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RESEARCH ARTICLE

EFFECT OF AYURVEDIC TREATMENT ON BIO-MARKERS OF RHEUMATOID ARTHRITIS (RA) : A CASE STUDY

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Abstract

Amavata is a disease caused by vitiation of *Vata Dosha* associated with formation of *Ama* (bio-toxin). The *Ama* combines with *Vata Dosha* and occupies *Sleshmasthanas* (*Asthisandhi*) which results in *Amavata*, producing symptoms like stiffness, swelling and pain in the joints. *Amavata* is compared with Rheumatoid Arthritis (RA) based on similarities in sign and symptoms. RA is a chronic progressive disease causing inflammation in the joints and resulting in painful deformity and immobility, especially in the fingers, wrists, feet and ankles. The prevalence of Rheumatoid arthritis is approximately 0.8 % of the population (range 0.3 to 2.1%); women are most commonly affected. CASE PRESENTATION: We report the case of a 20 years old female patient experiencing pain in multiple joints along with swelling and stiffness. Patient was investigated with markedly raised level of bio-markers like R.A. Factor, E.S.R., C-Reactive Protein (CRP) and Anti-cyclic citrullinated peptide (anti-CCP) antibody. The patient was administered various *Shaman*, *Deepana* and *Ama-paachanyogas* along with *Balukaswedan*. The symptoms of *Amavata* (RA) like *Sandhi ruja* (joint pain), *Sandhishotha* (joint swelling) *Stabdhatata* (morning stiffness), and tests like R.A. Factor, ESR, CRP and Anti-CCP were observed over the treatment. Marked improvement were observed in signs and symptoms of *Amavata* during the course of treatment. Patient was feeling much better than earlier and she felt that about >95% of her symptoms got decreased. No any complication was found during the treatment.

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Introduction:-

Amavata is a pain predominant crippling disease claiming the maximum loss of human power. It is not just a locomotor disorder rather it is a systemic disease and thus is named after its chief pathogenic constituents, *Ama* and *Vata*. *Amavata* is a disease of *Asthivaha* and *Rasavaha Strotas*. It is mainly developed due to *Ama* and vitiation of *Vata Dosha*. The *Ama* is carried by the aggravated *Vata* and deposited in *Sleshmasthanas* (Seats of *kapha* like joints etc.) producing features like *Angamarda* (body ache), *Aruchi* (loss of appetite), *Alasya* (weakness), *Sandhiruk* (joint pain), *Sandhishotha* (joint swelling).^[1] The main causative factor, *Ama*, is caused due to malfunctioning of the

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digestive and metabolic mechanisms. The disease is initiated by the consumption of *ViruddhaAhara* and simultaneous indulgences in *ViruddhaAhara* in the pre-existence of *Mandagni*.^[2] Although *Ama* and *Vata* are chiefly pathogenic factors, *Kapha* and *Pitta* are also invariably involved in its *Samprapti*.^[3] *Amavata* is a disease of *Madhyama Rogamarga* hence it is said to be *Krichasadhya* or *Yapya*.

According to the clinical features *Amavata* very closely resembles with the Rheumatoid arthritis. Rheumatoid arthritis is a chronic, progressive autoimmune arthropathy and characterised by bilateral symmetrical involvement of joints with some systemic clinical features.^[4] This disease affects mainly young population especially females and the patients are gradually crippled physically as well as mentally due to bad prognosis of the disease. The onset is most frequent during the fourth and fifth decades of life, with 80% of all patients developing the disease between the ages of 35 and 50.^[5] In RA the patient's social roles, capacity to work, independence, self-concept, mood and psychological well-being are usually affected as well.^[6] Hence it is a most burning problem in the society. R.A. still remains a challenge till today as there is no effective treatment for this disease. From the modern side, the non-steroidal anti inflammatory drugs (NSAID'S) and disease modifying anti-rheumatic drugs (DMARD'S) are the main stay in this condition, however they have serious adverse effects and have limitations for long term therapy.^[7] NSAID'S and DMARD'S provide temporary control to the pain and possibility of further damage to joint also increases as root cause of disorder remains unattended. Here, the role of *Ayurveda* comes to ensure a treatment regimen which can have predictable efficacy with low toxic profile in this debilitating disorder. There are various multimodal approaches followed in *Ayurveda* practice for its management.^[8] Hence, this study aims to describe the plan of management of *Amavata* with *Ayurvedic* therapies like *Baluka swedan* and various *Shamana Yoga*.

