AN INDIGENOUS APPROACH TO MANAGE THE OSTEOARTHRITIS OF KNEE JOINT WITH LAKSHADI GUGGULU, KALKA-PATRA BANDHAN AND KNEE TRACTION

DR. VISHNU DUTT SHARMA, DR. ANURADHA SHARMA, PROF. H.K. KUSHWAH
National Institute of Ayurveda JAIPUR.

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ABSTRACT:

The clinical study was attempted to develop a holistic treatment module for the patients of osteoarthritis of the knee. The study was done in 10 patients of Osteoarthritis of knee. The patients were given Lakshadi Guggulu Tablet, Kalka patra –bandhan (Bandage of medicinal paste) and Knee joint traction. The duration of treatment was 1 month with follow every week. At the end of 4 weeks, statistically significant results were found in the criteria of assessment specifically in severity of pain, deep grading of tenderness, walking distance and movement of knee joint (degree of flexion). Maximum response was observed in the deep grading of tenderness (76%). The combined therapy with Lakshadi Guggulu, Kalka bandhan and traction therapy in the management of OA of the knee joint was very effective. It is essential to evaluate the clinical efficacy of this combination in a large population.

INTRODUCTION:

Now a days “pain in joints” is a very common problem from the age of 30. Degenerative changes of joints include many type of joints diseases like Osteoarthritis, Rheumatoid arthritis etc. Amongst these, Osteoarthritis is the most common joint disease. By the age of 65, 80% of people have some radiographic evidence of osteoarthritis, although only 25% may have symptoms. Males and females both are affected but OA is more generalized and more severe in older women.

It is a chronic degenerative disease of 5-6th decade of life which mainly affects the weight bearing joints. Osteoarthritis of the knee is a very common form of osteoarthritis. Other joints which are often affected include joints in the hands, the spine, the hip joint and the big toe joint. It is also known as degenerative joint disease (DJD). It is a joint disease that mostly affects the cartilage. Cartilage is the slippery tissue that covers the ends of bones in a joint. Healthy cartilage allows bones to glide over one another.
It also absorbs the shock of physical movement. In osteoarthritis the surface layer of cartilage breaks down and wears away. This allows bones under the cartilage to rub together, causing pain, swelling and loss of motion of the joint. Over time the joint may lose its normal shape. Also, bone spurs – small growths called osteophytes may grow on the edges of the joint. Bits of bone or cartilage can break off and float inside the joint space. This causes more pain and damage.

CAUSES OF OA OF KNEE JOINT:

While the exact cause is unknown, the following factors are known to be the possible causes which include-obesity (Body Mass Index >30 mg/kg) , occupation, prolonged squatting or kneeling, lifting more than 25 kg regularly , walking more than 2 miles per day , age related -osteoarthritis affects people over the age of 45 ,gender related -osteoarthritis is more common in women than in men ,hereditary conditions such as defective cartilage and joint deformity .joint injuries caused by sports, work-related activity or accidents, diseases that affect the structure and function of cartilage, such as rheumatoid arthritis, hemochromatosis (a metabolic disorder), Paget’s disease and gout.

SYMPTOMS OF OA OF KNEE JOINT:

Pain aggravated by prolonged activity; relieved by rest, localized stiffness of short duration relieved by exercise possibly painful; muscle spasm, limitation of motion “flares” associated with crystal induced synovitis, disability depends upon the joints affected, restricted movement

SIGNS OF OA OF KNEE JOINT:

Bony and soft tissue swelling sometimes associated with effusion, localized tenderness, crepitus and crackling on movement,mild joint enlargement with firm consistency from proliferation of bone and cartilage palpation may reveal some warmth over the joint, peri-articular muscle atrophy may be due to disuse of reflex inhibition of muscle contraction, synovitis (less common), gross deformity (later) inhibition of movement,tenderness in the joint line and over the attachment of the medial ligament, movements are restricted. In late cases there is often a genu deformity.

DIAGNOSIS OA OF KNEE JOINT:

The diagnosis of O.A. is usually based on clinical and radiological features. In the early stages, the radiograph may be normal but later on as pathology progresses following changes develops-

RADIOLOGICAL FEATURES

Narrowing of joint space - Marginal osteophyte spurs formation - Remodeling and hypertrophy of bone
HEMATOLOGICAL FEATURES
- TLC, DLC, ESR, Hb%

SEROLOGICAL CRITERIA
- R.A. Factor, C.R.P., A.S.L.O. Titer

Materials and Methods

The study was carried out on 10 patients suffering from Osteoarthritis of knee joint. A detailed history of every patient was recorded on proforma specially designed for the purpose. The patients were subjected to a thorough local and general examination.

