

THE EFFECT OF MUNDITIKA CHOORNAM IN THE MANAGEMENT OF VATARA-KTA WITH SPECIAL REFERENCE TO RHEUMATOID ARTHRITIS

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ABSTRACT

Vatarakta is a *Vatavyadhi prabheda*. The illness is the finest illustration of an *Avarana vyadhi*. In its course, pathogenesis, signs, and symptoms, an RA has many features like *Vatarakta*. In the Kayachikitsa OPD of Govt Ayurveda College, the majority of patients diagnosed as *Vatarakta* as per *the lakshanas* according to Ayurvedic classics show symptoms similar to 2010 ACR EULAR criteria and favouring Rheumatoid Arthritis, so even though *Vatarakta* mimics the symptoms of Rheumatoid Arthritis, Systemic Lupus Erythematosus, Sjogren's, Gouty Arthritis etc., Rheumatoid arthritis alone is taken for the study. Twenty-two patients fulfilling the inclusion and exclusion criteria were subjected to detailed clinical examination according to clinical research proforma and lab investigation. The study drug *Munditika choornam* was given 6 gm bd and *Guduchi Kwatha* 50 ml bd for 30 days. Evaluation was done on the 0th and 31st day. The results obtained were statistically analysed and concluded.

Key words: *Vatarakta*, Rheumatoid Arthritis, *Munditika Choornam*, *Guduchi Kwatha*

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic systemic disorder of unknown cause. It results in debilitating musculoskeletal deformities due to the destruction of articular tissues, bone erosion, and severe mechanical

abnormalities of the joints. Although there are many clues as to the initiating event or events in the development of RA, their precise nature is not entirely understood. Research suggests that its pathogenesis

involves both humoral and cellular immune processes and that genetic and environmental factors may also play a part. The prevalence is lowest in black Africans and Chinese and highest in Pima Indians and Caucasians; it is 1.0-1.5%, with a female-to-male ratio of 3:1.^[1] Worldwide, the annual incidence rate of RA is approximately 3 cases per 10,000 population, and the Prevalence rate is approximately 1%, increasing with age and peaking between the ages of 35 and 50.^[2] In India, the prevalence rate is about 0.65% to 0.75%. The last two decades have witnessed a remarkable improvement in the outcomes of RA.

In Ayurveda, multifocal joint disease with deep *dhathugata* pathologies is mentioned under the purview of one of the *Mahavata vyadhi-Vataraktam*. It resembles Rheumatoid arthritis in many aspects. Due to the involvement of deeper *dhathus*, in its due course, it results in permanent, irreversible deformities. *Vata prakopa* and *Rakta prakopa nidanas* leads to *Raktaavritha vata* and lodges in *Asthisandhis*^[3]. As it is an *Avaranajanya vyadhi*, different preparations with

drugs having *Avaranaharatwa*, *Vatanulomana* and *Rasayana* properties are exclusively indicated in the management of *Vatarakta*. Combination drug therapy is considered the standard of care in treating several medical conditions. In this study, I have put forward the drug *Munditika choorna* with *Guduchi kwatha anupana*, mentioned in *Chakradutta*.

METHODS: This section outlines the methodology employed in the current study, which aimed to explore the potential benefits and efficacy of *Munditika choornam* in managing *Vatarakta* concerning Rheumatoid arthritis.

AIM: To determine the effect of *Munditika choornam* in *Vatarakta* concerning Rheumatoid arthritis.

OBJECTIVE: To determine the effect of *Munditika choornam* in the management of *Vatarakta* concerning Rheumatoid arthritis by measuring the changes in the prevalidated tool, the DAS Score, and the improvement in blood parameters in *Vatarakta* w.s.r. to Rheumatoid Arthritis.

METHODOLOGY:

TABLE 1-Prevalidated tool

LAKSHANA	GRADE	FINDINGS
1. <i>Sandhi soola</i> (joint pain) and functional capacity	0	No pain, can perform all activities
	1	Mild pain, mild restriction of activities due to pain
	2	Moderate pain, marked restriction of activities due to pain
	3	Severe pain, complete restriction of movement
2. <i>Sparsha asahatva</i> (touch intolerance)	0	No tenderness
	1	Pt complains of pain
	2	Pt winces with pain
	3	Pt winces and withdraws the affected part
3. <i>Daha</i> (burning sensation)	0	Absent
	1	Transient
	2	Frequent (day time), self approach for its aversion
	3	Frequent (day and night) self approach for its aversion
4. <i>Sandhi sotha</i> (swelling in joints)	0	Absent
	1	Swelling present but not apparent
	2	Swelling in lesser than 2 joints
	3	Swelling in more than 2 joints
5. <i>Stabdhatata</i> (stiffness)	0	No stiffness
	1	Stiffness present sometimes
	2	Stiffness present quiet often
	3	Stiffness persists throughout the day
6. <i>Twak vaivarnyam</i>	0	Not seen
	1	Mild

Patients eligible for the study were selected per the inclusion and exclusion criteria from the study setting, and informed consent was obtained. A detailed history of the disease, clinical examinations, and investigations were conducted and recorded using clinical case proforma.

The study was conducted in a single group, and the study drug, Munditika choornam with Guduchi kwatha, was given to the participants for 30 consecutive days. The patient explained the details regarding the study drugs.