Material And Methods:-

Case Presentation

A 20-years-old, female was presented in the OPD (OPD No. 3285, CR-11728), Department of Kayachikitsa, A & U Tibbia College and Hospital, University of Delhi, on 05/04/2021. She was experiencing pain in multiple joints with increased morning stiffness and swelling in bilateral foot and small joints since 8 months. No major structural deformities like swan neck deformity etc were noted.

History of Present Illness

The patient states that she was quite well 9 months back. Since then she developed polyarthralgia with pain predominately in right wrist joint. It was also associated with generalised weakness, loss of appetite and enthusiasm. She then took some pain relieving medication (Tab. Diclofenac 50mg IBD & Diclogel ointment L/A) for a few days from some allopathic hospital. She was only getting temporary pain relief and didn't note much improvement in her condition. Later the pain and swelling start shifted to symmetrical joints. With days the condition got worsen like the pain disturbs her daily routine and household activities. Though she was under medication, pain got aggravated and started to getting repeated attack of fever and joints pain. She was further diagnosed for *Amavata* (Rheumatoid Arthritis) on the basis of clinical presentation and being investigated for raised level of R.A factor, ESR, CRP and Anti-CCP. She was admitted in Kayachikitsa Dept., A & U Tibbia College & Hospital on 05/04/2021 for further *Ayurvedic* management.

Past History of the Patient

The patient was having no history of any addiction. There were no known personal or family histories of any serious systemic diseases. According to patient she has a habit of *Dewaswapna* (day time sleep). She was following *Apathya-ahara*, she used to consume spicy food item, non-vegetarian food, curd etc. Patient was lean structured and *Vata Kapha Prakruti*, *Madhyamakosti* and was having *Mandagni*. She was having no known history of allergy to any drug.

General Examination

On physical examinations patient was febrile with body temperature 100 °F with Blood Pressure - 110/86 mm Hg, Pulse rate - 76 bpm, R.R.- 20 per minute. A systemic examination revealed no anomalies in the function of the central nervous system, heart, or lungs. On examination patient was anxious and irritated due to intolerable pain. She had disturbed sleep and *Mandagni* (lower digestive functions). Tongue was coated associated with loss of appetite. The patient was *Vata Kapha Prakruti*, having *Madyam Koshtha* and *Madyam Bala*. *Rasavaha*, *Raktavaha*, *Manovahasrotas*, *Srotodushti Lakshanas* were observed. On local examination local raise of temperature on multiple joints was noticed along with tenderness in multiple joints. Swelling was present in metacarpals joints.

Criteria for Assessment

The assessment was made on the basis of level of biomarkers like RA, CRP, ESR & anti-CCP antibody. Also, the 2010 ACR/EULAR rheumatoid arthritis classification score [Table. 1] was used to grade the severity of the disease.^[9] The patient was observed before and after the treatment for improvement in clinical sign and symptoms and objectively on the basis of changes in level of biomarkers. The 2010 ACR/EULAR rheumatoid arthritis classification score was also calculated before and after completion of the treatment to assess the relief in grade of severity of the disease.

Table 1:- 2010 RA classification criteria: domains, categories and point scores.

Domain	Category	Point Score	Patient score
A	Joint involvement (0-5 points)		
	1 large joint	0	4
	2-10 large joints	1	
	1-3 small joints (large joints not counted)	2	
	4-10 small joints (large joints not counted)	3	
	>10 joints including at least one small joint	4	
B	Serology (at least one test needed for classification; 0-3 points)		
	Negative RF and negative ACPA	0	3
	Low positive RF or low positive ACPA	2	
	High positive RF or high positive ACPA	3	
C	Acute-phase reactants (at least one test needed for classification; 0-1 point)		
	Normal CRP and normal ESR	0	1
	Abnormal CRP or abnormal ESR	1	
D	Duration of symptoms		
	<6 weeks	0	1
	≥6 weeks	1	
(Total score : 9)			

2. Bio-markers assessed

- (A) R.A. Factor
- (B) ESR
- (C) C-Reactive Protein (CRP)
- (D) Anti-cyclic citrullinated peptide (anti-CCP) antibody

Assessment of total effect of therapy:

The overall assessment was calculated on the basis of average improvement in terms of percentage relief of scores.

