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Clinical exploratory evaluation of Komuthira Silasathu Patru (Semi-solid poultice) in the management of Azhal Keelvaayu (Osteo Arthritis – Knee) – A case series

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Abstract

Background: Osteoarthritis (OA), a chronic degenerative joint disease and is the most common type of arthritis. It is one among the most prevalent chronic arthritis and leading cause for pain and disability in most countries world-wide. In India, OA is the most prevalent form of arthritis, affecting over 15 million adults every year. Patient with OA- knee has more difficulty in doing their activities of daily living and is commonly managed through intake of non-steroidal anti-inflammatory drugs (NSAIDs), analgesics, intra-articular corticosteroid injections. These may of little value in the long term. Hence, the study evaluated the efficacy of Komuthira Silasathu Patru (KSP) in managing the symptoms of OA knee through external application.

Study design: Descriptive study presented as case series.

Methods: Sample of 10 patients were included in the study and was administered with the trial therapy. Pain and functional scales were evaluated pre and post treatment using WOMAC Osteoarthritis index.

Results: The average value of WOMAC index evaluated were 66 and 38 before and after the administration of the trial therapy respectively. This shows considerable reduction in pain and functional disability in patients.

Conclusion: The study supports the conclusion that Komuthira Silasathu Patru is an effective form of external therapy for patients with OA – knee. Findings can be used for further elaborate studies in future in order to prove the efficacy of external therapies in treating the chronic degenerative joint diseases.

Keywords: Osteoarthritis knee, external therapy, management, pain.

Introduction

Osteoarthritis (OA), a chronic degenerative joint disease and is the most common type of arthritis. It is characterized by focal loss of articular hyaline cartilage with proliferation of new bone and remodelling of joint contour. Osteoarthritis is one among the most prevalent chronic arthritis and leading cause for pain and disability in most countries world-wide. In India, osteoarthritis is the most prevalent form of arthritis, affecting over 15 million adults every year. And it comes under top five prevalent diseases in India. The rapid increase in the incidence suggests that osteoarthritis of knee joint has growing impact on health care and public health in the future.

As the age advances the physical functions such as leg strength, balance and mobility of the leg joints decreases markedly. Because of its frequent disability in the major weight bearing joints especially knee joint. Patient with osteoarthritis knee joint has more difficulty in doing their activities of daily living like climbing stairs and walking than any other disease.

Pain is a key symptom in the decision to seek medical care and an important antecedent to disability.

Non-steroidal anti-inflammatory drugs (NSAIDs), analgesics, intra-articular corticosteroid injections are of little value in the long term and opioids may have ominous consequences^[2].

Hence the study evaluated the efficacy of Komuthira Silasathu Patru (KSP) in managing the symptoms of OA knee⁴.

Siddha medicine is a traditional indigenous system of medicine that originated in South India. There are 32 rich and unique treatment procedures practiced as external therapies in siddha literature. PATRU is one among the 32 external therapies practiced as a traditional and widely used way in treating arthritis, muscular sprain, swellings, abscesses etc. Patru is a poultice which is soft and moist in nature. Poultice is made of semi solid paste which is made by grinding plant parts or

crude raw drugs and applied as a thick paste over the affected region.

Methods

This study, presented as case series was conducted at Government Siddha Medical College, Chennai. It was carried out following the approval of the Institute's Ethical Committee. The study assessed the efficacy of the trial intervention in 10 patients who attended the Out-patient department of Pura Maruthuvam. The diagnosis was made with the help of clinical examination. Patients who presented with the complaints of pain, swelling, stiffness, crepitation with movement and reduced range of motion in one/both the knee joints were included in the study. The patients enrolled in the study were informed about the trial medicine, possible outcomes and the objectives of the study in the language and terms understandable to them and the study was performed after obtaining informed consent. The study consisted duration of 14 days. Baseline assessment and the post treatment assessment was done and recorded in the prescribed format to know the response for the treatment.

Study intervention

Patients received treatment of KSP for 7 days with an interval of 3 days and the intervention was done in 2 such courses. Patru is prepared by mixing the powdered Komuthira Silasathu with egg yolk and made into a semi-solid paste. The paste prepared as mentioned above was applied on a gauze cloth. The gauze will be tied around the affected knee joint. The patient was asked to allow it to dry and to retain it the whole day. The patients were withdrawn from the study if any acute illness was developed during the treatment phase or if the patients experienced any adverse ill effects due to the therapy or if the patients themselves turned unwilling to participate in the study.

