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Potentised Commiphora Mukul (Guggul) in Osteoarthritis: An Observational Study

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Abstract

Objective: To explore the usefulness of potentised Commiphora mukul (Guggul) in osteoarthritis (OA).

Method: A prospective, placebo controlled, observational study was carried out during the period 2001-2003. Patients were screened on the basis of the signs and symptoms of osteoarthritis. A total of 60 patients enrolled, out of which 40 patients were administered with Guggul 3C, 20 patients with placebo. Patients of both the groups were advised for physiotherapy.

Results: Out of 60 patients, 39 (65%) patients showed positive response and 21 (35%) patients showed negative response. Among these 39 patients; 34 (85%) were given Guggul 3C, out of which 25% patients had marked improvement, 37.5% moderate and 22.5 % showed mild improvement. Five (n=5) patients were on placebo, out of which 16.66% had moderate improvement and 20% mild improvement. Negative response was more in placebo group (75%) as compared to Guggul group (15%). Out of 15 (75%) patients showing negative response in placebo group: 05 (25%) patients exhibited no improvement and 10 (50%) had aggravation of their complaints. In the Guggul group, 10% (n=25) had no improvement of their complaints, while 5% (n=02) had aggravation. The Guggul group had a statistically significant ($P < 0.05$) decrease in signs and symptoms of OA.

Conclusion: We conclude that Guggul is more useful in persons suffering from single joint OA (especially knee), than in persons suffering from multiple joint OA especially in obese patients. However this work is not comprehensive, a systematic Homoeopathic Pathogenetic Trial (drug proving) along with clinical trial of different potencies need to be conducted to further explore the therapeutic potential of this drug.

Key words: Homoeopathy; OA; placebo controlled observational study; commiphora mukul; guggul; potentization.

Introduction

Osteoarthritis (OA) is the most common form of joint disease in humans. Our ancestor's skeleton shows that it has been with us for many centuries.⁴ It is uncommon before the age of 40, but its prevalence rises rapidly with age after, such that most people over the age of 70 have the pathological changes of the OA in some of their joints. Given current projections indicating that OA could be the fourth leading cause of disability on a world wide basis by the year 2020 leading to a significant reduction in the overall quality of life.⁵ The reported prevalence of OA in rural India from Pune is 5.78% accounting for 30% of rheumatological problems. Indians are found to have increased knee OA as compared to Western people, while hip OA is comparatively rare in India.⁶ Traditional nonsteroidal anti-inflammatory drugs (NSAIDs)

are widely used to treat pain and symptoms associated with disease but with induced GI toxicity in a linear fashion with age.⁷ Systemic review by Long and Ernst, in homoeopathy for osteoarthritis showed the effectiveness of complex homoeopathic intervention⁸. Nonetheless the results favored homoeopathy but it was against the basic laws of it.

Guggul (*Commiphora mukul*) has been used in ayurvedic medicine for the treatment of arthritis, obesity, skin diseases, serious wounds, and inflammation for several thousand years. The scientific basis for its therapeutic uses for obesity has been reviewed.⁹ The anti-inflammatory activity of guggul has been demonstrated in several animal models: formaldehyde-induced arthritis in rats, formaldehyde-induced arthritis in adrenalectomized rats, carrageenan-induced foot pad oedema in rats, and Freund's adjuvant-induced right hock joint arthritis in rabbits. A study on the usefulness of Guggul on osteoarthritis of knee has been already done by Singh and Mishra using it in crude form with positive results.¹⁰

Banerjee used potentised Guggul in various clinical conditions including rheumatism but, not mentioned about the type of rheumatic complaint also did not specify about the source of symptoms¹¹. Following the statement of Burnett¹² 'that imperfectly proved remedies necessitate the use of names of the disease at times instead of the component symptoms that alone are the legitimate guide to the choice of the curative remedy', this medicine was chosen to explore its usefulness in potentised form in osteoarthritis.

Material and Methods

A prospective study was conducted for a period of 2 years from December 2001 to December 2003 at Dr. A.C.H. Medical College and Hospital, Bhubaneswar, Orissa. A total of 70 patients of both sexes and age ranging between 30-70 years were enrolled from O.P.D and I.P.D of the attached hospital.

Design

The study was prospective, placebo controlled observational study.

Medicine

The oleoresin of the plant *Commiphora mukul* (Guggul) was procured from Gopabandhu Govt.

