from here on. In modern pharmacology, Adjuvant again is also a drug According to W.H.O. definition:

A Drug is any substance or product that is used to modify or explore physiological systems or pathological states for the benefit of the recipient. In the context of medicine, it means a chemical used in prevention, diagnosis or treatment of diseases. It is to be noted that benefits are in terms of physical, mental and economical value<sup>18</sup>.

An ideal prescription contains inscription as its main part. This constitutes of (a) Basis - the primary drug which is responsible for the main action of the prescription. (b) Adjuvant- this is a drug which facilitates or promotes the action of the primary drug. (c) Corrective - this is added to modify or eliminate the undesired effects of the basis. (d) Vehicle- this is a carrier, commonly a solvent which facilitates the administration of preparation into human body.

However, under the name Adjuvant, Corrective and Vehicle too are inducted. In modern prescription, firstly Basis is written, followed by Adjuvants but are not mentioned.

Further, extensive details of the concept of Adjuvant are not dealt as a distinct topic in modern literature. However Drug interactions and Biopharmaceutics are the sectors of modern pharmacology which speak of drug or formulation combinations and their effect - harmful or beneficial on therapeutic activity. These topics can be inducted under the concept of Anupanam.

## **AMA VATA – HISTORICAL REVIEW**

An offshoot of Atharva and Rigveda, this science of medicine is without beginning, but Ayurveda saw throughout many people, who organized it into beautifully woven treatises, incorporating newer diseases and their treatment which cropped up during their times. It is evident in the Samhitas that the most prevalent and deadly diseases have been devoted separate chapters were included as secondary diseases under the major category.

Amavata might not have been widely prevalent and severely crippling as it was during the time of Madhava Nidana, as we see only passing references to the disease have been made in the Bruhatrayees. Madhava was the first person to devote separate chapter for Amavata. Thus the birth of this disease and its formative years can be glanced, starting from Vedic period.

### **Vedic Period:** (5000 BC to 1000 BC)

The word Ama has been used in Rigaveda in various forms like ‘Amayath’ and ‘Amayatham’. In Atharvaveda ‘Amaya’ and ‘Amayam’ words were mentioned in the sense of a disease caused by a toxic substance Ama. The concept of Ama, its similarity with visha and its role in causing many other diseases has been discussed. Vata dosha has been mentioned in Atharvaveda with five types Prana, Samana, Udana, Vyana and Apana.<sup>19</sup> Also reference about Sandhi Vikriti caused by Sleshma Vikriti is available in Atharvaveda. Here it is clear that Ama and Vata have been described separately but no direct reference of the disease Amavata is available during Vedic period.

**Samhita Period:** (1000 BC TO 600 AD)

**Charaka Samhita:**

Charaka has described in detail Ama and Ama Pradoshaja Vikara and their treatment with Langhana and Ullekhana<sup>20</sup>.

Charaka had described treatment for Amavata while dealing with Avarana Chikitsa in Vatavyadhi, which indicate Pramehahara and Medohara Vidhi. Amavata finds a mention in the list of therapeutic indication of Kamsa Hareetaki<sup>21</sup> in Shwayathu Chikitsa and Vishaladi Phanta in Pandu Chikitsa<sup>22</sup>.

The treatment of Shariragata Ama in Grahani Chikitsa by Charaka<sup>23</sup> is similar to the description of Amavata Chikitsa by Bhava Mishra i.e. Langhana,

Pachana and oral administration of Panchakola Phanta<sup>24</sup>, same is the case with Amavata Chikitsa of Chakrapani in Chakradatta<sup>25</sup>.

**Sushruta Samhita:**

The description of Amavata in Sushruta Samhita is conspicuous by its absence.

**Bhela Samhita:**

The tenth chapter in Sutra Sthana deals with Ama Pradosha. This description has some resemblance with that of Amavata.

**Harita Samhita:**

A complete chapter on Amavata finds a mention in Harita Samhita<sup>26</sup>. The classification of Amavata is quite unique and not followed by any of the later works in this field.

**Anjana Nidana:**

This work is claimed to be written by Acharya Agnivesha, contains detailed description about etiology, premonitory symptoms, clinical manifestations, and complications.

**Sangraha Kala:** (600AD-1600AD)

Astanga Sangraha and Astanga Hridaya have ignored the disease though the word Amavata is included in the therapeutic index of compounds Vatsakadi Yoga<sup>27</sup> and Vyoshadi Yoga<sup>28</sup>.

**Madhava Nidana**<sup>29</sup>:

Madhavakara accorded this disease the status of an independent disease and has dealt the topic threadbare.

**Chakradutta:**

Chakrapanidutta has described the treatment for Amavata<sup>30</sup>.

Vangasena<sup>31</sup> and Vrinda Madhava followed Madhava with few additions in the treatment aspect. Works like Bhava Prakasha<sup>32</sup>, Yogaratnakara<sup>33</sup> and Bhaishajya Ratnavali<sup>34</sup> have only corroborated the descriptions with additional principles of treatment.

**Adhunika Kala:** (1600AD onwards):

Mahopadhyaya Acharya Gananath Sen has coined the term Rasavata for Amavata.

In Yoga Shastra the practice of Shushka Basti for improving Jatharagni and treating Amavata has been mentioned<sup>33</sup>. Y. N. Upadhyaya (1955) has correlated the disease with rheumatoid arthritis. Later research workers have agreed with Y. N. Upadhyaya.

**MODERN HISTORY OF RHEUMATOID ARTHRITIS:**<sup>35</sup>**First Century A.D:**

The rheumatoid/rheumatology is derived from the root 'Rheuma', which refers to a substance that flows and probably was derived from phlegm, an ancient primary humor, which was believed to originate from brain and flow to various parts of the body causing ailments.

**1642 A.D:**

The word rheumatism is introduced into the literature by the French physician Dr. G. Baillou who emphasized that arthritis could be a systemic disorder.

**1800 A.D:**

Landre Baervier, a physician from Salta Petruver in Paris, seemed to have described the disease for the first time he called it Garte Asthanique Primitivae.

**1857 A.D:**

Sir Garrod proposed the name Rheumatoid Arthritis, Bannatyne also in 1959 published his pathological observations on the disease but he could differentiate it from Osteoarthritis only in his later edition.

**1928 A.D:**

The American committee for the control of rheumatism is established in U.S. by Dr. R. Pemberton, renamed American Association for the study and control of rheumatic disease (1934), then American Rheumatism Association (1937) and finally American college of Rheumatology (ACR) (1988).

**1940 A.D:**

The terms Drs. Hollander and Comroe first coin Rheumatology and Rheumatologist respectively.

**1948 A.D:**

Roses identified some criteria for diagnosis of Rheumatoid arthritis.

**1958 A.D:**

American Rheumatic Association suggested uniform criteria for diagnosis.

**1987 A.D:**

The criteria were revised.

In the beginning it was thought to be an infective condition especially in early 20<sup>th</sup> century. French scientists thought it to be due to tuberculosis.

Hench and Kendell introduced steroids in the management of rheumatoid arthritis described pediatric onset, juvenile RA in 1896. Later Felty A.R. described Felty's syndrome.

Recent advancement in immunology has opened new vistas in the management of Rheumatoid arthritis. Unfortunately till date the etiology of Rheumatoid arthritis is unknown the pathogenesis is speculative, the treatment is only palliative and there is no cure to this disease.

## **CONCEPT OF AMA AND VATA**

In Ayurveda, most of the diseases are named taking into consideration the vitiated dosha, Dushya, Avayava, Marga, Lakshan and Karma. In the same way Amavata has been named, taking into account two predominant pathological factors i.e. Ama and Vata having their important place in Chikitsa and Nidana.

Here first of all separate description of Ama and Vata is being given and later on of the disease Amavata will be mentioned

### **Concept of Ama:**

Nearly all diseases as per the Ayurvedic view have their origin from amadosa. Even one of the synonyms of Vyadhi - amaya indicates it. The foremost step after intake of unwholesome diet and daily regimen is vitiation of Agni and this malfunctioning Agni produces Ama. Hence it is very important to know in detail about Ama.

### **ETYMOLOGY:**

The word Ama is derived from

**Amyate Eshath Pachyathe/aa-ama+ Karmanaa**

Which indicates that -

Which undergo slight '**Paaka**'

Paaka means-

**Paakascha Agni samyogatha kalavastha Va vasthu parinama  
visheshah ||**

The Changes occurring in a substance during the time of Agni samyoga. Lack of that specific Agni interaction results in aama.

**Amyate Gamyate Pakadyartham Iti Amah |**

i.e. the substance, which is not, digested properly and needs further digestion.

So Ama denotes a substance or group of substances, which is near to poison or acts like a poison. So a substance that harms normal healthy state of body or any part of body can be considered as Ama. Therefore depending upon etymology Ama can be described as - raw, uncooked, unripe, immature, undigested or incompletely oxidized / metabolized or similar to a toxin.

Again in Madhava Nidana it is stated that due to the feebleness of Agni a residue of Ahara rasa which is still left as undigested. It is then known as Ama, which is the root cause of all diseases.

**Amam Anna Rasam Kechit Kechit Malasanchayam |**

**Prathamam Dosha Dushtim Cha Kechit Amam Prachakshate ||<sup>36</sup>**

There is no direct definition of Ama available in Charaka Samhita but in 15th chapter of Chikitsa Sthana while describing pathogenesis (Samprapti) of grahani roga indirect reference of Ama is available which is

**....Dusyatyagnih, sa dustoannam na tat pacati laghvapi**

**Apachyamanam suktatavam yatyannam visaruptam||**

i.e. due to Nidana sevana when Agni is vitiated it becomes incapable in digesting the ingested food, and this undigested food after getting fermented turns into poisonous substance<sup>37</sup>



The poisonous characteristic of *Ama* can be seen in following description of Vagbhata.

**Amadosha mahaghoram varjyedwishesajhyakam||**

Means amadosa is very dreadful and hence is considered like poison<sup>38</sup>.

**Symptomatology of *Ama*:**

Various symptoms produced due to presence of *Ama* in body, are described in texts. These symptoms help in diagnosis of *Ama* clinically. Sama and Nirama stage of disease can also be identified with presence or absence of these symptoms. Symptoms described by Vagbhata in Astang Hridaya<sup>39</sup> are:

**Srotorodhbalabhramsagauravanilmudhtah |**

**Aalasyapaktinisthivamalasangaruchikalamah ||**

Here srotorodha, balabhransa, gaurava, anilamudhta aalasya, apakti, nisthiva, malasanga, Aruchi, klama are described as the symptoms produced due to *Ama*. Also Acharya Madhava describes many symptoms in chapter of Amavata, which can be summed as - angamarda, trishna, jwara, suntanganam, praseka, utsahahani, vairasyata, Daha, Bahumutrata, kukshikathinta, nidraviparyaya, chardi, shrama, murcha, hridgraha, vitavibandham, jadyata etc.

When this *Ama* comes in contact with Dosha, Dushya and Mala it is termed as Sama Dosha, Sama Dushya and Sama Mala. Assessment of Sama-Nirama is very much helpful for the treatment.

Summing up, *Ama* is resultant of improper digestion or partial digestion of the food materials in presence of hypo functioning of Jatharagni. It is also the accumulation of Malas and Prathma doshadushti. In case of Dhatavagnimandya it refers to the partially or incompletely metabolized dhatu.

**Concept of Vata:**

As earlier said Amavata is resultant of combination of Ama and vitiated Vata Dosha. So discussion of Vata Dosha is also important in connection to Amavata.

Vata is the chief functional operator of the all types of bodily movements. All type of movements whether voluntary or involuntary are possible only under the influence of Vata Dosha. The symptoms like pain, stiffness and restricted movements in Amavata are due to the vitiation of Vata Dosha. Thus the predominance of Vata Dosha in causation of Amavata is very well understood.

**Nirukti:**

The Nirukti of Vata is as follows, the term Vata is derived from the root “Va” with “Tan” Pratyaya, and it forms the word Vata. The root Vata summarizes the essential Karma of Vata-Gati and Gandhana.

**Guna:**

Ruksha, Sheeta, Laghu, Sukshma, Chala, Vishada, Daruna and Khara.

**Bheda:**

There are five classification of Vata Dosha based on the location and function. They are Prana, Udana, Samana, Vyana and Apana.

**Importance:**

Following opinions shows the importance and supremacy of Vata:

Charaka opines that the Vayu in its abode with unimpaired functions in its normalcy facilitates the Ayus of an individual to be hundred years.

The Pitta, Kapha, Mala and Dhatus are inert (Pangu) until mobilized by Vata, which takes them to get localized in specific location and cause disease; hence Vata controls all other Doshas Dhatus and Malas.

Vata, Pitta and Kapha are circulating all over the body, Vata the subtle among them provokes Kapha and Pitta and causes them to lodge in various places from where the disease originates. The Pitta and Kapha hence occludes the channels of Vata, thus vitiating Vata; diminution of tissue elements, which may be an independent cause, or an effect of occlusion also vitiates it.

**Etiological factors of vitiation of Vata:**

Etiological factors, which vitiate Vata, can be brought under Aharaja, Viharaja, Manasika and Anya Hetuja.

**Ahara:**

Ruksha Ahara, Sheeta Ahara, Alpa Ahara, Laghu Ahara.

**Vihara:**

Vyavaya, Atiprajagara, Vishama Upachara, Langhana, Plavana, Atyadva, Atichesta, Dukhashayya Asana, Divaswapna, Abhighata, Marmaghata.

**Manasika Karanas:**

Includes Chinta, Shoka, Krodha, and Bhaya.

**Anyahetuja:**

Dhatu Sankshaya and Rogatkarshya.

**Symptoms of Vata Prakopa:**

Parva Sankocha, Stambha, Asthiparva Bheda, Lomaharsha, Kanja Pangu, Kubjata, Anga Shosha, Anidrata, Garbha Shukra Rajonasha, Spandana, Gatra Suptata, Shiro Hundana, Nasa Hundana, Jatru Hundana, Griva Hundana, Moha , Alasya and Akshepa.

**Symptoms of Vata Kshaya:**

Kshaya of Vata leads to Manda Chesta, Alpavak, Apraharsha and Mudha Samjnyata.

## **NIRUKTHI**

### **ANUPANA:**

#### **Vyutpatti:**<sup>40,41</sup>

#### **Anupanam:**

Neuter gender

Anu + Dhatu Pa

#### **Anu:**

- after, along, with
- subordinate to, inferior to, near to
- following methodically, orderly, accordingly

#### **Pana:**

- a drink
- observing, keeping, protection, defence

#### **Anupana:**

- to drink after, drink at
- to preserve, cherish, keep, wait for

#### **Adjuvant: (L)**

- ad – juvo
- juvans – to give, aid to

**Nirukti:**

- Anugatam panam Anupanam<sup>42</sup>
- Anu saha paschat va piyate iti Anupanam<sup>43</sup>
- Oushadha bhakshanopari yatpitam tadAnupanam<sup>44</sup>
- Annat anupaschat piyate iti Anupanam<sup>45</sup>

**AMAVATA - NIRUKTI****Vyutpatti:****1. Amam Cha Vatam Cha Amavata**

The word Amavata comprises of two meaningful terms Ama and Vata, which form the pathogenic basis of the disease.<sup>46</sup>

**2. Amena Sahito Vata Amavata**

This derivation highlights the propulsion of Ama by Vata to produce Amavata.<sup>47</sup>

**3. Amo Apaaka Hetuh Vataha Swanaama Khyaata Rogavisheshaha**

That which is the result of improper digestion is Ama and with Vata the disease is popularly known as Amavata.<sup>48</sup>

## PARIBHASHA

### ANUPANA

- Anupanamiti anu shabdam lakshanarthamahuh |

Aharam lakshikrutyanam ..... sukhapakartham ||<sup>49</sup>

- Tena bhavi bhojanam trushnam chanulakshikrutya piyata ityanupanam |<sup>50</sup>

- Yadyogena rasadinam vibhaktah paramanavah |

Drutamangeshu sarpati sahapana taduchyate ||

Tattat rogaghna bhaishajyam beshajasyanupiyate |

Yaccha sahayakari syadanupanam taducyate ||<sup>51</sup>

- Oushadhangapeya vishesha taccha oushadhapananantaram vilambya  
prayojanam |<sup>52</sup>

## **AMAVATA - PARIBHASHA**

**Yugapath Kupithavantaha Trikasandhi Praveshakau**

**Stabdham Cha Kuruthe Gatramamavathaha Sa Uchyate**

Amavata is a condition where Stabdhatata of the body occurs due to lodging of vitiated Ama and Vata in the Trika Sandhi.

Prof. Y.N. Upadhyaya and other experienced doctors and research scholars keep Amavata equivalent to Rheumatoid Arthritis.

**Definition:**<sup>53</sup>

Rheumatoid Arthritis is the commonest form of chronic inflammatory joint disease. In its typical form it is a symmetrical, destructive and deforming poly arthritis affecting small and large synovial joints with associated systemic disturbances.

## **PARYAYA**

### **ANUPANA:**

#### **Synonyms**<sup>54</sup>

- Anupanam
- Sahapanam
- Rogaghna bhaishajyam



## ANUPANA

### **Anupana Swaroopam:**

Before proceeding with the details of Anupana, it is essential to resolve the Swaroopam of Anupana as to its (i) usage in Ahara vidhi only or in Bheshaja vidhi also and (ii) the nature of Anupana - liquids only or others too could be considered under this heading. The contexts under which Anupana is dealt in various Ayurvedic texts are enlisted below:

- Cha. Sa. Su. 27 Annapanavidhi - Aharayogivarga
- Su. Sa. Su. 46 Annapanavidhi - Anupanavarga.
- Ash. Hr. Su. 8 Matrashitiyadhyaya - Bhojanavidhi
- Ash. Sa. Su. 10 Annapana Vidhi – Bhojanavidhi
- Bhe. Sa. Su. 27 Annapanavidhi
- Dr. Gu. Sa. 14 Anupanavarga
- Kal. Ka. 5 par – Anupanadhikara
- Kai. Ni. Vihara varga – Anupana
- Yo. Ra. - Anupana
- Bh. Pr. Mishraka varga - Bheshajavidhana prakarana

From this, it is evident that authors of older times have dealt with this topic in relation to Ahara vidhi and Ahara dravya while the later authors have tried to highlight its therapeutic value for which, they devoted separate sectors for its discussion. Sushruta while describing the planning of selecting an Anupana, says that a Hita dravya of suitable Matra in particular Kala should be administered only after considering the disease in which it would be administered<sup>55</sup>

Rasa Taranganikara's synonym Rogaghna bhaishajyam<sup>56</sup> and indication to administer Anupana following Bheshaja makes it very clear that Anupana is to be

administered with Oushadha. Adhamalla<sup>57</sup> lucidly defines that Anupana is that which is administered following Oushadha as “ Oushadha Bhakshanopari ”. Bhavaprakasha has deliberately dealt about Anupana in Bhesajavidhana prakarana. Similarly, Yogaratnakara says Oushadhas are given to patient along with Anupana based on the diseased state. Apart from this, we find plenty of references of specific Anupanas to be used along with particular Yogas to obtain the required effect in a particular disorder/disease.

By this, we can see that Anupana is that which is given with both Ahara dravyas - regularly and Oushadha dravyas - specifically.

### **Nature of Anupana:**

The term Anupana<sup>58,59</sup> is in itself suggestive of a substance which is administered for drinking. Sushruta describing the qualities of the Shreshta Anupana – water, says, by virtue of its Toyatmakatva<sup>60</sup> and presence of Sarvarasa, it is the most favourable Anupana. The list of dravyas meant for utilization as Anupana constitutes only Drava Pradhana dravyas in Sushrutha samhita.

However, we find many references of solids being prescribed as Anupana in all these texts. For instance,

- Guda as Anupana to Guduchi in Vibandha – Bha. Pra. Vol I
- Sita as Anupana to Guduchi in Pittaroga – Bha. Pra. vol I
- Chitraka churna as Anupana to Rasa sindura in Kapharoga – Ay Pr. 1 /404

This reveals that Anupana includes substances other than liquid forms also.

### **Anupana Bheda:<sup>61</sup>**

Except for Raja Nighantukara, no other author speaks of Anupana Bheda. Accordingly the two types of Anupana are:

- i) Kramana Anupana is that which is administered in delay following the Basis.
- ii) Pachana Anupana is given in the night, without delaying but immediately.

No lucid information regarding type of adjuvant is available in most of the modern literature. From the available information, adjuvant can be understood under three classes<sup>62</sup>:

1. Adjuvant - which facilitates and promotes the action of Basis
2. Corrective - which modifies or eliminates the undesired effect of the Basis
3. Vehicle - a carrier, commonly a solvent which facilitates the administration of preparation into human body.

#### **Anupana Dravyas<sup>63,64</sup>:**

We find numerous substances belonging to diverse drug groups which are indicated in accordance with the requirement. Enlisting them are :

- Sheeta jala, Ushna jala, Madhu, Ghrita, Taila
- Asava of various drugs like Durva, Chitraka, Pippali, Nyagrodha, Kapittha, Shiresha phala
- Ksheera, Mastu, Takra, Udashwit, Mahisha payah, Mamsarasa, Yusha, Manda
- Dhanyamla, Madhya, Madhvasava, Souveera, Kanji, Chukra, Sura, Ikshurasa
- Sharkarodaka, Triphalodaka, Ardrakodaka, Madhudaka
- Lavana, Sita, Guda, Shunti churna, Hingu grhitanvitam, Pippali churna, Shilajatu, Rasonaka kalka, Bhallataka, Nisha churna, Parpata kwatha, Hema, Laja, Guggulu, Mashavataka.

Majority of the authors<sup>65,66</sup> prescribe Meghambu collected in a clean container as the superiormost Anupana and that this could be used in all conditions. However,

pioneers of Rasashastra advocate Madhu in the absence of required Anupana and with all the Basis<sup>67,68</sup>

### **Anupana Matra:**

It is a well know fact that even poison acts as a life saving drug provided its dosage is judiciously fixed. Information regarding the dosage of Anupana is found to be varying from author to author. Based on the doshas involved and form of basis dosage of Anupana too varies as recorded below:

- According to Sharangadhara, Anupana matra is 3, 2 and 1 pala for Vataja, Pittaja and Kaphaja rogas respectively<sup>69</sup>.
- According to Madhava, Chakrapanidutta, Bhavamishra and Kashirama vaidya, the dosages are 3, 2 and 1 pala respectively in Pittaja, Vataja and Kaphaja disorders.
- According to Sharangadhara<sup>69</sup>, 2 and 1 pala dravas are advised to be used with the Churna when consumed in the form of linctus or drink respectively.

### **Anupana Kala:**

Opinions of various authors with regard to the administration of Anupana are accounted below:

- The term Anupana<sup>70,71</sup> suggests that it should be administered after the consumption of the primary drug
- Sahapana a synonym of Anupana indicates its usage along with the prime drug
- Raja Nighantukara<sup>72</sup> advocates Kramana Anupana to be delayed in administration while Pachana Anupana is advised not to be delayed and is indicated in the night
- In the context of Aharavidhi, three Kalas are indicated for Anupana and their effects are also described i.e., before food for Karshanartham, inbetween food for Sthapanartham and after food for Brumhanartham. This Vidhi probably holds good only for Jala in Aharavidhi<sup>73,74</sup>.

**Anupanavacharana Vidhi<sup>75</sup>:**

In Rasa jala nidhi, mode of administration of both Bheshaja and Anupana are portrayed in the context of Anupana in Rasoushadhas. Here, both Bheshaja and the Anupana are directed to be triturated with Madhu in a Khalva yantra and then to be consumed following recitation of Aghoramantram or offering prayers to the esteemed diety.

**Anukte – Anupana Yojana:**

Charakacharya<sup>76</sup> clarifies stating that it is not possible to describe all the Anupana dravyas in toto. Sometimes those Anupanas advocated in a particular Desha need not be beneficial in another or may not be available. In such a condition, he advises one should critically evaluate the drug and only those which are beneficial<sup>32</sup>, not possessing fallacies by nature, but possess qualities useful in relation to the Ahara or Bheshaja should be selected.

Charaka and other authors like Vagbhata, Chakrapani, Gangadhara, Sushruta opine that the Anupana dravya should possess opposite qualities in terms of Rasa, Guna to that of the Ahara or Bheshaja but should not be Viruddha to it to obtain the desired effect<sup>77</sup>.

Sushruta emphasizes that one should judiciously evaluate the consideration of Anupana in terms of the disease involved; Kala - Roga kala, Rogi kala, Nitya kala and Matra<sup>34</sup>. Further, he indicates that the selected drug should be wholesome to the patient or person administered<sup>78</sup>

However, water is to be consumed as the adminiculum says Sharangadhara<sup>79</sup> when no specified Anupana is mentioned. Vagbhata indirectly hints that Anupana dravya should be Satmyakara and possess Jeevanadi guna in it<sup>80</sup>. Rasa jala nidhikara<sup>81</sup> gives the liberty to change to another Anupana in due consideration to Desha, Kala

and requirement<sup>82</sup>. Rasanusara selection of Anupana should be such that it should be Parasparaviruddha, Ruchikrut, Satmyam, Hitam, Sukhakaram says Sushruta<sup>83</sup>.

### Uktanupana:

Abundant illustrations of Anupana are found in the text. For a better understanding of this concept, here is an attempt to classify these illustrations under various factors which influence the effect of Anupana viz. Rasa, Guna, Dravya, Dravya varga, Kalpana, Yoga, Kala, Vaya, Dosha, Roga-avastha and Swasthya.

### Anupana in Swasthya:

Sushruta, Chakrapanidutta specify that amidst food, Chitram-various types of Paniya and other dravyas which do not alter the doshic homoeostasis are to be consumed by the healthy persons<sup>84</sup>.

Gangadhara commenting on Charaka's similar view defines Chitram as Chitraka udaka and indicates its consumption by normal persons<sup>85</sup>.

**Table No.01: Based on Rasa:**

Rasa	Anupanam	References
Madhura	Katu rasa	Kal. Ka. 5 Pa/39-42
Amla	Lavana rasa Madhura rasa	Kal. Ka. 5 Pa/39-42 Su. Su. 46/419-Da.
Katu	Tikta rasa Durvanalavetrasava	Kal. Ka. 5 pa/39-42 Su. Su. 46/432
Kashaya	Madhura rasa	Kal. Ka.5 Pa/39-42
Tikta	Amla rasa	Kal. Ka. 5 Pa/39-42
Lavana	Amla rasa	Kal. Ka. 5 Pa/39-42
Sarva rasa	Ksheera	Kal. Ka. 5 Pa/39-42

**Table No.02: Based on Guna:**

Guna	Anupanam	References
Ushnata	Sheeta jala	

Pittaja vikara Raktajavikara Vidaha		Ash. Sa. Su. 10/43-44 Su. Su. 46/435 Dal.
Sheetata - Vataja vikara Kaphaja vikara	Ushna jala	Su. Su. 46/435 Dal.

