

Added advantage of ayurvedic management in a series of 100 cases of osteoarthritis of the knee joint: a shared experience between Orthopaedic and Ayurvedic Faculty

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Osteoarthritis of the knee joint is a disease due to the uncoupling of balance between cartilage degeneration and regeneration in the elderly, causing knee joint pain, deformity and limp. About half of the population after the fifth decade of life have symptoms of osteoarthritis of the knee. The treatment of osteoarthritis varies from conservative to operative procedures. As yet, no long-term definitive conservative management has been described. We compared the results of osteoarthritis among 100 patients in the Orthopaedic outpatient department who either underwent (42 patients) or did not undergo (58 patients) added ayurvedic panchakarma (snehan and swedan) therapy. Patients' visual analogue scores and satisfaction scores were assessed before the treatment and after 2 and 4 weeks. Patients with early to moderate grade of osteoarthritis treated with added ayurvedic therapy showed better improvement in terms of pain and mobilization compared with the patients treated with analgesics only.

Keywords:

ayurveda, knee, osteoarthritis, panchakarma

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Introduction

Osteoarthritis of the knee joint is a degenerative condition and is inevitable in old age. There is no definitive cure for the destruction of joint cartilage. The process of degeneration of cartilage can be delayed with some precautions and physiotherapy. Ayurvedic massage with medicated oil helps in the improvement of knee joint range of movement and decreases pain because of its anti-inflammatory and soothing effect [1].

Osteoarthritis of the knee joint is equally common in rural and urban areas. There is no discrimination in sex and economical status. However, knee joint deformities are more commonly seen in poor patients because of negligence of the condition.

Primary osteoarthritis of the knee joint is common in India compared with hip joint, which is more common in western countries [2]. Joint cartilage cannot be regenerated naturally. Delaying the degenerative process is the mainstay of treatment. Orthopaedic management of osteoarthritis depends on symptoms. Treatment varies from conservative to operative procedures. As yet, no long-term definitive conservative management has been proven [3]. Analgesic medication reduces pain for short duration.

Patients treated with a combination of analgesic medication and ayurvedic local treatment showed better improvement compared with the patients treated with

analgesic medication only. Ayurvedic panchakarma therapy adds to the improvement of the patients' condition in terms of pain management, mobilization and delaying of joint replacement surgery [4].

Materials and methods

We studied 100 patients with primary osteoarthritis of the knee joint in Aacharya Vinoba Bhave Rural Hospital over a period of 1 year from April 2012 to April 2013. Patients with early to advanced osteoarthritis of the knee joint were included in the study group, diagnosed on the basis of criteria of American College of Rheumatology. Elderly patients were studied in terms of their symptoms, clinical findings, pain score and patient disabilities. The visual analogue scale was used for the assessment of pain in patients.

Patients were graded on the basis of clinical findings into early mild, moderate and severe osteoarthritis. Severity was assessed on the basis of knee joint flexion deformity, varus or valgus angulation deformity, joint space narrowing, and compartment involvement. All these findings were checked and correlated with patients' symptoms.

Of 100 patients, randomly selected 42 willing patients were sent to an Ayurvedic hospital for panchakarma (snehan and swedan) therapy. Patients with acute exacerbation of chronic osteoarthritis were continued on allopathic analgesic along with ayurvedic local

therapy. The remaining 58 patients were managed with analgesic medication.

Patients were followed up after 2, 4 weeks, 3 and 6 months. Patients were assessed in detail at every visit. Patients' satisfaction level with respect to pain management was asked and noted on every visit.

Study design: randomized-control trial.

Level of evidence: level 2

Observations

- (1) A total of 200 knee joints of 100 patients were assessed. Every patient was considered as a single case. Highly deformed and symptomatic knee joints were considered for clinical assessment.
- (2) Of the 100 elderly patients above 50 years, 56 were female.
- (3) All patients were from the low to middle economic strata, involved in farming-related work for their living.
- (4) A total of 68 patients were literate and 32 were illiterate.
- (5) A total of 20 patients were in sixth decade, 48 were in seventh decade and 32 were above 70 years.
- (6) Osteoarthritis was early mild in 46 cases, moderate in 36 cases and severe in 18 cases.
- (7) Most of the cases with mild osteoarthritis of the knee joint, 39 of 46 cases, were diagnosed before 70 years of age.
Twenty-five of 32 patients above 70 years were found to have moderate to severe osteoarthritis.
- (8) Many of the cases with moderate to severe osteoarthritis of the knee joint, 37 of 54 cases, were found to have 5°–15° of flexion deformity and 5°–10° of varus deformities.
- (9) Better symptomatic relief was observed with added ayurvedic therapy compared with only analgesic medication, although no significant difference in fixed joint angular deformity was observed after conservative management with or without local ayurvedic therapy.
- (10) Of 42 patients undergoing ayurvedic local therapy, 10 patients had severe osteoarthritis of

the knee joint, 24 had moderate and eight had mild osteoarthritis of the knee joint.

Twenty-five of 34 patients with moderate to severe osteoarthritis of the knee joint and all eight with mild osteoarthritis of the knee joint symptomatically improved with the combination of ayurvedic and orthopaedic management.

- (11) Of 58 patients undergoing only orthopaedic pain medication without ayurvedic therapy, eight had severe osteoarthritis of the knee joint, 12 had moderate and 38 had mild osteoarthritis of the knee joint.
- (12) Of 20 patients with moderate to severe osteoarthritis of the knee joint, only three patients responded good to analgesic-only medication. Temporary pain relief for a couple of days with no long-term definite benefit was the common complaint of most of the patients.