Statistical Analysis:

10 patients presented with the symptoms of OA-knee were administered with the trial therapy.

The outcome of the study was analysed with change in the WOMAC OSTEOARTHRITIS INDEX score. The response to treatment was analysed and recorded on 7th and 14th day of the treatment.

The quantitative variables were expressed as Mean (Standard Deviation) and qualitative data as percentage. A probability value of <0.05 was considered to indicate as statistical significance with 95% confidence interval. Analysis of Variance (ANOVA) technique was performed for determining the significance between before and after treatment.

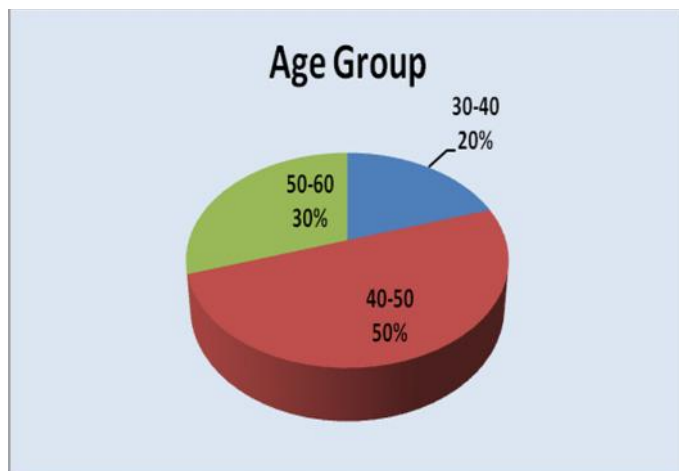
Null Hypothesis was stated as- There is no significant difference before and after the treatment with respect to different factors of WOMAC Scores.

Results

10 patients presented with the complaints of OA - knee were included in the study and was given the trial therapy. The baseline data was collected along with demographic details of the patients. WOMAC index score was recorded for each patient at baseline and on the 7th and 14th day of the treatment. The change in the mean score for each patient was recorded before and after the treatment, was analysed and results are obtained as below.

Demographic profile:

Age group:



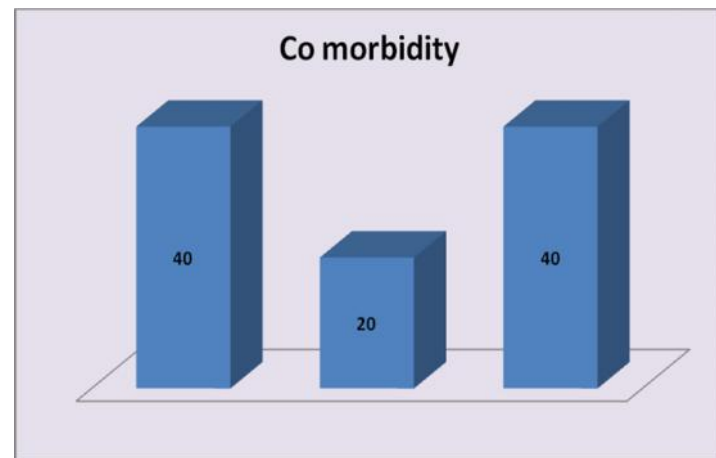
It was clear that 50% (5 patients) were in the age group 40-50, remaining 30% (3 patients) were in the age group 50-60, and only 20% (2 patients) in the age group 30-40 were in the study.

Gender:

Gender	No. of Patients	Percentage
Male	1	10
Female	9	90

It was clear that 90% (9 patients) in the study were females and only 10% (1 patient) was male in the study.

Co – morbidity



Co – morbidity

It was clear that 40% (4 patients) was diabetic and 20% (2 patients) was obese and 40% (4 patients) were free from co-morbidities.