**Table No.03: Based on Ahara and Oushadha dravya – Samanya Anupana:**

Ahara/Oushadha dravya	Anupanam	References
Shali, Shastikashali	Ksheera	As. Sa. Su. 10/43-44
Mudgadi Dhanya	Mamsa rasa	Su. Su. 46/423-433
Odana	Takra	Kal. Ka. 4 Pa./18
Vaidala supa	Souvira	Kal. Ka. 4 Pa. /18
Dhanyadi	Phala Khandasava Dadhi, Chukra	Bhe. Sa. 27/31
Shaka Mudgadi vikaras	Dhanyamla, Mastu, Takra	As. Hr. Su. 8/48
Yava, Godhuma, Pishtamayanna, Bisagranthi, Dadhi, Madhu, Madhyavikaras, Sneha	Sheeta jala	Su. Su. 46/423-433 As. Sa. Su. 10/43-44 As. Hr. Su. 8/47
Mamsa-Varahamamsa Aja mamsa, Hayamamsa	Koshna jala	Kal. Ka 4 Pa / 18
Taila	Madhya, Sheetakashaya, Udaka, Khadirodaka, Yushamlakanji	Ash. Hr. Su. 8/ 47-48, Su. Su. 46/423-433
Vasa majja sneha	Manda	Kas. Sa. 22/11
Varuni	Kakubha	Bhe. Sa. 27/36
Ashwagandha kashaya	Varuni, Manda	Bhe. Sa. 27/37

**Table No.04: Based on Ahara and Oushadha dravya – Rogabhedena Anupanam:**

Dravya	Roga / Vikara	Anupanam	References
Guduchi	Vata vikaram	Ghritam	Bha. Pra. Ma. Kha. Va

			Ra.
	Pitta vikaram	Sita	
	kapha vikaram	Madhu	
	Vibandham	Guda	
	Vataraktam	Erandatailam	
	Amavatam		
Guda	Sleshmavikaram Pittavikaram	Ardrakam Haritaki	Bha. Pra. Ik. Va. 28
	Vata vikaram	Shuntyahasamam	
Gandhaka	Twagdosham	Mochaphalam	Ras. Jal. Ni. 266-267
	Balakshayam	Chitrakam	
	Kshaya Kasa	Bhallataka Kashaya	
	Agnimandya	Triphala kashaya	
	Bala-virya kshaya,	Dugdha	
	Arti Netrarogam		
<u>Based on Dravya Vargas</u>			

**Table No.05: Anupana Based on Dravya Varga:**

Dravya Varga	Anupanam	Reference
Vaidalanam	Dhanyamlam	Su Su 46 / 433
Shasyajatanam	Bhadramlam	
Jangala Dhanvajanam	Pippalyasavam	
Vishkiranam	Kolabadarasavam	
Pratudanam	Ksheerivrukshasavam Sura Draksha- kashmarya kharjrasavam	Su su 46/433 Bhe sa 27/35
Guheshayanam	Kharjura – narikelasavam Bilwa, kapitha pindakasavam	Bhe sam 27/35
Prasaha	Ashwagandhasavam Amlaphalasavam	Su Su 461/433 Ash Hr Su 10/ 43-44



Parnamruganam	Krushnagandhasavam	Su Su 46 / 433
Bileshayanam	Phalasangavam Of kapitha shireesha	Su Su 46/433 Bhe Sa 27/35
Ekashephanam	Triphalasangavam	Su Su 46/433
Aneka shephanam	Khadirasavam	Su Su 46/433
Kulecharanam	Shrungataka – kas	Su Su 46/433
Kosharasipadi	Erukasavam	Su Su 46/433
Plaranam	Ikshurasasavan	
Nadeya matsyanam	Mrunalasangavam	
Samudranam	Matulung asavam	
Anelaphalanam	Padmotpala kandasaram	
Kashayanam	Dodimavetrasavam	
Talaphaladinam	Shwadamstravasuv kasavam	
Kushmandadinam	Darvikarirasavam	
Chucchu prabritinane	Lodhrasangavam	
Kusumbha shakha Jeevantiacinam	Triphalasangavam	
Manadukaparnyadinam	Mahapanchamulasavam	
Talamastakanam	Anelaphalasangavam	
Saindhavadinam	Sura Aranalam	
Gramyeshu	Madhrasangavam	Ash Hr Su 10/43-44
Vanyeshu	Tekshnaphalasangavam	
Oudakeshu	Ikshu kash Padmake	
Mahamrugeshu	Shrungataka - Kasereeka	
	Mrudvika madirasavam	
	Kshoulka/ Sheetadaks/ Udcelshwith yuktam	

**Table No.06: Based on Kalpanas:**

Kalpana	Anupanam	Reference
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Avalehya	Madhu ksheera sita	Sha sa ma khr 41
	Ghrita	
Sneham	Ushnodakam	Kal ka 4 pa

**Table No.07: Based on yogas:**

<u>Yoga</u>	<u>Rogaghnata</u>	Anupannam	Reference
Rasa sindhura	Vataroga	Madhu-pippali	Ayu.pr.1/404
	Kapharuja	Trikatu-chitrata chura	
	Pittaroga	Ela-Sitendu	
	Vrana	Triphala guggulu	
	Pushtyarthan	Chaturjatha, Triphaa	
Kauhora Gugyulu	Netraroga	Vasa	Sha.sa.ma7/80-87
	Gulnea	Varuna	
	Varana kushta	Khadira kwatha	
	Ajeernam	Anrla-teeksha dravya	
Kankayane			
Gutika	Gulma	Ghruta,ksherra	Anela Madhya
		Ushnodaka	Sha. ma. 7/53-55
	Vataja Gulnea	Madhya	
	Pittaja Gulma	Goksheera	
	Kaphaja Gulma	Gonumtra	
	Tridoshaja Gulma	Dashanula	
	Rakta gulma	Oushtra dugdha	
Yogaraj Guggula	Vatarikaran	Rasnadikwatha	Sha Su Ma 7/66- 69
	Pittarikaran	Kankolyadi kwatha	
	Kapha vikaran	Aragwadhadi kwath	
	Pranuhar	Darvikwatha	
	Pandu	Gonutra	
	Medornuddi	Madhu	

	Kushta	Ninebashruta	Vatarakta
	Shotha Shula	Pippali kwatha	
	Mushaka visha	Patala quatha	
	Netrathi	Triphala kwatha	
	Sarvaudara	Punarnavadi kwatha	

**Table No.08: Based on Kala:**

Kala	Anupanam	Reference
Ushna kale	Yusha – with Taila	Su Su 46/422-433
Sheeta kale	Amala kanji with Taila	
Sharad Greeshna Hemanta	Sheeta jala	Ash San. Su 10/43 -44

**Table No.09: Based on Vaya:**

Vaya – Avastha	Anupanam	Reference
Ksheerapa	Ksheerasalpi – Dhatryaha alone	Su Sha
Ksheerannada	Ksheerararpi – matrgaha and Dhatryaha	
Annada	Kashayadini-with aroidance of Dhatryaha	

**Table No.10: Based on Dosha:**

Dosha	Anupanam	Reference
Vata	Singdha,UshnaDrava Amla	As Sa Su 10/43
	Kanjika, manuarasa	Cha Su 27/321 Gang
Pitta	Sheeta Madhura	
	Shakarodakam Sita	
Kapha	Ruksha Ushna Dravam	
	Triphalodakam with Madhu	
Sannipate	Skenoudra Ardra kadakam	

**Table No.11: Anupana based on Roga / Arstha:**

Roga/vikara	Anupana	Roga /Vikara	Anupanam
Jwara	Musta Parpata kirata	Raktapitta	Vala, Ikshurasa

Grahani	Takram	Kruni	Vidanga
Prameha	Nishamalaka, Triphala	Ashmari	Pashanabhed
Arshal	Bhallataka, chitrka	Amarata	Mutrayeranda taila
Swaraguda	Samadhu Pushkara	Pleharoga	Pippali
Sheeta	Tambula dala maricha	Kasa	Kantakari
Vataryadhi	Ajya rasonaka Guggulu	Apasmear	Vacha Brahmi
Kshaya	Shitajith, Marsa	Udara	Virechaka drevya
Puranajwara	Madhu– Maricha	Vataeakta	Guduchi
Sheela	Ghritanvita hingu	Ardita	Masharataks
Visha	Kostinajala, Hema	Medaroga	Madhudeka
Sthoulya	Madhudaka	Prallara	Lodhra
Krusha Shrama	Sura	Aruchi	Matulunga
Pandu	Loha kitta	Vrana	Guggulu
Chardi	Laja	Amlapitta	Draksha
Atisara	Kutaja	Mutrakrucha	Shatavari kushmandea
		Netraroga	Triphalodaka sakshoudra
Unmada	Punarnaghrita	Kushta	Khadisa sara
Nidrakshaya	Mahisha ghrita	Parshwarhula	Pushkara mula
Shwitra	Bakuchi	Gulma	Shigrutwacha

Shwasa – samadhu trikatu, sashunti Brahmadandi

Vishagni Shastra – Arkaselu, Shireesha kapitha phalasavam Sheetodaka hate

Alpagni – Madhya if Madhya satnya

### **Anupanam Avastha:**

Ksheera Atapa Upvasa Langhana, Adhwa, Bhashya, Vyayam,

klanta Vyavaya stri Balye, Vardhakya

Dhnyamala Anidra Tandra Bhaya klame

Dhadhi mastu

**Anupana Ayogyaha:**

Most of the times the knowledge of patients in whom particular drugs are contraindicated becomes more important than in whom it is indicated. Ayurvedic scholars<sup>86</sup> like Charaka, Vagbhatta, Chakrapani have propounded that people suffering from :

Urdhwanga Vata, Hikka, Shwasa, Kasa, Urah kshata, Praseka Swaropahata, Medhra – Akshi – Galaroga, Praklinnadeha and those who are engaged in Geeta, Bhashya, Adhyayana should refrain from Anupana following consumption.

Charaka reasons, for this contraindication as: in these persons Anupana stagnates in Kanta and Uras because of which Aharaja sneha is withheld resulting in re-causation of the Doshas.

Chakrapani and Shivadas Sen elaborate this reasoning as follows: Udakadi Anupana combines with Ahara and results in Aharasneha i.e., Aharasara janana by virtue of its Snigdhatva. However, in patients suffering from Shwasadiroga due to the predominantly vitiated Vata the procession of Anupana lower down, is hindered due to the absence of Dravamsha appropriate Pachana does not take place. Consequently Sara or Snehajanana does not occur resulting in only vitiating the Vatadi Doshas again. Vagbhata<sup>87</sup> adds to this stating that thus vitiated Vatadi Doshas result in disorders like Agnisada, Chardi, Syandana - sleshma sravana and so on.

Indukara<sup>88</sup>, commentator of Ashtanga Sangraha quotes that according to some, Anupana here refers to only jala while Ksheeradi in Kasadi roga can be permitted. Further he clarifies according to his school of thought in Urdwajatrugatadi rogas in

general all Anupanas are prohibited. But Ksheeradi in Kasadiroga are considered as exceptions.

Shivadas Sen<sup>89</sup> opines that Alpa pana could be allowed since “No” means Ishat i.e. Alpam.

### **Nishidha Anupanas:**

Sometimes, certain combination of drugs are likely to produce certain untoward or toxic effects in the body. In this context, Sushruta<sup>90</sup> advises prohibition of usage of Ushnajala along with Bhallataka and Tugaraka Sneha. While, Kashyapa inhibits the utility of Ushnodaka along with Paya, Dadhi and Madhu and in disorders of Pitta, Raktasrava, Garbhachyavana and Garbhadaha<sup>91</sup>.

It is more likely that this topic could be understood better under the topic of Virudhatwa i.e., incompatibility According to Charaka drugs are harmful if they are incompatible from the point of view of Desha, Kala, Matra, Veerya, Samyoga, Gunadi - 11 factors<sup>92</sup>.

In modern parlance, Drug - Drug interactions; Drug - Food interactions, Drug formulations interactions could be considered here.

### **Anupananntaram Nishiddha Karma**<sup>93</sup>

We come across references which advises the following activities to be avoided immediately after the consumption of Anupana viz., Adhayayana, Bhashana, Gayana, Adhwagamana. Dalhana supporting author scholars reasons out stating that by such of these activities doshas get vitiated and result in Chardiyadi Vikaras, similar to the consequences of Anupana administered in Ayogyaha.

### **Anupana Guna Karma**<sup>94</sup>:

Dealing with the rationality of drugs combination Charaka states that two or more drugs together exhibit some special properties which can never be produced by

the individual components<sup>95</sup>. Accordingly utility of Anupana by virtue of its combination produces diversified actions and these are enlisted in the table 'I'.

On screening this list of Anupana Karma following implications could be derived.

Charaka, Vagbhata have described the effect of Anupana under Annapanavidhi and in relation to Ahara/Anna. While Sushruta<sup>96</sup>, Sharangadhara<sup>97</sup> and Rasataranginikara<sup>98,99</sup> speak of the role of Anupana on influencing the Beshaja and its therapeutic effect. On the whole, the effect of Anupana can be understood at four levels.

**(i) Effect on Ahara:**

Bhuktam Avasadhayati, Sanghatam Bhinatti, Kledayti, Mardavatamapadayati, Sukham parinamati, Ashu vyavayi tamapnuyati, Doshala – atimatra - Guru Bhuktam Prajeeryati. Deha Paryaptini abhivardhayati, Satmyatam prayacchati.

**(ii) Effect on Oushadha:**

Bhaishajyam Kshanena angeshu prasarpati, Oushadha gunakaram, Rasadeenam paramanavaha vibhajayati, Rasadeenam drutam agenshu sarpati, Bsheshajam paribrumhayet, Yogavahi-yuktaha karyavardhanamcha. Rasataranginikara<sup>100</sup> quotes Charaka's Anupana Guna karma and comments similar to the effect of Anupana on Anna, its influence on other dravyas too can be considered: Based on this, probably all those effects of Anupana over Ahara could be emulated in the context of Oushadha dravyas too to some extent.

**(iii) Effect on Roga/Vikara**

Dosha Shamanam, Dosha – Sanghata bhedanam, Pipasam harati, Shrama Klamahram, Rogahna Bhaishajyam sahayakari, Rogahari shakti – gunavati cha.

**(iv) Effect on the Rogi/Swastha**

Tarpayati Preenayati Urjayati, Brumhayati, Ayu-jeeva balam karoti, Drudhangatam karoti, Sukham-swasthyam dadati, Rochayati, Deepanam Vrushyam, Varngam.

**Table No.12: Anupana Guna Karma:**<sup>101</sup>

<b>Guna – Karma</b>	<b>Reference</b>
Tarpayati- Chakshuradi prasadam Janayati	a b, d, i
Preenayati – Manah prasadanam Janayati	a, b, d,
Urjayati - Utsaham Janayati, Bala Jeevanayoho	a, b, d,
Brumhayati	a, b, i
Deha - paryaptim Abhivardhayati – Aloluptamvjanayati Adhobhagam nayati	a,b,
Bhuktam Avasadhayati – Shathilatam janayati - Adhobhagam nayati	a, b, d
Anna sanghatam – Kathingam	a, b
- Bhinnatti	a, b
- Kledayati	a, b
- Marda vatam apadayati sharira komalatam	
- Sukham parinamati	a, b, i
- Ashu vyarayitamapnuyati – Akhita deha vyapkatvam Janayati	a, b, i
	a, b
Ayu - Balaya Hitam, Jeevayati, Balavantamkaroti - Drudangatam karoti	b, i c
Satmyatam prayacchati	e
Bhashajyam kshanena Angeshu prasurpati	f
Oushadha gunakaram	g
Sukham dadati - swasthyotpadakem	i
Rochayati	i
Pipasam harati	i
Doshala - Guru – Atimatra bhuktam sukham jeeryati	h, i



Vrushyam	i
Dosha - Sanghata Bhedanam	i
Shrama Klamaharam	i
Deepanam	i
Dosha Shamanam	i
Varnyam	i
Rasadeenam paramanavaha vibhajayati	g
Rasadeenam drutamangeshu sarpati	g
Rogaghna bhaishajyam - Sahayakari	g
Bheshajam paribrumhayet	g
Rogahara shakti, Gunavati bhavet	g
Yogavahi - Yuktaha karyavardhanam cha	j
Alpa dosham - Adosham jeevati	c

Further we can distinguish these Karmas based on the duration of the effect as follows:

**(i) Immediate effect:**

Generally medicines as compared to Ahara are meant to obtain immediate action. Hence all the Karma listed against effect on Oushadha and those against effect on Roga/Vikara could be considered here.

The purpose of intake of Anupana with Ahara dravya is to procure easier and Sukha Parinamana. These effects though not found as early as in case of Oushadha yukta but still could be put under this category

**Distant effect:**

Tarpana, Brumhanadi effects listed under effect on Swasthya are apparently achieved after a prolonged duration. However in some cases of Rogas the benefits may not be immediate as in case of Vrushaya Karma. Hence, effect on Swastha and on few cases of Rogi could be accounted here.

Balavaranakarama – refers to long terms effect of Ahara but may refer to its effect in abala and twakrogi too.

Dosha Sanghata bhedanam – aids in samprapti righthana in rogi or the dasha Sanghata in the drug like the undesired harmful effects properties, constituents of the drug are removed or destroyed. Eg : Vatsnabha is always administered with Tankana, Tamra with Ardraka swarasa

Urjayati – utsaha as well as may indicate vyadhikshamatwa too Sukham Jarayati- aids in beneficial and faster metabolism of medicines vyaptimapnuyat – aids in the spread of the pradhana oushada.

This might refer to its capacity to navigate the pradhana oushadha to reach the desired site of action maybe to particular Dhatu eg yogaraj guggulu with madhu in medorga I or to a specific Arayava - eg: yogaraja Guggulu with Triphalodaka in Netraroga, Guduchi kwatha in Vatasaka

Apart from this it indicates that by the properties of Anupana Basis is carried to even the remote corners of the body passing across the other wise barriers.

### **Anupana Karmukata:**

Deriving the mode of action of a drug is a complex matter for a given drug. We know that a single drug has been consisting of various fractions on analysis and its action might be due to each one of them or in sum toto. In a compound, it becomes even more necessary to enquire the effect produced by the compound as a whole is due to the some total effect of all composing ingredients or in units.

Also Charaka <sup>101</sup> says the effect exerted by the whole compound need not be same as that of individual drugs. We can see such an evidence especially in the Rasoushadhas wherein their range of effect i.e., widened and improved with

Anupama. Looking into the Ayurvedic literature except for Sharangadara and Rasataranginikara vivid description of mode of action of Anupama is not available<sup>102</sup>.

Sarangadara illustrates “as oil in contact of water readily radiates all over the surface of water, similarly drug followed by Anupana soon pervades all over the body”.

Rasataranginikara being a recent author, seems to be influenced by Modern science and tries to imbibe its fundamentals. According to him Anupana aids in disintegrating the complex basis into its components and then carrying swiftly in the body. Anupana augmenting the effect of the primary drug thus helps in producing a therapeutic effect.

The Karmas described in relation to Ahara are said to be applied for other dravyas too like Bhuktam avasadhayate, Kathinyam bhinnati, Kledayati, Mardavatam apadayati, Akhila deham ashu vyapakatvam janayati and Sukham parinamati which could be considered for Oushadha dravyas too as said ny Taranginikara.

### **Modern references aiding in understanding the mode of action of Anupana**

#### **Anupana in the form of solution<sup>103</sup>:**

For absorption from gastro intestinal tract (GIT) the drug must be in solution. When not in solution the rate of absorption slows down due to time required for disintegration and release from the dosage form and time needed for dissolution in to GIT fluid. Once drug is in solution, absorption is a function of GIT membrane and follows the process of simple diffusion across lipid membranes with water filled pores. GIT membrane is permeable to lipid soluble forms, unionized and weak acids.

#### **Anupana and various solvents and suspensions**

Drugs in aqueous forms are absorbed faster and more completely than solid forms like tablets or suspensions. Microcrystalline suspensions are better absorbed than their coarser counterparts.

Drugs with high lipid - water partition co-efficient, lipid solubility, low degree of ionization have greater absorption in GIT and from the basic criteria for entry in to the Blood Brain Barrier<sup>104</sup>.

### **Anupana and absorption in GIT**

Drugs which accelerate gastric emptying time aid the drug to reach large absorptive surface of small intestine sooner and increases the drug absorption. Basic drugs are best absorbed from alkaline environment of small intestine<sup>105</sup>.

### **Anupana and Renal clearance**

Resultant metabolites are almost always more polar and water soluble, this facilitates rapid rate of renal clearance as renal tubular reabsorption decreases<sup>106</sup>.

### **Anupana vis-à-vis Controlled Release Drug Delivery Systems:**

Some drugs when combined with certain other chemicals agents, form chemical complexes which are slowly soluble in body fluids depending upon the pH of the environment. This slow dissolution rate provides a constant release of the drug for sustained action. This type of drug designing provides:

- Prolonged duration of action – used in treating chronic ailments
- Sustained drug action – of those having rapid rate of absorption and excretion
- Reduced frequency of administration - for drugs required in small doses
- Stable plasma concentration maintenance :

to have reduced potential for adverse effects and

to aid in uniform absorption from GIT<sup>107</sup>

### **Anupana vis-à-vis Drug interactions**

“Biopharmaceutics” is the study of the influence of formulations on the therapeutic activity. When two substances are administered simultaneously one may alter the response of the other which may be a beneficial - desired effect or a harmful undesired effect. This interaction between the two substances could be understood under Drug-Drug interaction, Drug-Food interaction in vivo and pharmaceutical interaction in vitro wherein chemical principals are involved.

There are basically two mechanisms responsible for drug interaction :

- (1) Pharmacodynamic interaction
- (2) Pharmacokinetic interaction

**(1) Pharmacodynamic Interaction:**

This involves modification of pharmacological response without altering the concentration of the drug in the tissue fluid i.e. when two drugs with similar pharmacological effects are administered with each other, they may alter the sensitivity of the effect or organ resulting in a synergistic: addition or potentiation effect or in a antagonistic effect: physiological or functional antagonism. The drugs may act on some or different receptors or processes to produce the response

**(2) Pharmacokinetic interaction:**

Here there is a change in the concentration of the drug at the target site and could be due to alteration in drug absorption, distribution, metabolism and excretion. These interaction may result in synergism antagonism.

**(a) Interaction at the site of the absorption**

In the gut, drugs may interfere with each others absorption by (i) chemical interaction. (ii) Effecting gut motility. (iii) Changing gut flora.

**(b) Interaction during distribution:**

This includes (i) Competition for plasma protein binding site

(ii) Displacement from tissue binding sites

**(c) Interaction during metabolism**

Altered response at this stage is because of

i) Enzyme induction

ii) Enzyme inhibition

**(d) Interaction during excretion :**

This results due to (i) Interference with active transport. (ii) Diuretic activity.

As Charaka says one should always equip oneself with excellent appliances for the advancement of science. In the light of modern pharmacology the mode of action of drug complex thus detailed here could be adopted in better understanding the effect of Anupana complex.

**Anupana Pradhanyata**

Commending the efficiency of Anupana Vagbhata says whether the dravya is Alpadoshayukta or Nirdosha, Anupana brings about Sukhaparinamana. Kayyadeva adds to it stating that eventhough Laghu, Satmyhara is consumed in an appropriate time, Atyambupana, Vishamasana, Sandharana and Swapna Viparyaya result in Apaka. In such a state utilization of Anupana results in Sukhajeerana.

Furthermore, utilization of Anupana is emphasized by the Ayurvedic scholars<sup>108</sup>, without which consequences like Ajeerna bhada are said to be resulted.

This reveals to us the need of Anupana in both daily life as well as in diseased conditions.

## AMAVATA NIDANA

### Nidana:

The word creation is a neologue. It should be actually called as evolution. Similarly destruction is called involution, because something can come from something not from nothing.

Circumstances favoring the evolution of an existence are the cause. The effect can be useful or harmful. Man's indulgence governs the good or bad effects he has to enjoy. If his indulgence is Hita, leads to peace. If it is Ahita, leads to commotion. Besides, the contents of ahita are highly disease specific. Though being common to quite a few diseases, they lead only to Amavata.

Identifying the causative factors and understanding the role of these causative factors in the manifestation of the disease is utmost important to make a proper diagnosis, to predict prognosis and to plan treatment.

Madhavakara has explained following Nidanas for Amavata.<sup>109</sup>

1. Viruddha Ahara
2. Viruddha Chesta
3. Mandagni
4. Nischalata
5. Vyayama soon after Snigdha Ahara.

Besides this, Harita opines that a person consuming Guru Ahara, Kanda Shaka (tubers) in excess and indulging in excessive Vyavaya is the Nidana of Amavata.<sup>110</sup>

### 1. Viruddha Ahara:

Factors that provoke doshas but do not eliminate them out of the body are called Viruddha<sup>111</sup>. Acharya Charaka<sup>112</sup> has described 18 types of Viruddha aharas (both drug and diet). Indulgence in any of these viruddhahara leads to provocation of tridosha, causing vitiation of Agni, which leads to production of Ama. Besides these, food intake without following the Asta-Ahara-Vidhi- Visheshayatana is also considered, as Viruddha.<sup>113</sup> Dwadashapravichara should also be followed while taking food otherwise it is considered Viruddha.<sup>114</sup>

### 2. Viruddha Chesta:

The habits, which exert unfavorable effect on body humors, are considered as Viruddha cheshta. In our classics viruddha ahara has been described extensively, but Viruddha cheshta is not mentioned clearly. In Viruddha cheshta following factors can be considered, which are responsible of Dosha Utklesha - Vega vidharana, Vega udirana, Diwaswapana, Ratrijagarana, Ativyayama, Visham shayya shayana, Ativyavaya.

Asthis and Sandhis are the most affected parts in Amavata. Root source of these are Majjavaha Srotas<sup>115</sup> and it is directly afflicted with Viruddha sevana.<sup>45</sup> So we can say that Viruddha Ahara and Viruddha Chesta both contribute as nidanas in pathogenesis of Amavata.

### 3. Mandagni:<sup>116</sup>

As it is said that Mandagni is the root cause of all diseases. It includes hypo functioning of various forms of dehaagni (i.e. Jatharagni, Bhutagni and Dhatvagni). All these types of Agni to form Poshaka and Vardhaka dhatus in the body digest the ingested food. Mandagni leads to formation of Ama, which causes srotorodha and



results in reduced Dhatuposhana in turn causing Dhatukshaya. This Dhatukshaya leads to vata prakopa.<sup>117</sup>

#### **4. Nishchalata: -**

Nishchalata causes kapha vriddhi ultimately leading to Agnimandya. A person who is lazy and less active by his nature, in such person continuous consumption of nutritious or even normal diet produces accumulation of Kapha dominant Dhatus. Also due to sedentary habits, Agni gets vitiated which in turn leads to vitiation of doshas and production of Ama; it along with Ama causes pathogenesis of Amavata.

#### **5. Snigdam bhuktavato hiannam vyayamam: -**

Though exercise just after any type of meal is unhealthy, but Vyayama after taking Snigdha Ahara has been specially mentioned in causation of Amavata. Here Vyayama means any type of physical activity. Normally a good blood supply is very essentials in gastro-intestinal tract for the digestion of heavy meal. But when a person indulges in any type of physical activity just after consuming meal, blood circulation to the skeletal muscle increases resulting in decrease of blood supply to the gastro-intestinal tract comparatively. This act seriously hampers the process of digestion and absorption. Therefore improper digestion leads to formation of Ama, which is the foremost pathological factor of Amavata. Also exercise after taking food causes Vata prakopa that affects the metabolism and assimilation of ahara.<sup>118</sup>

In nutshell different etiological factors of Amavata have been tabulated as follow according to different Acharyas.

**Table No.13: Nidanas of Amavata According to Different Authors:**

Sr. No.	Nidana	H.S.	M.N.	A.N.
i.	Viruddha ahara	-	+	-
ii.	Guru ahara	+	-	-
iii.	Tarpite kandashakastu	+	-	-
iv.	Mandagni	+	+	-
v.	Viruddha chesta	-	+	-
vi.	Avyayama		+	-
vii.	Snigdha bhuktavato hiannam vyayama	-	+	-
viii.	Swa prakopnaiha: Vatadosha Pittadosha Kaphadosha	-	-	+
ix.	Vyavayina	+	-	-

Bhava Mishra, Vangsen and Yoga Ratnakara have followed the Madhavakara.

