

The effect of ajmodadi vatkam in the management of amavata with special reference to rheumatoid arthritis

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Abstract

Amavata is one of the commonly affected lifestyle and degenerative disorder. It is equated with Rheumatoid Arthritis, an inflammatory autoimmune disorder. The major aim of treatment of this disease is to provide relief in the form of reduced pain and discomfort, prevention of further disease process, loss of joint function, maintenance of productive and active life and above all to restore the vitality of the body (Oja) or a good immune status. The present study was aimed to assess the effect of Ajmodadi vatak in the management of Ama vata with special reference to Rheumatoid Arthritis. Total 40 randomly selected patients of Amavata were registered among them Group I, 20 patients on Ajmodadi vatak was given to these patients and Group 2; 20 as control group celecoxib was given for one month. On the basis of observations and the results of this present study it can be concluded that effect of the trial drug i.e., Ajmodadi vatak along with and Virechana are effective in majority of the symptoms.

Keywords: amavata, ajmodadi, rheumatoid arthritis, vatak

Introduction

Amavata is made up of two words, Ama & Vata. Ama means incomplete digestion of food which result in incomplete/impure formation of Annarasa, circulate in body & reach to target cell where it produces pathology like heaviness in the body, loss of strength, drowsiness, aggravation of Vata & improper elimination of waste product, Body ache, not desire to take food, thirst, fever, incomplete digestion of food is the symptoms of Amavata. When disease grows in intensity it becomes difficult to cure, as well as involved joints of hands, feet, head, ankles, knees & produces pain, swelling, stiffness & tenderness in affected joints ^[1]. The clinical presentation of Amavata closely mimics the special variety of Rheumatological disorders called rheumatoid arthritis, in accordance with their similarities on clinical features, like multiple joint pain, swelling, stiffness, fever, general debility ^[2]. RA is a serious disease condition, it very rarely shows a complete cure. Factor producing rheumatoid arthritis include infectious triggers, genetic predisposition & autoimmune response. Insidious onset with fatigue, anorexia, weakness, and acute onset with the rapid development of polyarthritis accompanied by constitutional symptoms includes fever, lymphadenopathy & splenomegaly. Joints involvement is usually symmetrical. It is characterized by pain, swelling, tenderness & painful limitation of movements. Generalized stiffness may occur but morning stiffness lasting more than one hour is a characteristic feature. The metacarpophalangeal & proximal interphalangeal joints of the hands, wrists, knees & metatarsophalangeal & proximal inter phalangeal joints of the feet are the most common joints involved ^[3].

Etymology of Amavata

1. 'Amena sahita Vata Amavata'. The virulent Ama circulates in the whole body propelled by the vitiated

Vata dashas producing block in the body channels that stations itself in the sandhi giving rise to Amavata ^[4].

2. The combinations of 'Ama' and Vata form Amavata. It shows the predominance of Ama & Vata in the samprapti of Amavata ^[5].
3. Ajeerna produces 'Ama' & along with Vata it produces Amavata ^[6].

Materials and Methods

Source of Data: A total of 40 patients of Amavata were randomly selected for the present study, from the Kayachikitsa OPD and IPD of Sir Sunder Lal Hospital, Institute of Medical Sciences, Banaras Hindu University, Varanasi. The case selection was random regardless of sex, occupation, and socio-economic conditions seropositive & seronegative conditions. Both acute and chronic phase of Amavata patients were taken for the study, following the criteria diagnosis of rheumatoid arthritis in Modern Medicine and the clinical features of Amavata described in Madhava Nidana.

Drug Used: In the present study selected drug Ajmodadi vatak (Bhaisajya ratnawali ^[7]) was used orally with lukewarm water.

1. Ajmoda: 1 pala(50g)
2. Maricha: 1 pala(50g)
3. Pippali: 1 pala(50g)
4. Pippalimula: 1 pala(50g)
5. Vidanga: 1 pala(50g)
6. Devdaaru: 1 pala(50g)
7. Shatahwa: 1 pala(50g)
8. Saindhavasalt: 1 pala(50g)
9. Chitraka: 1 pala(50g)
10. Haritaki: 1 pala(250g)
11. Shunthi: 10 pala(500g)
12. Vriddhdaru: 10pala(500g)

13. Guda: As a binder

Inclusion Criteria

1. Diagnosed cases of Amavata and Rheumatoid Arthritis
2. Age >16 years but less than 60 years
3. Patient willing to participate in the above trial

Exclusion Criteria

1. Patient with deformities & systemic complications.
2. The patient suffering from DM, HTN, Tuberculosis, Asthma, and other diseases.
3. Pregnant and lactating women
4. Patient discontinuing the trial drug with or without information to the investigator
5. Non-willing patients.