They were advised to take 6 gm *Munditika choornam* with one teaspoon *Goghrita*, ½ teaspoon Madhu, and 50 ml Guduchi kwatha on an empty stomach morning and evening before food. 30 such sachets of *Munditika choornam* and 30 sachets of *Guduchi kwatha sookshma choornam* were given to them at an interval of 15 days. The patient was given sixty such sachets of *Munditika choornam* and *Guduchi kwatha sookshma choornam* during the study period. Patients were encouraged to make regular visits at 15 days for

uninterrupted feedback. Evaluation will be done on the 0th and 31st days. The results were statistically analysed.

DATA COLLECTION METHOD: detailed clinical research proforma and lab investigations.

OUTCOME MEASUREMENTS:

- Changes in prevalidated tool based on the *lakshana* of *Vata rakta*.
- Changes in the DAS 28 scale
- Changes in lab investigations for estimation of ESR, LFT, RFT, RA factor, Anti CCP, CRP

STUDY DESIGN: Pre- and post-interventional study.

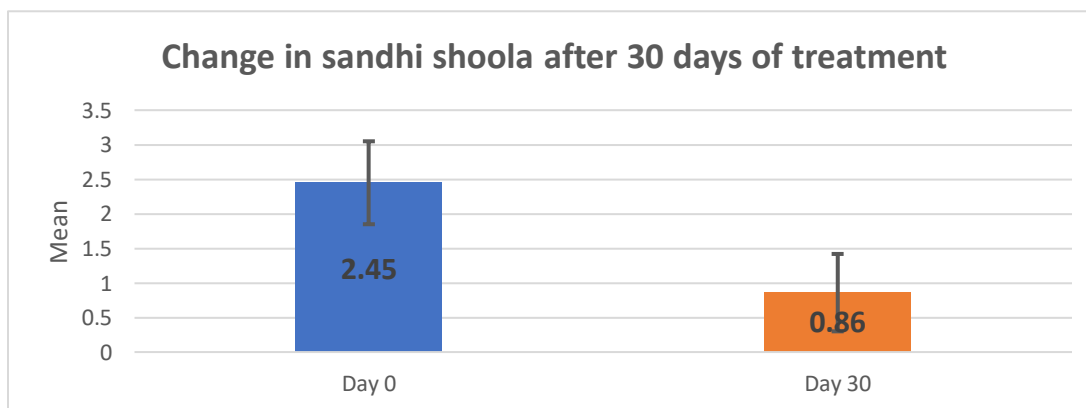
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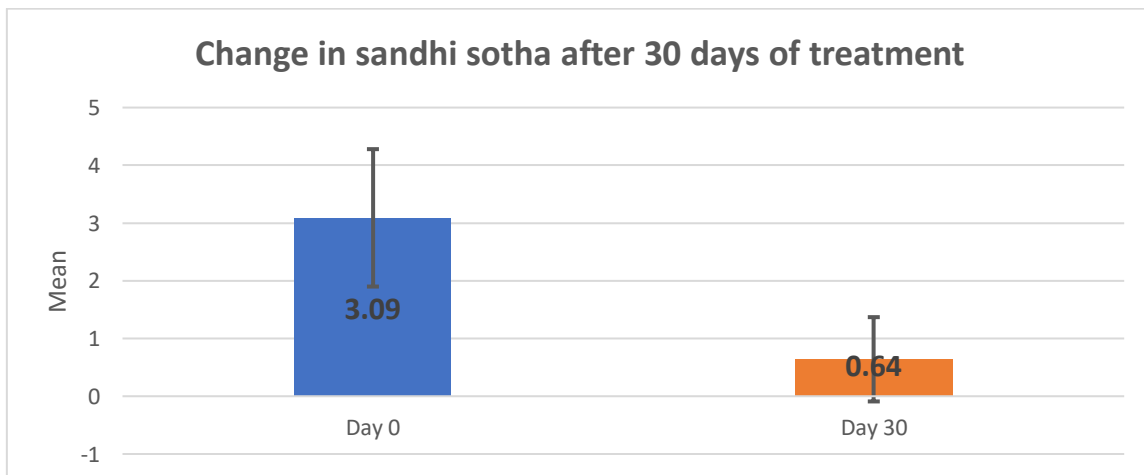
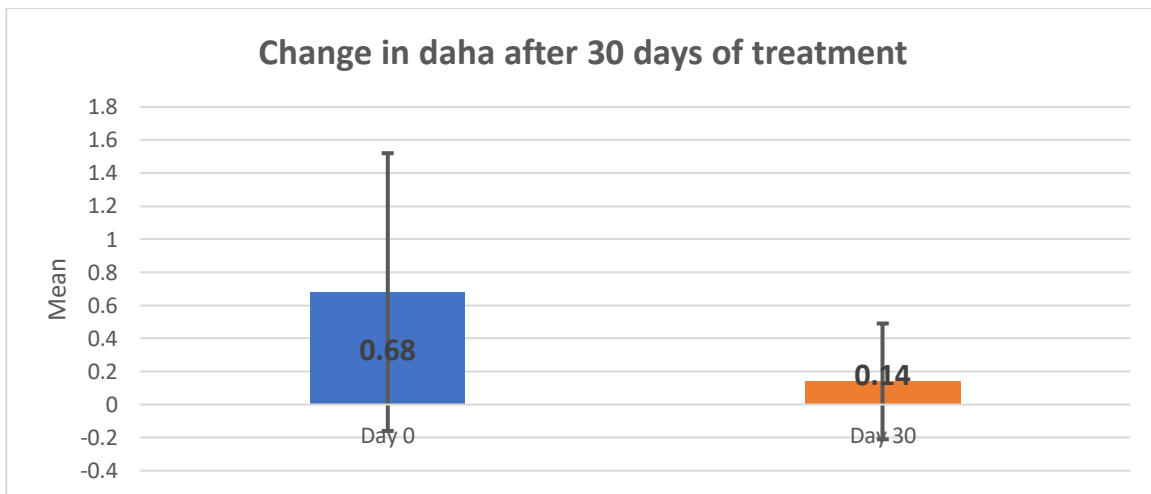
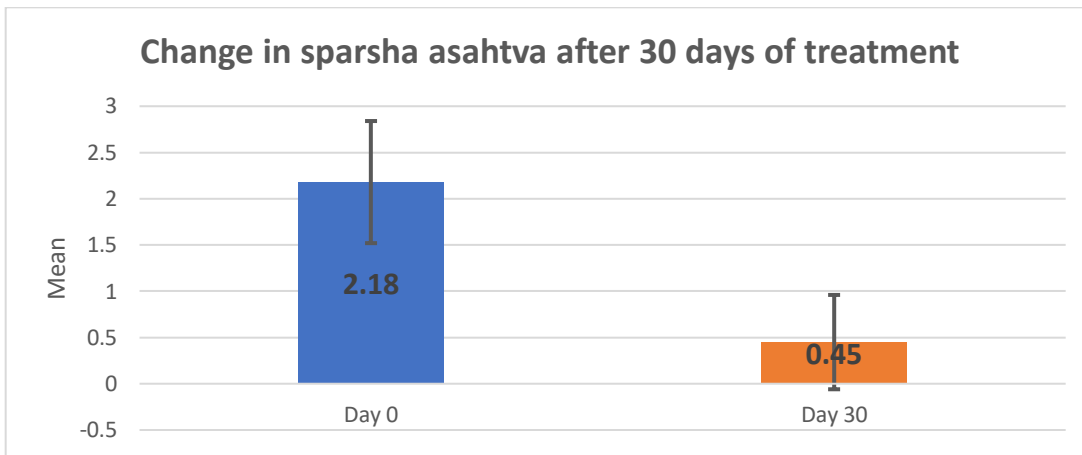
Table 2- statistical values changes in prevalidated tool and blood parameters.

