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Original Article

A Comparative Study on *Singhnad guggulu* & *Trayodasanga guggulu* in the Management of Juvenile Rheumatoid Arthritis W.S.R to Amavata

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ABSTRACT

Objective: The aim of present study was to compare the effect of *Singhnad guggulu* and *Trayodasanga guggulu* in the management of Juvenile rheumatoid arthritis w.s.r. to *Amavata.*
Methods: 20 patients satisfying criteria of Juvenile rheumatoid arthritis of 7 to 16 yrs age group of either sex had been randomly selected from OPD & IPD of Hospital of University College of Ayurved, Dr. S.R. Rajasthan Ayurved University, Jodhpur, Rajasthan, India. They were divided into two groups of 10 each. Group A: 10 patients of this group were treated with *Singhnad guggulu.* Group B: 10 patients of this group were treated with *Trayodasanga Guggulu*. Both medicines were administered in a dose of 2mg/kg body weight /day (dose calculated by clark's rule) for 45 days with luke warm water.
Results: *Singhnad guggulu* in Group A was found to have statistically highly significant effect (<0.001) in controlling joint pain while significant effect (<0.05) was found on all other three symptoms joint swelling, joint stiffness and joint tenderness in juvenile rheumatoid arthritis affected patient as compared to *Trayodasanga Guggulu*.

Keywords: Juvenile idiopathic arthritis, *Amavata, Singhnad guggulu, Trayodasanga guggulu.*

INTRODUCTION

Juvenile rheumatoid arthritis (JRA) is the most common form of arthritis in children and adolescents.[1] The international League of Association for Rheumatology (ILAR) recently proposed Juvenile rheumatoid arthritis (JRA) as Juvenile idiopathic arthritis (JIA). It is an auto-immune, non-infective and inflammatory joint disease of children affecting 7 to 12 age group but it can be seen in older children as old as 15 years of age, as well as in infants.[2] It is a subset of arthritis seen in childhood which may be transient and self-limited or chronic. Its clinical presentation differs from other type of chronic childhood arthritis as well as arthritis seen in adults. Although its etiopathology is just similar to rheumatoid arthritis but cartilage erosion, joint instability and negative rheumatoid factor makes it quite different. The etiology of the diseases classified under JRA is unknown. At least two events are considered necessary: immunogenetic susceptibility and an external, presumably environmental, trigger. Specific HLA subtypes have been identified as rendering children at risk, which may confer varying degrees of susceptibility or indeed protection depending on the age of the child. Possible external triggers for JRA include certain viruses (e.g., parvovirus B19, rubella, Epstein-Barr virus), host hyper reactivity to specific self-antigens (type II collagen) and enhanced T-cell reactivity to bacterial or mycobacterial heat shock proteins.[1] Various experimental studies show that certain viruses that have mutated may be able to trigger JRA. JRA appears to be more common in young girls and the disease is most common in Caucasians.[3] It is of three types viz. oligoarticular, polyarticular and systemic.[4,5] The first manifestation particularly in young children may be limping. Children may also become quite ill, presenting with flu-like symptoms. The cardinal clinical feature is persistent swelling of the affected joints such as knee, ankle, wrist and small joints of the hands and feet. Children with juvenile rheumatoid arthritis cause significant growth retardation of joints as well as other body system. If it attack larger joint like knee joint its growth is faster due to inflammation which increases blood supply to the bone growth plates situated near the joints. Diagnosis of JRA is difficult because lot of other cause exist. Therefore, there is no single test that can confirm the diagnosis and most pediatricians use a combination of blood tests, x rays and clinical presentation to make an initial diagnosis of JRA. The blood tests measure antibodies and the rheumatoid factor. Unfortunately the rheumatoid factor is not present in all children with JRA.

Rheumatoid arthritis can be compared with *Amavata* in *Ayurveda* but no clear description is present regarding its relation to juvenile age group. *Amavata* was first described as an independent disease in *Madhava Nidana*.[6] 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 factor being contradictory in nature has been posing difficulty in planning the treatment.

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

lesions etc are caused by them. Hence the management of this disease is merely insufficient in other systems of medicine and patients are continuously looking with a hope towards *Ayurveda* to overcome this challenge.