Stages and Grouping

Group 1: 20 patients were given the drug Ajmodadi vatak 2 bd (3 gm each) twice daily for the total trial period of 3 months.

Group 2: 20 patients of this group were given control group drug celecoxib 100mg bd.

Diagnostic criteria of Rheumatoid arthritis

The 2010 EULAR for diagnosis of Rheumatoid arthritis as shown in table no. 1

- Four of the seven criteria are required to classify a patient as having rheumatoid arthritis.
- Patients with two or more clinical diagnoses are not excluded.

Criteria 1 and 4 must be present for at least 6 weeks. Criteria 2 and 5 must be observed by a physician. However, in 2010, a collaborative effort between ACR & European League against Rheumatism (EULAR) revised the 1987 ACR classification for RA to improve early diagnosis to identify patients who would benefit from the early introduction of disease modifying therapy. Application of the newly revised criteria yields a score of 0-10, with a score of ≥ 6 fulfilling the requirement of definite RA. It is important to emphasize that the new 2010 ACR-EULAR criteria are "classification criteria" as opposed to "diagnostic criteria" and serve to distinguish patients at the onset of disease with a high likelihood of evolving into a chronic disease with persistent synovitis & joint damage.

Table 1: EULAR criteria for the classification of Rheumatoid Arthritis

		Score
Joint Involvement	One large joint (shoulder, elbow, hip, knee, Ankle)	0
	2-10 large joints	1
	1-3 small joints (MCP, PIP, Thumb IP, MTP, wrist)	2
	4-10 small joints	3
	>10 joints (at least 1 small joint)	5
Serology	Negative RF & Negative ANCPA Low positive RF or low positive anti-CCP antibodies(≤ 3 times ULN)	0
	High positive RF or High positive anti-CCP antibodies(≥ 3 times ULN)	2
	antibodies(≥ 3 times ULN)	3
Acute phase reactants	Normal CRP & normal ESR	0
	Abnormal CRP & ESR	1
Duration of symptoms	<6 weeks	0
	>6 weeks	1

Parameters of the study

The selected patients were interrogated by their family members too to obtain detailed information about the patients as well as the disease and the following data were collected.

- **Demographic profile:** patient's name, Age, Sex, Occupation. Religion, Socio-economic status, Marital status, Deha prakriti, Effect of weather Family history, Dietary habit, Habitat, Agnibala, Bowel habit and Duration of illness, etc.
- **Clinical profile:** Chief complaints with a total duration of illness, Precipitating factors: In relation to time, weather, work, etc.; Onset of Disease: Acute, Subacute, Chronic; Biographic details like Family history,

Occupational history, Menstrual history (If female), any allergic disorder, etc.

- **Subjective parameters:** Study of symptomatology of Amavata ^[8] was done apart from modern clinical features and the following 8 points were selected from Madhava Nidana for the present study (Table no. 2):
 1. Angmarda (Bodyache)
 2. Aruchi (Loss of taste)
 3. Trishna (Thirst)
 4. Alasya (Lack of enthusiasm)
 5. Gaurav (Heaviness)
 6. Jwara (Fever)
 7. Apaka (Indigestion)
 8. Shuntaanganam (Swelling of the body)

Table 2: Symptoms of Amavata were assessed by the following symptom rating scale

	Bodyache (Angmard)	Loss of taste (Aruchi)	Thirst (Trishna)	Lack of enthusiasm (Alasyam)	Heaviness	Fever	Indigestion	Swelling of the body
0	No bodyache	No loss of taste	Normally drinks water 2-3 l/day	Absent	No heaviness	Normal body temperature	Gets normal appetite and digests in 3 yaam	No swelling of the body
1	less than 1 hr	Mild loss of taste	3-4 l/day(feeling present only)	Loss of enthusiasm on excess work	Mild less than 30 mins localized	Mild less than 99 degree F	Digestion in 3-4 yaam	Mild swelling
2	1-2 hrs	Moderate	4-5 l/day(frequent)	Loss of	Moderate for 30-60	Moderate 99-	Digestion in 4-5	Moderate swelling

		loss of taste	feeling of thirst)	enthusiasm on moderate work	mins generalized	100 F	yaam	in localized few joints
3	more than 2 hrs	Severe Loss of taste	Excessive water intake of more than 5 l/day	Loss of enthusiasm on mild work	Severe greater than 60 min generalized	Severe greater than 100 degree F	Digestion more than 5 yaam	Severe in multiple joints and other parts of the body

Physical Examination: Under the physical examination patient's general condition, pulse rate, blood pressure, pallor, icterus, cyanosis, lymphadenopathy, thyroid status, and body weight were recorded at the basal level and at each successive follow ups.

