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 s 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 11th 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 marga, 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, Stabdhata 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.

“Critical analysis of anupana with special reference to YogaRaja Guggulu”
**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 gugulu 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
Abhakra 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, Pippalimooola 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, Gambari 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 caries 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.

“Critical analysis of anupana with special reference to YogaRaja Guggulu”
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 'Tendemess (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 Obiective 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 Immuno-modulatory 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.