Ayurvedic Medical College and Hospital, Puri and was prepared in the mini pharmacy of the college. Gum of this plant is soluble in alcohol; however, a large quantity of alcohol is required. So class VI B of old method as mentioned by Hahnemann¹³ was followed. The medicine was given in 3C potency. 4-6 pills (no. 20) were administered twice or thrice daily according to the intensity of the signs/symptoms till any changes were observed.

Patient

Patients of both sex exhibiting signs and symptoms indicative of OA were included in this study. While patients with raised ESR, leucocytosis, raised ASO titre, presence of C-reactive protein, positive rheumatoid factor, increased uric acid level in blood, positive complementary fixation test were excluded.

The patients were categorized into two groups: *Group - I* (25 patients) with less severity of symptoms were administered placebo and *Group- II* (45 patients) were administered Guggul 3C. Patients of both the groups advised for physiotherapy.

Parameters of assessment of results (evaluation criteria)

Marked improvement : Complete disappearance of symptoms and signs pertaining to osteoarthritis for at least a period of year even after discontinuation of medicine.

Moderate improvement : Disappearance of signs and symptoms pertaining to osteoarthritis with feeling of well being for at least 6 months even after discontinuation of medicine.

Mild improvement : Disappearance of signs, symptoms for at least a period of 3 months even after discontinuation of medicine.

No improvement : Patient did not improve with medicine although prescribed for sufficient period of time.

Aggravation : Condition of the patient was deteriorated during the course of treatment

Statistical analysis : As the study was a non-parametric, Chi-square test was taken as basis for analysis of the results with the following hypothesis.

Ho = Guggul is not useful in treating the patients of osteoarthritis

H_A = Guggul is useful in treating the patients of osteoarthritis.

Results

Out of 70 patients enrolled: sixty (60) patients were followed up completely and their results were analyzed; 5 patients each from placebo and medicinal group were dropped out as the patients did not turn up although advised and discontinued the treatment after one or two visits.

Different demographic and disease related profile were observed in this study. The sample consisted of 35.7% males and 64.2% females, age ranged from 30-70 years. The mean age was 54.51 yrs, details given in table 1. Different body built was observed among the patients: out of which 52.85% (n=37) were obese (table 1). Patient presented with OA involving different joints viz. knee, 47.14% (n=33); hip, 1.42% (n=1); spine, 2.85% (n=2); hands, 11.42% (n=8) and multiple joints, 37.14% (n=26) (table-1).

More than half of the patients manifested pain (92.85 %), stiffness (78.57 %), restriction of range of motion (78.57%), and crepitus (64.28%), whereas half of patients manifested local tenderness (50%) and less than half manifested synovial effusion (14.28%) and deformity of joints (7.14%) (table 2).

Out of 60 patients, 39 (65%) showed positive

response and 21 (35%) negative response. Among these 39 patients, 34 (85%) were given Guggul 3C, out of which 25% had marked improvement; 37.5% moderate and 22.5 % showed mild improvement. Five (5) patients were on placebo, out of which 16.66% had moderate improvement; 20% showed mild improvement (table 4 & 5).

Negative response was more in placebo group (75%) as compared to Guggul group (15%). Out of 15 (75%) patients showing negative response in placebo group: 05 (25%) patients exhibited no improvement and 10 (50%) had aggravation of their complaints. In the Guggul group: 10% (n=25) had no improvement of their complaints, while 5% (n=02) had aggravation (table 5).

Out of forty patients administered with Guggul 3C, twenty-seven (n=27) patients had single joint OA like knee, shoulder, ankle, etc. Thirteen (n=13) patients had multi-joint OA (Table 3). Guggul has showed more positive response in patients with monoarticular OA 73.52% (n=25), where as in polyarticular OA patients the positive response was 26.47% (n=9). Again the negative response in monoarticular OA patients treated with Guggul was less i.e.33.33% (n=2) in comparison to polyarticular OA i.e. 66.66% (n=4).

On statistical analysis of results with non-parametric χ^2 (Chi-square) test between the Guggul and placebo group it was found that the result was significant at 1 degree of freedom, 5% level of significance with χ^2 cal. (16.48) > than χ^2 tab. (3.84).