Systemic Examination: Detailed examination of G.I.T., cardiovascular system, respiratory system, central nervous system, urogenital system, and locomotor system were undertaken. Apart from the routine examination of the locomotor system like examination of swelling, stiffness, deformity, restriction of joint movement, some special tests like walking time, grip power of hands were also done to assess the functional ability of the joints. All these were recorded at each successive follow-ups and taken as the criteria for improvement of the patients of Amavata.

Objective Parameters: For diagnosis of a disease, its assessment, severity, clinical improvement and to assess the possible side effects, certain routine and specific investigations were performed in every patient *viz*:

- Hematological investigations: Total leucocytes count, Hemoglobin, Erythrocyte Sedimentation Rate, TLC, S. Creatinine, SGOT, SGPT, RBS, T.bilirubin
- C-Reactive Protein (CRP titre)
- Rheumatoid factor (RA titre)
- Normal level: titre
- Anti-CCP
- Clinical Assessment of the Disease

Follow-up Study: All the cases were followed up at the interval of 1 month for a total 3 months duration.

Statistical Analysis: The data collected were analyzed using statistical software SPSS (Version 16.0) for the various sign and symptoms number and percentages of grades for different groups were calculated and to test the significance of the difference between various follow-ups within the group for symptoms grade, Friedman Chi-square test was applied. Chi-square (χ^2) was used to find out the significant difference among the groups. Wherever expected frequency came less than 5, Chi-square had been calculated after suitably pooling the rows/columns. Mean and S.D. of investigations at different follow-ups was calculated for all the groups. Wilcoxon Signed-Rank test was used to see the effect of drugs from baseline to different follow up in quantitative variable. Non-parametric ANOVA (Kruskal-Wallis & Mann Whitney method) was used to infer any significant difference among the groups.

Observation and Results

The drug ingredients of Ajmodadi vatkam were classified in the perspective of Rasa, Guna, Virya vipaka, Karma, and Doshghana as shown in Tables 3-8

Table 3: Study of Rasa in combination

Rasa	No. of Drugs	%
Madhura	2/13	15.4
Amla	1/13	7.7
Lavana	1/13	7.7
Katu	8/13	61.6
Tikta	5/13	38.5
Kashaya	2/13	15.4

Table 4: Study of Guna in combination

Guna	No. of Drugs	%
Laghu	11/13	84.6
Snigdha	5/13	38.5
Ruksha	7/13	53.8
Ushna	3/13	23.0
Tikshna	5/13	38.5
Sukshma	1/13	7.7

Table 5: Study of Virya in combination

Virya	No. of Drugs	%
Ushna	11/13	84.6
Shita	1/13	7.7
Anushnashita	1/13	7.7

Table 6: Study of Vipaka in combination

Vipaka	No. of Drugs	%
Madhura	5/13	38.5
Katu	8/13	61.6

Table 7: Study of Karma in combination

Karma	No. of Drugs	%
Dipana	10/13	76.9
Pachana	9/13	69.2
Swedajanana	3/13	23
Shulaghna	8/13	61.5
Rasayana	3/13	23
Vatanulomana	5/13	38.5
Mutranjanana	2/13	15.4
Vedanasthapana	4/13	30.8
Angamardaprashamana	3/13	23
Krimighna	3/13	23
Shothaghna	5/13	38.5
Vrishya	4/13	30.8

Table 8: Study of Doshaghnta in combination

Dosha	No. of Drugs	%
VK	10/13	76.9
VPK	3/13	23.0

The data collected and compiled from this clinical trial were sorted out and processed further by subjection to varied statistical methods.

The maximum number of a patient registered were in between 31-40 years of age group followed by 41-50 years of age group.

Higher incidence in accordance with the reported incidence in India and abroad and dominance of this disease is in females than in males. The majority of the patients were non-married, probably due to stress and lifestyle issues it is more prevalent in the married community. Most of the patients were educated rest were non-educated, probably may be due to more sedentary lives it flares up the disease and most of the patients studied were of mixed dietary habit, having 58.3% & 41.7% patients had a vegetarian diet.

Dwidosa prakriti with a relative incidence of 35 patients were maximum was found in Vata-Kapha. Thus Vata-Kapha trait appears to be more vulnerable for Amavata disease. Thus we find that a Vata predominant prakritis were more prone to develop the Amavata. This seems rational because the natural predominance of Vata must be adding to the precipitation and exacerbation of the disease in the otherwise prone individuals. Patients with Kapha-associated Vata suffered more which may be because Kapha is one of the bio-physical nature of ama.

According to the modern concept of RA, genetic predisposition is one, of the major cause of this disease. But the data shows that 31 patients gave a negative family history of the disease. So it can be said that Nidana sevana plays important role in the manifestation of the disease compared to the presence of family history. Most of the patients were observed with madhyam aahaar shakti as some had increased and some had decreased aahaar shakti jointly became madhyam due to this disease While most of the patients were in madhyam vyayaam shakti as due to morbidity of this disease patients not had pravara vyayaam shakti. The patients in both groups have shown symptoms of Amavata like Pain, Morning Stiffness, Lack of enthusiasm, & Bodyache, etc.