After going through the study of all etiological factors of Amavata, it is found that above factors individually or together lead to the Kapha prakopa or Vataprakopa or both, and both of them are responsible for disease Amavata<sup>119</sup>.

## **AETIOLOGY OF RHEUMATOID ARTHRITIS**

Many theories regarding aetiology of Rheumatoid arthritis have been laid down however the exact cause is still to be explored. The most accepted concept regarding Rheumatoid arthritis is that it is an autoimmune disorder. All the possible causative factors are given below:

### **1. Heredity:**

The disease is triggered by T- lymphocyte activation in genetically predisposed individuals with defined HLA class **II** haplotypes.<sup>120</sup>

### **2. Infection:**

Infectious agents like Mycoplasma, E-B Virus, CMV, Parvo virus or Rubella virus may be having a role in the manifestation of Rheumatoid arthritis as chronic inflammatory diseases cause the changes in joints.

### **3. Super Antigen Driven Disorder:**

Super Antigens are proteins produced by a number of microorganisms like Staphylococci, Streptococci, M. arthritidis etc. They have capacity to bind to HLA-DR molecules and T-cell receptors, which stimulates specific T-cells.<sup>121</sup>

### **4. Nutrition and Metabolism:**

In some instances a history of prolonged malnutrition and intake of incompatible diet and habit may be found.

### **5. Endocrine Secretions:**

The incidence of Rheumatoid arthritis in females and striking amelioration during pregnancy has suggested a possible disturbance of gonadal functions.<sup>122</sup> Some studies suggest that women with R.A. have reduced fertility because

antispermatozoan or anti ovarian antibodies may be involved in autoimmune diseases.<sup>123</sup>

#### **6. Autoimmunity:**

Most recently R.A. has been classified among the diseases of autoimmune disorder, due to immune response against autologous immunoglobulin G (IgG) (Cecil 1985). It has been suggested that sensitization to self antigens could be a consequence of enzymatic or free radical change to proteins such as Immunoglobulin (IgG) or type II collagen leading to the development of idiotypic antibodies or a defect in glycosylation of IgG.

#### **7. Psychological Factors:**

Clinical experiences support this concept, that in certain patients, the course of the disease appears to be influenced by emotional and personality factors.

## **AMAVATA SAMPRAPTI**

The term Samprapti is applied to express the course of the appearance of disease right from the Nidana sevana to Vyadhi Utapatti. The study of Samprapti is most essential part of treatment as the Samprapti vighatana is said to be done by treatment.

According to the commentators on Madhava Nidana<sup>124</sup> the Samprapti of Amavata can be summarized as under:

### **Sanchaya & Prakopa:**

When a person is exposed to aetiological factors like Viruddha Ahara, does Vyayama after intake of Snigdha Ahara, Chinta, Krodha etc., Agnimandya is there leading to Tridosha dushti (specially Vata) and Amotpatti. Ama because of its guru, sheeta, sthira, Snigdha, and picchila guna further reduces the Agni. During these stages, the dosha becomes virulent and capable of inflicting others, but remain at their own site during this stage.

### **Prasara:**

With the help of Vata, this Ama gets Prasara to shleshma sthana producing mild sandhishoola etc. along with Ama symptoms. Then Ama gets interacted with Tridosha and further modified (Vidagdha) to great extent and yugapatakupitavanta of Ama and Vata takes place via Rasavaha srotasa (Dhamani).

### **Sthana Samshraya:**

Thus prasarita Ama, which viscid, unctuous and guru along with prakupita Vata endures Sthana Samshraya in Hridaya, Trika Sandhi and Sarvanga (Srotoabhishyanda) leading to Dosha-dushya Sammurchhana. Vata acts as avaraka

and blocks srotasas. Primarily the disease is not manifested completely, so only initial mild symptoms like Aruchi; Apaka etc. are observed which can be considered as purva rupa of the disease Amavata.

**Vyakti:**

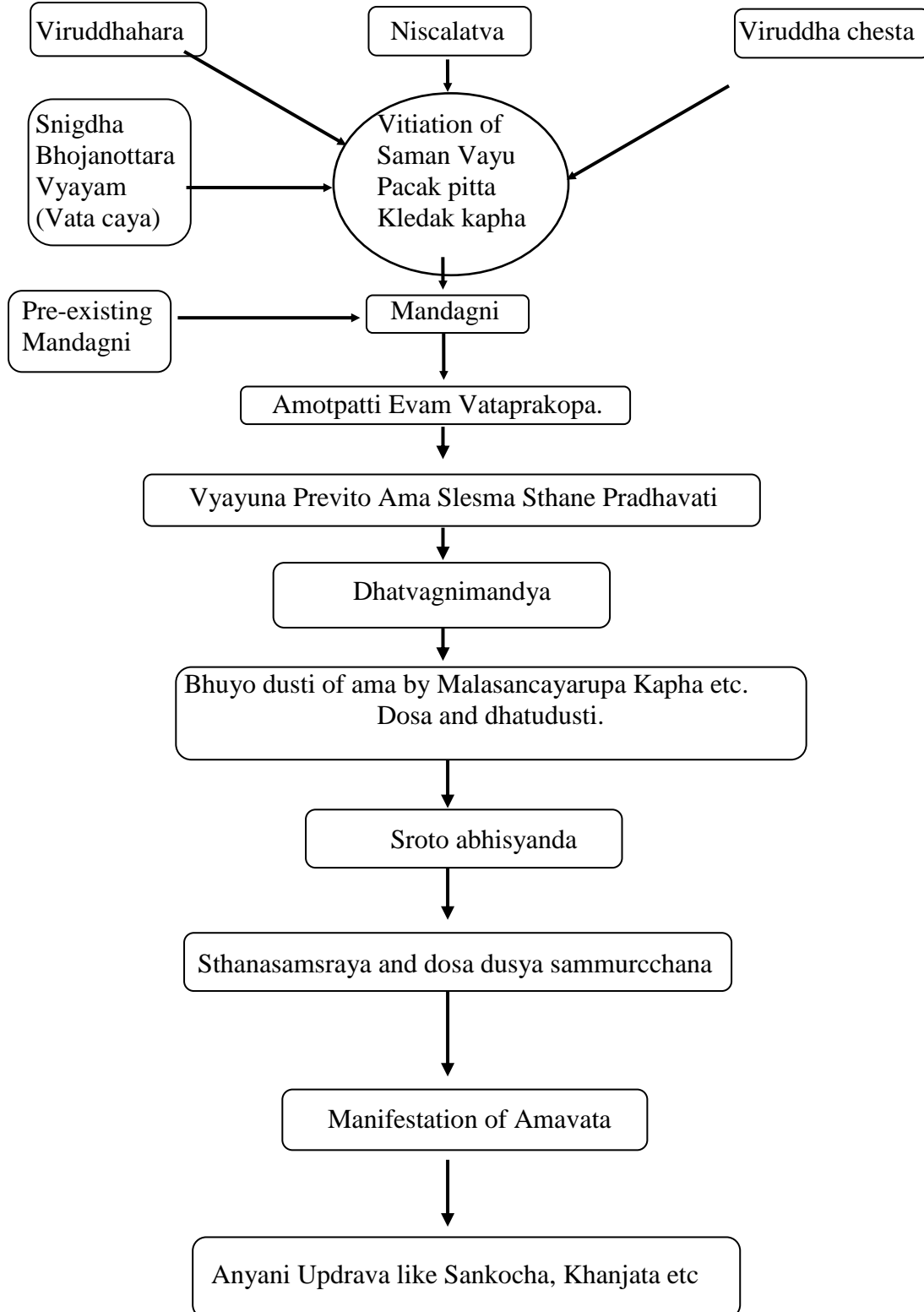
In this stage, if the patient is not managed or the patient continuous to indulge in the etiological factors then the disease passes to the next stage where manifestation of the disease occur and it is known as Vyakti Avastha.

In Vyakti Avastha most of the symptoms of Amavata are manifested like Vrishchika damshavata vedana, Stabdhata, Sandhi sotha, Gaurava etc.

**Bheda:**

In chronic stage or if the disease is left untreated it reaches Bhedavastha i.e. producing updrava life Samkocha, Khanjata, etc.

Illustration No.1 Schematic Representation of Amavata Samprapti:

**SAMPRAPTI OF AMAVATA**

**SAMPRAPTI GHATAKA:**

In the process of disease, a vast number of factors invariably take part in the manifestation of a disease and are collectively called as samprapti ghatakas. Consideration of these ghatakas is quite essential for the proper understanding of disease. The samprapti ghataka of Amavata are as under.

**Dosa** : Kaphavata pradhana Tridosha

**Dusya** : Rasa, Asthi, Sandhi

**Agni** : Jatharagni, Dhatvagni

**Aam** : Tatjanya Ama

**Udbhava sthana** : Amasaya

**Sanchara sthana** : Rasayni, sarvasareera.

**Adhithana** : Sleshmasthan, Sandhi

**Vyakta sthana** : Sandhis

**Srotas** : Rasavaha Srotas

**Srotodusti** : Sanga

**Roga marga** : Madhyama.

**Vyadhi svabhava** : Chirkari.



**SAMPRAPTI BHEDA:**

**Samkhya Samprapti evam Vidhi Samprapti:**

On the basis of doshik involvement Amavata is classified into seven types, viz.

1. Vataja
2. Pittaja
3. Kaphaja
4. Vatapittaja
5. Vatakaphaja
6. Pittakaphaj
7. Sannipataja

**Vikalpa Samprapti:**

Kapha dravyatah gunatah vridhi

Vatah karmatah vikriti

Aama - jathragnimandyajanya aam

**Pradhanya Samprapti:**

Pradhantah aam

Vata kapha

**Bala Samprapti:**

Roga bala to be understood by Nidana panchaka

Rogi bala is to be understood by dasavidha pareeksha.

Thus a detailed review of the Samprapti of Amavata has been dealt.

## **PATHOGENESIS OF RHEUMATOID ARTHRITIS:**<sup>125</sup>

The cause of rheumatoid arthritis is unknown, but it is suspected that certain infectious agents or a genetical susceptibility or immunologically mechanism cause non-specific inflammation. In this process T/B cell activation of synoviocytes occurs and they cause inflammatory synovitis.

The exact pathogenesis of rheumatoid arthritis is not known. Many hypotheses have been put forward. The primary event is inflammation of synovium which is immunologically mediated. The proposed sequence of events, which leads to joint damage, is as follows:

The first event is presentation of the putative antigen by macrophages to the CD4+ helper cells in genetically predisposed individuals. The antigen could be of bacterial or viral origin.

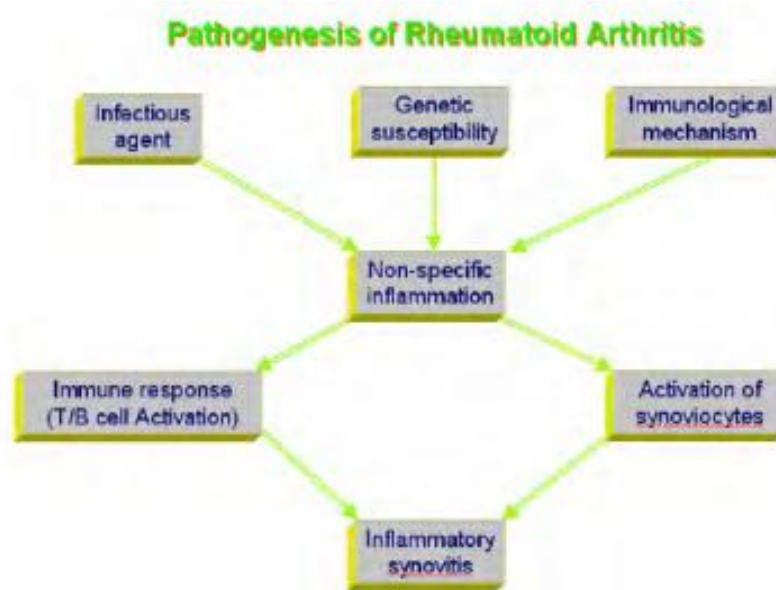
Activation of Helper T cells results in release of interleukin 2, which in turn amplifies the Helper T cells by a positive feedback mechanism. Cytokines like IL-4, IL-6 and gamma IFN are also released by the activated CD4+cells. These cytokines increase the expression of adhesion molecules like ICAM-1, LFA-1 and Mac-1, which help in the localization of the inflammatory cells. Cytokines stimulate the activation, proliferation, and differentiation of B-cells into antibody-producing plasma cells. These plasma cells produce antibodies against the Fc fragment of IgG, which is termed as the Rheumatoid Factor.

Rheumatoid factor forms immune complexes with IgG. These activate the complement cascade. This result in production of C3a, C5a, C3b and C56789 (membrane attack complex) is capable of damaging cells by drilling pores in their membranes.

Infiltration with Neutrophils result in further amplification of the inflammatory insult through release of oxygen free radicals, inflammatory metabolites of arachidonic acid pathway like prostaglandin's and leukotrienes, metalloproteinases like collagenase, elastase, gelatinase and stromelysin.

These inflammatory mediators lead to damage of the articular cartilage, demineralisation of the underlying bone, erosion of the joint margins, laxity of the joint capsule and ligaments and finally total derangement of the affected joint leading to joint deformities.

**Figure No.01: Pathogenesis of Rheumatoid Arthritis:**



**Pathology:**

In earliest changes the synovium becomes oedematous, filled with fibrin exudates and cellular infiltrates. There is an increase in Synovial fluid. As the inflammation persists the synovium gets hypertrophied and surrounds the periphery of the articular cartilage to form a Pannus. The articular cartilage loses its smooth shiny appearance. With further progress of the disease the cartilage becomes worn off and the bone surfaces become raw. The joints get deformed, initially because of severe

muscle spasm associated with pain but later due to fibrosis of the capsule and other soft tissue structure.

In an advanced disease, the hypertrophied synovium and synovial fluid distend the joint capsule and the ligaments supporting the joint are stretched, resulting in subluxation of joint. Osteoporosis develops in the bones adjacent to the diseased joint. Periarticular tissues, notably tendons and muscles become oedematous and infiltrated with cells and may rupture spontaneously.

The course of disease varies from patient to patient. In some, it is no more than a mild arthritis, which totally recovers; in others it may be severe, chronic debilitating disease, ultimately ending up in deformity.

#### **Stages of Rheumatoid Arthritis:**

From clinical viewpoint rheumatoid arthritis can be divided into following stages-:

- 1) **Potentially reversible soft tissue proliferation:** In this stage, the disease is limited to the synovium. There occurs synovial hypertrophy and effusion. No destructive changes can be seen on X-ray.
- 2) **Controllable but irreversible soft-tissue destruction and early Cartilage Erosions:** X-ray shows a reduction in the joint space, but the outline of the articular surface is maintained.
- 3) **Irreversible soft-tissue and bony changes:** The Pannus ultimately destroys the articular cartilage and erodes the subchondral bones. The joint becomes ankylosed usually in a deformed position. It may be subluxated or dislocated.

## **POORVAROOPA**

The Purvarupa of Amavata has not been clearly mentioned anywhere in the classics. Early clinical manifestation of the signs/symptoms can be considered as Purvarupa of the disease.

When the prakupita Ama via Rasavaha srotasa endures Sthana samshraya in Hridaya, Sandhi etc. before getting fully manifested as disease Amavata, in the early stage produces mild symptoms like Apaka, Aruchi etc. that can be considered as Purvarupa of Amavata. Vangasena has given Shiroruja and Gatraruja as Purvarupa of Amavata.

### **PREMONITORY SYMPTOMS OF RHEUMATOID ARTHRITIS:**

In Western system of medicine, it is described that the prodromal symptoms like fatigue, weakness, joint stiffness; vague arthralgia, myalgia and parasthesia of extremities may precede the appearance of joint swelling by several weeks. Anorexia, weight loss, lethargy and myalgia occur commonly throughout its course and may also precede the onset of articular symptoms by weeks or months.

## **ROOPA**

Roopa have been very clearly mentioned in Madhava Nidana. Almost same has been mentioned by Bhava Prakasha and Yogaratnakara.

The signs and symptom of Amavata mentioned in Ayurvedic classics can be categorized and described under the following headings.

1. Pratyatama Roopa
2. Samanya Roopa
3. Doshanubandha Roopa
4. Pravridhdha Roopa

### **Pratyatma Lakshana (Cardinal Signs and Symptoms)**

Pratyatma Lakshanas are main clinical features on which the disease can be clearly differentiated from other identical forms of disease. In Amavata, sandhis are the main site of manifestation of clinical features, thus joint associated symptoms are considered as Pratyatma lakshana of disease Amavata.

These are as follows:

#### **A). Sandhi Shoola (Pain in Joints)<sup>126</sup>:**

Sandhishoola is the characteristic feature complained by the patients suffering from Amavata. It may be severe and continuous characteristically like that of scorpion sting (Vrishchika Damshavata) usually disturb the patient in sleep, aggravate by movement. It also indicates the presence of Vitiated Vata Dosha as Vata causes all pains. This pain aggravates during cold and cloudy weather and on performing any type of massage with oily preparations. This is the characteristics evidence of involvement of Ama.

**B). Sandhi Shotha (Swelling in Joints)<sup>127</sup>:**

Shotha is the result of accumulation of Ama in Sandhi Sthana. It is caused by Srotorodha i.e. obstruction of Ama by vitiated Vata Dosha.

**C). Stabdhatva<sup>128</sup>:**

Difficulty in performing movements in involved joints constitutes the Gatra-Stabdhatva (Stiffness). This is due to the affliction of the joint by Samavata. It is generally felt in the morning but may precede the whole day.

**D). Sparshasahatva<sup>129</sup>:**

Sparshasahatva means tenderness in affected part. Though it is not separately referred in Ayurvedic texts but objective pain i.e. pain on pressure may be considered as sparshasahatva. It is usually present in the affected joints.

**E). Sashabda Sandhi:**

This symptom has been mentioned in Yogaratnakara. It means crepitation on movement of the joint. Such type of affliction joint is due to vitiated Vata Dosha.

**Samanya Rupa<sup>130</sup>:**

In addition to Pratyatama Rupa the patient suffering from Amavata may have a number of Samanya Rupa constitutional feature depending upon severity and chronicity of the disease.

Acharya Madhavakara has mentioned Angamarda, Aruchi, Trishana, Alasya, Gaurava, Jwara, Apaka, and Angasunnata as Samanya Rupa of Amavata.

**Dosha Anubandha Rupa:**

In Madhava Nidana the symptoms of involved Dosha has also been described which are as follows.

1. Vatanubandha Lakshana - Sandhi Shoola
2. Pittanubandha Lakshana - Sadaha Raga
3. Kaphanubandha Lakshana - Staimitya, Guru and kandu.

**1. Vatanubandha:**

Though pain in joints is the main feature of the Amavata, severe throbbing pain that aggravate in night and cold atmosphere is the characteristics of Vatanubandha.

**2. Pittanubandha:**

Redness and burning sensation on the affected joint confirms the presence of pitta in the patient of Amavata.

**3. Kaphanubandha:**

A subjective feeling as the body parts being covered by wet cloth is there in case of Kaphanubandha.

- Guruta may be present in all types of Amavata but it is predominantly present in Kaphanuga Amavata.

- Itching (kandu) sensation on the affected parts is the characteristics of Kaphanubandha.



**1. Dosha Samsarga Lakshana:**

Any two doshas may be involved in Amavata, which can be inferred by doshik lakshana explained previously.

**2. Sannipataja Lakshana:**

This can be understood by overviewing single dosha lakshana as the disease Amavata, may picturise the symptoms showing equal involvement of all doshas.

**Pravridha Lakshana of Amavata:**

It is the advanced stage of disease and very troublesome to patients as well as for physicians. According to Kriyakaal and stage wise development, it is the worst stage of disease. Acharya Madhavakara, Bhava Mishra and Yoga Ratnakara have elucidated articular and Extra-articular feature present in this stage. These features are Sarujam Sandhishotha, Vrishchika damshavata vedana, Utsahahani, Bahumutrata, Kukshikathinya, Kukshishool, Nidra Viparyaya, Chardi<sup>131</sup>, Bhrama, Murcha, Hritgraha, Vibandha, Antrakujana, Anaha, Agnimandya, Praseka, Gaurava<sup>132</sup>, Daha Trishna.

**Table No.14: Rupa of Amavata in Ayurvedic Classics by Various Acharyas:**

Sr.	Rupa	Harita Samhita	Madhava Nidana	Anjana Nidana
1	Angamarda	-	+	-
2	Aruchi	-	+	-
3	Trishna	-	+	+
4	Angagaurava	-	+	+
5	Angasunnata	-	+	-
6	Agnisada	-	+	+
7	Praseka	+	+	+
8	Alasya	-	+	-
9	Staimitya	-	+	-
10	Asyavairasya	-	+	+
11	Apaka	+	+	+
12	Daurbalya	-	+	-
13	Kandu	-	+	-
14	Chhardi	-	+	+
15	Bahumutrata	-	+	+
16	Hridgraha	-	+	-
17	Angavaikalya	+	-	-
18	Bhrama	-	+	+
19	Nidraviparyaya	-	+	+
20	Hasta, Pada, Shiro, Gulpha, Trika, Janu Sandhi Ruja & Shotha	+	+	+
21	Kukshishoola	-	+	-
22	Kukshikathinya	-	+	-
23	Jadyata	-	+	+
24	Murcha	-	+	-
25	Trikashoola	+	+	-
26	Utsahahani	-	+	-
27	Jwara	+	+	+
28	Trishna	-	+	+
29	Daha	-	+	+

Bhava Mishra and Yoga Ratnakara have followed Madhavakara.

## CLINICAL FEATURES OF RHEUMATOID ARTHRITIS

In majority of patients, the onset is insidious with joint pain, stiffness and symmetrical swelling of a number of peripheral joints but other disease patterns can occur.

**Table No.15 : Patterns of onset:**

<b>A)</b>	Insidious	70%
	Acute	15%
	Systemic	10%
	Palindromic	05%
<b>B)</b>	Oligoarticular	44%
	Polyarticular	35%
	Monoarticular	21%

Initially pain may be experienced only on movement of joints, but rest pain and especially early morning stiffness is characteristic feature of all kind of inflammatory arthritis.

In typical case the small joints of the fingers and toes are the first to be affected. Swelling of proximal but not the distal, Interphalangeal joints gives the fingers a “Spindled” appearance and swelling of the Metatarsophalangeal joints result in “Broadening” of the forefoot. As the disease progresses with or without intervening remission, there is a tendency for it to spread to involve the wrist, elbow, shoulder, knees, ankles, subtalar and mid-tarsal joints. The Hip joints become involved only in the more severely affected. The temporo-mandibular, acromioclavicular, sternoclavicular joints are sometimes affected as indeed are all synovial joints.

**Table No.16: Joints affected in Rheumatoid Arthritis:**

S.No.	Common	Less common	Uncommon
1.	Metacarpophalangeal joints of hands	Hip joint	Atlanto-axial joint
2.	Proximal interphalangeal joints of hands	Temporo-mandibular joint	Facet joint of cervical spine
3.	Wrist, Knee, Elbow, Ankle		

**Progression:**

As the disease advances, muscle atrophy, tendon sheath and joint destruction results in limitation of joint movement, joint instability, subluxation and deformities but later permanent contracture develops.

Characteristic deformities include flexion, contracture of small joints of hands and feet, the knee, hips, and elbow.

**Table No.17: Different deformities in Rheumatoid arthritis:**

S.No.	Part of the Body	Deformity
1.	Hand	Ulnar Drift of Hand Boutannier deformity (Button-Hole) Swan- neck Deformity
2.	Thumb	Z- Deformity
3.	Elbow	Flexion deformity
4.	Knee	Early – Flexion Deformity Late – Triple subluxation (flexion, posterior subluxation, external rotation)
5.	Ankle	Equinus deformity
6.	Foot	Hallux valgus, Hammer toe etc.

**Extra-articular Features:**

Rheumatoid arthritis is a systemic disease. Anorexia, weight loss, lethargy and myalgia occur commonly throughout its course and may precede the onset of articular symptoms by week or month. The many extra articular feature of the disease are as follows –

- **Systemic feature** : Fever, weight loss, fatiuge, susceptibility of infection.
- **Haematological feature**: Anaemia (Anomochromic, normocytic anaemia).
- **Lymphatic feature** : Splenomegaly, felty’s syndrome, lymphadenopathy.
- **Musculoskeletal feature** : Muscle wasting, tynosynovitis, bursitis, osteoprosis.
- **Ocular feature** : Scleritis, episcleritis, keratoconjuntivitis Sicca, scleromalacia
- **Neurological feature** : Cervical cord compression, compression neuropathies, peripheral neuropathy, mononeuritis multiplex.
  - **Cervical cord compression** : It can result in cord compression and sudden death if the neck in manipulated inadvertently under an anesthetic.
- **Vascular feature** :
  - **Digital arteritis** : Ulcer, polyderma gangrennosum, mononeuritis multiplex, visceral arteritis.
- **Cardiac features** : Pericarditis, myocarditis, endocarditis, conduction defect, coronary vasculitis, gramalomatous arthritis.

## BHEDA

Madhavakara has classified Amavata according to predominance of doshas<sup>133</sup>, which are as follows:

### 1. Ek Doshaja<sup>135</sup>:

- (a) Vataja
- (b) Pittaja
- (c) Kaphaja

### 2. Dwi Doshaja<sup>136</sup>:

- (a) Vata-pittaja
- (b) Pitta-kaphaja
- (c) Kapha-vataja

### 3. Tri Doshaja<sup>137</sup>:

These varieties of Amavata can be differentiated on the basis of characteristic symptoms of Dosha involved.

Acharya Harita has classified Amavata into following four types on the basis of **clinical manifestation**:<sup>134</sup>

1. **Vishtambhi** – In Vishtambhi type of Amavata Gatra-gaurava, Adhamana and Bastishoola are present.
2. **Gulmi** – In this type Jathargarjana (Bowel sounds), Gulmavatapeeda and Katijadata are present.
3. **Snehi** – Gatra snigdhata, Jadya, Mandagni and Excretion of vijjala and snigdha Ama are present in such type of Amavata.
4. **Sarvangi** – Excretion of Peeta, Shyama, Vijjala and Pakwa Ama, Shrama and Klama are present in this type.

**Again it can be classified according to<sup>138</sup>:**

**(A) Severity:**

1. Samanya Amavata
2. Pravridha Amavata

In Samanya Amavata, the symptoms are more or less general, less severe and not associated with Upadrava in comparison to Pravridha Amavata.

**(B) Chronicity:**

Depending on the chronicity, the disease is classified into:

1. Navina Amavata
2. Jeerna Amavata

Up to one year of onset it is said to be Navina and more than one year it is called Jeerna Amavata.

## **UPADRAVA**

Upadrava of Amavata is not mentioned with separate headings and they are included in Pravridha Lakshna of Amavata.

Madhava Nidana had considered Khanja, Samkoca, as the upadras of Amavata.

Acharya Harita had considered Angavaikalya as the Upadrava of Amavata.

## **COMPLICATION OF RHEUMATOID ARTHRITIS<sup>139</sup>**

- Septic Arthritis
- Amyloidosis – The synovium is infiltrated with amyloid protein.
- Systemic Vasculitis
- Spinal Cord Compression
- Felty's syndrome – Splenomegaly with neutropenia leads to repeated infections and weight loss known as Felty's syndrome.



## UPASHAYA – ANUPASHAYA

Use of medicaments, dietary regimens and viharas, which bring lasting relief, are known as Upashaya. On the contrary, anupashaya aggravates the disease. In classics there is no direct reference regarding Upashaya and anupashaya of Amavata except Acharya Harita who mentions that cold-water bath increases the condition.

The other things related to Ahara Vihara that can be considered as Upashaya and anupashaya are given in the table.