Table 1: Demographic and disease profile of the enrolled patients

Demographic	Male	Female	Total	Total	%
<i>Age (Range and mean age)</i>					
< 40 (32.5)	3	1	4	4	5.71
40-49 (45.6)	6	6	12	12	17.14
50-59 (54.7)	9	11	20	20	28.57
60 (64.17)	6	28	34	34	48.50
<i>Body built</i>					
Obese	15	22	37	37	52.85
Moderate	08	14	22	22	31.42
Thin	02	09	11	11	15.71
<i>Inhabitants</i>					
Urban	17	30	47	47	67.14
Rural	8	15	23	23	32.85
<i>Nature of manual work</i>					
Hard	03	05	08	08	11.42

Demographic	Male	Female	Total	Total	%
Moderate	08	10	18	18	25.71
Sedentary	14	30	44	44	62.85
<i>Joints involvement</i>					
Knee joint	13	20	33	33	47.14
Hip joint	01	00	01	01	1.42
Spine	01	01	02	02	2.85
Joint of hands	02	06	08	08	11.42
Multiple joints	08	18	26	26	37.14

Table 2: Presenting signs and symptoms of the patients with osteoarthritis.

Symptoms & signs	No. of patients	%
- Pain	65	92.85
- Stiffness	55	78.57
- Local tenderness	35	50
- Restriction of movement	55	78.57
- Crepitus	45	64.28
- Synovial effusion	10	14.2
- Deformity of joints	05	87.14

Table 3: Result analysis of the treatment

Result analysis	Total patients n(%)	Placebo n(%)	Guggul		
			Total n (%)	Monoarticular joint n (%)	Polyarticular joint n (%)
Positive response	39 (65)	05 (25)	34(85)	25 (73.52)	09 (26.47)
Negative response	21(35)	15 (75)	06(15)	02 (33.33)	4 (66.66)
Total	60	20	40	27	13

Table 4: Comparison of results between Guggul and placebo groups

Category	Positive response	%	Negative response	%
Group-II	34	69.38	06	54.54
Group -I	05	38.46	15	30.61
Total	39		21	

Table 5: Comparison of response of treatment in between the groups

Basis of prescription	Marked >	Moderate >	Mild >	No >	Worse <	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	
Group II (Guggul)	10 (25)	15 (37.5)	09 (22.5)	04 (10)	02 (5)	40
Group I (Placebo)	00	1 (5)	04 (20)	05 (25)	10(50)	20

Discussion and conclusion

Similar to findings of Mishra et al¹, Guggul in homoeopathic potency is also useful in the management of osteoarthritis.

Before entering into this study 60 patients had undergone various types of treatments like; allopathy, ayurveda and homoeopathy who improved partially and opted to enter this trial. This otherwise adds to the potentials of Guggul in potentized form.

During the course of treatment all patients were advised to take ancillary measures like physiotherapy. Some patients due to severe pain could not give up allopathic medicines suddenly and they were advised to taper the dose slowly till complete discontinuance of the medicine.

Among the obese patients (n=33) suffering from OA, 63.6% (n=21) were given Guggul 3C and 36.3% (n=12) placebo. Positive result was reflected more in Guggul group (90.4%) in comparison to placebo group (16.6%). Among the patients with monoarticular OA the principally affected joint was knee. Here it is observed that obesity is potentially a risk factor for osteoarthritis of knee.^{2,33} We observed that Guggul was useful in patients with monoarticular OA (knee) (100% of 16) in comparison to polyarticular OA where 60% patients (n=03) had improvement.

Three groups of patients taking potentized Guggul i.e. sedentary habit, 67.5% (n=27), moderate work, 20% (n=08) and hard work, 12.5% (n=05) were compared. Out of 27 patients with sedentary life style, positive results was observed in 77.7% (n=21), among them 07 improved markedly, 07 moderately and 07 mildly. All the patients other than sedentary habit i.e. hard working (n=08) and moderate working (n=05) groups showed positive results. This is a preliminary study with limitations too. This study lacked the radiological investigations. However this work is not comprehensive, a well designed study with larger sample size is needed to further substantiate the outcome.

We conclude that Guggul is more useful in obese persons suffering from single joint OA (especially

knee), than in persons suffering from multiple joint OA. A systematic Homoeopathic Pathogenetic Trial (drug proving) along with clinical trial of different potencies need to be conducted to further explore the therapeutic potential of this drug.

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