Change in WOMAC index score:

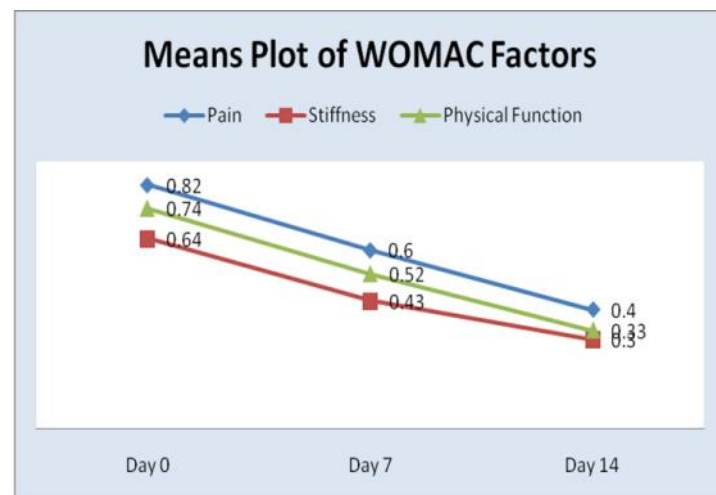


Figure 1. Means plot of WOMAC factors with respect to pain, stiffness and functional disability.

From the graph it was clear that the mean WOMAC Score for the factors Pain, Stiffness and Physical function were decreasing from Day 0 to Day 14. The percentage improvement in Pain was 51%, in Stiffness was 53% and improvement in physical function was 55%.



Figure 2: Means plot of total WOMAC score.

From the graph it was clear that the mean of total WOMAC Score was decreasing from Day 0 to Day 14. The percentage of improvement in total WOMAC Score was 54.67%.

WOMAC Factors	Day 0	Day 7	Day 14	F value	P Value
Pain	0.82 (0.11)	0.6 (0.2)	0.4 (0.18)	15.782	<0.001**
Stiffness	0.64 (0.09)	0.43 (0.16)	0.3 (0.11)	19.576	<0.001**
Physical Function	0.74 (0.11)	0.52 (0.15)	0.33 (0.14)	23.006	<0.001**
Total WOMAC Score	0.75 (0.1)	0.53 (0.16)	0.34 (0.14)	22.272	<0.001**

Figure 3.

- Note: 1. The value within bracket refers to SD
 2. ** denotes significant at 1% level

Since P value is less than 0.01, null hypothesis is rejected at 1% level with regard to the Factors Pain, Stiffness and Physical function and Total WOMAC Score.

Discussion

In the present study, the trial therapy of KSP has been evaluated by administering it to 10 patients externally for 14 days. Komuthira Silasathu Patru has been chosen for the trial under the rationale that the literature review of the siddha classical book⁴ recommends the use of semi-solid poultice of powdered Komuthira Silasathu and egg yolk⁶ for treating joint pain. The anti-inflammatory and analgesic actions of Komuthira Silasathu have been proved in the previous studies and the review of siddha literature suggests the same⁸. Hence, based on the above said references and the research works it justifies the beneficial treatment on Azhal Keel Vaayu (OA-knee).

The response was evaluated on day 7 and 14 using the WOMAC INDEX score. The main outcome was change in the score with respect to pain, stiffness and functional disability. Based on the score obtained on day 0, day 7 and day 14 after the course of the treatment the reduction in the mean score was statistically significant ($p < 0.001$) as shown in results section (figure 3). The mean of total WOMAC score shows a decrease on day 7 from 0.75 to 0.53 in the course of the treatment and was found to reach a value of 0.34 at the end of the treatment course which is considerable (figure 2 means plot). The WOMAC index has three sections - pain, stiffness and functional disability. The mean scores in each of the three sections has been given in the figure 1. The decrease in mean score with respect to pain has been noted with 51%, stiffness with 53% and functional disability has been noted with 55%. The reduction in mean scores suggests the external application of komuthira Silasathu Patru has proved to be effective in terms of reduction in pain, stiffness and functional disability. The percentage decrease in functional disability in patients is suggestive of the fact that the difficulties in performing the daily activities has been considerably reduced.

At present scenario, the conventional management of OA-Knee includes intake of non-steroidal anti-inflammatory drugs and analgesics at initial stages and may require intra-articular corticosteroid injections at advanced stages. As

these medications has to be taken on a long-term basis, they are always associated with adverse side effects apart from high financial burden. Hence, there is a need for a cost-effective simple external therapy for long term management of OA-knee and from the present study the external application of KSP has proved to be effective in the management of OA- knee.

Conclusion

Significant improvement in various clinical manifestations of OA-Knee were noted in small group of patients administered with KSP. Hence these findings can be further taken up for study in large group of population for complete contemporary understanding of the role of KSP in the management of chronic degenerative joint diseases.

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