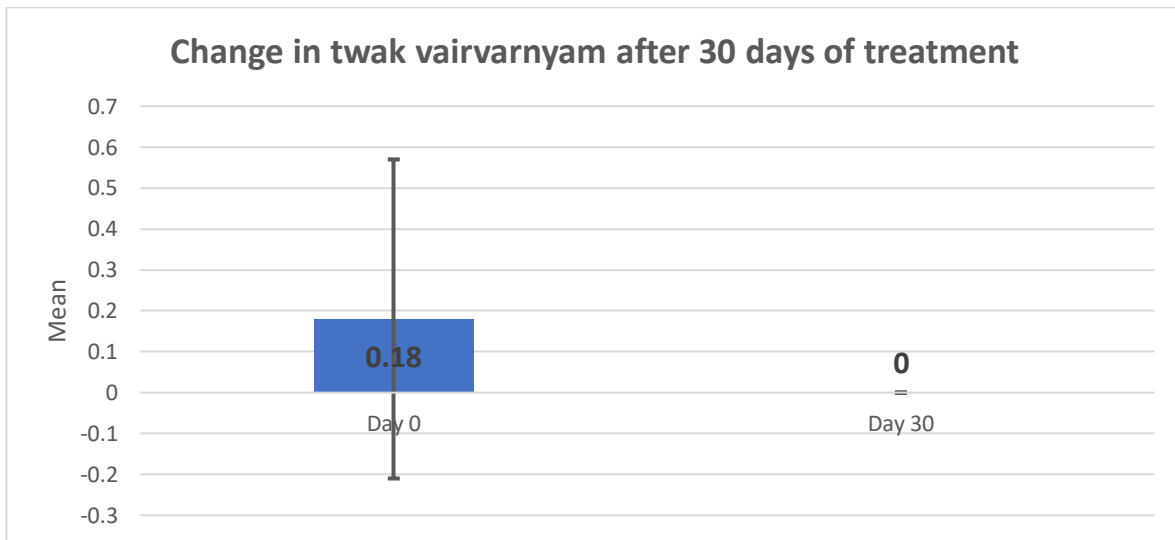
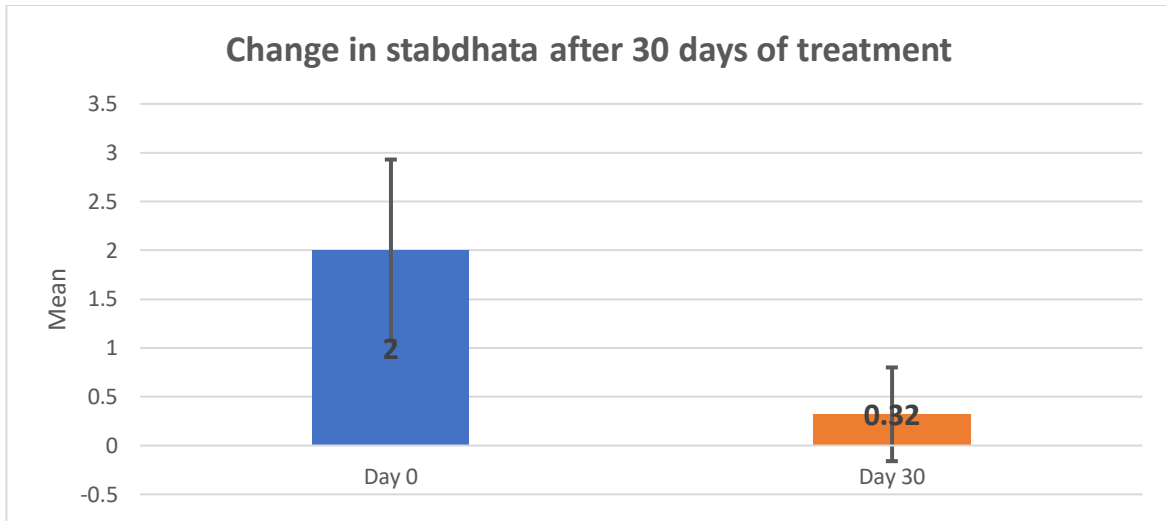
Parameter	Assessment day	Mean	SD	Median
Sandhi soola	Day 0	2.45	0.60	2.5
	Day 30	2.45	0.60	2.5
Sparsha asahtva	Day 0	2.18	0.66	2.0
	Day 30	0.45	0.51	0.0
Daha	Day 0	0.68	0.84	0.0
	Day 30	0.14	0.35	0.0
Sandhi soola	Day 0	3.09	1.19	4.0
	Day 30	0.64	0.73	0.5
Stabdhatta	Day 0	2.00	0.93	2.0
	Day 30	0.32	0.48	0.0
Twak vaivarnyam	Day 0	0.18	0.39	0.0
	Day 30	0.00	0.00	0.0
DAS	Day 0	6.13	1.18	5.7
	Day 30	4.59	0.43	4.5
Joint tenderness	Day 0	14.64	9.55	14.0
	Day 30	3.23	2.22	2.0
Morning stiffness	Day 0	2.09	0.68	2.0
	Day 30	1.09	0.29	1.0
ESR	Day 0	61.59	35.48	50.0
	Day 30	32.01	22.68	21.5
RA	Day 0	104.46	71.82	83.5
	Day 30	63.03	41.00	66.2
CRP	Day 0	0.97	0.59	0.9
	Day 30	0.45	0.34	0.4
HB	Day 0	11.29	1.87	11.5
	Day 30	11.67	1.42	11.45
ANTICCP	categories		Day 0-n	Day 0-%
	<500		6	27.3
	>500		18	81.8