**Table No.18: Showing Upashaya – anupashaya of Amavata:**

Upashaya of Amavata	Anupashaya of Amavata
Katu, Tikta, Ruksha drugs	Amla Rasa
Deepan, Pachan drugs	Samtarpana
Langhana, Ruksha Sweda	Abhyanga, Snehayukta Sweda
Ushna Kaal etc.	Sheeta Kaal, Meghodaya Kaal and Prataha Kaal

## **SADHYA - ASADHYATA**

Physician who wants to be successful should have clear knowledge of curable and incurable disease, and start treatment in time with well understanding of various aspects of the disease. This will help in accomplishing his goal of curing diseases. Physician treating incurable diseases would loose wealth, fame and earn bad reputation. He will become victim of legal sanctions.

Generally Amavata is a Krichrasadhya Vyadhi as it includes Madhyama Rogamarga. It is also difficult to treat because of opposite nature of Ama and Vata. Diseases accompanied by Upadrava becomes Asadhya the same is applicable to Amavata.

Ekadoshaja Amavata caused by Minimum Nidana, with few Lakshanas, of recent origin is Sadhya and Harita adds Pakwama type of Amavata is Sukhasadhya. When the disease is Dwidoshaja, having many Nidanas and Lakshanas, then it become Yapyia. Disease becomes Krichrasadhya by the involvement of Tridosha and when associated with Sarvangashotha. Snehi ama, Vishtambhi, Gulmi types of Amavata is Kasthasadhya.<sup>140</sup>

Shopha anaha, Jadya, Ghana udara, Aruchi and Amatisara yukta Snehi Amavata is Asadhya according to Harita.

**PROGNOSIS OF RHEUMATOID ARTHRITIS<sup>141</sup>:**

The course and prognosis in Rheumatoid arthritis is very difficult to predict because of its variability. 25% of the severe patients may have complete remission of symptoms and fit for all normal activities. 40% of the cases suffer with moderate type of functional impairment despite exaggeration and remission. 25% may be more severely disabled and 10% may be severely crippled almost limited to bed.

**Prognosis may be very poor in many cases as follows:**

1. High titer of rheumatoid factor
2. Insidious onset of the disease
3. More than one year with active phase without any remission
4. Early development of nodules and erosions
5. Extra-articular manifestation
6. Several functional impairment the median life expectancy of persons suffering with Rheumatoid Arthritis is shortened by three to seven years. Factors co-related with early death include disability, disease duration or severity, glucocorticoid use and age of onset of disease.

## **SAPEKSHA NIDANA**

For the diagnosis of any disease physician should have clear knowledge of other conditions that mimic particular condition. This can avoid the physician from embarrassment and prevents the patient from taking the unwanted pain and complications. While diagnosing a case of Amavata it is necessary to identify and exclude those diseases which have a close bearing on the trail of Amavata in its signs and symptoms some of them are Vatarakta, Sandhigata Vata, Kroshtuka Sheersa, Sandhigata Sannipata jwara, etc.

### **1. Vata Shonita<sup>142,143</sup>:**

In the disease process of Vata Shonita, Rakta Dushti plays an important role. Vata and Shonita get vitiated due to each other's own causative factors. Though this disease presents with Shotha in Parshva Sandhi and big joints also, it classically begins with affliction of big toe with skin manifestations unlike Amavata.

### **2. Kroshtuka Sheersha<sup>144</sup>:**

This is a disease of the knee joint and the question of involvement of other joints does not arise. Swollen Knee has the appearance of head of a jackal (Jambuka Shira). Here too Vata and Shonita are the two factors involved.

### **3. Sandhigata Vata<sup>145</sup>:**

Sandhigata Vata typically presents with swelling of the joint that gives a feeling of a bag inflated with air. Notably, use of oil here results in improvement of symptoms rather than aggravation.

#### 4. Sandhigata Sannipata Jwara<sup>146</sup>:

In this disease the joint manifestations are secondary to Jwara that is the cardinal symptom. Besides, excessive mucoid secretion from mouth, Insomnia and Saruja Kasa differentiates this condition from Amavata.

Along with the above-mentioned diseases, Shotha<sup>147</sup> and Shoola in Sandhi, like in Amavata can be seen in Vataja Atisara<sup>148</sup>, Grahani<sup>149</sup>, Kshayaja Kasa<sup>150</sup>, Vatodara<sup>151</sup>, Arsha<sup>152</sup>, and Antarvega Jwara. But these can be differentiated from Amavata by their own characteristic features.

### DIFFERENTIAL DIAGNOSIS OF RHEUMATOID ARTHRITIS

Rheumatoid Arthritis differentiated from other diseases having similar features like Joint Pain on the basis of presenting Signs and Symptoms & biochemical investigations. These diseases are as follows<sup>153</sup>:

#### 1. Gout:

In pathological investigation high serum uric acid level is present. Response to administration of Colchicine is found in this condition.

#### 2. Osteoarthritis: -

Radiological appearance differs, absence of subcutaneous nodules and R.A. factor. In typical case, Heberdon's nodes appear in relationship to DIP joints and ESR usually within normal limits.

#### 3. Polymyalgia Rheumatica: -

In this condition ESR is very high and peripheral joint signs are minimal. (Onset of Rheumatoid Arthritis in elderly mimic Polymyalgia Rheumatica)

**4. Polyarthritis Nodosa: -**

May resemble Rheumatoid Arthritis, but radiological changes are minimal. Severe systemic symptoms and necrotising vasculitis at early stage of polyarthritis may be present, but joint erosions and typical Rheumatoid Arthritis deformity are rare in later stage.

**5. Systemic Lupus Erythematosis: -**

It is characterized by the presence of numerous autoantibodies, circulating immune complexes and widespread immunologically determined tissue damage. Chronic inflammatory arthritis and tenosynovitis may lead to deformities and contractures, but erosive changes are very uncommon.

**6. Rheumatic Fever: -**

First, attacks are usually under 15 years of age in 70% of case. It is characterized by flitting type of joint pain and sustained fever. Spindling of finger joint is rare. Myocarditis, endocarditis and nodules on the different histological picture are present.

**Table No.19: Symptoms of Rheumatoid Arthritis, which may require differential diagnosis:**

Symptoms	Possibilities to be considered
Acute or severe pain in one or a few joints	Joint sepsis – fever may be absent Fracture – even without obvious trauma
Unexplained weakness	Cervical spine involvement producing cord compression
Unilateral calf swelling	Ruptured Baker’s cyst – this is frequently misdiagnosed as a deep venous thrombosis (which may however occur in association with a ruptured joint)
Painful red eye	Scleritis – requires expert ophthalmological assessment

**Table No.20: SAPEEKSHA NIDANA CHART:**

<b>Sl. No.</b>	<b>Amavata</b>	<b>Vata sonita</b>	<b>Kroshtuka Sheersha</b>	<b>Sandhigata Vata</b>	<b>Sandhigata Sannipata Jwara</b>
01.	At first the smaller joints are affected	At first the great toe is usually affected	Only the knee are affected	Weight bearing joints are affected	Both small and big joints
02.	Mild fever present	Fever present	Fever absent	Fever absent	Fever present
03.	Swelling over the affected joint followed by pain	Swelling over the affected joint followed by pain	Typical jackal's head shape of knee joint with pain	Pain and swelling over the affected joint	Pain in all the joints of the body
04.	Tridoshaja mainly vata kapha predominant	Tridoshaja mainly vata rakta predominant	Tridoshaja mainly vata predominant	Vata predominant	Tridoshaja mainly kapha predominant
05.	Hritgaurava present	Absent	Absent	Absent	Absent
06.	Dusya rasa	Dusya rakta	Dusya rasa rakta	Dusya rasa	Dusya rasa
07.	No relief by Rakta-mokshana	Relief by Rakta-mokshana	No relief by Rakta-mokshana	No relief by Rakta-mokshana	No relief by Rakta-mokshana
08.	Apakwa in nature	Pakwa in nature	Apakwa in nature	Apakwa in nature	Apakwa - pakwa in nature

## **PATHYA APATHYA**

The pathyas mentioned in Yoga Ratnakava and Bhaisajyaratnavali for Amavata can be classified and listed as under.

### **Pathya**

- Anna varga** : Purana sali, purana sastikasali yava, pancakola siddha anupana
- Saka varga** : Patola, Karavellaka, Sigru, Varuna goksura, nimba patra.
- Kanda varga** : Lasuna and Adraka
- Mamsa varga** : Takra siddha lava mamsa, jangala mamsa
- Jala varga** : Usna jala
- Mutra varga** : Gomutra
- Ksira varga** : Takra and Mastu
- Madya varga** : Purana madya

### **Apathya**

- Annavarga** : Masa
- Saka varga** : Upodika
- Mamsa varga** : Anupa mamsa, matsya
- Taila varga** : Tila taila
- Jala varga** : Dusta jala, sita jala
- Ksira varga** : Dadhi
- Anya** : Viruddhahara, Vegavidharana, Visamasana etc.



In general it can be said that any drug or diet that is katu, Tikta by rasa, usna by guna and having Vatahara Kaphahara and amapacana in action can be considered as pathya for Amavata.

The drugs and diet that possess Madhura and amla rasa, guru, picchila, Atisnigdha Sita and abhisyandi guna and which causes provocation of vata, kapha and formation of ama are apathya for Amavata.

## **AMAVATA CIKITSA SIDDHANTA**

Acharya Chakrapani was the pioneer in describing the principles of treatment of Amavata, which are Langhana, Swedana, and drugs having tikta-katu rasa and Dipana property, virecana, snehapana and Basti<sup>154</sup>. In Yogaratnakar similar description regarding the etiology and principles of treatment is available. In addition to ruksha sweda like Valuka pottali and upanaha have been mentioned for the management of Amavata. In Yogaratnakar and Chakradatta a lot of recipes in the form of Kwatha, churna and lepana have been enumerated. Acharya Bhavamishra also followed the same steps in these aspects.

### **Langhana:**

Langhana is the first and must measure that has been advised for Amavata chikitsa. Agnimandya and Ama is the chief initiating factors of Amavata, which are best, conquered by langhana.<sup>155</sup> Further Amavata is considered as an amasayottha Vyadhi and langhana is the first line of treatment in such conditions.

### **Swedana:**

In the management of Amavata, Ruksha Sweda has been advocated mostly in the form of valuka pottali due to its Amapacana, Kaphahara, and Soshana etc. properties. Moreover Bhava prakasha and Yogaratnakar also prescribe upanaha sweda without sneha in Amavata. But in the chronic stage of the disease when rukshata takes place due to vatavridhi, snigdha sweda should be employed, as it is Mardavakara and Balakara.

**Tikta-katu and Dipana drugs:**

Tikta and katu rasa have got the antagonistic properties that of ama and kapha. Because of their Agni Vardhaka property, they increase digestive power, which digests amarasa and reduces the excessive production of kapha and also removes the obstruction of channels. Dipana drugs act through the same mechanism. These all properties also help in transportation of the doshas from sakhas to kostha and thus help in the samprapti vighatana process.

**Virechana:**

In Amavata the procedure of virechana is specially adopted to expel out the Ama and Kapha obstructed in the Rasavaha Srotasa. The virechana drugs, which are comparatively higher in concentration than, that of ama attract it into the kostha and from there it is expelled out. The re-opening of rasavaha srotas establishes the proper nutrition of consecutive dhatus. The Agni becomes sharp and helps in digestion of amarasa.

**Snehapana:**

Snehapana has been indicated in the nirama stage of the disease. The therapeutic measures employed so far are likely to produce rukshata in the tissues of the patient, which may provoke the vatadosa and further aggravate the disease process. This is best prevented by snehapana. Moreover samana sneha has been stated to augment the Agni<sup>156</sup> as it influences the digestion by softening the food and stimulating the Agni, which is the primary requirement in Amavata. It also pacifies the vitiated vata.

**Basti:**

In Amavata both Anuvasana as well as Niruha basti have been advocated. The Niruha basti eliminates dosa from the body brought into the kostha by the langhana and allied therapies. In addition to generalized effects Basti produces local beneficial effects also by removing the anaha, antrakujana, vibandha etc. Anuvasana Basti removes the 'rukshata' of the body caused by the amahara chikitsa.

In nutshell, sequential employment of Dipana, Amapacana, Sodhana and Samana therapies constitute the holistic approach in the treatment of Amavata.

**Table No. 21: Showing different ousadha yogas according to different Acharya:**

S.No.	Name of the Yoga	Ch. D	B.P	BYT	Y.T	Y.R	B.R	G. N
	<b>Kasaya and Kwatha</b>							
1.	Rasnadi Panchaka kwatha	+	+	+	+	+	+	+
2.	Rasna saptak kwatha	+	+	+	+	+	+	+
3.	Rasnadi Kwatha	-	+	-	-	-	-	-
4.	Rasnadidasmoala kwatha	-	+	-	-	-	+	-
5.	Rasonadi kasaya	-	+	-	-	-	+	-
6.	Sunthyadi kwatha	+	+	+		+	+	+
7.	Shatyadi kwatha	+	-	-	+	+	+	+
8.	Dasmooladi Kwatha	-	-	-	-	+		+
9.	Pippalyadi Kwatha	-	-	-	-	+	-	-
10.	Panchkola Kwatha	-	+		-	-	-	-
11.	Punarnava Kasaya	+	+	+	-	-	-	-
12.	Madhyam Rasnadi Kwatha	-	+	-	-	-	+	-
13.	Maharasnadi Kwatha	-	+	-	-	-	+	-
14.	Erandadi Kwatha	-		-	-	-	+	-

S.No.	Name of the Yoga	Ch. D	B.P	BYT	Y.T	Y.R	B.R	G. N
15.	Simhasyadi Kwatha	-	+	-	-	-	+	-
16.	Vishwa Pathya amruta kwatha	-	+	-	-	-	-	-
17.	Rasaka yusha with Kanjika	-	+	+		+	-	-
18.	Guduchi with sunthi kwatha	-	+	-	-	-	-	-
19.	Rasona sura sindhika sidhmala	+		-	-	-	-	-
20.	Guduchi nagar kwath	-	+	-	-	-	-	-
	<b>Churna yoga</b>							
21.	Ajmodadi churna	-	-	-	+	-	-	-
22.	Panchasma churna	-	-	-	+	-	-	-
23.	Hingwadhyia churna	+	+	-	+	+	+	-
24.	Nagaradi churna	+	+	-	+	+	-	-
25.	Vaishwanara churna	+	+	+	+	+	-	-
26.	Panchkola churna	+	+	-	+	-	+	-
27.	Chitrakadi churna	-	+	+	+	+	-	-
28.	Alambhushadhya churna	-	+		+		-	-
29.	Pathyadi churna	-	+	+	-	+	-	-
30.	Punarnavadi churna	-	+	+	-	-	+	-
31.	Amrutadhya churna	+	+	+	-	-	+	+
32.	Treetya Alambhusadi churna	+	+	-	-	-	+	
33.	Shatapuspadhya churna	+	-	-	-	-	+	+
	<b>Ghrita yoga</b>							
34.	Sunthi Ghrita	-	-	-	+	+	-	+
35.	Kanjikadhya ghrita	-	+	+	-	-	+	
36.	Shringaveradhya ghrita	-	+	-	-	-	-	-

S.No.	Name of the Yoga	Ch. D	B.P	BYT	Y.T	Y.R	B.R	G. N
37.	Dhanwantra ghrita	-	+	-	-	-	-	-
38.	Mahasunthi ghrita	-	+	-	-	-	-	-
39.	Dweetiyasunthi ghrita	+	+	-	-	-	-	-
40.	Amrutadhya ghrita	+	-	-	+	-	-	-
	<b>Taila yoga</b>							
41.	Brihat sandhavadhya taila	+	+	+	+	-	+	-
42.	Mahasandhavadhya taila	-	+	-		-		-
43.	Prasarni taila	-	+	-	+	-	+	-
44.	Dwipanchmuladhya taila	-	+	-	+	-	+	-
45.	Eranda taila	-	-	-	-	-	+	-
46.	Vijaybhairav taila	-	-	-	-	-	+	-
	<b>Kalka yoga</b>							
47.	Shatyadi kalka	+	+	-	-	-	+	-
48.	Rasona pinda	+	+		+		+	-
49.	Maharasona Pinda	-	-	+	+	+	+	-
	<b>Vati/Guggulu Yoga</b>							
50.	Simhnad guggulu	+	+	+	-	-	+	-
51.	Yograj guggulu	+	+	-	+	+	+	-
52.	Mahayograj guggulu	-	+	-	-	-	-	-
53.	Bruhat yograj guggulu	-		-	-	-	+	-
54.	Amruta guggulu	-	+	-	-	+	-	-
55.	Vatari guggulu	-	-	-	-	-	+	-
56.	Shiva guggulu	-	-	-	-	-	+	-
57.	Punarnava guggulu	+	-	+	-	-	-	-
58.	Vyadhishardul guggulu	-	-	-	-	-	+	-
59.	Ajmodadi vati	-	-	-	+	+	+	-
60.	Aamgajasimho modaka	-	-	-	-	-	+	-

S.No.	Name of the Yoga	Ch. D	B.P	BYT	Y.T	Y.R	B.R	G. N
61.	Eranda guti	-	-	+	-	-	-	-
	<b>Lepa</b>							
62.	Himsradi lepa	-	-	-	-	-	+	-
63.	Satpuspadi lepa	-	-	-	-	-	+	-
.	<b>Loha</b>							
64.	Vidangadi loha	-	-	-	-	-	+	-
65.	Trifaladi loha	-	-	-	-	-	+	-
66.	Panchanan rasa loha	-	-	-	-	-	+	-
	<b>Rasaushadhi</b>							
67.	Amavatari rasa	-	-	-	-	-	+	-
68.	Amavatari vatika	-	-	-	-	-	+	-
69.	Amavatadi vajra rasa	-	-	-	-	-	+	-
70.	Amavatavidhvanasana rasa	-	-	-	-	+	-	-

## **MANAGEMENT OF RHEUMATOID ARTHRITIS**

Outline of treatment in Rheumatoid Arthritis<sup>157</sup>:

### **1. Rest and Nutrition: -**

Complete bed rest for short period during most active painful stage. Fish or plant oil supplements may partially relieve symptoms because they can decrease production of prostaglandins.

### **2. First Line Drugs: -**

NSAIDs (e.g. ibuprofen, indomethacin and Salicylates) produce symptomatic relief of pain and stiffness – will not abolish pain. It has rapid onset of benefit and rapid loss of effect on cessation of therapy. Has no effect on laboratory parameters.

Salicylates are relatively safe, inexpensive analgesic and anti-inflammatory and can still be a cornerstone of drug therapy. E.g. - Acetylsalicylic acid (aspirin).

### **3. Second Line Drugs: -**

DMARDs e.g. Gold, Penicillamine, Sulphasalazine and Anti-Malarials (add to first line drugs in face of active R.A., poorly controlled by NSAIDs.

Decrease pain and stiffness and increase grip strength and functional ability. Slow onset of benefit – allow 12-24 weeks to assess affect. E.S.R. if elevated will decrease, titre of rheumatoid factor will come down and Hb will tend to increase.

### **4. Third Line Drugs: - Corticosteroids and Cytotoxics**

Corticosteroids e.g. Oral-prednisolone are the most dramatically effective short term Anti-inflammatory drugs. But the patients should be cautioned about the complication with long-term use.



Cytotoxic or Immunosuppressive drugs are effective similar to those of the DMARDs with the variety of toxic side effects. So these drugs have been reserved for patients who have clearly failed therapy with DMARDs e.g. Methotrexate, Azathioprine, Cyclosporine.

5. **Intra-articular Injections of Corticosteroids:** - e.g. Triamcinolone hexacetonide

Temporary (2-3 months) reduction of pain and stiffness in that joint. Possible general marginal benefit because of slight systemic absorption in some instances.

6. **Exercise and Physiotherapy:** -

- Active Exercise: to restore muscle mass and maintain the normal joint movements.
- Passive Exercise: to prevent contracture
- Joint Splinting: reduces local inflammation

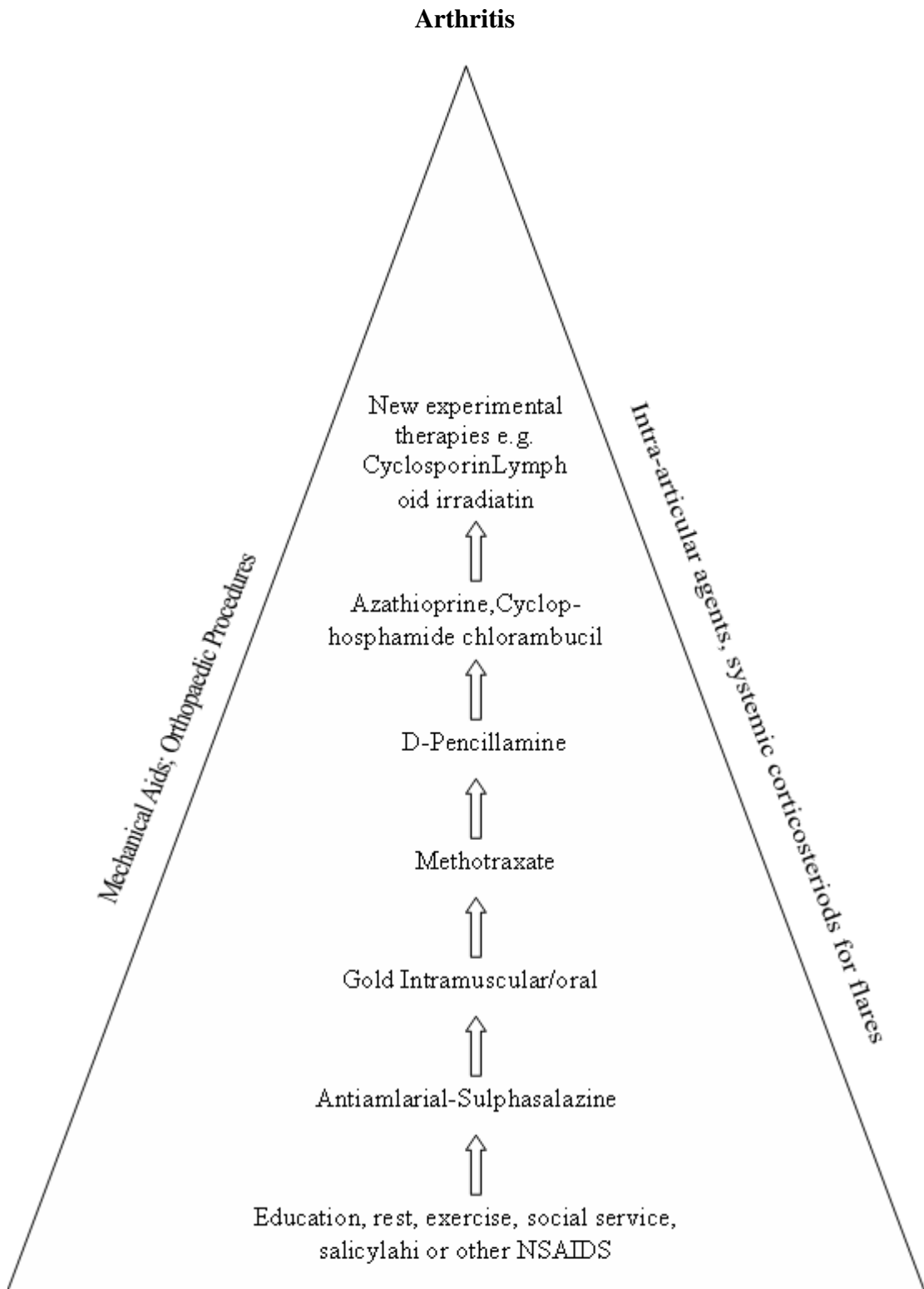
7. **Surgery for severely damaged joint:**

- Synovectomy
- Osteotomy
- Arthrodesis
- Excision
- Joint replacement.

**Table No. 22: Some surgical procedures in Rheumatoid Arthritis:**

S.No	Problem	Surgery
1.	Carpal tunnel Tarsal tunnel	Decompression
2.	Tendon attrition	Tendon repair and / or Tendon transfer
3.	Ulnar nerve entrapment	Decompression + Ulnar nerve repositioning
4.	Persistent Synovitis of a joint without joint damage	Synovectomy
5.	Persistent dorsal tenosynovitis at wrist	Synovectomy
6.	Pain, subluxation radio-ulnar joint Pain acromio-clavicular joint Metatarsalgia	Excision arthroplasty
7.	Pain relief or improve function of PIP, MCP, wrist, ankle subtalar joints	Arthrodesis
8.	Persistent pain +/- Dysfunction of knee, hip, MCP, elbow, shoulder	Joint replacement
9.	Alanto-axial subluxation	Fixation

**Illustration No.2 Showing the Pyramidal approach to Therapy in rheumatoid**



## **GUGGULU KALPANA**

### **Guggulu Defination:**

‘Gunjo Vyadhe: Gudati Rakshati |’

Which protect from the vyadhi.

### **Kalpana Definition:**

‘Kalpayate Vidheeyate Asou Vidhee: |’(Sa.Ka.Dr)

‘Prakalpnaam Samskaaraanaam Iti |’ (Chakrapani)

‘Kalpanaam Yojyaamityartha: |’ (Arunadatta)

Kalpana is a method/process or a kind of modification, transformation (samsakaran), or plan of preparation of medicine using either a single drug or several drug.

### **References:**

We are having good knowledge about guggulu from ancient time.

We can get references in Atharva Veda.

‘Vishvascastaamaad Yakshmaa Mrugaa Ashwaa Ive Rate |

Yad Guggulu Saindhavam Yad Vaapyaasi Samudriyam |

Ubhayatograte Naamaastaa Aristataataye | (Atharva Veda)

In the ancient time it was used for Homa, Havan, Dhupana etc.

### **References from samhita’s:**

Ch.Su.4/48 – sankhasthapan mahakasay, Ch.Vi.8/114 – kasaya skandh

Su.Su.38/24 – eladi gan and katuk varga

A.H.Su.15/43,44 – eladi gana

Bhavaprakash – karpuradi varga

Yogaratanakar – chandanadi varga

Raja Nighantu, Adarsh Nighantu – gugguluvadi varga

**Types:**

Acc. To bavaprakash nighantu (karpuradi varga)

**Based on color:-**

1. Mahshaksha – black , used foe human
2. Mahaneed – blue
3. Kumud - white
4. Padma – brown, for animal
5. Kana guggulu – yellow, for human

**Vyavaharik bheda:-**

1. Kana guggulu – raktabh pita varna, soft, granular
2. Bhaisa guggulu – haritabh varna, brittle & soft

**Another two varieties:-**

1. Nava guggulu – Brahman
2. Puran guggulu – karshan / lekahan

**Botanical description:**

Latin name:- commiphora mukul

Kula:- guggulu kula

Family:- burseraceae

Morphology:- it is tree , grow up to 1.5-2 mt. height

Leaves:- imperipinate, compound, composite

Leaflates:- sessile to subssile

Flowers:- brownish, 5 petals

Fruit:- pulpy round and red colour

Gum:- thick, scented, multicolored, burnt on fire, liquefies in sun heat,  
when dissolved In waters,it turns milky white

**Guna:**

Guna – laghu, tikshana, snigdha, picchilla, sukshama, & sara

Rasa – tikta, katu, madhur, kasaya

Veerya –usna

Vipaka – katu

Prabhava – tridosahara

Karma – hridya, rasayan, balya, varnya, swarya, dhatuposhak, agnidipak, kasaghna, buddhivardhak, shukrajanan, virya, aartavvridhikar, asthisandhankar. (su.ci.5/40)

**Grahya Lakshana:**

pure guggulu is snigdha, mrudu, sweet smell, tikta rasa, yellowish tinge, soluble in water, not contaminated with mud or sand.