1. Complete remission - 100%
2. Marked improvement – 76% to 100%
3. Improvement - 51% to 75%
4. Mild improvement – 25% TO 50%
5. Unchanged- 25%

Study Design

On the basis of symptoms, various Shamanayogas were advised to patient along with Baluka swedan with heated sand packs. [Table 2][Table 3] *Pathya* (Do's) & *Apathya* (Dont's) for both dietary and lifestyle modifications were also advised to the patient. [Table 4] Follow up was made after every 15 days. Total duration of treatment was around 14 months.

Table 2:- Treatment- *Abhyantar Chikitsa* (Internal Medication).

S.no.	T/t Given	Form	Dose	Anupana
1	<i>Simhanad Guggulu</i>	Tablet	2 x 250mg BD.	<i>Koshna jala</i>
2	<i>Amavatari Ras</i>	Tablet	1 x 250mg TDS.	<i>Koshna jala</i>

	(Given 1 month gap period after every 2 months)			
3	<i>Guduchi ghanvati</i>	Tablet	1 x 250mg TDS.	<i>Koshna jala</i>
4	<i>Ajmodadi churna</i>	Fine Powder	3 gms BD	<i>Koshna jala</i>
5	<i>Maharasnadi Kwath</i> (First 2 months)	Decoction	20 mL BD	<i>Koshna jala</i>
6	<i>Dashmool Kwath</i> (After 2 months)	Decoction	20 mL BD	<i>Koshna jala</i>

Table 3:- Treatment- *Bahya Chikitsa* (External Treatment).

T/t Given	Method of administration	Time
<i>Baluka Pottali swedan</i>	Heated sand packs were applied to the joints and throughout the body for Swedana - early in morning empty stomach.	30 mins daily

Table 4:- *Pathya-apathya* (dos and don'ts) - Advised to the patient.

T/t Given	Pathya	Apathya
<i>Aaharaja</i> (Food)	Yava (barley), kulattha (horse gram), raktashali (rice)	Flour of mash (black gram), Rajmah (kidney beans), sweets.
	shigru (drum sticks), punarnava, karvellak (bitter gourd), parawar, ardrak (ginger), rasona	Fast food, uncooked food, salty, spicy, oily food.
	Jangal mansa (meat)	Fish
	Hot water	Cold water, Curd, jaggery, milk, cold beverages, ice creams.
<i>Viharaja</i> (Behaviour)	Sunlight exposure for at least 15 minutes in a day.	exposure to cold, wind, A.C., excess of stress
	Pranayam, yoga, meditation	Daytime sleeping, vegavadhan (suppression of natural urges)

Results:-

The regular follow up of the patient was taken every 15 days in OPD basis and the patient was also advised to get admitted in the IPD in the hospital time to time for proper management and monitoring of the treatment progress. During treatment, the patient did not develop any other complaints. Patient's dependency or the need to take any pain relieving allopathic medicines gradually started to decrease from first month only and patient completely stopped taking any allopathic pain relieving medicines after 90 days of the treatment. The symptoms like pain and stiffness over joints were subsided remarkably, so that she got able to perform her daily tasks. [Table 5]

After treatment, the patient got marked improvement in the symptoms and there were remarkable changes in the value of biological markers of Rheumatoid arthritis like R.A. factor, CRP etc. [Table 6][Table 7]

Table 5:- Patient Timeline - Treatment outcomes.

S.no.	Timeline	Joint pain	Morning stiffness	Anorexia	Bodyache	Analgesic needed
1	Baseline - April 2021	Severe	60 min	+	+	2 times/day
2	30 days of treatment	Moderate	60 min	+	+	1-2 times/day
3	60 days of treatment	Moderate	25-30 min	-	-	1 time/day
4	90 days of treatment	Mild	10-15 min	-	-	Rarely needed
5	120 days of treatment	-	-	+	+	-
6	180 days of treatment	-	-	-	-	-
7	14 months- total	-	-	-	-	-

duration of treatment					
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Table 6:- Changes in ACR/EULAR rheumatoid arthritis classification score (Ref. Table 1).

Category BT	Patient score BT	Category	Patient score AT	Category AT
>10 joints including at least one small joint	4	Joint involvement	1	2-10 large joints
High positive RF or high positive ACPA	3	Serology	0	Negative RF and negative ACPA
Abnormal CRP or abnormal ESR	1	Acute-phase reactants	1	Abnormal CRP or abnormal ESR
≥6 weeks	1	Duration of symptoms	1	≥6 weeks
(Total score : 9)			(Total score : 3)	

Table 7:- Improvement in Objective Variables findings.