MATERIALS AND METHODS

Study design was single center open label. Patients (age group of 7 to 16 years of both sexes) suffering from juvenile rheumatoid arthritis were selected from O.P.D. and I.P.D. of Hospital of University college of *Ayurved* Jodhpur, Rajasthan, India. The study was planned after the approval of Institutional Ethical Committee.

Inclusion criteria

- The patients were diagnosed on the basis of proforma incorporating all signs and symptoms of the disease described in *Ayurvedic* textbooks chiefly joint pain, joint swelling, joint stiffness & joint tenderness.
- A detailed clinical history along with physical examination was performed.
- RA factor test was carried out in all patients.
- In addition, routine haematogical, stool, urine, serum uric acid test was also carried out to rule out other pathologies.

Moreover, the criteria laid down by American Rheumatism Association 1988 were followed:

1) Morning stiffness lasting for more than one hour
2) Arthritis of three or more joint area
3) Arthritis of hand joints
4) Symmetrical arthritis
5) Presence of rheumatoid nodules
6) Presence of RA factor

Diagnosis of juvenile rheumatoid arthritis were made satisfying at least four or more criteria.

Exclusion criteria

Patients (age less than 7 years and more than 16 years) having crippling deformities, cardiac disease, pulmonary tuberculosis and diabetes mellitus were excluded from this study.

Laboratory investigation

- Hb gm%
- Complete blood count (CBC)
- Erythrocyte sedimentation rate (ESR)
- Rheumatoid factor (RA Factor)

Grouping of the patient

Randomly 20 patients affected from *Amavata* were selected from the OPD & IPD of Hospital of University College of Ayurved, Jodhpur, Rajasthan, India & divided into two groups of 10 each.

- **Group A:** 10 patients of this group were treated with *Singhnad guggulu.*
- **Group B:** 10 patients of this group were treated with *Trayodasanga guggulu*.

Dose & duration

Both medicines were administered in a dose of 2mg/kg body weight /day (dose calculated by clark's rule) for 45 days with luke warm water.

Assessment criteria

The assessment of progress was done by regular fortnightly observation and examination of the patients and the progress was recorded on the prescribed proforma.

Subjective assessment

It was divided into four grades on the basis of severity of signs and symptoms and presented as:

1. Absence of signs and symptoms: -grade
2. Mild signs and symptoms: +grade
3. Moderate signs and symptoms: ++grade
4. Severe signs and symptoms: ++ +grade

Objective assessment

The objective assessment was done on the basis of the investigation report of patient.

Assessment of result and progress

The clinical study was analyzed after the treatment as here under:

- Remission: - Relief in clinical features more than 60%.
- Partial Remission: - Relief in clinical features between 30 to 60%.
- No Remission: - Persistence of clinical signs and symptoms or progress less than 30%.

Observation

See table 1 to 3.

RESULT

See table 4 to 8.

DISCUSSION

Singhnad guggulu in Group A was obtained to have statistically highly significant effect (<0.001) to control joint pain while it shows significant effect on all other three symptoms viz swelling of joints, joint stiffness and joint tenderness. (<0.05) (Table no. 4).

Trayodasanga guggulu in Group B had shown statistically significant effect on joint pain and joint tenderness (<0.05) while remains insignificant on swelling of joints and joint stiffness. (Table no. 5).

In group A, slight decrease was observed in Hb% as it came down from 12.22gm% to 11.62gm%. The mean initial recording of E.S.R. came down from 28.80 mm of 1 hour to 14.80 mm of 1 hour after the completion of the treatment which was statistically significant (P<.001).

The initial mean of total leucocytes count of 8260 cu mm was decreased to 58.31 cu mm after the treatment, however the decrease of 29.41% was statistically insignificant (P<0.05). (Table no. 6).

In Group B, the mean initial Hb% was 11.79gm% which was improved to 11.84gm% showing an increase of 0.05gm%. However the result was not statistically significant. ESR reduction was also statistically insignificant as it was 28.80 mm before treatment which was reduced to 22.40 mm of one hour after 45 days of treatment. Initial T.L.C. was 7940 cu mm, which decreased to 7860 cu mm which was statistically insignificant. (Table no. 7).