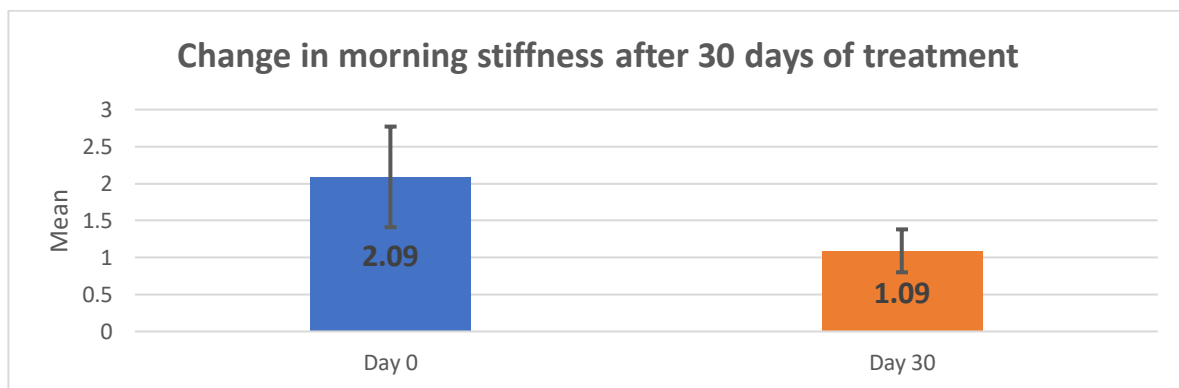
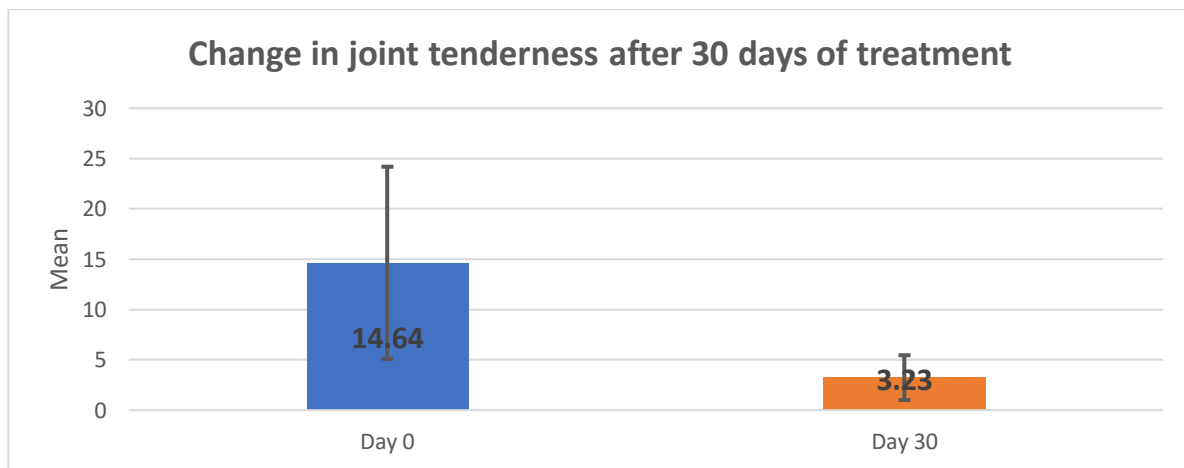
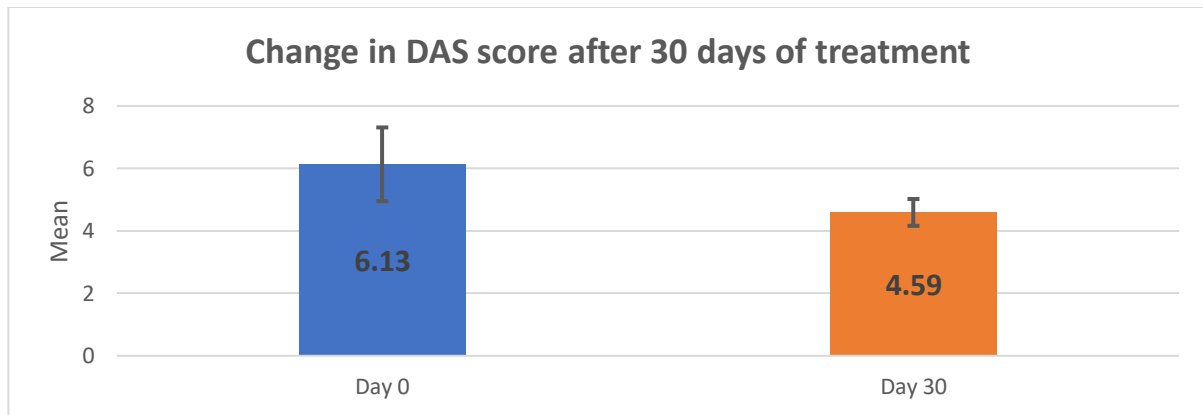
Parameter	IQR	Mean dif-ference	z	P
Sandhi soola	2-3	1.59	4.23	<0.001
	2-3			
Sparsa-asahtva	2-3	1.73	4.21	<0.001
	0-1			
Daha	0-1	0.55	3.14	0.002
	0-0			
Sandhi soola	2-4	2.45	4.13	<0.001
	0-1			
Stabdhatta	2-3	1.68	4.17	<0.001
	0-1			
Twak Vaivarnyam	0-0	0.18	2	0.046
	0-0			
DAS	5.09-7.54	1.54	4.11	<0.001
	4.2-5.04			
Joint tenderness	5-24	11.41	4.11	<0.001
	2-5			
Morning stiffness	2-3	1.00	3.86	<0.001
	1-1			
ESR	34-93	29.58	4.11	<0.001
	15-50			
RA	49-143	41.43	3.81	<0.001
	30-77			
CRP	0.5-1.2	0.52	3.61	<0.001
	0.1-0.8			
HB	10.2-12	-0.38	-1.66	0.097
	10.7-12.6			
ANTICCP	Day 30-%	P value		
	72.7	<0.001		
	18.2			