Test Name	Bio. Ref. Interval	Unit	BT	AT
R.A. Factor	0 - 14	IU/mL	63.100	6.98
ESR	0 - 20	mm/hr	67	24.25
C-Reactive Protein (CRP)	0 - 6	mg/L	42.22	2.53
Anti-cyclic citrullinated peptide (anti-CCP) antibody	0 - 17	U/mL	446.60	4.105

Discussion:-

Amavata is one of the most difficult conditions to treat since it renders the sufferer bedridden with crippling stiffness and joint abnormalities while making them weep in excruciating pain. *Ama* is an undigested substance that results from *Agni's* malfunction at the *Jatharagni* or *Dhatvagni* levels. *Mandagni* is the main cause of *Ama* production.^[10] The primary perpetrator in *Amavata* is *Vayu*, which is *Pradhan* among the *Tridosha*. *Ama* and *Vata Dosh*a travel via *Rasa Vaha Dhamanis* on their way to *Kapha Sthanas*, where they join with *Tridosha* and gets *Dushita*. They then dwell in the *Sandhis*, where *NidanaSevana* produces *Khavaigunyata* and *Lakshana* of *Amavata*. In the beginning, *Rasavaha Srotasa* and *Rasa Dhatu* are the most affected, and *MajjavahaSrotasa* is also affected when *Sandhis* are involved.^[11]

Acharya Chakradatta described the *Chikitsa Siddhant* for *Amavata*. It includes *Langhana*, *Swedana* and use of drugs having *Tikta*, *Katu Rasa* with *Deepana* property, *Virechana*, *Snehapana* and *Vasti*.^[12] In the present case study, *Baluka swedan* was given to the patient. It is a type of *RukshyaSwedan*^[13] which helps in rectification of the imbalance of *Kapha Dosh*a, as well as alleviation of *Ama Dosh*a. It is also *ShothaShulahara* i.e. also helps in reduction of swelling, pain and stiffness.

In *Shamana Yogas*, the patient was administered *Maharasnadikwatha* 20 ml twice a day with lukewarm water and *Simhanada Guggul* 500mg twice daily. *Simhanada Guggul* has *Laghu*, *Ruksha*, *Ushna*, and *Tikshna* properties.^[14] The majority drugs of *Simhanada Guggul* have *Deepana* (enzyme activating), *Ama-Pachana* (neutralising biotoxin), *Shothaghna* (reducing oedema), *Shoolghna* (analgesic), *Jwaraghna* (antipyretic), *Balya* (energy increasing), and *Amavatahara* (anti-rheumatic) qualities. It improves *Agni-Bala* (digestive and metabolic capability), reduces *Ama* (biotoxins), and stops the body from producing more *Ama* (biotoxins). This helps to break the *Samprapti* (pathogenesis) of *Amavata* and lessens the clinical symptoms of *Amavata* (rheumatoid arthritis). *Maharasnadikwath* is *Vata Shamak* (pacifying) in action, helps in *Deepana* and *Pachana* of *Ama* and also acts as analgesic. Later it was replaced with *Dashmool kwath*. *Dashmool Kwath* contains *panchang* of *choti* and *badi kateri*, *shalparni* and *prishnaparni panchang*, *bilwa*, *gambhari*, *sonapatha*, *arni* and *gokshura*. These drugs mainly act in *vata* and *vata-kapha* disease. It is anti-inflammatory as its content *dashmoola* is *shothhara* in properties. *Guduchi ghanvati* contains *guduchi ghan* i.e. a concentrated form of decoction that is obtained from the aqueous extract of the stem of

Guduchi (*Tinospora cordifolia* Miers). *Guduchi* possess *shothahara* and *shula prashamana* qualities and gives desired *Rasayan* effect. The drug suitably acts on vitiated *vata&kapha* and produce the overall effect.^[15] *Ajmodadi Churna* contains *ajamoda*, *vacha*, *kutha*, *amalvetas*, *saindha namak*, *sajjkshar* etc. All medicines have *ushnavirya* and having *deepana pachana* properties help in ignition of *jatharagni* and elimination of *ama sanchaya* in whole body. Also help in removal of vitiated *vata dosha* thus help in breakdown of pathogenesis of *Amavata*. *Aamvatari Rasa* has been cited for treating *Amavata* in *Bhaishajya Ratanawli*. This medicine contains *Shuddha Parada*, *Shuddha Gandhaka*, *Triphala*, *Chitrakmoola* and *Guggul*. It has anti-inflammatory effects and it also abolish the tingling sensations which occurs as a result of *vata prakopa* thus help in breakdown of pathogenesis of *Amavata*.^[16] Thus, the combination of above mentioned *Ayurvedic Shaman yogas* along with *Balukaswedan* provided remarkable improvement in the patient. The assessment of the patient before and after treatment was taken which showed marked improvements in the subjective and objective parameters.