Any other variety other than these qualities should be considered as impure.

**Shodhana:**

Shodhan is necessary for removing the unwanted and non-conducive qualities and to generate useful and good qualities.

Shodhan is done in 2 process

1.Samanya shodhana

2.Vishishta shodhana

**1. Samanya Shodhana**

Samanya shodhan is done for remove the physical impurities like sand, stone, leaf etc.

Procedure :-

Take guggulu 1 part and usna jjala 4 parts and kept it over night. Next day morning give mandagni to it and reduce up to ½ part. Filter it with cloth. Dried it I sun light.

## 2. Vishishta Shodhana

When guggulu is heated with other kwatha then it will work as quality of that kwatha and also showing it's own quality.

As per ayurvedic formulary of india part 1, 1<sup>st</sup> edition page no. 55:-

- 1<sup>st</sup> remove physical impurities then crushed into pieces.

-Then bundled in a piece of cloth and boiled in dolayantra containing any one of the following fluids.

- Gomutra,
- Triphala kwatha,
- Vasapatra kasaya,
- Vasa patra swarasa,
- Nirgundi swarasa with haridra churna,
- Dugdha.

-The boiling of guggulu in dolayantra is carried on until all the guggulu passes into the fluid through cloth .

-The residue in the bundle is discarded. The fluid is filtered and again boiled till it forms a mass.

-The mass is dried in the sun and the pounded with pastle in a stone mortar add little quantity of ghrita till it become waxy.

### **Characterstics feature of shodhit guggulu:**

Soft , waxy and brown in colour.

### **Shelf life:**

2yrs - when prepared with ingredients of plant origin

Infine – when prepared with metals and minerals.

**GUGGULU KALPANA:**

The formulation which uses Guggulu as main is called as Guggulu kalpana.

1st kalpana Named by vanaspati dravya.

**Main types of contents:**

- a) adhar dravya: shuddha guggulu
- b) adheya dravya: churna, bhasma etc
- c) drava dravya: ernada tel, goghrita, kashaya, gomutra etc.
- d) prakshepa dravya: churna etc

**TYPES OF GUGGULU KALPA:**

Guggulupradhankalpa: guggulu acts as main active ingredient eg: triphala guggulu ( sha sam )

Guggulus ahayogikalpa : guggulu acts as co-ordinating or synergistic e.g. chandraprabhi vati

**TYPE OF PROCESSES:**

Processes classified according to the methodology of application of heat.

Main 3 types

1. somapaka
2. aditya paka
3. agni paka

**1) SOMAPAKA**

Absence of direct heating during preparation,

(either by heating or by using heat of sun).

Therefore it is called as somapaka.

- Types of somapaka :

a) kuttan somapaka    b) mardan somapaka.



**KUTTANA SOMAPAKA PROCESS:**

Shuddha guggulu and other ingredients are mixed accordingly and sneha is added . further heavy pounding is done over the mixture till very fine powder is obtained.

Heat : supplied due to continous pounding .

Types: shatapiitit, sahastrapittit, dashasahastra pittit

**ADVANTAGES:**

- 1.more the pounding better the efficacy.
- 2.Ingredients finely powdered and mixed properly.
- 3.Sukshmata, laghuta, supachya.

Eg: yograj guggulu ra .yo . s a, vatari guggulu bha.bhai.ra

**MARDANA SOMAPAKA:**

Use of kashaya instead of sneha. Principle Mardanam guna vardhanam

Process:

- shuddha guggulu mixed with kashaya and other ingredients are added.
- mardan for 3,7,14,21 days.

eg: amavatari guggulu

**ADVANTAGES:**

- guggulu pachan easier due to proper samskar of mardan.
- homogenous mixture formed.
- liquid state of guggulu enhances the ability of binding to larger no of patricles.
- suskshamata, shalskshanta.

**2)ADITYAPAKA:**

Prepared with the help of heat of sun.

Process:

- shuddha guggulu mixed well with the kwath or other liquid.

- mixed well properly and spread in a flat large pan for drying in sun
- powdered well after drying
- The required liquid solute is added and mixed well for every time.The process is repeated for 7,14 ,21 times .
- The process can be repeated even before drying continuously
- Appropriate time for drying :afternoon
- Appropriate season : nov to feb.
- precaution: atleast satge- roll the preparation into small pills to avoid fungal contamination.

Eg: adipaka guggulu ( va nga sen)

### **3) AGNIPAKA:**

- Process:
  - Shuddha guggulu is heated with kashaya or water till required paka lakshan is achieved.
  - the required churna or bhasma are added to the guggulu.
  - pills are rolled quickly.
- Precautions:
  - heat on mild flame
  - continous stirring to avoid kharpaka at bottom
  - stop heating immeditely after achieveing paka lashanas
  - add powders after the heating is stopped
  - start rolling pills as soon as the powders are mixed homogenously.

Eg: vajra guggulu (ra.yo.sa)

**ADVERSE EFFECTS CAUSES:**

- ashuddha guggulu.
- dose variation.
- absence of anupan.
- negligence of determining factors like vaya, kala, vyadi avsatha etc.
- adulterated raw material.
- apthya kar ahar vihar by patient.

**SOME OF THE ADVERSE EFFECTS:**

- mukhapaka.
- urodaha
- asamyaka grathit mala pravritti.
- twaka kandu

**VARIOUS TYPES OF KALPANA:**

Use of guuguluin various kalpana

- Vati : Vajra guggulu ( ra .yo . sa ) Yograj guggulu
- Asava : Guggulasava( a.hri chi)
- Ghrita : Guggulu tikta ghrita(s ahastrayo ga)
- Avleha : Guggulu tikta madhusnuhi rasayana.
- Dhooma : Dhatryadi dhooma.(rasaratnakara)
- Lepa : Baladi lepa(charaka)
- Kwath : Manjisthadi kwath( sharangdhar samhita)

**DOSAGE:**

By seeing rogi vaya, bala, agni, can be given 1-4 tolas. (Hareeta Samhita)

Starting from1 tola to 4 tolas, but not more than 4 tolas. (Gada Nigraha)

Acc. To bhavaprakash

Hina kostha – 4 masa

Madhyam kostha – 8 masa

Uttam kostha – 12 masa

**Anupana (Su.Ch)**

- Triphala kwatha
- Darvi kwatha
- Patola kwatha
- Kusha kwatha
- Gomutra
- Kshara
- Usna jala

**Acc. To Rtu:**

Varsha and hemant – ghrita

Sharat and vasant – triphala kwatha

Hemant and shishir – gomutra

**Acc. To Dosha:**

Vata – sura, sauvirak, tushodak, mairey, dhanyaamla, phalamla, amla dravya etc.

Pitta – mruddika , amalaki, madhu, madhuk, purushak, phanit, kshiradi.

Kapha – madhu, gomuti, kasaya.

- Commonly in vata and kapha dosa usna jala can be taken as anupana
- In pitta and raktaj vikara sita jala can be taken as anupana

**Pathyapathya:****Pathya**

After getting digest the guggulu mudga/yusha/mamsarasa with mudgayusha, shastik shali with milk make it soft and take it. (Hareeta Samhita)

**Apathya**

Amla rasa dravya, tikshna, ajirna, maithun, excessive/hard work(vyayam/shram), walking, aatapsevan, madhya, angryness(rosha),

**PHARMACEUTICAL ACTION OF GUGGULU:**

Guggulu is resin known to increase white blood cell counts and possess strong disinfecting properties. It has long been known to lower cholesterol and triglycerides, while maintain or improve the hdl and ldl ratio. It is one of the very first “broad spectrum drug” with a wide therapeutic range. A broad mode of action makes this herb very helpful even in protecting against ailments such as common cold, and various skin, dental and ophthalmic infection.

Hypolipidaemic, antibacterial, arthrosclerotic, antheminitic, anti-arthritic, antiviral, antiinflammatory, antirheumatic, hypolipaemic, antifertility, increase serum cholesterol, fibrinolytic activity.

Increase blood count, promotes strength and vitality,

Remove stone from kidneys, various skin diseases, anti-inflammatory.

**SIDE EFFECT OF GUGGULU:**

There are no known serious side effects to taking Guggul. It is non-toxic and well-tolerated. However, prolonged use may be associated with mild stomach upset. It may stimulate the thyroid and uterus, so it is best to avoid in cases of hyperthyroidism and pregnancy.

## DRUG REVIEW

As explained before, the treatment principles for the management of IBS also mainly depends on principles of Agni Deepana, Ama Pachana, and then to Grahi and Stambhana measures has to be adopted.

In the present study entitled “**Clinical Management of Irritable Bowel Syndrome (IBS) through Takra Vasti and Sangrahi Vasti**” was carried out with following drugs;

1. Yogaraja Guggulu
2. Rasnadi Kwatha (Sahasra Yoga, Kasaya Prakarna, Vatahara Kasaya)
3. Kana Kwatha (Bhava Prakasha, Purva Kanda 6(Ii) /53-58)
4. Punarnavadi Kwatha (Sahasra Yoga, Kasaya Prakarna. Panduhara Kasaya)
5. Madhu (Bhava Prakasha, Purva Kanda.6.22/1-5)
6. Ushnodaka (Bhava Prakasha, Purva Kanda 1/81-84)

### **1.Yogaraj Guggulu:**

- |                   |                 |
|-------------------|-----------------|
| 1. Shunti         | 11. Renuka      |
| 2. Pippalimoola   | 12. Indrayava   |
| 3. Pippali        | 13. Patha       |
| 4. Chavya         | 14. Vidanga     |
| 5. Chitraka       | 15. Gajapippali |
| 6. Hingu          | 16. Katuka      |
| 7. Ajamoda        | 17. Ativsha     |
| 8. Sarshapa       | 18. Bharangi    |
| 9. Sweta Jeeraka  | 19. Vacha       |
| 10. krishna jeera | 20. Moorva      |

**Method of preparation:**

The choorna of all the above mentioned drugs is taken in equal quantity ie 1 shana each approx 5 gms totally. 10 tola of triphala choorna and 15 tola of shodhita guggulu to be taken. Vanga, rourpya ,naga ,loha ,abhraka ,mandoor,the bhasma of these along with rasasindhoora has to be taken in quantity of 1 pala each.initially guggulu has to be boiled in water, when it becomes thick add all the above mentioned drugs accordingly.when the mixture becomes eligible for making pills then prepare guggulu of 1 to 2 shana each.this yogaraj guggulu is indicated in all vatavyadhis.

**Table No.23: Showing Ingredients and its Rasa panchaka of Yogaraja Guggulu:**

Sanskrit Name	Latin Name	Rasa	Guna	Veerya	Vipaka	Dosha Karma	Samanya Karma
<b>Shunti</b>	Zingiber officinale	Katu	Laghu, Snigdha	Ushna	Madhura	Kapha Vata Shamaka	Agni Deepana, Shothahara
<b>Pippali Mula</b>	Piper longum	Katu	Laghu, Ruksha	Ushna	Katu	Kapha Vata Shamaka	Kasahara
<b>Pippali</b>	Piper Longum	Katu	Laghu, Snigdha	Anusna Seeta	Katu	Vaata Kapha Hara	
<b>Chavya</b>	Piper Chaba	Katu	Laghu, Ruksha	Ushna	Katu	Kapha Vata Shamaka	
<b>Chitraka</b>	Plumbago zeylanica	Katu	Laghu, Ruksha, Tikshna	Ushna	Katu	Kapha Vata Shamaka	Deepana
<b>Hingu</b>	Ferula foetida	katu	Laghu, Snigdha	Ushna	Katu	Vata Kapha hara property	
<b>Ajamoda</b>	Apium graveolans	Katu, Tikta	Laghu, Ruksha,	Ushna	Katu	Kapha Vata	Deepana, hridya,

			Tikshna			Shamaka	balya
<b>Sarshapa</b>	Brassica nigra	Katu, Tikta	Tikshna, Snigdha	Ushna	Katu		Lekana, Kushtagha
<b>Jeeraka</b>	Cuminum cyminum	Katu	Laghu, Ruksha	Ushna	Katu	Kapha Vata Shamaka	Deepana, pachana, balya
<b>Bruhat jeeraka</b>	Nigella sativa	Katu, Tikta	Laghu, Ruksha	Ushna	Katu	Vata Kapha hara	Raktapitta yonishula hara
<b>Pata</b>	Cissampelos Pereira	Katu, Tikta	Laghu, Tikshna	Ushna	Katu	Tridosha Hara	Shothahara
<b>Vidanga</b>	Embilia ribes	Katu, Kasha ya	Ruksha, Tikshna	Ushna	Katu	Kapha Vata Shamaka	Krimighna
<b>Gaja Pippali</b>	Piper sylvaticum	Katu	Laghu, Tikshna, Snigdha	Ushna	Katu	Kapha Vata Shamaka	
<b>Katuka</b>	Picrorhiza kurroa	Tikta	Laghu rooksha	Sheeta	Katu	Kapha pittahara	Deepana sothahara
<b>Ativisha</b>	Aconitum heterophyllum	Tikta, Katu	Laghu, Ruksha	Ushna	Katu	Kapha Pitta Shamaka	Deepana
<b>Vacha</b>	Acorus calamus	Tikta, Katu	Laghu, Tikshna	Ushna	Katu	Vata Kapha Shamana	

## 2. Rasnadi Kwatha:

### Ingredients:

Rasna, Bhumiamalaki, Vasa, Agaru, Kachura, Chitraka, Mustaka, Chavya, Pashana Bheda, Amalaki, Bharangi, Patola, Puskara Mula, Haridra, Soureyaka, Shunti, Chitraka Mula, Dasamula, Devadaru → Boil → Add Saindava And Misri → Pana

Uses → Tridoshothara Vata Nasaka.



**Table No.24: Showing Ingredients and its Rasa panchaka of Rasnadi Kwatha:**

Sanskrit Name	Latin Name	Rasa	Guna	Veerya	Vipaka	Dosha Karma	Samanya Karma
Rasna	Pluchea Lanceolata	Tikta	Guru.	Ushna	Katu.	Kapha Pitta Shamaka	Vedana Stapaka.
Bhumiamalaki.	Phyllanthus Urinaria.	Tikta.	Laghu Ruksha	Sheeta	Madhura.	Kapha Pitta Shamaka	Mutra Roga.
Vasa.	Adhatoda Vasica	Tikta.	Laghu Ruksha	Sheeta	Katu.	Pitta Shamaka	Chedana.
Agaru.	Aquilaria Agallocha	Katu.	Laghu Ruksha	Ushna	Katu.	Kapha Vata Shamaka	Sheeta Prashama.
Chitraka.	Plumbago Zeylanica	Katu	Laghu, Ruksha, Tikshna	Ushna	Katu	Kapha Vata Shamaka	Deepana
Mustaka.	Cyperus Rotundus	Katu.	Laghu Ruksha	Sheeta	Katu.	Pitta Shamaka	Jwaragna.
Chavya.	Piper Chaba	Katu	Laghu, Ruksha	Ushna	Katu	Kapha Vata Shamaka	Deepana
Pashana Bheda.	Bergenia Ligulata	Kasaya	Laghu Snigdha Tikshna	Sheeta	Katu	Tridosha Shamaka	Ashmari Bhedana.
Amalaki.	Emblica Officinalis	Lavana Rahita Pancha Rasa	Guru Ruksha Sheeta	Sheeta	Madhura.	Tridosha hara	Rasayana
Bharangi.	Clerodendrum Serratum	Tikta.	Laghu Ruksha	Ushna	Katu.	Kapha Vata Shamaka	Swasahara
Patola.	Trichosanthes Dioica	Tikta.	Laghu Ruksha	Ushna	Katu.	Kapha Vata Shamaka	Jwaragna
Puskara Mula.	Inula Racemosa	Tikta.	Laghu Tikshna	Ushna	Katu.	Kapha Vata Shamaka	Swasahara
Haridra.	Curcuma Longa	Tikta	Ruksha Laghu.	Ushna	Katu.	Kapha Vata Shamaka	Kustagna
Soureyaka.	Barleria Prionitis	Tikta Madhu ra	Laghu	Ushna	Katu.	Kapha Vata Shamaka	Kustagna
Shunti.	Zingiber Officinale	Katu	Laghu, Snigdha	Ushna	Madhura	Kapha Vata	Agni Deepana,

						Shamaka	Shothahara
Chitraka Mula.	Plumbago Zeylanica	Katu	Laghu, Ruksha, Tikshna	Ushna	Katu	Kapha Vata Shamaka	Deepana
Dasamula.	-	Katu	Laghu, Snigdha	Ushna	Madhura	Kapha Vata Shamaka	Agni Deepana, Shothahara
Devadaru.	Cedrus Deodara	Tikta	Laghu Snigdha	Ushna	Katu	Kapha Vata Shamaka	Vedana Stapaka

### 3. Kana Kwatha:

**Ingredients:** Pippali

**Uses:** Medo Kapha Nasaka, Swasa, Kasa, Jwarahara, Vrushya, Medhya, Agnivardana, Jeerna Jwara, Adnimandya, Kasa, Ajeerna, Aruchi, Pandu, Krimi Roga.

**Table No.25: Showing Ingredients and its Rasa panchaka of Kanadi Kwatha:**

Sanskrit Name	Latin Name	Rasa	Guna	Veerya	Vipaka	Dosha Karma	Samanya Karma
Pippali	Piper	Katu	Laghu,	Anusna	Katu	Vaata	Kasa hara
	Longum		Snighda	Seeta		Kapha Hara	

### 4. Punaranavadhi Kwata:

**Ingredients:**

Punarnava, Nimbha, Patola, Shunti, Kiratha Tiktha, Guduchi, Daru Haridra, Haritaki.

→ Kasaya → Pana.

**Uses:**

Sarvanga Shofa, Jwara, Kasa, Swasa, Shoola, Upadrava Yukta Pandu.

**Table No.26: Showing Ingredients and its Rasa panchaka of Punarnavadi****Kwatha:**

Sanskrit Name	Latin Name	Rasa	Guna	Veerya	Vipaka	Dosha Karma	Samanya Karma
Punarnava	Boerhavia diffusa	Madura Tikta kasaya	Laghu Ruksha	Ushna .	Madhura	Tridoshahara	Mutra virajaniya
Nimbha.	Azadriachta indica	Tikta Kasaya	Laghu	Sheeta .	Katu.	Pitta shamana	Kustagna.
Patola.							
Shunti.	Zingiber officinale	Katu	Laghu, Snigdha	Ushna	Madhura	Kapha Vata Shamaka	Agni Deepana, Shothahara
Kiratha tiktha.	Swertia chirayita	Tikta.	Laghu Ruksha	Ushna .	Katu.	Kapha Pitta shamaka	Vedana stapaka.
Guduchi.	Tinospora cordifolia	Tikta Kasaya	Guru Snigdha	Ushna	Madura	Tridoshahara	Rasayana
Daru haridra.	Beberis aristata	Tikta.	Laghu Ruksha.	Ushna .	Katu.	Kapha Pitta shamaka	Yakrut utejaka
Haritaki.	Terminalia chebula	Lavana rahita pancha rasa	Guru Ruksha	Ushna	Madhura.	Tridoshahara	Rasayana

**5. Madhu**

Madhu is used for the preparation of Vasti in both the Groups. Madhu is having the qualities like Madhura Rasa, Sheeta Rukha Laghu Guna, Grahi, Deepana and Ropana. It is best among the vehicles because of its Yogavahi Guna. It contains sucrose and lot of enzymes.

**6. Ushnodaka**

Hot water consumed at nights, breaks the masses of slesma (kapha), expels the flatus, and digests the undigested food matter quickly.

Water boiled during day becomes hard for digestion at the night; so also that boiled during night and consumed in the day becomes hard for digestion.

## **MATERIALS AND METHODS**

### **MATERIALS:**

The present study entitled “**Critical Analysis of Anupana with special reference to Yogaraja Guggulu**” was carried out with following materials:

1. **Yogaraja Guggulu** – Internally as Shamanoushadhi  
(Sharngadhara Samhita, Madhyama Khanda. 7/56-69).
2. **Rasnadi Kwatha** – As Anupana for Yogaraja Guggulu in Group A  
(Sahasrayoga, Kashaya Prakarana, Vatahara Kashaya)
3. **Punarnavadi Kwatha** – As Anupana for Yogaraja Guggulu in Group B  
(Sahasrayoga, Kashaya Prakarana, Panduhara Kashaya)
4. **Kana Kwatha** – As Anupana for Yogaraja Guggulu in Group C  
(Bhava Prakasha, Purva Khanda, 6(II)/53-58).
5. **Madhu** – As Anupana for Yogaraja Guggulu in Group D  
(Bhava Prakasha, Purva Khanda, 6(XXII)/1-5).
6. **Ushnodaka** – As Anupana for Yogaraja Guggulu in Group E  
(Bhava Prakasha, Madhyama Khanda, 1/81-84).

### **PRE PREPARATORY MEASURES:**

Principle task was to prepare the trial drugs genuinely after standardizing the individual drugs, hence keen interest was taken in the manufacture of the individual formulations.

**I Step – Individual Drug Identification and Standardization:**

All the drugs used for clinical trials were identified properly by looking into its classical features mentioned in our texts and by its characteristic features mentioned in our Indian meteria medica books.

**II Step – Purchase of the Raw Drugs – Source of Materials:**

All the raw drugs were procured from the Department of Rasa Shastra and Bhaishajya Kalpana, Ayurveda Mahavidyalaya, Hubli.

**III Step – Purification and Preparation of Raw Drugs:**

- The drugs were individually taken in separate vessels and were checked for adulterants, impurities, and stones and then cleaned properly.
- Then the drugs were allowed to get dried in shade for 2 days.

## **METHODS**

### **Source and Methods of Collection of Data:**

1. Literary research will be conducted at the libraries of Ayurveda Mahavidyalaya, Hubli, Karnataka, and The Central Library of Tilak Maharashtra Vidyapeeth, Pune.
2. A Clinical survey of subjects attending OPD of Post Graduate Department of Kayachikitsa, Ayurveda Mahavidyalaya, Hubli was made and subjects fulfilling the criteria of diagnosis as per proforma were registered for the study. Regular informative were placed in the local print media to create awareness about the condition and its management.
3. Special clinical proforma based on criteria of selection and parameters was prepared for assessment.
4. Informed consent of all the subjects registered was duly taken before starting the interventions in each group.
5. Clinical evaluation was done by collection of data through information obtained by history, physical examination and laboratory tests.
6. Finally after interventions the data collected was subjected to statistical analysis and level of significance was obtained.

### **Sample:**

The Subjects were selected incidentally and randomly placed into five groups.

### **Sample Size:**

Total 150 subjects were placed into 5 groups, 30 in each group.

**Study Design:**

Literary research supported with clinical data.

**Groups:**

**Group A** - Yogaraja Guggulu- Rasnadi Kwatha Anupana

**Group B** - Yogaraja Guggulu- Punarnavadi Kwatha Anupana

**Group C** - Yogaraja Guggulu- Kana Kwatha Anupana

**Group D** - Yogaraja Guggulu- Madhu Anupana

**Group E** - Yogaraja Guggulu- Ushnodaka Anupana

**Inclusion Criteria:**

The criteria by American Rheumatism Association, 2004 for the Diagnosis of Rheumatoid arthritis, as follows;

1. Morning stiffness lasting for more than one hour.
  2. Arthritis of 3 or more joints
  3. Arthritis of hand joints
  4. Symmetrical arthritis
  5. Presence of rheumatoid nodules
  6. Presence of Rheumatoid factor
  7. Radiological changes such as particular osteoporosis, loss of articular cartilage or erosion.
- Criteria, 2, 3, and 4 must be present for the duration of six weeks or more.
  - Diagnosis of RA is made with four or more criteria.

Subjects fulfilling the above criteria along with;

- Subjective features of Amavata
- Between age group 15- 60 years
- Irrespective of gender

**Exclusion Criteria:**

1. Chronicity of more than 10 years
2. Having severe crippling deformities
3. Having other systemic diseases like cardiac disease, tuberculosis, diabetes etc.
4. Heena Mano Bala
5. With Arista laxanas.

**Diagnosis:**

After detailed examination, the diagnosis of Amavata was made based on signs and symptoms explained in Ayurvedic classics, supported along with modern description of Rheumatoid Arthritis.

**Laboratory Investigations:**

Hemoglobin, Erythrocyte Sedimentation Rate (ESR), Rheumatoid Factor was carried out in all the subjects.



**Parameters of the Study:****1. Pain in joint (Sandhi Shoola)**

No pain	00
Mild pain of bearable nature, comes occasionally	01
Moderate pain, but no difficulty in joint movement, appears frequently and requires some Upashaya measures for relief	02
Slight difficulty in joint movements due to pain or severe pain, requires medication and may remain throughout the day	03
More difficulty in moving the joints and pain is severe, Disturbing sleep and requires strong analgesics	04

**2. Swelling of the joint (Sandhi Shotha)**

No swelling	00
Slight swelling	01
Moderate swelling	02
Severe swelling	03

**3. Stiffness of the joints (Sandhi Stabdata)**

No stiffness or stiffness lasting for 5 min	00
Stiffness lasting for 5 min to 2 hrs.	01
Stiffness lasting for 2 to 8 hours	02
Stiffness lasting for more than 8 hours	03

**4. Tenderness of joints (Sandhi Sparshaasahishnuta)**

No tenderness	00
Subjective experience of tenderness	01
Wincing of face on pressure	02
Wincing of face with withdrawal of affected parts on Pressure	03
Resists touch	04

**5. Redness of joints (Rakta Varnata of Sandhi)**

Redness observed before treatment	02
Reduction in redness after treatment	01
No redness	00
No change after treatment	02

**6. Warmth of joint (Sthanika Ushma Vriddhi of Sandhi)**

The temperature of the joint surface will be measured using the digital skin temperature measuring instrument. The temperature was compared with the normal body surface. The rise in the temperature of joint surface will be scored as follows:

Raised temperature when compared to the normal body surface	02
Fall in local warmth	01
Normal temperature	00
No change after treatment	02

**7. General functional capacity:**

Complete ability to carry on all routine duties without handicap	00
Adequate normal activity despite slight difficulty in joint movement	01
Few activities are persisting but patient can take care of himself	02
Few activities are persisting and patient requires an attendant to take care of.	03
Patients is totally bed ridden	04

**STATISTICAL TESTS:**

The analysis of the effects of therapy was based on ANOVA Test applications between all the five groups.

**LEVEL OF SIGNIFICANCE:**

‘f’ Ratio value = / > 0.05 is statically insignificant

‘f’ Ratio value = / < 0.05 is statically significant

‘f’ Ratio value = / < 0.01 and = / < 0.001 is statically highly significant.

**HYPOTHESIS:**

**Null Hypothesis:**  $A = B = C = D = E$

**Research Hypothesis:**  $A \neq B \neq C \neq D \neq E$

**INTERVENTIONS:**

**Group A** - Yogaraja Guggulu- Rasnadi Kwatha Anupana

**Group B** - Yogaraja Guggulu- Punarnavadi Kwatha Anupana

**Group C** - Yogaraja Guggulu- Kana Kwatha Anupana

**Group D** - Yogaraja Guggulu- Madhu Anupana

**Group E** - Yogaraja Guggulu- Ushnodaka Anupana

**Posology:**

1. Yogaraja Guggulu Dosage –1000mg B.I.D. (Its advised to the patients to powder Yogaraja Guggulu and take it with appropriate Anupana)
2. Anupana- Kwatha matra for Kashaya and Ushnodaka; and Karsha Pramana for Madhu.