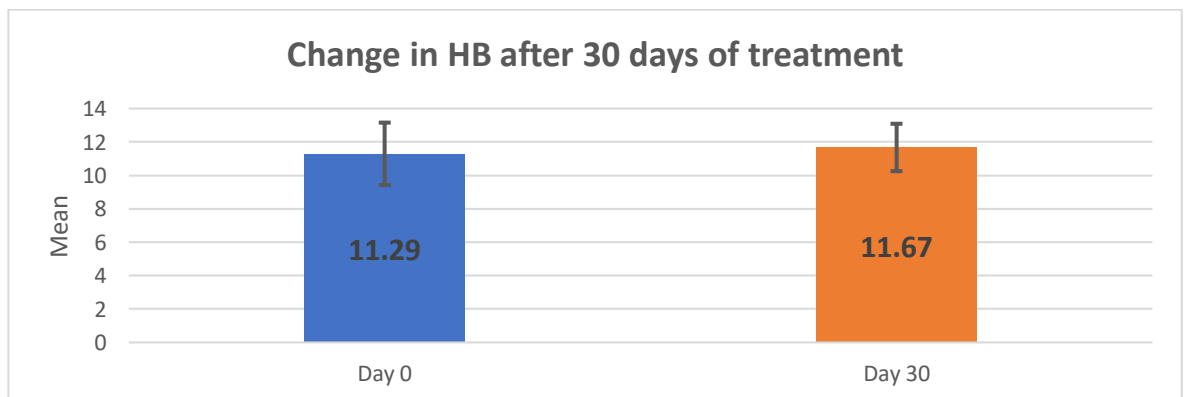
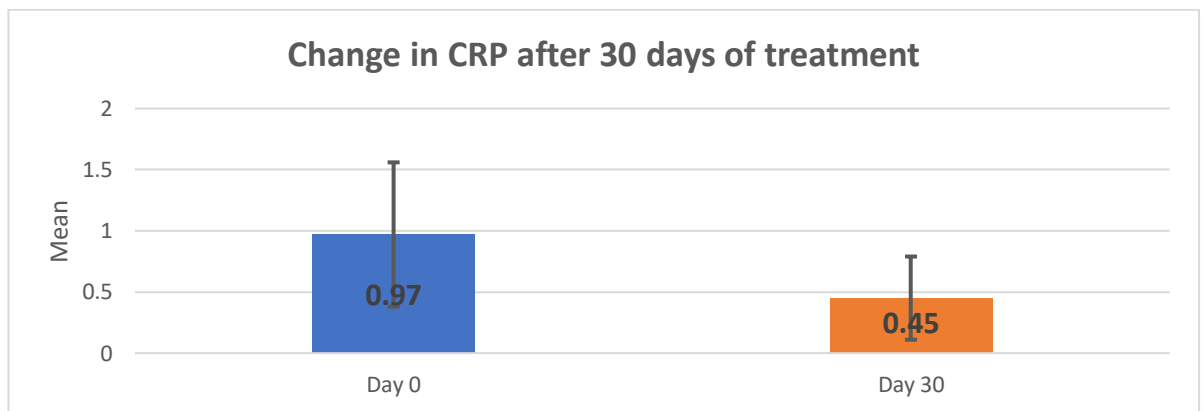
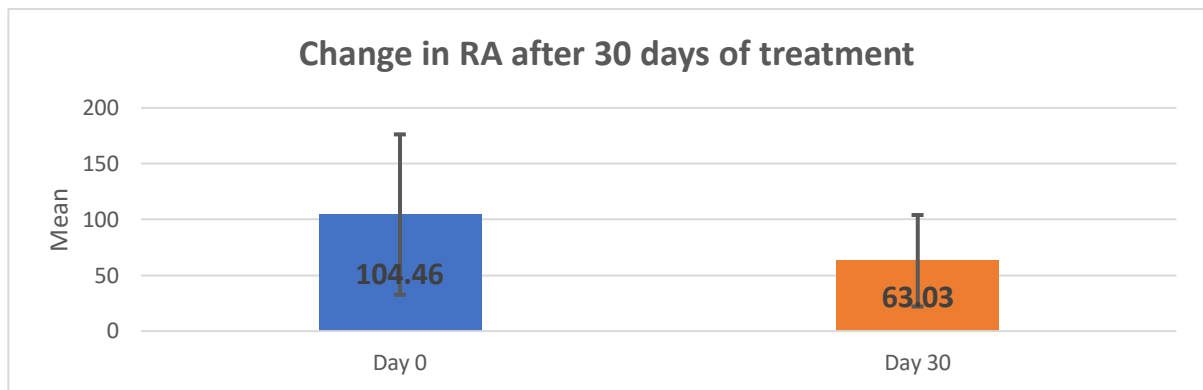
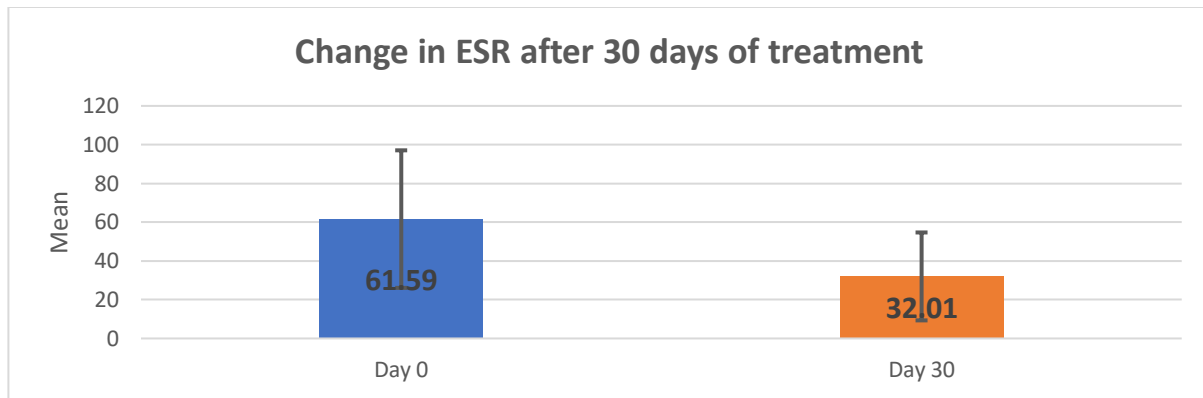
OBJECTIVE PARAMETERS