Conclusion:-

Amavata causes the sufferer to sob in excruciating pain, lowers their functional capacity due to extreme stiffness and incapacitating joint abnormalities, and renders them bed-ridden. As per results obtained in this case, it is evident that *Ayurvedic shamana yogas* along with *Baluka Sweda* showed remarkable relief in the features of *Amavata* (Rheumatoid Arthritis) and marked improvement in the levels of biological markers for R.A. and thus improving the quality of life. At the end of the management, >95% improvement was observed in the overall effect of therapy.

From this case study, it can be concluded that *Amavata* can be effectively and safely treated by using combination of *Ayurvedic shamana yogas* along with *Baluka swedan* as adjuvant therapy. This study certainly showed encouraging results in this case of RA, but this was a single case study. However, study may be conducted on large sample size to ascertain the same.

References:-

1. Madhavakara, Madhavanidana, Vimala Madhudhara Teeka by Tripathi Brahmanand, Chaukhambha Surabharati Prakashana, Varanasi, ed. 2010, poorvardha, adhyaya 25, (Page.571-577).
2. Upadhyaya Y. Astanghrudayam. 3rd ed. New Delhi: Chaukhambha Publication; 2008.P.131.
3. Murthy KRS. Madhava Nidanam. 4th ed. New Delhi: Chaukhambha Publication; P.95.
4. Shah Ankur, E.William St. Clair, Harrison's Principles of Internal Medicine Volume 2, 18th edition, Chapter 321, Rheumatoid Arthritis, (Pg. 2739).
5. Churchill Livingstone, Davidson's Principle and Practice of Medicine. 19th ed.: Elsevier Publication; 2002. (pp. 1002-7).
6. Krol et al, Disease characteristics, level of self-esteem and psychological well- being in rheumatoid arthritis patients., Scand J Rheumatol. 1994; 23(1):8-12.
7. Dermis L Kasper et al. Harrison's Principal of Internal Medicine. 16th Edition. Medical Publication Division; 2005. p.1974.
8. Bhattarai A, Kumawot G, Mangal G. Intervention of Amavata (Rheumatoid Arthritis) through multimodal Ayurveda approach: a case study. Int J Health Sci Res. 2018; 8(12):201-205.
9. Aletaha D, Neogi T, Silman AJ, Funovits J, Felson DT, Bingham III CO, Birnbaum NS, Burmester GR, Bykerk VP, Cohen MD, Combe B. 2010 rheumatoid arthritis classification criteria: an American College of Rheumatology/European League Against Rheumatism collaborative initiative. Arthritis & rheumatism. 2010 Sep;62(9):2569-81.
10. Tripathi Ravidatta, Charaka samhita with Vidyamanorama Hindi commentary, Chaukhamba Sanskrit Pratishthan, Delhi, 2009. Ni 8/31 (Pg.542)
11. Prof. Ramharsh Singh's Kaya Chikitsa, Chaukhambha Sanskrit Pratisthan, Delhi, Part II, Chapter 43, Page no 536.
12. Chakrapani Datta. Chakradatta commentary by Indradev Tripathi. Amavatarogadhikara 25/31-36. Varanasi: Chaukhamba Sanskrit Sansthan; 2010. (Pg. 167-168).
13. Dr.G.Shrinivasa Acharya (2006), Panchakarma illustrated, 1st edition, Delhi, Chaukhamba Sanskrit Pratisthan, Baluka sewdana, Page 215.
14. Das Govinda, Bhaishajya Ratnavali, Hindi commentary by Ambikadatta Shastri, Chaukhambha Prakashana, Varanasi, Edition2014, Amavata chikitsa, 29/181-189, (Pg no.628)
15. Clinical evaluation of Guduchi Kwatha in management of Amavata. Kiran S. Satpute, Rajan B. Kulkarni, Eknath G. Kulkarni. Ayurlog: National Journal of Research in Ayurved Science-2015; 3(3):60-66
16. Kaushik J, Kumar A, Yadav P "Role Of Vaitarana Basti In The Management Of Amavata W.S.R. To Rheumatoid Arthritis – A Case Study" IRJAY [online]2021;4(12);67-73.