**STUDY DURATION:** 4 weeks

**FOLLOW-UP:** 6 weeks

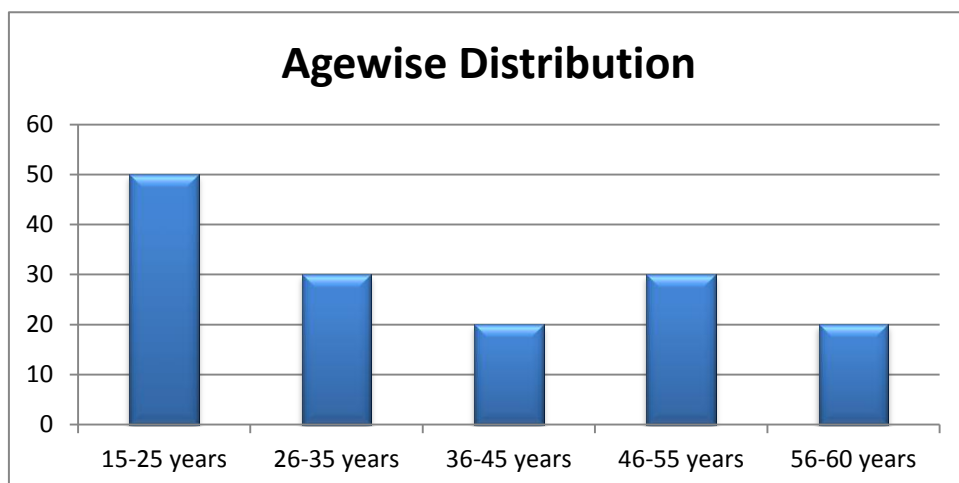
## OBSERVATIONS

**Table No.27: Age wise distribution of 150 subjects of Amavata:**

Age Group	No of Subjects	Percentage (%)
15 – 25 years	50	33.33%
26 – 35 years	30	20%
36 – 45 years	20	13.33%
46 – 55 years	30	20%
56 – 60 years	20	13.33%

Out of 150 subjects, the inclusion Criteria was between 15 to 60 years out of which maximum number of subjects i.e.,50 (33.33%) were between the Age group of 15 to 25 years, followed by the age group between 26 to 35 years and 46 to 55 years i.e., 30 subjects (20%). The least number of subjects were between 36 to 45 years and 56 to 60 years item 20 subjects (13.33%).

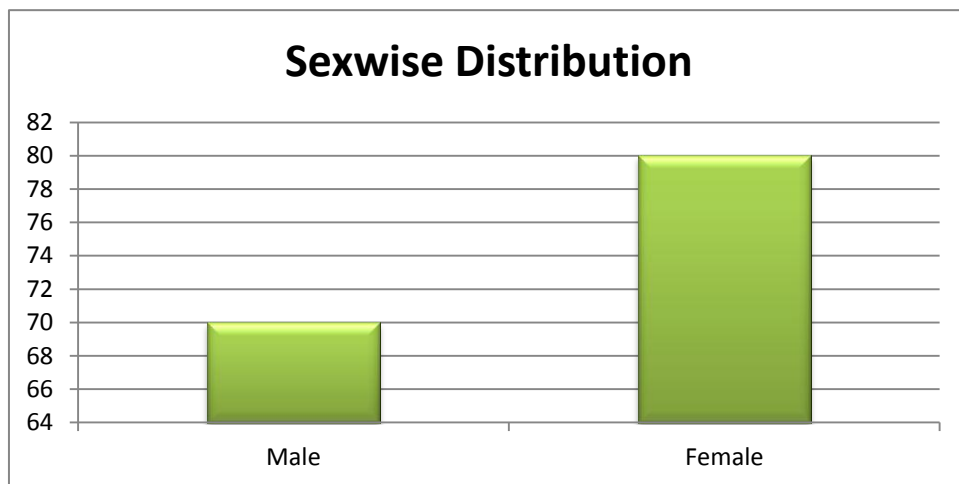
**Graph No.01: Age wise distribution of 150 subjects of Amavata:**



**Table No.28: Sex wise distribution of 150 subjects of Amavata:**

Sex	No of Subjects	Percentage (%)
Male	70	46.67%
Female	80	53.33%

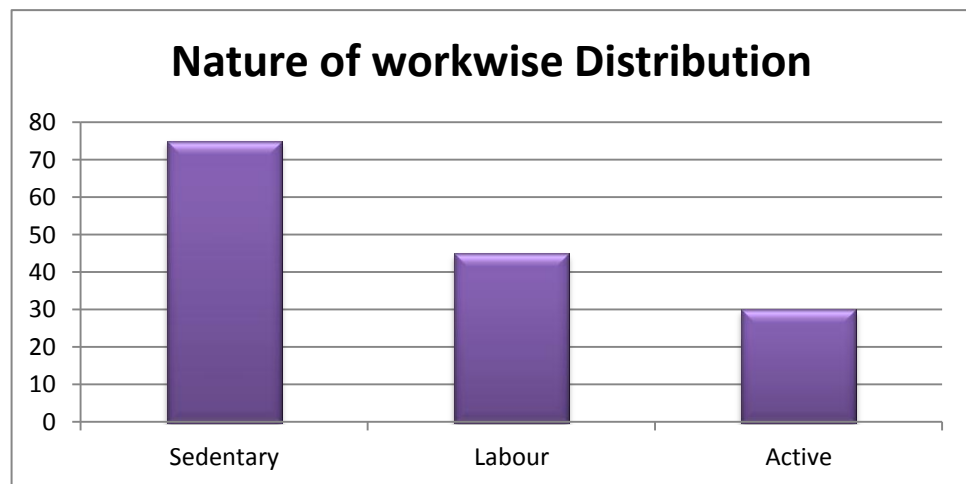
Out of 150 subjects, 80 female subjects (53.33%) and 70 male subjects (46.67%) were registered.

**Graph No.02: Sex wise distribution of 150 subjects of Amavata:**

**Table No.29: Nature of work wise distribution of 150 subjects of Amavata:**

Nature of work	No of Subjects	Percentage (%)
Sedentary	75	50%
Labour	45	30%
Active	30	20%

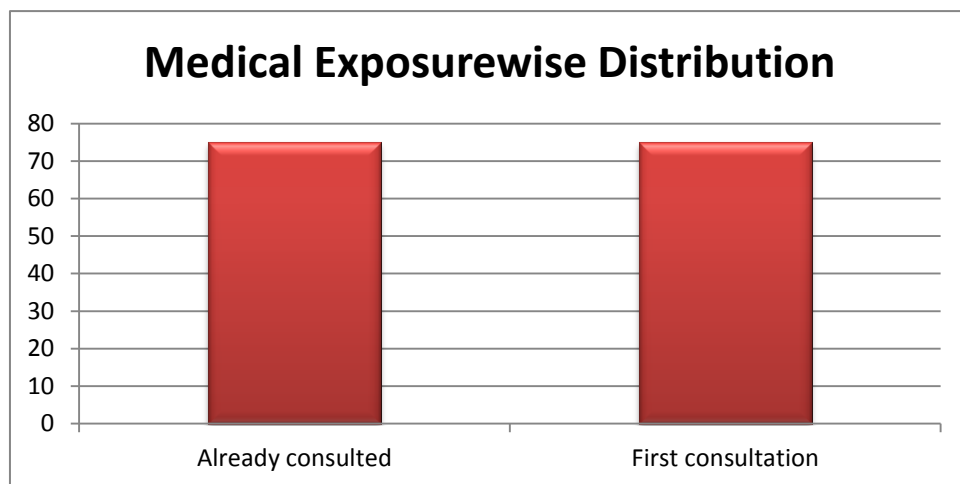
Maximum numbers of subjects, i.e., 75 (50%) had sedentary type of work style, whereas 45 subjects (30%) were labours and 30 subjects (20%) were active.

**Graph No.03: Nature of work wise distribution of 150 subjects of Amavata:**

**Table No.30: Medical exposure wise distribution of 150 subjects of Amavata:**

Medical Exposure	No of Subjects	Percentage (%)
Already consulted	75	50%
First consultation	75	50%

The study shows that 75 subjects (50%) had previously received both Ayurvedic and allopathic treatment whereas the other 75 subjects (50%) are consulting for the first time for their complaints.

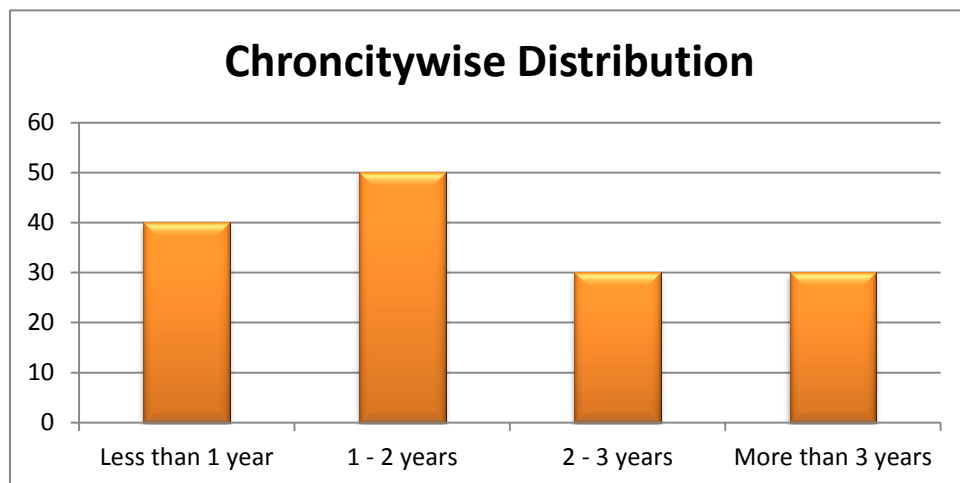
**Graph No.04: Medical exposure wise distribution of 150 subjects of Amavata:**



**Table No.31: Chronicity wise distribution of 150 subjects of Amavata:**

Chronicity	No of Subjects	Percentage (%)
Less than 1 year	40	26.67%
1 - 2 years	50	33.33%
2 - 3 years	30	20%
More than 3 years	30	20%

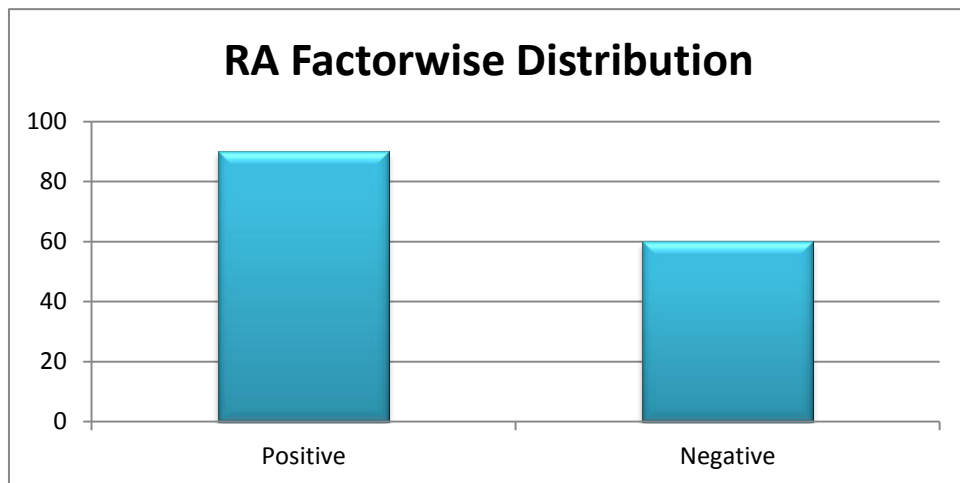
The exclusion criteria of this study were chronicity more than 10 years. Here in the present study the maximum subjects i.e., 50 (33.33%) had the problem since 1 to 2 years next to which 40 subjects (26.67%) had the problem less than 1 year. 30 subjects (20%) had the problem since 2 to 3 years, and other 30 subjects (20%) were suffering from more than 3 years.

**Graph No.05: Chronicity wise distribution of 150 subjects of Amavata:**

**Table No.32: RA Factor wise distribution of 150 subjects of Amavata:**

RA Factor	No of Subjects	Percentage (%)
Positive	90	60%
Negative	60	40%

Maximum number of subjects i.e., 90 (60%) presented with RA Factor positives where as 60 subjects (40%) presented with RA Factor negative.

**Graph No.06: RA Factor wise distribution of 150 subjects of Amavata:**

## RESULTS

All the 150 subjects registered under the 5 groups completed the course of treatment for 4 weeks. The effect of the therapy on different parameters was assessed after the complete course of active treatment. The results thus obtained before and after the treatment were analyzed statistically by using ANOVA test and are depicted as under;

### SUBJECTIVE PARAMETERS:

**Table No.33: ANOVA table for the ‘Pain in Joints (Sandhi Shoola)’:**

Variation	Total Sum	Degree of Freedom	Mean Square
<b>Between the Groups</b>	52.76	4	13.19
<b>Within the Group</b>	26.73	145	0.18
<b>‘F’ Ratio</b>	Mean Square between the Groups / Mean Square within the Groups		<b>71.54</b>

The Mean Square between the groups was 13.19, and the Mean Square within the group was 0.18. The obtained ‘f’ Ratio by the ANOVA test for the ‘**Pain in Joints (Sandhi Shoola)**’ parameter was highly significant ( $p < 0.001$ ) with ‘f’ value 71.54.

**Table No.34: ANOVA table for the ‘Swelling in Joints (Sandhi Shotha)’:**

Variation	Total Sum	Degree of Freedom	Mean Square
<b>Between the Groups</b>	20.29	4	5.07
<b>Within the Group</b>	17.2	145	0.12
<b>‘F’ Ratio</b>	Mean Square between the Groups / Mean Square within the Groups		<b>42.77</b>

The Mean Square between the groups was 5.07, and the Mean Square within the group was 0.12. The obtained 'f' Ratio by the ANOVA test for the '**Swelling in Joints (Sandhi Shotha)**' parameter was highly significant ( $p < 0.001$ ) with 'f' value 42.77.

**Table No.35: ANOVA table for the 'Stiffness in Joints (Sandhi Stabdata)':**

Variation	Total Sum	Degree of Freedom	Mean Square
<b>Between the Groups</b>	27.31	4	6.83
<b>Within the Group</b>	17.77	145	0.12
<b>'F' Ratio</b>	Mean Square between the Groups / Mean Square within the Groups		<b>55.71</b>

The Mean Square between the groups was 6.83, and the Mean Square within the group was 0.12. The obtained 'f' Ratio by the ANOVA test for the '**Stiffness in Joints (Sandhi Stabdata)**' parameter was highly significant ( $p < 0.001$ ) with 'f' value 55.71.

**Table No.36: ANOVA table for the 'Tenderness in Joints (Sandhi Sparshaahishnuta)':**

Variation	Total Sum	Degree of Freedom	Mean Square
<b>Between the Groups</b>	46.13	4	11.53
<b>Within the Group</b>	21.2	145	0.15
<b>'F' Ratio</b>	Mean Square between the Groups / Mean Square within the Groups		<b>78.88</b>

The Mean Square between the groups was 11.53, and the Mean Square within the group was 0.15. The obtained 'f' Ratio by the ANOVA test for the '**Tenderness in Joints (Sandhi Sparshaahishnuta)**' parameter was highly significant ( $p < 0.001$ ) with 'f' value 78.88.

**Table No.37: ANOVA table for the 'Redness in Joints (Rakta varnata of Sandhi)':**

Variation	Total Sum	Degree of Freedom	Mean Square
<b>Between the Groups</b>	20.57	4	5.14
<b>Within the Group</b>	20.6	145	0.14
<b>'F' Ratio</b>	Mean Square between the Groups / Mean Square within the Groups		<b>36.20</b>

The Mean Square between the groups was 5.14, and the Mean Square within the group was 0.14. The obtained 'f' Ratio by the ANOVA test for the '**Redness in Joints (Rakta varnata of Sandhi)**' parameter was highly significant ( $p < 0.001$ ) with 'f' value 36.20.

**Table No.38: ANOVA table for the 'Warmthness in Joints (Sthanika Ushma Vriddhi of Sandhi)':**

Variation	Total Sum	Degree of Freedom	Mean Square
<b>Between the Groups</b>	22.17	4	5.54
<b>Within the Group</b>	28.37	145	0.19
<b>'F' Ratio</b>	Mean Square between the Groups / Mean Square within the Groups		<b>28.33</b>

The Mean Square between the groups was 5.54, and the Mean Square within the group was 0.19. The obtained 'f' Ratio by the ANOVA test for the '**Warmthness in Joints (Sthanika Ushma Vruddhi of Sandhi)**' parameter was highly significant ( $p < 0.001$ ) with 'f' value 28.33.

**Table No.39: ANOVA table for the 'General Functional Capability':**

Variation	Total Sum	Degree of Freedom	Mean Square
<b>Between the Groups</b>	19.91	4	4.98
<b>Within the Group</b>	27.27	145	0.19
<b>'F' Ratio</b>	Mean Square between the Groups / Mean Square within the Groups		<b>26.46</b>

The Mean Square between the groups was 4.98, and the Mean Square within the group was 0.19. The obtained 'f' Ratio by the ANOVA test for the '**General Functional Capability**' parameter was highly significant ( $p < 0.001$ ) with 'f' value 26.46.

**Table No.40: Percentage of Relief on the Parameters of Assessment in Group A:**

Parameter	Mean		Percentage (%)
	B.T.	A.T.	
<b>Pain (Shoola)</b>	3.03	1.2	60.44%
<b>Swelling (Shotha)</b>	2.17	1.23	43.07%
<b>Stiffness (Stabdaha)</b>	2.27	1.27	44.12%
<b>Tenderness (Sparshaahishnuta)</b>	2.8	1.36	51.19%
<b>Redness (Rakta Varnata)</b>	1.83	0.38	58.18%
<b>Warmthness (Sthanika Ushma Vruddhi)</b>	1.73	0.63	63.46%
<b>General Functional Capability</b>	2.77	1.63	40.96%

A maximum percentage i.e. 63.46% relief was observed in **‘Warmthness (Sthanika Ushma Vruddhi)’**. 60.44% relief was observed in **‘Pain (Shoola)’**. 58.18% relief was observed in **‘Redness (Rakta Varnata)’**. 51.19% relief was observed in **‘Tenderness (Sparshaahishnuta)’**. 44.12% relief was observed in **‘Stiffness (Stabdata)’**. 43.07% relief was observed in both parameters of **‘Swelling (Shotha)’**. 40.96% relief was observed in **‘General Functional Capability’**.

**Table No.41: Percentage of Relief on the Parameters of Assessment in Group B:**

Parameter	Mean		Percentage (%)
	B.T.	A.T.	
<b>Pain (Shoola)</b>	3.13	2.37	24.46%
<b>Swelling (Shotha)</b>	2.03	1.16	42.62%
<b>Stiffness (Stabdata)</b>	2.63	2.43	7.59%
<b>Tenderness (Sparshaahishnuta)</b>	2.93	2.63	10.22%
<b>Redness (Rakta Varnata)</b>	1.86	1.13	39.28%
<b>Warmthness (Sthanika Ushma Vruddhi)</b>	1.6	1.3	18.75%
<b>General Functional Capability</b>	2.77	2.2	20.48%

A maximum percentage i.e. 42.62% relief was observed in both parameters of **‘Swelling (Shotha)’**. 39.28% relief was observed in **‘Redness (Rakta Varnata)’**. 24.46% relief was observed in **‘Pain (Shoola)’**. 20.48% relief was observed in **‘General Functional Capability’**. 18.75% relief was observed in **‘Warmthness (Sthanika Ushma Vruddhi)’**. 10.22% relief was observed in **‘Tenderness (Sparshaahishnuta)’**. 7.52% relief was observed in **‘Stiffness (Stabdata)’**.

**Table No.42: Percentage of Relief on the Parameters of Assessment in Group C:**

Parameter	Mean		Percentage (%)
	B.T.	A.T.	
<b>Pain (Shoola)</b>	2.87	2.33	18.60%
<b>Swelling (Shotha)</b>	2.1	1.83	12.69%
<b>Stiffness (Stabdata)</b>	2.53	2.26	10.53%
<b>Tenderness (Sparshaahishnuta)</b>	3	1.96	34.44%
<b>Redness (Rakta Varnata)</b>	1.83	1.63	10.91%
<b>Warmthness (Sthanika Ushma Vruddhi)</b>	1.67	1.33	20%
<b>General Functional Capability</b>	2.8	2.53	9.52%

A maximum percentage i.e. 34.44% relief was observed in ‘**Tenderness (Sparshaahishnuta)**’. 20% relief was observed in ‘**Warmthness (Sthanika Ushma Vruddhi)**’. 18.60% relief was observed in ‘**Pain (Shoola)**’. 12.69% relief was observed in both parameters of ‘**Swelling (Shotha)**’. 10.91% relief was observed in ‘**Redness (Rakta Varnata)**’. 10.53% relief was observed in ‘**Stiffness (Stabdata)**’. 9.52% relief was observed in ‘**General Functional Capability**’.

**Table No.43: Percentage of Relief on the Parameters of Assessment in Group D:**

Parameter	Mean		Percentage (%)
	B.T.	A.T.	
<b>Pain (Shoola)</b>	2.8	2.5	10.71%
<b>Swelling (Shotha)</b>	2	1.76	11.66%



<b>Stiffness (Stabdata)</b>	2.03	1.03	49.18%
<b>Tenderness (Sparshaahishnuta)</b>	2.66	2.43	8.75%
<b>Redness (Rakta Varnata)</b>	1.8	1.33	25.92%
<b>Warmthness (Sthanika Ushma Vruddhi)</b>	1.67	1.47	12%
<b>General Functional Capability</b>	2.67	2.2	17.5%

A maximum percentage i.e. 49.18% relief was observed in ‘**Stiffness (Stabdata)**’. 25.92% relief was observed in ‘**Redness (Rakta Varnata)**’. 17.5% relief was observed in ‘**General Functional Capability**’. 12% relief was observed in ‘**Warmthness (Sthanika Ushma Vruddhi)**’. 11.66% relief was observed in both parameters of ‘**Swelling (Shotha)**’. 10.71% relief was observed in ‘**Pain (Shoola)**’. 8.75% relief was observed in ‘**Tenderness (Sparshaahishnuta)**’.

**Table No.44: Percentage of Relief on the Parameters of Assessment in Group E:**

<b>Parameter</b>	<b>Mean</b>		<b>Percentage (%)</b>
	<b>B.T.</b>	<b>A.T.</b>	
<b>Pain (Shoola)</b>	3.06	2.6	15.21%
<b>Swelling (Shotha)</b>	2.23	2.13	4.47%
<b>Stiffness (Stabdata)</b>	2.03	1.96	3.27%
<b>Tenderness (Sparshaahishnuta)</b>	2.9	2.8	3.44%
<b>Redness (Rakta Varnata)</b>	1.86	1.76	5.36%
<b>Warmthness (Sthanika Ushma Vruddhi)</b>	1.86	1.8	3.57%
<b>General Functional Capability</b>	2.86	2.7	5.81%

A maximum percentage i.e. 15.21% relief was observed in '**Pain (Shoola)**'. 5.81% relief was observed in '**General Functional Capability**'. 5.36% relief was observed in '**Redness (Rakta Varnata)**'. 4.47% relief was observed in both parameters of '**Swelling (Shotha)**'. 3.57% relief was observed in '**Warmthness (Sthanika Ushma Vruddhi)**'. 3.44% relief was observed in '**Tenderness (Sparshaahishnuta)**'. 3.27% relief was observed in '**Stiffness (Stabdata)**'.

#### **OBJECTIVE PARAMETERS:**

**Table No.45: Increase in Haemoglobin in all 5 groups:**

<b>Groups</b>	<b>Increase in Haemoglobin (mg/dl)</b>
<b>Group A</b>	2.64
<b>Group B</b>	1.94
<b>Group C</b>	1.36
<b>Group D</b>	0.77
<b>Group E</b>	0.47

The maximum increase in Haemoglobin i.e. 2.64mg/dl was observed in **Group A**, followed by 1.94mg/dl increase in **Group B**, 1.36mg/dl increase in **Group C**, 0.77mg/dl increase in **Group D** and 0.47mg/dl increase in **Group E**.

**Table No.46: Reduction in Erythrocyte Sedimentation Rate in all 5 groups:**

<b>Groups</b>	<b>Reduction in ESR (mm/Hr)</b>
<b>Group A</b>	46.52
<b>Group B</b>	34.91
<b>Group C</b>	24.40
<b>Group D</b>	18.34
<b>Group E</b>	9.47

The maximum reduction in Erythrocyte Sedimentation Rate i.e. 46.52mm/Hr was observed in **Group A**, followed by 34.91mm/Hr reduction in **Group B**, 24.40mm/Hr reduction in **Group C**, 18.34mm/Hr reduction in **Group D** and 9.47mm/Hr reduction in **Group E**.

**Table No.47: Rheumatoid Arthritis Factor:**

<b>Group</b>	<b>RA Factor Positive before treatment</b>	<b>RA Factor became Negative after treatment</b>
<b>Group A</b>	21	07
<b>Group B</b>	17	05
<b>Group C</b>	15	02
<b>Group D</b>	17	02
<b>Group E</b>	20	00

The Rheumatoid Arthritis Factor was positive for 21 subjects in **Group A** before treatment, out of which 7 subjects turn to be negative for the same after treatment. In **Group B**, 17 subjects were positive before treatment, out of which 5 subjects turn to be negative. In **Group C**, 15 subjects were positive before treatment, out of which 2 subjects turn to be negative. In **Group D**, 17 subjects were positive before treatment, out of which 2 subjects turn to be negative. In **Group E**, 20 subjects were positive before treatment, out of which none of the subjects turn to be negative.

## DISCUSSION

### **Discussion on Anupana:**

The word meaning of “Anupana” is that a drink that is taken with or after medicine intake and also it is considered as a fluid vehicle for medicine. Anupana is an after drink for both Aahara & Oushada (food as well as Medicine). Acharya Charaka opines that an ideal Anupana is that which has the properties opposite to that of the food but not incompatible with them.

Anupana is a very important factor which helps in Absorption, Assimilation, as well as in the efficacy of the drug. Anupana is a vehicle that carries the medicines to its target. This should be decided according to the constitution of the patient as well as condition of doshas (three humours of body meant with maintenance of health).

The main vehicles are cold water, warm water, honey, buttermilk, sugar, Jaggery, milk, whey water, Dhanyamla, etc. The Pharmaceutical preparations like Swarasa (extract from fresh herb), Kwatha (decoction), Hima (cold infusion), Phanta (hot infusion) etc are also be given as Anupana.

It brings about refreshment, gives Pleasure, Energy, nourishment, spreads quickly through out the body, pushes food downward, breaks down food into smaller particles, helps in assimilation and instant diffusion of the food. Action of medicine depends upon the Anupana with which it is given. One particular medicine may be given with different Anupanas to treat various diseases. For instance one drug, Makaradwaja may be useful in Jwara when given with Ardraka Swarasa (Ginger juice), & in Raktapitta (internal hemorrhages) with Vasa Swarasa (an extract from a herb called Vasa).

According to an Ayurvedic scholar Sharangdhara Anupana is usually selected on the basis of Drug, Patient, Disease, etc. like if Ghee is to be given warm water is advised as Anupana.

Anupana taken before meals will causes emaciation. Middle of the meals it maintains physiological condition of the body. After meals it nourishes and strengthens body.

The dosage and the mode of action of Anupana is explained by Sharangdhara an Ayurvedic scholar depending upon the predominance of Doshas in the body.