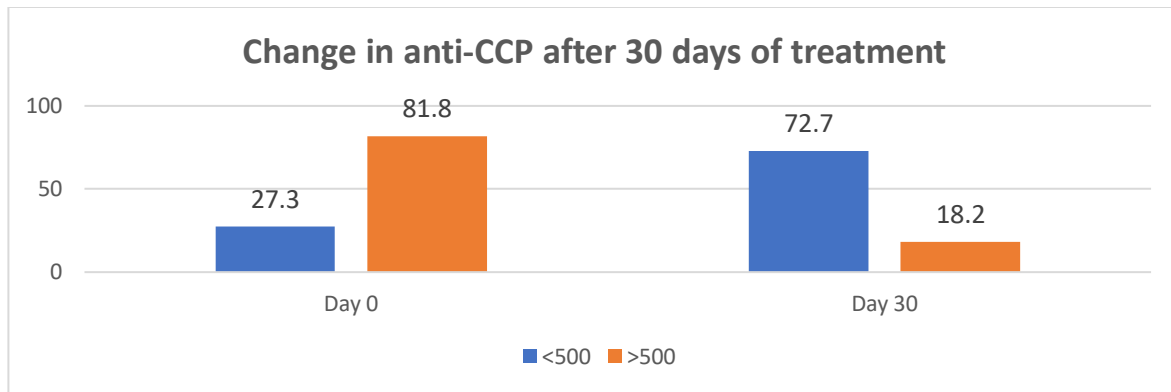












*McNamara Chi-Squared test

RESULTS:

Tenderness of each major and minor joint was assessed, and a significant reduction in tenderness was found after the treatment, which proves that the drugs have shoola haratva properties. There was a substantial change in the morning stiffness, as evidenced by the reduced mean score of 1.09, with an SD of 0.29. The median score dropped to 1.0, and the IQR decreased to 1-1, indicating a notable reduction in morning stiffness. The mean difference between Day 0 and Day 30 was 1.00, suggesting a substantial positive change in morning stiffness after treatment. Morning stiffness is one of the features of *Samavata lakshana*. The change in the grade of morning stiffness means that the drug is amapachana and has *sothahara* properties.