Systemic examination showed that; Groups 1 shows no significant changes in the values of Hb, ESR Urea level but group 2 i.e control group showed a significant decrease in the value of all these. Hb decrease in group 2 is due to ama dusti rasa formed which is morbid leading to faulty rakt dhatu hence it will cause reduced Hb; ESR due to its anti-inflammatory actions and increase in urea which may be due to its mild nephrotoxic activity.

Total bilirubin, SGOT, SGPT shows slight decrement in group 1 while the increase in values was observed in group 2. In group 2 due to the mild hepatotoxic nature of the drug control group, it showed a mild increase in the amount of total bilirubin; SGOT, SGPT levels. Overall reduction was observed in the CRP, Anti CCP, and RA factor in both the groups. But the most highly significant values in the reduction of CRP level were found in group 2 whereas the mild increase in total RBS was noted in group 2 might be due to increased gluconeogenesis induced by cox2 inhibitors.

Discussion

In disease Amavata, Kapha, and Vata dosha are the main culprits. The combination shows the main action against Kapha and Vata doshas by virtue of its virya (about 81% of total drugs have an Ushna virya. It also exhibits tridosha shamaka prabhava, but to a lesser extent. After seeing Doshagnata percentage, it is proved that the combination acts against kapha-vata doshas. From the samprapti of Amavata, it is clear that the main dushya involved is rasa dhatu. The combination shows, about 61% of total drugs have a Katu rasa. Katu rasa improves the digestion and made the first dhatu in proper form, so the combination will

act on the rasa dhatu. After seeing karmas percentage, it is clear that the yoga has a dipana (76% of total drugs) and Pachana (about 69% of total drugs) properties. It is proved that the yoga will act on the rasa dhatu.

The disease mainly exhibits sanga type of strotodushti. The combination by the virtue of dipana, pachana property, and also by the virtue of ruksha guna (about 53% of total drugs) does strotomukh vishodhana and relieves sanga. By ushna virya (about 84% of total drugs) the yoga will act on uplepa and clean the strotasa. In the combination, the maximum percentage of the drugs like Shunthi, Pippali, Pippalimoola, Chitraka, etc. show dipana, pachana property which improves the function of agni. The churna will stop further ama production and help to break the basic pathology. An ama means unripe and undigested annarasa. It needs proper paka. By the virtue of ushna virya (81% of total drugs) and dipana-pachana property, ama pachana will take place. This ampachana causes Strotomukh vishodhana. Drugs like Sunthi, Pipali, Pipalimoola, Chitraka, etc. are proved as the best ampachaka. So the yoga will act on the ama.

All the drugs used in Ajmodadi churna work on the disease amavata collectively as well as separately. Sunthi, Chitraka, Pipali, Pipalimool, Ajmoda are digestive and ampachaka, so relieves the stiffness, alasya, tandra, lalastrava, aruchi, gaurava. Deodara, Vidanga, Saindhava, are vatshamaka and vatanulomaka, so relieves pain, constipation, antrakunjana. Abhaya, Vriddhadaru, Pipali are Rasayana, so it controls the further damage of cells and also free radicals. Abhaya, Shatahwa, are diaphoretics, so relieve ever. So it seems that the yoga not only acts on symptoms of the disease but also checks its progression by hitting the basic pathological process. On the evaluation of the knowledge of the literature and experience of the present work, it may be concluded, that Disease amavata can be correlated to Rheumatoid Arthritis, which is one of the chronic destructive polyarthritis systemic disease. The exact etiology of the disease remains unknown, but the pathognomic nidana like Ama is believed to act as an autoantigen, which triggers the immunological reaction in genetically susceptible individuals. The disease amavata is diagnosed on symptomatology, specific laboratory tests like anti-CCP help in diagnostic and RF & ESR help in prognosis of the disease.

The specific ayurvedic line of management and drugs helps in decreasing the autoantigens and may act as modifying the immune response to autoantigens. At the same time, safe drugs can be given for a longer duration without any adverse effects. So with all the above results showing the improvement in the signs and symptoms of Amavata, we can conclude that the trial drug Ajmodadi Churna showed good results. Hence, the Ayurvedic drug i.e., Ajmodadi vatak can be used in the chronic as well as acute patients of amavata with good hope and wish that the present study would prove a boon for humanity. It is proved that the root cause of pathogenesis of Amavata is mandagni which causes formation of Ama and Vata causes pain and inflammation of the joints. Therefore, the first line of treatment is considered to restrict the production of Ama,

liquidate already produced Ama and improve and correct the improper function of Agni and use the drug which pacifies the Vata which is the main cause of pain and inflammation of the joints.

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