### **Discussion on Amavata:**

Amavata is one of the crippling diseases claiming the maximum loss of human power. It is not only a disorder of locomotor system but is a systemic disease and is named after its chief pathogenic constituents i.e. Ama and Vata. Due to absence of some suitable remedy it is imposing great challenge before the medical world. An unsatisfactory therapeutic state for the disease concerned in modern science has diversified the treatment selection pattern of majority of Subjects and rendered them rushing them physician to physician and from one health care system to another. Chronicity and disability associated with the disease has further potentiated the driving force in search of a real cure. A very large proportion of this bewildered Rheumatoid population used to visit ayurvedic clinics at least some time during the course of their disease. Relative failure of other systems, in providing relief, anxiety concerned with the disease state and a repute associated with indigenous system of medicine may be identified as the main reason which could be attributed to this Motivation.

**DISCUSSION ON DISEASE REVIEW:**

Though the word Amavata is mentioned in Chikitsa Sthana of Charaka Samhita but no description of Amavata, as disease is available in Brihatrayi. Madhava Nidana was the first to give the vivid description of Amavata. He described it in detail including its etiopathology, sign and symptoms, and types according to Dosa pradhanya and sadhyasadhyata of Amavata. Acharya Chakradatta in 11<sup>th</sup> century has given the full account of the effective treatment of the same along with many combinations of drugs. Various books of medieval period like Yogaratnakara, Bhaisajya Ratnavali etc. have also prescribed some more combination of drugs. In Bhavaprakasha Samhita also a detail description of Amavata is available including the line of treatment.

The main causative factor of disease Amavata i.e. Ama is the result of malfunctioning of digestive and metabolic mechanisms. The disease is initiated by the consumption of Viruddha Ahara and simultaneous indulgence in Viruddha Vihara in the preexistence of Mandagni. Though, Ama and Vata are chief pathogenic factors Kapha and Pitta are also invariably involved in its Samprapti.

Primarily the Samprapti originates in the Annavaha Srotas then branches out through the Madhyama roga margā, with special inclination for Sleshma sthana especially Sandhi. Rasa, Asthi and Majja dhatus are primarily involved Dushyas though the Mamsa Dhatu, Snayu and Kandara are also affected. Sandhishoola, Sandhishotha, Stabdhatā and Sparshasahyata are salient feature of the disease. The disease Amavata run a chronic course and Jadya, Sankocha, Anga vaikalyata etc. are responsible for crippling of the patients in the long run.

**Amavata in modern parlance:**

From the modern point of view, the disease Rheumatoid Arthritis stands parallel to Amavata in its clinical features. Rheumatoid Arthritis is a chronic inflammatory arthropathy, which most commonly affects middle-aged women. Despite intensive research, the etiology of Rheumatoid Arthritis remains unknown. There is no clear evidence of an infective cause although this is a possibility. Nowadays theories of autoimmune mechanism, genetic susceptibility and free radical are most commonly incriminated in etiopathology of the disease arthritis. Immunological tests may demonstrate an imbalance between T-helper and T-suppressor cells. It is known that some 60% of Rheumatoid patients will be DR4 positive. It has been suggested that diet or stress could play a significant role, in the majority of Rheumatoid Arthritis patients.

So uncertainty in the etiology of the disease is the main hurdle to find out an effective treatment. Only the analgesic and anti-inflammatory drugs provide some symptomatic relief but underlying pathology goes on and in due course of time the destruction of the articular cartilage and ankylosis makes the patients to cripple for the rest of the life.

Several formulations have been mentioned for the management of Amavata in Ayurvedic classics. Samprapti Vighatana and there by remission or cure of the illness is achieved by advocating the different therapeutic procedures. Deepana, Pachana, Shodhana and Shamana are the procedures said to be efficacious in Subjects suffering from Amavata. Ama is the one among the predominant pathological factor in the Samprapti of Amavata, and is initially treated by Deepana and Pachana. Thus at the outset of the Samprapti Vighatana an attempt is made to eliminate the effect of Ama. As the morbid Dosha acquire the Pakwa stage by these procedures, this renders ideal

stage for the purificatory procedures. Virechana, Kshara Basti and Valuka Swedana when employed in Subjects of Amavata eliminate the excessive accumulation of vitiated Dosha further causing the remission of the illness. Based on these principles of treatment the present study is planned to evaluate the efficacy of these therapies in Subjects of Amavata. Dietary instruction has been included as an essential ingredient of the regimen and all the subjects taken under the study were instructed for the same.

### **Discussion on Materials and Methods:**

#### **a) Yogaraja Guggulu:**

Yogaraja Guggulu has the main therapeutic action as Vedana sthapaka and Sothahara which attributed by the presence of Guggulu as the major ingredient. Rasna and Gokshura can also be considered as the best drug of choice in Vatavyadhi. Guggulu due to its Lekhana property scraps away the excessive Jalamsa and Amatva which has got accumulated in the joints. The Ushna Guna of both drugs help in bringing back the vitiated Vata into normalcy. Hence this drug has direct action on Ama and Vata, so it gives good relief in the disease Amavata.

Yogaraj guggulu which is a herbo-mineral compound and the probable mode of action can be divided into –

1) **Activators:** This group of components will have a direct role in the treatment of the disease. Ingredients like Naga bhasma and Tamra bhasma have their direct role over tendons and nerves. In Rasa classics, the therapeutics have been described as Snayu sakthi vrudhikara, Nadi mandala balya kara etc. Rasa sindoora, another main component of this yoga plays a vital role in controlling the functions of vata and strengthens the functions of motor neurons. On the other hand, ingredients like



Abhraka bhasma, Vanga bhasma and Tamra bhasma are beneficial in pacifying the aggravated vata.

2) **Potentiators**: They enhance the therapeutic qualities of drugs against the disease. Most of the dravyas of the compound act as vata shamaka, which is most important in breaking the pathological process of Apabahuka. Moreover, these drugs also act as Vedana sthapaka, Nadi balya, Shoolaprashamaka, Shothahara, which is most essential in promoting symptomatic relief. Plumbagin, an alkaloid present in Chitraka is a known stimulant of muscle tissue. It also stimulates the motor neurons thus helpful in reducing the intensity of disease.

3) **Antidote action**: The herbal part incorporated into the product by levigation process checks the vata kopaka property of mineral part and helps in maintaining the normalcy of the body elements. Moreover, the Trikatu checks the visceral deposition of Tamra, Naga, Vanga and Loha etc. This kind of balancing activity reduces the incidences of toxicity with herbo-mineral compounds.

4) **Increasing Bio-availability**: The deepana and pachana dravyas like sunti, pippali, Pippalimoola helps the medicine to get metabolise easily and completely. They also show their action in the cellular level (Dhatwagni) and help the cells to uptake the medicine in optimum level.

5) **Increasing the shelf life**: The essential oils and volatile principles of trikatu helps in keeping the therapeutic principles actively for longer periods. These volatile principles also help in increasing the palatability of the compound, which indirectly influences the mode of action of the drug.

Thus, the compound probably shows therapeutic effects in Amavata. The art of combination of different components reveals the scientific vision of our maharshis.

**b) Rasnadi Kwatha:**

This Anupana has been selected from Sahasrayoga. Rasnadi Kwatha is one of the primary medicines used for any kind of Vatavyadhi. It acts as Vedana Sthapaka, Ama pachaka as well as has some properties of Rasayana. It contains ingredients like Shunti, Chitraka, Cavya which are having Ushna Veerya acting on Ama placed over the joints, and other ingredients like Rasna, Sahachara, Shyonaka, Gambhari etc does the Vats Shamana. It also has some Rasayana effect as it also contains Gokshura, Devadaru, Salaparni, Prishniparni etc drugs. When Yogaraja Guggulu crushed into pieces and given along with Rasnadi Kwatha as Anupana, it is explained as Vata Rogahara. There are eighty types of Vata Vyadhi's, the Lakshanas like Shopha, Shoola, Angamarda, Kati Prushtagraha etc if noticed, then Rasnadi Kwatha is the Anupana having maximum effects.

**c) Punarnavadi Kwatha:**

The Anupana Punarnavadi Kwatha has been selected from Sahasrayoga. Punarnavadi Kwatha has been one of the main choice of medicine in the management of any kind of Sotha. It mainly acts as Sothahara, Vedana Sthapaka and to some extent as Rasayana also. The ingredients like Punarnava, Tikta, Patola, Hareetaki does the Sothahara action, whereas drugs like Sunti, Punarnava acts on Shoola, and other ingredients Devadaru and Guduchi gives the Rasayana effect. The Kleda principle accumulated in the joint cavity is drained out by the administration of Punarnavadi Kwatha. It is an ideal Mutrala, Ama Pachaka, Swayathuhara Kwatha Yoga. Along with Yogaraja Guggulu, the Ama Pachana effect will be enhanced. The Lakshana like Anga Marda, Shoonatva of the Sharira and Sandhi are treated.

**d) Kana Kwatha:**

Kana Kwatha is the plain decoction prepared by using Pippali alone. It acts on digesting the Ama, as well as it has Shoolahara property also. Pippali is Katu, Madhura and Ushna in nature, it is Kaphagna, Amapacaka, Deepana and Rasayana. The Kana Kwatha improves Koshtagni Vyapara, along with Yogaraja Guggulu the Lakshana like Sandhi Shopha, Sandhi Shoola, Anga Marda, Arocaka are relieved. Pippali digests the Ama Dosha accumulated in the Koshta as well as the Ama Dosha which is present all over the body. The reference regarding Kana (Pippali) is taken from Bhavaprakasha Nighantu.

**e) Madhu:**

Madhu has the properties of Ruksha, and Kashaya Madhura Rasa and increases Vata. Madhu is Kaphagna as well, it is Rasayana, Srotho Shodhaka and Balya. In this study Madhu has been used as Anupana for Yogaraja Guggulu as it has the Yogavahi nature which enhances the action of the drug as well as carries the drug to its action site. It has Theekshna guna which helps in Ama pachana. The Lakshanas produced by Kapha and Ama Dosha, the symptoms related with Rasa Dushti are treated by Madhu.

**f) Ushnodaka:**

Ushna Jala is used as the common Anupana for almost all the medicines used in Ayurveda. It also has the properties like Deepana and Pachana which helps in digesting the Ama. Ushnodaka is prepared by boiling the water and reducing it to different proportions. The symptoms related with Annavaha Srotas, the symptoms confined to Rasavaha Srotas are relieved by the use of Ushnodaka. It is Srotho Shodhana, Vibandhahara and Mutrala.

**Discussion on Observations:****Age:**

Out of 150 subjects, the inclusion criteria was between 15 to 60 years out of which maximum number of subjects i.e. 50 (33.33%) were between the Age group of 15 to 25 years, followed by the age group between 26 to 35 years and 46 to 55 years i.e. 30 subjects (20%). The least number of subjects were between 36 to 45 years and 56 to 60 years i.e. 20 subjects (13.33%). The observation shows that more of the youngsters are getting affected with this disease, which may be due to they are more use to sedentary lifestyle, lack of exercise as well as more intake of spicy, oily and fast foods. Probably the influence of adolescent developmental factors are contributory in the manifestation of Amavata.

**Sex:**

Out of 150 subjects, 80 female subjects (53.33%) and 70 male subjects (46.67%) were registered. The observation proves the statistics which shows females are more affected than males. However no conclusions can be made regarding sexwise incidence of the morbid condition.

**Nature of work:**

Maximum numbers of subjects, i.e. 75 (50%) had sedentary type of work style, whereas 45 subjects (30%) were labours and 30 subjects (20%) were active. Here it proves those who are more prone to sedentary life style are more prone to this disease due to lack of exercise.

**Medical exposure:**

The study shows that 75 subjects (50%) had previously received both Ayurvedic and allopathic treatment whereas the other 75 subjects (50%) are consulting for the first time for their complaints. This shows the chronicity of the disease and the non curability of the disease by simple treatment modalities. This also shows the progressive nature of the disease in spite of continuous treatments. The disease Amavata is a Kashta Sadhya Vyadhi, and often it becomes Yapya also. In order to get the symptoms relieved patients are usually on medications.

**Chronicity:**

The exclusion criteria of this study were chronicity more than 10 years. Here in the present study the maximum subjects i.e. 50 (33.33%) had the problem since 1 to 2 years next to which 40 subjects (26.66%) had the problem less than 1 year. 30 subjects (20%) had the problem since 2 to 3 years, and other 30 subjects (20%) were suffering from more than 3 years. This observation shows the slowly progressive nature and chronic nature of the disease. Chira Kalinatwa is the usual phenomenon of Kapha related conditions. And the disease even exhibit Upadrava.

**RA Factor:**

Maximum number of subjects i.e., 90 (60%) presented with RA Factor positive, where as 60 subjects (30%) presented with RA Factor negative. This observation shows the disease Amavata having similarity to Rheumatoid Arthritis. And the disease Rheumatoid Arthritis is a connective tissue disorder.

**Discussion on Results:****1. Discussion on the Results of the therapies over the Subjective Parameters:****Pain in the Joints (Sandhi Shoola):**

The treatment in all the five Groups provided 60.44%, 24.46%, 18.60%, 10.71% and 15.21% improvements respectively on this subjective parameter 'Pain in the Joints'.

The comparative efficacy of all the five Groups by ANOVA method shows the 'F' value (71.54) obtained by the calculators, is more than the table 'F' value at significant level of 0.01. It proves the Research Hypothesis which states that the Anupana told for Yogaraja Guggulu has significance in the management of Amavata in the 'Pain (Sandhi Shoola)' parameter. And in Group A, the response of treatment, and relief in the symptom 'Pain (Sandhi Shoola)' is comparatively high and it may be assumed that administration of Yogaraja Guggulu along with Rasnadi Kwatha as Anupana is effective in the management of 'Pain (Sandhi Shoola)'.

**Swelling in the Joints (Sandhi Shotha):**

The treatment in all the five Groups provided 43.07%, 42.62%, 12.69%, 11.66% and 4.47% improvements respectively on this subjective parameter 'Swelling in the Joints'.

The comparative efficacy of all the five Groups by ANOVA method shows the 'F' value (42.77) obtained by the calculation, is more than the table 'F' value at significant level of 0.01. It proves the Research Hypothesis which states that the Anupana told for Yogaraja Guggulu has significance in the management of Amavata in the 'Swelling' parameter. And in Group A and B, the response of treatment, and

relief in the symptom 'Swelling' is comparatively high and it may be assumed that administration of Yogaraja Guggulu along with Rasnadi Kwatha and Punarnavadi Kwatha as Anupana is effective in the management of 'Swelling (Sandhi Shotha)'.

**Stiffness in the Joints (Sandhi Stadbata):**

The treatment in all the five Groups provided 44.12%, 7.59%, 10.53%, 49.18% and 3.27% improvements respectively on this subjective parameter 'Stiffness in the Joints'.

The comparative efficacy of all the five Groups by ANOVA method shows the 'f' value (55.71) obtained by the calculation, is more than the table 'f' value at significant level of 0.01. It proves the Research Hypothesis which states that the Anupana told for Yogaraja Guggulu has significance in the management of Amavata in the 'Stiffness (Sandhi Stadbata)' parameter. And in Group A and D, the response of treatment, and relief in the symptom 'Stiffness' is comparatively high and it may be assumed that administration of Yogaraja Guggulu along with Rasnadi Kwatha and Madhu as Anupana is effective in the management of 'Stiffness (Sandhi Stadbata)'.

**Tenderness in the Joints (Sandhi Sparshaahishnuta):**

The treatment in all the five Groups provided 51.19%, 10.22%, 34.44%, 8.75% and 3.44% improvements respectively on this subjective parameter 'Tenderness in the Joints'.

The comparative efficacy of all the five Groups by ANOVA method shows the 'f' value (78.88) obtained by the calculations, is more than the table 'f' value at significant level of 0.01. It proves the Research Hypothesis which states that the Anupana told for Yogaraja Guggulu has significance in the management of Amavata

in the 'Tenderness (Sandhi Sparshaasahishnuta)' parameter. And in Group A and C, the response of treatment, and relief in the symptom 'Tenderness' is comparatively high and it may be assumed that administration of Yogaraja Guggulu along with Rasnadi Kwatha and Kana Kwatha as Anupana is effective in the management of 'Tenderness (Sandhi Sparshaasahishnuta)'. This effect may be due to the Anti-inflammatory activity of the formulations.

**Redness of the Joints (Rakta Varnata of Sandhi):**

The treatment in all the five Groups provided 58.18%, 39.28%, 10.91%, 25.92% and 5.36% improvements respectively on this subjective parameter 'Redness in the Joints.

The comparative efficacy of all the five Groups by ANOVA method shows the 'f' value (36.2) obtained by the calculation, is more than the table 'f' value at significant level of 0.01. It proves the Research Hypothesis which states that the Anupana told for Yogaraja Guggulu has significance in the management of Amavata in the 'Redness' parameter. And in Group A and B, the response of treatment, and relief in the symptom 'Redness' is comparatively high and it may be assumed that administration of Yogaraja Guggulu along with Rasnadi Kwatha and Punarnavadi Kwatha as Anupana is effective in the management of 'Redness (Rakta varnata of Sandhi)'. This effect may be due to the Anti-inflammatory activity of the formulations and the combination is effective in relieving symptoms produced out of Tridosha.



**Warmthness of the Joints (Sthanika Ushma Vruddhi of Sandhi):**

The treatment in all the five Groups provided 63.46%, 18.75%, 20%, 12% and 3.57% improvements respectively on this subjective parameter 'Warmthness in the Joints'.

The comparative efficacy of all the five Groups by ANOVA method shows the 'f' value (28.33) obtained by the calculation, is more than the table 'f' value at significant level of 0.01. It proves the Research Hypothesis which states that the Anupana told for Yogaraja Guggulu has significance in the management of Amavata in the 'Warmthness' parameter. And in Group A, the response of treatment, and relief in the symptom 'Warmthness' is comparatively high and it may be assumed that administration of Yogaraja Guggulu along with Rasnadi Kwatha as Anupana is effective in the management of 'Warmthness' (Sthanika Ushma Vruddhi of Sandhi)'. And this Lakshana is produced out of Pitta Dosha and it may be said as this combination is effective in relieving Lakshanas of Pitta Dushti.

**General Functional Capacity:**

The treatment in all the five Groups provided 40.96%, 20.48%, 9.52%, 17.5% and 5.81% improvements respectively on this subjective parameter 'General Functional Capacity'.

The comparative efficacy of all the five Groups by ANOVA method shows the 'f' value (26.46) obtained by the calculation, is more than the table 'f' value at significant level of 0.01. It proves the Research Hypothesis which states that the Anupana told for Yogaraja Guggulu has significance in the management of Amavata in the 'General Functional Capability' parameters. And in Group A and B, the

response of treatment, and improvement in the parameter 'General Functional Capability' is comparatively high and it may be assumed that administration of Yogaraja Guggulu along with Rasnadi Kwatha and Punarnavadi Kwatha as Anupana is effective in the improvement of 'General Functional Capability'.

## **2. Discussion on the Results obtained in the Objective Parameters:**

### **Haemoglobin:**

The treatment in all the five Groups provided 2.64gms/dl, 1.94gms/dl, 1.36gms/dl, 0.77gms/dl and 0.47gms/dl increase in Haemoglobin in all the five groups respectively. This shows there is significant difference in the improvement of Haemoglobin which may prove the significant role of Anupana. In Group A and B the improvement in the Hemoglobin level is comparatively high and the Anupana Rasnadi kwatha and Punarnavadi Kwatha along with Yogaraja Guggulu improves the Koshtagni, rate of absorption and these combinations are Panduhara and Rakta Prasadaka. In Pandu Roga, Rasa Dushti is the common phenomenon. Yogaraja Guggulu along with these two specific Anupana rectifies Rasa Dushti.

### **Erythrocyte Sedimentation Rate:**

The treatment in all the five Groups provided 46.52mm/hr, 34.91mm/hr, 24.40mm/hr, 18.34mm/hr and 9.47mm/hr reduction in Erythrocyte Sedimentation Rate in all the five groups respectively. This shows there is significant difference in the reduction of Erythrocyte Sedimentation Rate which may prove the significant role of Anupana. The mean value in the reduction of Erythrocyte Sedimentation Rate in Group A, Group B and Group C were found comparatively high. The Anupana like Rasnadi Kwatha, Punarnavadi Kwatha and Kana Kwatha are effective in reducing the

level of ESR, this benefit may be due to the Anti-inflammatory and Immunomodulatory effect of these combinations.

**Rheumatoid Arthritis Factor:**

In Group A out of 30 subjects, 23 were positive for RA Factor before treatment, out of which 07 turned to be negative for the same after treatment. In Group B out of 30 subjects, 19 were positive for RA Factor before treatment, out of which 05 turned to be negative for the same after treatment. In Group C out of 30 subjects, 15 were positive for RA Factor before treatment, out of which 02 turned to be negative for the same after treatment. In Group D out of 30 subjects 19 were positive for RA Factor before treatment, out of which 02 turned to be negative for the same after treatment. In Group E out of 30 subjects, 22 were positive for RA Factor before treatment, and none turned to be negative for the same after treatment. This also proves that there is some significant role of Anupana is played along with Yogaraja Guggulu in the management of Amavata.

## CONCLUSION

Conclusion is the essence of any study. A study from which no conclusion can be drawn turns out to be futile. A discussion, based on Shastra, over any conceptual and practical oriented study definitely gives one or other fruitful conclusions. From this particular study also, some conclusions are being drawn on the basis of conceptual references, critical review, observations made, results achieved and by thorough discussion. They are,

- The word meaning of "Anupana" is that a drink that is taken with or after medicine intake and also it is considered as a fluid vehicle for medicine.
- Anupana is a very important factor which helps in Absorption, Assimilation, as well as in the efficacy of the drug.
- Anupana is a vehicle that carries the medicines to its target.
- Anupana should be decided according to the constitution of the patient as well as condition of Doshas.
- Anupana augmenting the effect of the primary drug thus helps in producing a therapeutic effect.
- Anupana acts as a transport media in the drug absorption and there is influence of Anupana in the symptom relief as well as it is contributory in the curative aspects.
- Anupana along with formulations even acts at the molecular level and the metabolic changes can be achieved by combining Anupana.
- Amavata is one of the most commonest form of inflammatory joint disease and may be co-related with Rheumatoid Arthritis.
- The signs and symptoms were seen in all the subjects which suggests the gross appearance of the disease.

- Yogaraja Guggulu has been mentioned in classical texts for Amavata Chikitsa and it is considered to be a potent medicine in the management of Amavata.
- Although most of the subjects were generally feeling better in the follow-up period in all the parameters, some exacerbations were equally seen in considerable subjects which suggest that the disease is of chronic nature and just a single course of the therapy is just not enough and more courses of such therapies are needed to combat the disease.
- Various Anupana mentioned for Yogaraja Guggulu has different efficacy in the management of Amavata.
- The Subjects of **Group A** showed better results in all parameters compared to other all groups. So Yogaraja Guggulu along with Rasnadi Kwatha as Anupana has a much contributory effect in the management Of Amavata. And the contributory effect of Punarnavadi Kwatha (**Group B**) and Kana Kwatha (**Group C**) is also found significant on the parameters like Swelling (Shotha), Stiffness (Stabdata) and Tenderness (Sparshaasahishnuta).
- The mean Hemoglobin value was significantly increased in **Group A** and **Group B**. Anupana Rasnadi Kwatha and Punarnavadi Kwatha along with Yogaraja Guggulu improves the Koshtagni, rate of absorption and these combinations are Panduhara and Rakta Prasadaka. In Pandu Roga, Rasa Dushti is the common phenomenon. Yogaraja Guggulu along with these two specific Anupana rectifies Rasa Dushti.
- The mean value in the reduction of Erythrocyte Sedimentation Rate in **Group A**, **Group B** and **Group C** were found comparatively high. The Anupana like Rasnadi Kwatha, Punarnavadi Kwatha and Kana Kwatha are effective in reducing the level of ESR, this benefit may be due to the Anti-inflammatory and Immuno-modulatory effect of these combinations.

### **RECOMENDATION FOR THE FURTHER STUDY**

- Various Anupana mentioned for Yogaraja Guggulu has to be studied in detail in the Management of Amavata.
- Various Anupana mentioned for Yogaraja Guggulu has to be studied in detail in the Management of various other diseases also.
- Large sample size would be taken up for the same study with longer time duration.
- As it is found that the various Anupana's mentioned for Yogaraja Guggulu has shown a significance in the assessment parameters, its recommended that the further study has to be conducted in the Pharmacodynamic aspects.

## SUMMARY

The present thesis entitled “Critical analysis of Anupana with special reference to Yogaraja Guggulu” comprise of eight sections i.e. Introduction, Objectives, Review of literature, Methodology adopted, Observation and Results, Discussion, Conclusion and Summary.

The literary study begins with the historical review of Amavata and Anupana from ancient literatures down to the developments taken place in Amavata and Anupana research till date. Thereafter, the etymology of Ama is given followed by the description of Vata and the concept of Amavata and the etymology of anupana is also described.

Nidana Panchaka is dealt along with Samprapti Ghataka in detail. An effort to comprehend them in the modern point of view is also been done. The Chikitsa of Amavata is described in brief along with various preparations mentioned in Ayurvedic classics.

A detailed conceptual study on Guggulu Kalpana was made in review of literature.

The methodology consists of two parts- Materials and Methods. The description of the constituents of the drug and five Anupana under trial viz. Yoga raja Guggulu, Madhu, Ushnodaka, Rasnadi Kwatha, Punarnavadi Kwatha, Kana Kwatha, ingredients are included in the materials section. The section of Methods includes the study design, sample size, criteria of inclusion and exclusion, investigations carried out, assessment criteria and their gradations and the statistical tests used to interpret the results.

The observations made were tabulated and the results obtained were analyzed statistically and were presented with the details. The observations

made in the clinical study were discussed to draw reasonable conclusions, which are as follows:

On the basis of observations preponderance Yogaraja Guggulu has the main therapeutic action as Vedana sthapaka and Sothahara which attributed by the presence of Guggulu as the major ingredient. Rasna and Gokshura can also be considered as the best drug of choice in Vatavyadhi. Guggulu due to its Lekhana property scraps away the excessive Jalamsa and Amatva which has got accumulated in the joints. The Ushna Guna of both drugs help in bringing back the vitiated Vata into normalcy. Hence this drug has direct action on Ama and Vata, so it gives good relief in the disease Amavata. Rasnadi Kwatha is one of the primary medicines used for any kind of Vatavyadhi. It acts as Vedana Sthapaka, Ama pachaka as well as has some properties of Rasayana. Punarnavadi Kwatha has been one of the main choice of medicine in the management of any kind of Sotha. It mainly acts as Sothahara, Vedana Sthapaka and to some extent as Rasayana also. The Kana Kwatha improves Koshtagni Vyapara, along with Yogaraja Guggulu the Lakshana like Sandhi Shopha, Sandhi Shoola, Anga Marda, Arocaka are relieved. Pippali digests the Ama Dosha accumulated in the Koshta as well as the Ama Dosha which is present all over the body. Madhu has the properties of Ruksha, and Kashaya Madhura Rasa and increases Vata. Madhu is Kaphagna as well, it is Rasayana, Srotho Shodhaka and Balya. Ushna Jala is used as the common Anupana for almost all the medicines used in Ayurveda. It also has the properties like Deepana and Pachana which helps in digesting the Ama.

The section of Discussion includes reasons behind the selection of the drugs and therapies along with the pharmacodynamics of the same. A postulate is put forth regarding the probable mode of action of the all five anupana and Yogaraj guggulu in Amavata.



Conclusions were drawn on the basis of conceptual references, critical review, observations made, results achieved and by thorough discussion.