The number of tender and swollen joints was considerably reduced after the treatment. On Day 0 (baseline), the mean *sandhi shoola* score was 2.45, with a standard deviation (SD) of 0.60. The median score was 2.5, and the interquartile range (IQR) was 2-3. After 30 days of treatment, the mean *sandhi shoola* score significantly decreased to 0.86, with an SD of 0.56. The median score was 1.0, and the IQR was 1-1. The mean difference between Day 0 and Day 30 was 1.59, indicating a substantial reduction in *sandhi shola*. At baseline (Day 0), the mean *sandhi sotha* score was 3.09, with a standard deviation (SD) of 1.19. The median score was 4.0, and the interquartile range (IQR) was 2-4, indicating moderate joint swelling. After 30 days of treatment, there was a significant improvement in *sandhi sotha*, as evidenced by the reduced mean

score of 0.64, with an SD of 0.73. The median score dropped to 0.5, and the IQR decreased to 0-1, indicating a substantial reduction in joint swelling. The mean difference between Day 0 and Day 30 was 2.45, suggesting a considerable positive change in *sandhi sotha* after the treatment period. Considering the above findings, the action of drugs based on *gunavikalpa* is *vata kapha hara, soolaghanm* and *avarana-hara*.

At baseline (Day 0), the mean DAS score was 6.13, with a standard deviation (SD) of 1.18. The median score was 5.7, and the interquartile range (IQR) was 5.09-7.54, indicating a high level of disease activity. After 30 days of treatment, there was a significant improvement in the DAS score, as evidenced by the reduced mean score of 4.59, with an SD of 0.43. The median score was 4.5, and the IQR was 4.2-5.04, indicating decreased disease activity. The mean difference between Day 0 and Day 30 was 1.54, suggesting a considerable positive change in the DAS score after the treatment period. This finding substantiates the potent role of *Munditika choornam* along with *Guduchi kwatham*; as mentioned earlier that *Guduchi* possesses a potent anti arthritic effect, and this finding justifies it.

At baseline (Day 0), the mean joint tenderness score was 14.64, with a standard deviation (SD) 9.55. The median score was 14.0, and the interquartile range (IQR) was 5-24, indicating significant joint tenderness. After 30 days of treatment, joint tenderness was substantially improved, as evidenced by the reduced mean score of 3.23, with an SD of 2.22. The median score dropped to 2.0, and the IQR decreased to 2-5,

indicating a notable reduction in joint tenderness. *Munditika*, which has been previously demonstrated to be an effective analgesic, i.e. shoolagham owing to its Vata Kapha hara karma and ushna guna, in this study, reassures the efficacy of the drug in relieving pain and its potential as a viable treatment option in *Vatarakta*.

At baseline (Day 0), the mean ESR was 61.59, with a standard deviation (SD) 35.48. The median score was 50.0, and the interquartile range (IQR) was 34-93, indicating an elevated level of ESR. After 30 days of treatment, ESR significantly improved, as evidenced by the reduced mean score of 32.01, with an SD of 22.68. The median score dropped to 21.5, and the IQR decreased to 15-50, indicating a notable reduction in ESR. The mean difference between Day 0 and Day 30 was 29.58, suggesting a considerable positive change in ESR after the treatment period.

At baseline (Day 0), the mean RA score was 104.46, with an SD of 71.82. The median score was 83.5, and the interquartile range (IQR) was 49-143, indicating a high level of RA activity. After 30 days of treatment, there was a significant improvement in RA, as evidenced by the reduced mean score of 63.03, with an SD of 41.00. The median score increased to 66.2, and the IQR decreased to 30-77, indicating a notable reduction in RA activity. The mean difference between Day 0 and Day 30 was 41.43, suggesting a considerable positive change in RA after the treatment period.

At baseline (Day 0), the mean CRP level was 0.97, with a standard deviation (SD) of 0.59. The median level was 0.9, and the interquartile range (IQR) was 0.5-1.2, indicating an elevated CRP level. After 30 days of treatment, there was a significant improvement in CRP, as evidenced by the reduced mean level of 0.45, with an SD of 0.34.

At baseline (Day 0), among the 22 individuals, 6 (27.3%) had anti-CCP levels below 500, while 18 (81.8%) had levels above 500. After 30 days of treatment, there was a significant change in the distribution of anti-CCP levels. Individuals with anti-CCP levels below 500 increased to 16 (72.7%), while those above 500 decreased to 4 (18.2%). The statistical analysis revealed a p-value of less than 0.001, indicating a highly

significant difference in anti-CCP levels between Day 0 and Day 30. This suggests that the treatment had a notable impact on reducing anti-CCP levels in the study participants.