Overall effect of treatment

Major improvement was seen in 63.36% of patients, minor improvement was seen in 27.27% of patients and 9.09% of patients were completely cured. (Table no. 8).

Active principle of *Singhnad guggulu*[7] on ayurvedic parameters was *guna- laghu ruksha, rasa-katu tikta, virya- ushna* and *vipaka- katu*. Therefore it was showing *vata-kapha shamaka*, *amapachaka and srotoshodhaka* properties which were useful measure for the disease *Amavata*. As a control drug *Trayodasanga guggulu*[8] active principle was *katu tikta rasa, ushna virya & vatakapha eliminating properties*. It is well known remedy of *vata vyadhi, asthi-majja-sandhi* and *snayugata vata*.

CONCLUSION

On the basis of above study it is concluded that *Singhnad guggulu* is a better remedy for *Amavata* as compared to *Trayodasanga guggulu* was used where. *Singhnad guggulu* contains castor oil and *guggulu* as the main ingredient which are very effective to breakdown the pathogenesis of *Amavata* along with its anti-inflammatory and analgesic effects.

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Table 1. Showing demographic data of *Amavata* (JRA) affected patients

S. No.	Observation	Predominance	%
1.	Age	7-10 yr	37.03
2.	Sex	Female	92.59
3.	Religion	Hindu	61.76
4.	Region	Rural	83.37
5.	Socioeconomic status	Lower	88.12
6.	Dietary Pattern	Mixed	56.12
7.	*Agni*	*Mandagni*	76.96
8.	*Sharirika Prakriti*	*Vata-Kapha*	59.25
9.	*Manasika Prakriti*	*Tamasika Rajasika*	37.89
10.	*Satva*	*Avara*	41.12
11.	*Koshtha*	*Krura*	59.25
12.	Immunization Status	Improper	78.34
13.	Chronicities of JRA	1-3 yr	48.14

Table 2. Showing clinical features of *Amavata* (JRA) present in both groups

Clinical features	Group A	Group B	Total	%
Joint pain	10	10	20	100.00
Joint swelling	10	10	20	100.00
Joint stiffness	09	07	16	80.00
Joint tenderness	10	10	20	100.00

Table 3. Showing positive RA factor of *Amavata* (JRA) present in both groups

Test	Group A	Group B	Total	%
RA factor	07	05	12	60.00

Table 4. Showing effect of therapy on clinical features of group A

Clinical features	B.T.	A.T.	% Relief	T value	P value
Joint pain	3.66	2.30	57.69	8.88	<0.001
Joint swelling	1.72	1.27	62.50	2.85	<0.05
Joint stiffness	1.79	1.26	62.25	2.78	<0.05
Joint tenderness	1.75	1.24	62.00	2.79	<0.05

Table 5. Showing effect of therapy on clinical features of group B

Clinical features	B.T.	A.T.	% Relief	T value	P value
Joint pain	3.88	2.00	47.00	5.60	<0.05
Joint swelling	1.66	1.11	37.50	2.07	>0.05
Joint stiffness	1.79	1.17	31.00	1.48	>0.10
Joint tenderness	1.87	1.43	21.00	3.75	<0.05

Table 6. Showing effect of therapy on pathological investigation of group A

Lab Investigation	B.T.	A.T.	% Relief	T value	P value
Hb%	12.22	11.62	0.05	1.40	>0.05
TLC	8260	5831	29.41	2.12	<0.05
ESR	23.80	14.80	37.82	2.41	>0.01

Table 7. Showing effect of therapy on pathological investigation of group B

Lab Investigation	B.T.	A.T.	% Relief	T value	P value
Hb%	11.79	11.84	0.42	0.03	>0.10
TLC	7940	7860	1.01	7.55	>0.10
ESR	28.80	22.40	22.22	4.21	>0.10

Table 8. Showing overall effect of therapy in both groups

Treatment effect	Group A	Group B
Complete Remission	09.09	11.11
Major Improvement	63.36	44.44
Minor Improvement	27.27	33.33
Unimproved	0	11.11