The comparative efficacy of all the five Groups by ANOVA method shows the 'f' value obtained by the calculators, is more than the table 'f' value at significant level of 0.001. It proves the **Research Hypothesis** which states that the **Anupana told for Yogaraja Guggulu has significance in the management of Amavata.**

The Subjects of **Group A** showed better results in all parameters compared to other all groups. So Yogaraja Guggulu along with Rasnadi Kwatha as Anupana has a much contributory effect in the management Of Amavata. And the contributory effect of Punarnavadi Kwatha (**Group B**) and Kana Kwatha (**Group C**) is also found significant on the parameters like Swelling (Shotha), Stiffness (Stabdata) and Tenderness (Sparshaasahishnuta).

The mean Hemoglobin value was significantly increased in **Group A** and **Group B**. Anupana Rasnadi Kwatha and Punarnavadi Kwatha along with Yogaraja Guggulu improves the Koshtagni, rate of absorption and these combinations are Panduhara and Rakta Prasadaka. In Pandu Roga, Rasa Dushti is the common phenomenon. Yogaraja Guggulu along with these two specific Anupana rectifies Rasa Dushti.

The mean value in the reduction of Erythrocyte Sedimentation Rate in **Group A**, **Group B** and **Group C** were found comparatively high. The Anupana like Rasnadi Kwatha, Punarnavadi Kwatha and Kana Kwatha are effective in reducing the level of ESR, this benefit may be due to the Anti-inflammatory and Immuno-modulatory effect of these combinations.

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**TILAK MAHARASHTRA VIDYAPEETH, PUNE****Late P.G Nanal DEPT. OF AYURVEDA****TITLE OF THESIS****“CRITICAL ANALYSIS OF ANUPANA WITH SPECIAL REFERENCE TO  
YOGARAJAGUGGULU”****Candidate:** Dr. A.S.PRASANTH**GUIDE:** Prof.Dr. M. B. KARAMBELKAR

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**CLINICAL CASE PROFORMA**

Name of the Patient:

Age:

Sex: Male / Female

Address:

Occupation:

Educational Status: UE / P / M / H.Sc / G / P.G.

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:

Group: A ( ); B ( ); C ( ); D ( ); E ( ).

Result:

**CHIEF COMPLAINTS: (WITH DURATION)**

1. JWARA ( STHANIKA / SARVADEHIKA)
2. ARUCHI
3. MALA BADDHATA
4. ANGAMARDA
5. ALASYA
6. SANDHISHOOLA
7. SANDHISHOTHA
8. SANDHIGRAHA
9. SPARSHASAHYATA
10. BAHUMOOTRATA
11. NIDRA VIPARYAYA

**ASSOCIATED COMPLAINTS: (WITH DURATION)**

1. HRUTGRAHA
2. PRASEKA
3. TRISHNA
4. HASTA PADA DAHA
5. KUKSHI SHOOLA
6. BHRAMA
7. KANDU
8. OTHERS

**HISTORY OF PRESENT ILLNESS**

## 1. ONSET:

INSIDIOUS  
GRADUAL  
SUDDEN

## 2. SEQUENCE OF JOINT INVOLVEMENT:

- |    |       |
|----|-------|
| 1. | Since |
| 2. | Since |
| 3. | Since |
| 4. | Since |
| 5. | Since |
| 6. | Since |

## 3. JOINT INVOLVEMENT:

Unilateral

Bilateral

## 4. COURSE:

Progressive

Receding

Relapsing

Stationary

## 5. LOCAL RISE OF TEMPERATURE:

Present

Absent

## 6. MORNING STIFFNESS:

Present

Absent

If present then lasts for 15 mins

½ hour

1 – 2 hour

2 – 3 hour

## 7. AGGRAVATING FACTOR:

## 8. RELIEVING FACTOR:

## 9. SYMMETRY OF JOINT INVOLVEMENT:

1.

4.

2.

5.

3.

6.

**HISTORY OF PAST ILLNESS:****FAMILY HISTORY:****TREATMENT HISTORY:**

Drug

Dosage

Duration

Details

NSAIDS

STERIODS

## OTHERS

**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 / Occasional

Koshta: Mrdu / Madhya / Krura

Mala Pravruithi:

Frequency / Day .....

Colour .....

Consistency .....

Ass. Problem .....

Mootra Pravruithi:

Frequency / Night .....

Frequency / Day .....

Colour .....

Ass. Problem. ....

Emotional Make Up:

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

### **OCCUPATIONAL HISTORY:**

Nature Of Work: Mild / Moderate / Heavy / Sitting / Standing / Labourious / Travelling / Sedentary.

Working Hours: Hours

### **GYNAECOLOGICAL HISTORY:**

#### **1) MENSTRUAL HISTORY:**

MENARCHE: At the age of ..... years

MENOPAUSE: Since ..... years



L. M. C.:

MENSTRUAL CYCLE: Regular / Irregular

Days:

Flow: Scanty / Normal / Heavy

Dysmenorrhoea / Menorrhagia / Metrorrhagia

LEUCORRHOEA: Absent

Present

## 2) OBSTETRIC HISTORY:

No. Of Deliveries:

FTND:

Last Delivery:

Abortion History:

H / O Surgical Intervention:

Relation Of Present Illness With Prasava Or Menopause:

### History Of Contraceptives Used:

Temporary: Without Any Contrivance / Mechanical /  
Chemical / Oral / Iucd.

Permanent: Vasectomy / Tubectomy

## GENERAL EXAMINATION:

### ASHTA STHANA PAREEKSHA:

Nadi:

Mala:

Mootra:

Jihwa:

Shabda:

Sparsha:

Drik:

Akruthi:

**DASHA VIDHA PAREEKSHA:**

Prakruthi:	Shareera:	Manasika:
Vikruthi:		
Sarataha:	P / M / A	
Samhanana:	P / M / A	
Pramana:	P / M / A	
Satmaya:	P / M / A	
Satwa:	P / M / A	
Ahara Shakti:	P / M / A	
Vyayama Shakti:	P / M / A	
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:**

**ASTHI SANDHI PAREEKSHA**

**1. PAIN IN JOINTS.**

TYPE: VRISHIKADANSHVATA / BHEDANAVATA /  
KARTANAVATA / TODA / SPHUTANA

OCCURRENCE: OCCASSIONAL / MORNING ( 1 – 2 HRS / 2 – 12  
HRS ) / CONTINUOUS

Left side			Right side			
BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW- UP	Joint involved	BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP

**2. SWELLING IN JOINTS:**

OCCURRENCE: CONTIUOUS

RECURRENT

Left side				Right side		
BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP	Joint involved	BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP

### 3. STIFFNESS IN JOINTS

PRESENT

ABSENT

LASTS FOR 15 MIN

30 MIN

1 – 2 HR

2 – 3 HR

Left side				Right side		
BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP	Joint involved	BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP

### 4. TENDERNESS IN JOINT:

Left side				Right side		
BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP	Joint involved	BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP

5 REDNESS IN JOINTS.

Left side				Right side		
BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP	Joint involved	BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP

6 WARMTH IN JOINTS.

Left side				Right side		
BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP	Joint involved	BT	AFTER ACTIVE TREATMENT	AFTER FOLLOW-UP

7 GENERAL FUNCTIONAL CAPACITY**FUNCTIONAL TESTS:**

Jt.	Motion	BT		AFTER ACTIVE TREATMENT		AFTER FOLLOW UP	
		RT	LT	RT	LT	RT	LT
Shoulder	Flexion						
	Extension						
	Range						
	Abduction						
	Abduction						
	Lat. Rotation						
	Med. Rotation						

Elbow	Flexion						
	Extension						
Fore arm	Supination						
	Pronation						
wrist	Ulnar Dev.						
	Rad. Dev						
	Flexion						
	Extension						
Hip	Flexion						
	Extension						
	Abduction						
	Adduction						
	Lat. Rotation						
	Med. Rotation						
Knee	Extension						
	Flexion						
Ankle	Plant. Flex.						
	Dorsi. Flex.						
Foot	Inversion						
	Eversion						
MCP	Flexion						
	Extension						
	Abduction						
	Adduction						

toe	Flexion						
	Extension						

**INVESTIGATIONS:**

**BLOOD:** HB%  
TLC  
DLC  
ESR  
RA FACTOR  
ASO TITRE  
CRP  
VDRL

**URINE:** R /E: ALBUMIN                      SUGAR  
M/E:

**RADIOLOGICAL: (MAJOR JOINTS – INVOLVED ONE)**

X RAY:                      KNEE JOINT  
                                    WRIST JOINT  
                                    ANKLE JOINT  
                                    ELBOW JOINT  
                                    HIP JOINT

**TREATMENT:**

STARTED ON:

COMPLETED ON:

FOLLOW-UP COMPLETED ON:

**CHIKITSA KARMA**

**GROUP – A**

**GROUP – B**

**GROUP – C**

**GROUP – D**

**GROUP – E**

OBSERVATION AND RESULT:

PATHYA:

APATHYA:

SIGNATURE OF THE GUIDE:

SIGNATURE OF THE PH.D SCHOLAR:



CRITERIA FOR ASSESSING THE PAIN, MORNING STIFFNES, SWELLING, LOCAL  
RISE OF TEMP. TENDERNESS

1. Pain in joint

No pain	00
Mild pain of bearable nature, comes occasionally	01
Moderate pain, but no difficulty in joint movement, appears frequently and requires some Upashaya measures for relief	02
Slight difficulty in joint movements due to pain or severe pain, requires medication and may remain throughout the day	03
More difficulty in moving the joints and pain is severe, Disturbing sleep and requires strong analgesics	04

2. Swelling of the joint

No swelling	00
Slight swelling	01
Moderate swelling	02
Severe swelling	03

### 3. Stiffness of the joints

No stiffness or stiffness lasting for 5 min	00
Stiffness lasting for 5 min to 2 hrs.	01
Stiffness lasting for 2 to 8 hours	02
Stiffness lasting for more than 8 hours	03

### 4. Tenderness of joints

No tenderness	00
Subjective experience of tenderness	01
Wincing of face on pressure	02
Wincing of face with withdrawal of affected parts on Pressure	03
Resists touch	04

### 5. Redness of joints

Redness observed before treatment	02
Reduction in redness after treatment	01
No redness	00
No change after treatment	02

## 6. Warmth of joint

The temperature of the joint surface will be measured using the digital skin temperature measuring instrument. The temperature was compared with the normal body surface. The rise in the temperature of joint surface will be scored as follows:

Raised temperature when compared to the normal body surface	02
Fall in local warmth	01
Normal temperature	00
No change after treatment	02

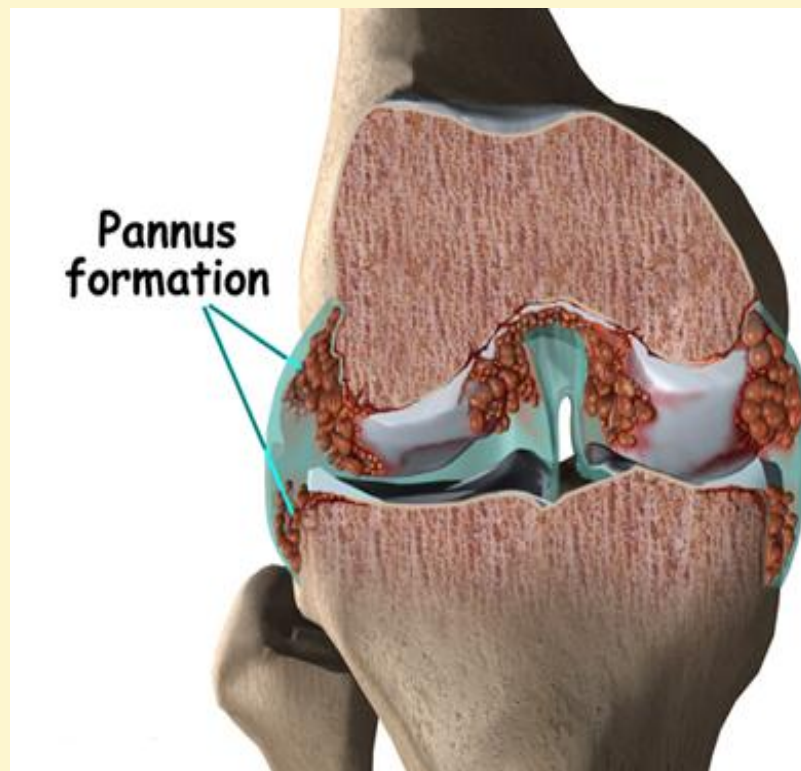
MASTER CHART - OBSERVATIONS IN GROUP E

Sl. No	OPD / IPD No	Age	Sex	Reli.	Edu.	Marital status	Eco. Status	Occupation	Diet	Rasa	Nidra	Mala	Vyasana	Koshta	Prakruti	Agni	Vyayama Sakti	Chronicity	RA Factor
1	6832	63	M	Hindu	Degree	Married	Poor	Swamiji	Veg	K,A	Alpa	Consti	Tea	Krura	VK	Manda	A	2	N
2	7864	52	M	Hindu	HS	Married	Rich	House wife	Veg	K,T	Ati	Consti	Smoke	Krura	VK	Manda	A	2	P
3	9089	45	M	Hindu	Primary	Unmarried	Middle	Labour	Mix	K,T	Prakruta	Reg	Alcohol	Madhyama	VP	Sama	A	2	P
4	6543	51	M	Hindu	Degree	Married	Middle	Teacher	Veg	K,T	Alpa	Consti	Tobacco	Krura	VK	Manda	A	2	N
5	6754	70	F	Hindu	Degree	Married	Rich	Rtd.officer	Veg	K,A	Alpa	Consti	Tea	Krura	VP	Manda	M	1	P
6	7684	24	M	Hindu	Degree	Married	Middle	Student	Veg	K,L	Prakruta	Consti	Tea	Krura	VP	Vishama	A	1	N
7	6754	59	M	Hindu	HS	Married	Middle	Agriculture	Veg	M,A	Prakruta	Reg	Tea	Madhyama	PK	Samagni	A	1	P
8	4532	62	M	Hindu	Degree	Unmarried	Middle	Agriculture	Mix	K,T	Ati	Consti	Alcohol	Krura	VK	Manda	A	1	N
9	6754	70	M	Hindu	Primary	Married	Poor	Rtd.Peon	Veg	K,T	Alpa	Consti	Tobacco	Krura	VK	Vishama	A	1	N
10	4532	41	M	Hindu	Degree	Married	Middle	Teacher	Veg	M,A	Alpa	Consti	Tea	Krura	VK	Vishama	A	1	N
11	5463	66	M	Hindu	HS	Married	Middle	House wife	Mix	K,A	Prakruta	Reg	Smoke	Madhyama	VP	Samagni	A	1	P
12	5673	50	M	Hindu	HS	Married	Middle	Office	Veg	K,T	Alpa	Consti	Alcohol	Krura	VK	Manda	A	1	P
13	7863	55	M	Hindu	Illiterate	Married	Poor	Agriculture	Veg	K,T	Alpa	Consti	Tea	Krura	VK	Manda	M	1	P
14	8973	35	F	Hindu	HS	Married	Middle	Office	Mix	K,T	Alpa	Reg	Tea	Madhyama	VP	Samagni	A	3	P
15	9983	47	M	Hindu	Primary	Married	Middle	House wife	Veg	K,T	Prakruta	Reg	Tobacco	Madhyama	VP	Samagni	M	2	P
16	6541	55	M	Hindu	Degree	Married	Middle	Business	Veg	K,A	Alpa	Consti	Tea	Krura	VK	Manda	A	3	P
17	1432	63	M	Hindu	HS	Married	Rich	Business	Veg	K,T	Alpa	Consti	Smoke	Krura	VK	Manda	A	2	N
18	1675	48	F	Hindu	illiterate	Married	Poor	House worker	Mix	K,T	Prakruta	Reg	Alcohol	Madhyama	VP	Manda	A	1	P
19	1670	26	M	Hindu	HS	Married	Middle	Labour	Veg	K,T	Alpa	Consti	Tobacco	Krura	VK	Manda	A	1	N
20	1560	59	M	Hindu	Degree	Married	Middle	Rtd.clerk	Veg	K,A	Alpa	Consti	Tea	Krura	VP	Manda	M	1	P
21	8097	68	F	Hindu	HS	Married	Middle	Rtd.Peon	Veg	M,A	Prakruta	Reg	Tea	Madhyama	PK	Sama	A	2	N
22	8056	50	M	Hindu	Primary	Married	Middle	House wife	Veg	M,A	Prakruta	Reg	Tea	Madhyama	PK	Sama	A	1	N
23	9076	66	M	Hindu	Primary	Unmarried	Poor	Agriculture	Mix	K,T	Ati	Consti	Alcohol	Krura	VK	Manda	M	1	N
24	6570	42	M	Hindu	HS	Married	Poor	Agriculture	Veg	K,T	Alpa	Consti	Tobacco	Krura	VK	Vishama	A	1	P
25	7067	52	F	Hindu	Degree	Married	Middle	Teacher	Veg	M,A	Alpa	Consti	Tea	Krura	VK	Vishama	A	2	P
26	6089	48	F	Hindu	HS	Married	Middle	Business	Mix	K,A	Prakruta	Reg	Smoke	Madhyama	VP	Sama	A	1	P
27	6087	54	M	Hindu	HS	Married	Poor	Agriculture	Mix	K,T	Alpa	Consti	Alcohol	Krura	VK	Manda	A	1	N
28	7091	59	M	Hindu	Illiterate	Unmarried	Poor	Agriculture	Veg	K,T	Alpa	Consti	Tea	Krura	VK	Manda	M	1	P
29	3401	59	M	Hindu	HS	Married	Middle	Rtd peon	Mix	K,T	Alpa	Consti	Tea	Krura	VK	Vishama	A	1	N
30	3021	70	M	Hindu	Primary	Married	Middle	Rtd.Teachr	Veg	K,T	Prakruta	Reg	Tobacco	Madhyama	VP	Sama	M	1	N

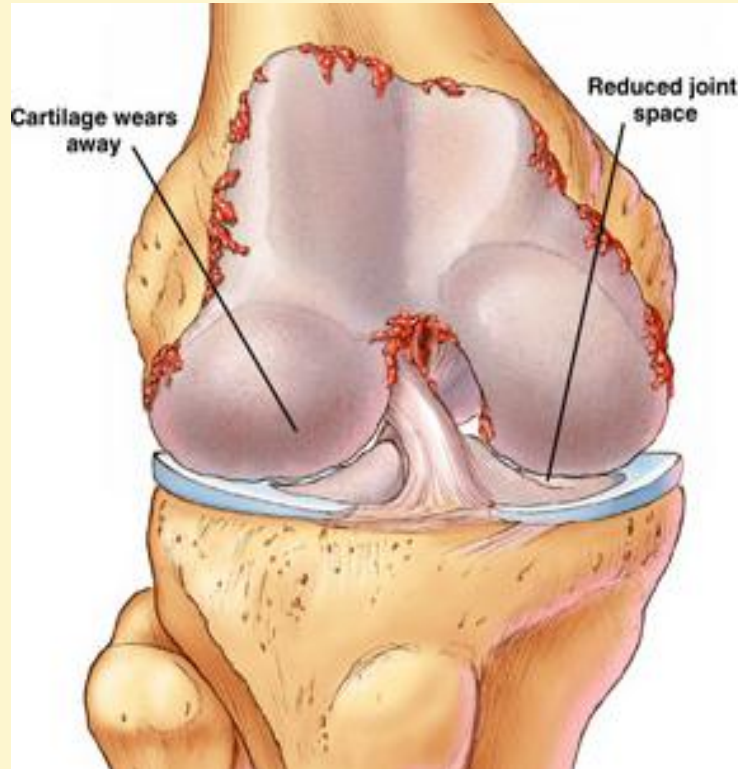
MASTER CHART - PARAMATERS IN GROUP E

Sl.no	Pain in Joints		Swelling in Joints		Stiffness in Joints		Tenderness in Joints		Redness in Joints		Warmthness in Joints		General function capability	
	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	3	1	1	0	1	0	3	1	1	0	1	0	4	1
2	1	0	0	0	2	1	1	0	1	0	1	0	3	1
3	1	1	3	0	3	1	4	2	2	1	2	0	4	1
4	2	1	2	1	1	0	2	2	1	0	0	1	3	1
5	3	1	1	0	2	1	3	1	2	1	2	2	2	1
6	3	0	0	0	2	0	3	0	1	0	2	0	2	1
7	2	0	0	1	0	0	3	2	2	0	1	0	2	1
8	3	1	1	0	0	0	2	1	2	1	1	0	0	0
9	3	2	2	0	3	1	1	0	1	0	1	0	4	2
10	4	1	0	0	1	0	3	0	1	0	2	0	3	2
11	4	0	1	0	2	1	4	1	0	0	1	0	1	0
12	2	0	2	0	2	0	1	0	0	0	1	0	2	2
13	1	0	0	0	0	0	2	1	2	1	1	0	2	0
14	3	0	1	0	2	1	0	0	2	0	1	0	3	0
15	2	0	1	0	3	0	4	1	1	0	1	1	4	2
16	1	0	3	0	2	0	2	1	2	1	0	0	2	1
17	1	1	1	1	3	1	2	0	1	0	2	0	3	2
18	2	1	2	0	0	0	3	1	0	0	1	0	1	0
19	4	0	2	1	1	0	0	0	2	1	2	0	4	2
20	3	2	2	0	2	0	1	0	0	0	2	1	0	0
21	1	1	1	0	2	0	3	2	0	0	2	1	3	2
22	2	1	0	0	3	1	2	1	2	1	1	0	2	0
23	5	0	0	0	0	0	4	2	1	0	2	0	1	1
24	1	0	1	1	1	0	0	0	1	0	1	0	2	1
25	2	1	2	0	1	0	3	2	2	0	2	0	2	1
26	3	0	3	2	2	1	2	1	1	0	2	1	3	1
27	4	2	1	0	1	0	2	0	1	0	1	0	2	1
28	3	0	2	1	2	1	1	0	2	0	2	0	3	1
29	4	2	3	1	3	1	4	3	2	0	2	1	4	1
30	2	1	0	0	0	0	2	2	0	0	1	1	3	1

**02. DIFFERENT PATHOLOGICAL CHANGES IN RHEUMATOID  
ARTHRITIS**

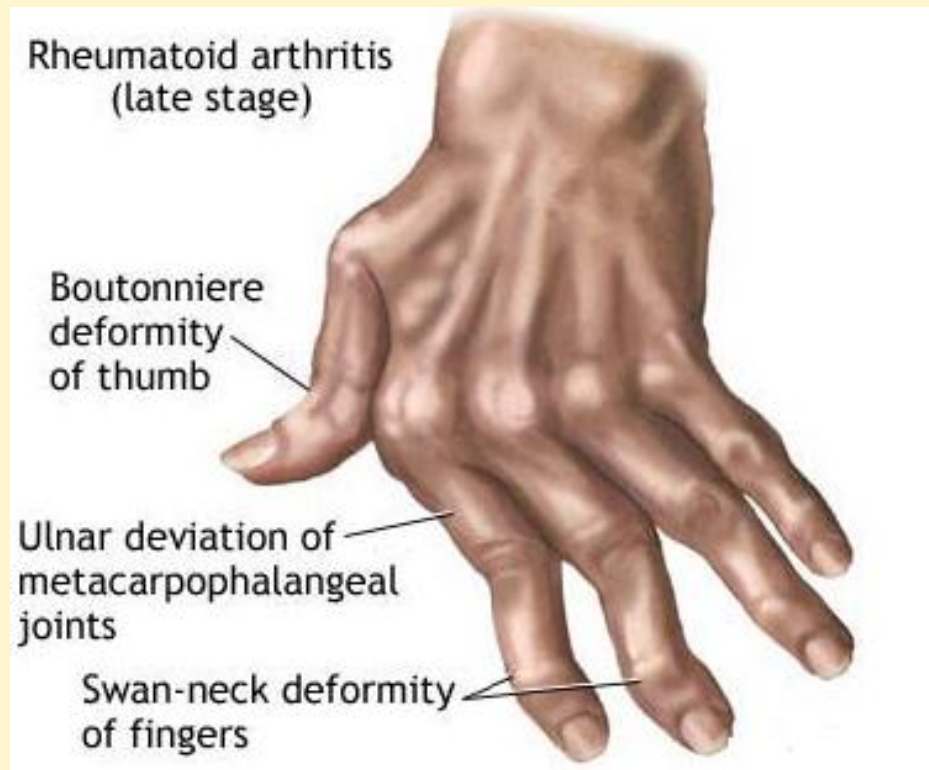


## 02. DIFFERENT PATHOLOGICAL CHANGES IN RHEUMATOID ARTHRITIS



### 03. DEFORMITIES OF HAND IN ADVANCED STAGE OF RHEUMATOID

#### ARTHRITIS



#### 04. RHEUMATOID NODULE





**05. EPISCLERITIS ONE OF THE OCULAR MANIFESTATION OF RHEUMATOID ARTHRITIS**



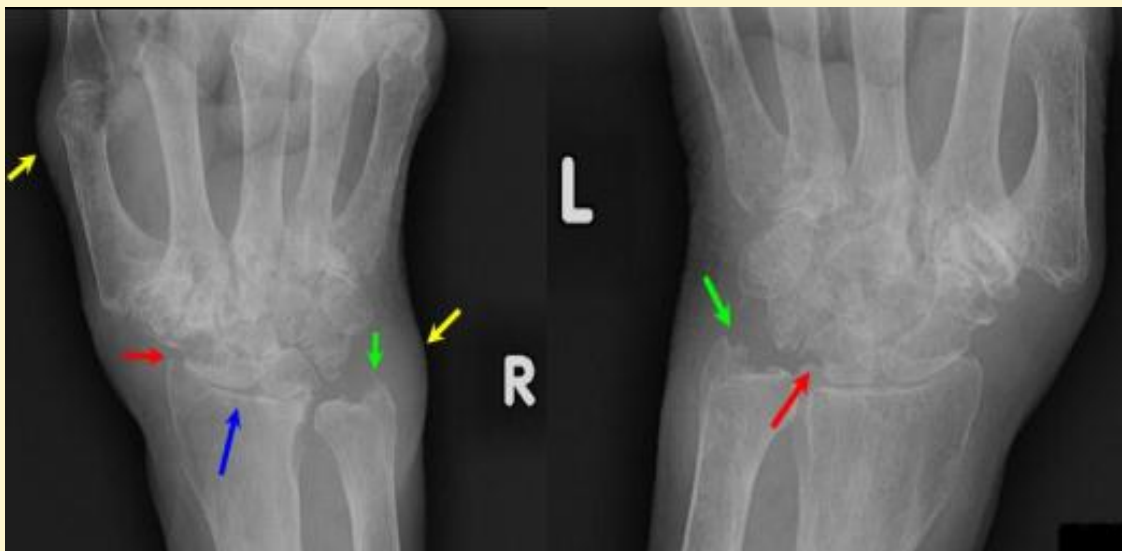
**06. TENOSYNOVITIS IN A RHEUMATOID HAND**



**07. SOFT TISSUE SWELLING IN EARLY STAGE OF RHEUMATOID ARTHRITIS**



**08. FRONTAL IMAGES OF BOTH THE RIGHT (ABOVE) AND LEFT WRISTS (BELOW) SHOW ADVANCED CHANGES OF RHEUMATOID ARTHRITIS WITH SOFT TISSUE SWELLING (YELLOW ARROWS), NARROWING OF THE RADIOCARPAL JOINT SPACE (BLUE ARROW), EROSIONS (RED ARROWS), AND DESTRUCTION OF THE ULNAR STYLOID (GREEN ARROW). THE INTERCARPAL JOINTS AND METACARPAL JOINTS ARE DESTROYED IN BOTH HANDS**



## 09. MATERIALS USED IN CLINICAL TRIAL



**YOGARAJA GUGGULU**



**RASNADI KWATHA**



**PUNARNAVADI KWATHA**



**KANA KWATHA**



**MADHU**



**USHNODAKA**