CTRI: CTRI/2023/06/054074 [Registered on: 19/06/2023] - Trial Registered Prospectively

DISCUSSION

In this study, *Munditika choornam* with *Guduchi kwatha anupanam* was taken to assess its effect in reducing signs and symptoms of *Vatarakta*, reducing the disease activity and blood parameters of RA, CRP, Anticcp, ESR etc. *Munditika choornam* is a formulation mentioned in *Chakradutta, Vatarakta Chikitsa Adhyaya*. The primary drug in this yoga, *Munditika*, is proven for its anti-analgesic and anti-arthritic properties. In *Vatarakta*, the medicines should have properties like *Tridosha hara*, especially *Vata pitta samana, Rakta prasadana, Sophahara* and *Vedanasamaka*. According to *Caraka Samhita, Sutrasthana, Vidhisonitheeya Adhyaya*, any disease which is not subsiding by *Guru, Snigdha, Seeta, Usna guna*, independently can be considered as a *Raktaja vikara*. Also, *Acharya Sushruta* in *sonithavarnaneyam adhyaya* of *sutra sthana* explained the gunas of *shudha rakta*, among which *Laghu, visrata* and *dravata* are certain gunas exactly opposite of which would be in *dushta rakta* where it would become *guru* and its *dravata* quality reduces thereby resulting in persistent inflammation owing to the angiogenesis in the microvasculature of small joints initially. While considering the general line of treatment of *Vatarakta*, clearance of *Margavarana* by the alleviation of vitiated *Rakta* becomes the 1st step, followed by alleviation of *Vata dosa*. *Rakta* is related to *pitta*. *Agnimandhya*, leading to the formation of *Ama*, is also a major *Nidana* for *Vatarakta*. So, the drug should have *Deepana, Pachana* and *Amahara* properties. The *pitta dusti* will directly cause the formation of *ama* at the *rasa* and *raktha dhathu* levels. Thus, in *Vatarakta*, *nidanans* favour the presence of *ama* in both *rasa* and *rakta dhathu* levels, which is manifested through the symptoms. Due to *vishamagni* and the presence of *ama*, the *agni bhava* of *pitta* reduces, and the *drava*

sara guna will increase. The sookshma and chala gunas inherent in vata favour the pathology by spreading the dushita rakta throughout the body and eventually get obstructed in the sandhis resulting in vatarakta.

The vasodilatory effect of vata combined with the circulating dushitha rakta assists the inflammatory process. By analysing the above, vata contributes to pain, and pitta will favour the inflammatory process. Thus, ama Avastha, rasadusti, and rakta dusti can be seen throughout the vatarakta pathology. Tridosha dusti and vishamagni are the core pathologies manifesting in vatarakta. So, the management aimed at amapachana and agnideepana without aggravating the underlying pitta.

Guduchi is a rasayana as well as raktaprasadana dravya. Moreover, Guduchi is said to be the agrya oushada of vatarakta. Being an autoimmune disease, Immunomodulatory drugs have a significant role in its management. Here, Guduchi acts as rasayana and will further stabilise the agni. The drug Munditika has an analgesic activity, which modifies the autoimmune disease activity. Munditika and Guduchi, in combination, have immuno-modulatory, Anti-arthritis, Anti-inflammatory and Analgesic properties. So, it is understood that the Drug Munditika choornam is vital in the samana management in Rheumatoid arthritis. The actions of Munditika Choornam and Guduchi showed promising results in reducing RA, CRP, and Anticcp. Though vatarakta has its unique nidana and samprapti, as explained earlier, the poorva roopas find twinning with that of Kushta. The genetic predominance in Kushta nidana could be related to the “pamabhihi karmabhi”, which suggests a strong association with disease onset in the early stages of life. While explaining the pathology of RA, the process of citrullination turning from healthy citrullination to a cascade of citrullination, prompting the body to produce self-auto antibodies against the perpetuating process, marks the stepping stone in RA disease manifestation and progression.

Hence, the study drugs, Munditika and Guduchi mainly, have been used proficiently in treating

Vyadhis coming under the spectrum of kushta, and Guduchi has kushtaghna property. The role of the admixture of anupana dravyas—ghrita and Madhu—together in unequal quantity substantiates the role of immunomodulator and better vehicle for the absorption and assimilation of Munditika. The combined effect of all these dravyas significantly reduced the elevated RA and CRP. It led to a change in the titer values of Anti-Ccp.

In this study, Yoga generally has a vata kapha hara pradhan Tridosahara property. The main component in this Yoga is Munditika, which is vata kaphahara in nature. Rasas of Munditika are unique, having Madhura, katu, Tikta and Kashaya rasa; there are vata and kapha shamaka with pittaharatvam. So, these drugs alleviate Rakta dushti also due to Asraya asrayi Bhava. Munditika, a proven analgesic, demonstrated the soolahara effect of yoga through its ushna guna and vatahara properties. The study drug was advised to be made into a linctus form, i.e. Lehya, by mixing it with unequal quantities of ghrita and madhu. Ghritam possesses efficient Pittahara property. Guduchi is an excellent rakta prasadana that helps reduce symptoms like tenderness, localised warmth of joints, and redness, which are signs of inflammation due to Pitta. This can be considered as the reason for the significant reduction in the ESR, CRP, RA & Anti-ccp values of the participants in the study. With tridoshaghna properties and ushna guna, Guduchi helps stabilise the Sthanika kapha dosa in the affected Sandhi. So, it helps in relieving the stiffness of the joints. Guduchi is one of the drugs, which is known to be the Agraya oushadha for Vatarakta. Having Snigdha guna, Madhura vipaka alleviating Vata and Tikta rasa alleviating Pitta played an essential role in the Samprapti Vighatana. RA is an autoimmune disease. So, the immune modulatory effect of these drugs helps reduce the disease activity and improve the prognosis. The comprehensive impact of all the components in Munditika choornam unitedly acts on the Samprapti Vighatana and alleviates the disease.

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