Statistical analysis

Total 100 cases of osteoarthritis were followed up in Orthopaedics outpatient department. Patients were categorized as having mild, moderate and severe osteoarthritis of the knee joint on the basis of clinical and radiological findings. All patients were advised for added ayurvedic local therapy along with allopathic analgesic medication. A total of 42 of 100 patients underwent allopathic local therapy and 58 had taken only allopathic analgesic medication.

Symptomatic outcome of cases with mild osteoarthritis (total 48) who had taken only allopathic medication (38 patients) were compared with the patients who underwent allopathic along with ayurvedic local therapy (10 patients). There was no significant association between these two groups [*F*-test ($P = 0.705$)] (Table 1).

However, symptomatic outcome of cases with moderate to severe (total 52) osteoarthritis who had taken only allopathic medication (20 patients) compared with the patients who had taken allopathic along with ayurvedic local therapy (32 patients) shows statistically significant improvement (χ^2 -test = 17.28, $P = 0.00003$, odds ratio = 20.24) in the patients who had taken allopathic analgesic medication and ayurvedic local therapy (Table 2).

Table 1 Treatment outcome in patients with mild osteoarthritis of the knee joint

	[n (%)]			Significance
	Patients on only allopathic analgesic medication	Patients on allopathic with added ayurvedic local therapy	Total patients	
Symptomatically improved	27 (71.05)	8 (80)	35 (72.91)	<i>F</i> -test $P = 0.705$ Not significant
Symptomatically not improved	11 (28.94)	2 (20)	13 (27.08)	
Total patients	38 (100)	10 (100)	48 (100)	

Table 2 Treatment outcome in patients with moderate and severe osteoarthritis of the knee joint

	[n (%)]			Significance
	Patients on only allopathic analgesic medication	Patients on allopathic with added ayurvedic local therapy	Total patients	
Symptomatically improved	3 (15)	25 (78.12)	28 (53.84)	χ^2 -test = 17.28 P = 0.00003 OR = 20.24 (highly significant)
Symptomatically not improved	17 (85)	7 (21.87)	24 (46.15)	
Total patients	20 (100)	32 (100)	52 (100)	

OR, odds ratio

Patients with moderate to severe osteoarthritis show 20 times more chance of improvement if treated with allopathic analgesic medication along with ayurvedic local therapy.

Discussion

Osteoarthritis of the knee joint is not a disease but an age-related progressive condition of degeneration of joint cartilage (dhatu kshay janya vyadhi) [5,6]. Destruction of cartilage cannot be naturally reversed. Progression of this condition can be controlled partially. Controlling the progression of degeneration is the mainstay of the treatment.

The main triggering factor for the development of osteoarthritis of the knee joint is biomechanical, due to microfracture of the subchondral bone or fatigue fracture of collagen fibres [7].

Subchondral bone microfractures cause weakening of the subchondral bone and depression of the weight bearing area. Weakening of the subchondral bone may cause a subchondral cyst. The cartilage is progressively eroded and bone matrix is exposed leading to osteophyte formation. Osteophytes are projected circumferentially to give lipping appearance.

Mechanical axis of weight bearing area passes medial to centre of the knee joint. This leads to more commonly involvement of medial knee joint. Medial unicondylar knee joint arthritis is the most common finding in most of the early to moderate osteoarthritis of the knee joint. Medial unicondylar knee joint causes more varus deformity and limping gait pattern. Destruction of posteromedial corner of tibial condyle is most common because of its anatomical position causing flexion and varus deformity. Restriction of flexion of the knee is because of mechanical block due to posterior osteophyte formation.

Very few patients with previous valgus deformity showed increase in further valgus of the knee. Valgus deformity may be because of congenital cause or

post-traumatic or ligament injury. More stress on lateral joint line leads to destruction of lateral tibial articular damage and more valgus deformity. More than 95% of patients of osteoarthritis of the knee joint with deformity present with varus angulations of the knee and less than 5% present with valgus deformity.

Arthritis of the knee may cause synovial inflammation leading to synovitis or synovial hypertrophy. Arthritis of the knee joint may also cause damage to intra-articular soft-tissue like cruciate and collateral ligaments and meniscus. This may lead to joint laxity and instability.

The main features of osteoarthritis of the knee joint are knee joint pain, loss of mobility, instability, deformity and swelling [8,9]. Pain is the most common concern of the patients. Orthopaedic outpatients are managed with oral analgesic medications combined with local fomentation and physiotherapy. Analgesic medication provides short-term good effect. However, they are not fully proven for long-term benefit [10]. Long-term analgesic drugs cause gastric discomfort and are contraindicated in patients with gastrointestinal disturbances [2,11].

Ayurvedic local therapy has proven a good support in the treatment of osteoarthritis of the knee joint. Massage (snehan) and heat (swedan) application helps in early mobilization of the joint and has a soothing anti-inflammatory effect. Gradual joint mobilization within the constraint of pain improves functional capacity of the patient [12]. Local ayurvedic therapy is continued for 2–4 weeks on the basis of the response of the patient. Treatment protocol for the patient varies with patient demand, work pattern and economical support [13]. Individualized treatment for every patient gives good outcome. Fixed deformity of the joint cannot be corrected with conservative treatment, but the patients' functional outcome and satisfaction level improves after the ayurvedic therapy. The patients with early to moderate osteoarthritis of the knee joint when given a combined treatment of orthopaedic and ayurvedic local therapy show better functional outcome and delay in progression of further symptoms (Fig. 1).

Figure 1



Radiograph showing osteoarthritis of the knee joint

Conclusion

Significantly good results were found on the visual analogue scale and the patients satisfaction index for osteoarthritis of the knee joint after a combined treatment of orthopaedic pain management and local ayurvedic therapy.

Acknowledgements

Conflicts of interest

None declared.

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