1. Selection of the patients: Ten patients were selected from the O.P.D of the P.G. Department of the Shalyatantra NIA Jaipur.

2. Medicines: A combined therapy with Lakshadi Guggulu, Kalka bandhan and traction therapy was planned.

A. Lakshadi Guggulu Tablet - It was given in a tablet form, drug dose was 2 B.D. daily to be consumed along with hot milk or hot water (Anupana). Duration was four weeks with follow up at weekly interval.

B. Kalka patra –bandhan (Bandage of medicinal paste) - Kalka (Paste) was formed with leaves of Moringa oleifera (Shigru patra), Ricinus communis (errand patra), Vitex negundo (nirgundi patra), Tamarindus indica (imli patra), Cuscuta reflexa (amarbel), castor oil (errand sneha) and water. This whole paste was wrapped with 6 inch bandage and the knee joint was fixed.

C. Knee joint traction - Skin foot traction of intermittent type was planned. Patient were positioned supine on the traction bed. Equipment consisted of Thomas spint, traction bed, traction kit, pulley, cord, weight etc. Thomas splint & traction kit was applied over the leg and a cord was tied and run over a pulley with a weight attached to it. Weight attached varied from 2 to 4 kg. Duration of the intervention was 12-15 minutes per day for 28 days. The progress was evaluated once a week.

3. Assessment criteria: Following four symptoms of OA of knee joint were taken for assessment:

1. Severity of pain
2. Deep grading of tenderness
3. Walking distance
4. Movement of knee joint (degree of flexion)

Grading of severity of pain was done on the basis of VAS (Visual analogue scale). The most common VAS consists of a 10 cm horizontal or vertical line with two end points labeled –no pain and worst pain ever.
The patients were required to place a mark on the 10 cm line at the point, which corresponded to the level of the pain intensity he or she experienced. The distance in c.ms. from the lower end of the VAS to the patient’s mark was used as numerical index of the severity of pain.

a. Pain (Scoring pattern)

0 - No pain
1 - Mild pain (up to 3 mark)
2 - Moderate pain (up to 4-6 marks)
3 - Severe pain (up to 7-8 marks)
4 - Intolerable pain (up to 9-10 marks)

b. Deep grading of tenderness (Scoring pattern)

0 - No pain on pressure
1 - Pain on pressure
2 - Winces with pain
3 - Winces & withdraws affected part
4 - Does not allow to touch the affected part

c. Walking distance (Scoring pattern)

0 - Walks without pain up to 1 km
1 - Walks without pain up to 500 meters
2 - Walks without pain up to 250 meters
3 - Feels pain on standing
4 - Can not stand

d. Movement of the knee joint – (degree of flexion) (Scoring pattern)

0 - 0 -130 degree
1 - 129 -90 degree
2 - 89 -60 degree
3 - 59 -30 degree
4 - 30-0 degree
TABLE I- Clinical observation chart- before and after treatment for 4 weeks.

| Patient Sr. No. | Severity of pain | Deep grading of tenderness | Walking distance |
|-----------------|------------------|---------------------------|-----------------|
|                 | B.T. | A.T. | B.T. | A.T. | B.T. | A.T. | B.T. | A.T. |
| 1.              | 3    | 1    | 3    | 2    | 3    | 1    | 3    | 1    |
| 2.              | 2    | 1    | 3    | 1    | 1    | 0    | 1    | 0    |
| 3.              | 1    | 0    | 2    | 0    | 3    | 1    | 3    | 1    |
| 4.              | 2    | 0    | 3    | 1    | 2    | 0    | 2    | 0    |
| 5.              | 1    | 0    | 2    | 0    | 2    | 0    | 1    | 0    |
| 6.              | 2    | 1    | 2    | 0    | 2    | 0    | 1    | 0    |
| 7.              | 9    | 2    | 9    | 3    | 1    | 3    | 1    | 1    |

Summarized Result -

According to above statistical data it is evident that patient with OA Knee responded well to the treatment. Here maximum response was observed in the deep grading of tenderness (76%). The response of treatment over other assessment criteria showed highly significant results.

DISCUSSION:

Osteoarthritis is classified as non-inflammatory arthritis. This suggests that there is no inflammation (swelling) but recent research proves that this is not true. Although there is usually no swelling in the early stage of the disease, as the arthritis progresses inflammation...
can occur. Break down of cartilage disturbs other soft tissues inside the joint and may cause pain and swelling between bones. We tried the combination of Lakshadi Guggulu, kalka Patra bandhan and traction therapy for purpose of reducing pain, inflammation, and swelling in Osteoarthritis of Knee joint patients.

By analyzing the properties of the Lakshadi Guggulu contents, it is clear that this formulation has vatanashaka (pacifies Vata), anti-inflammatory (CCRS.1989) and is analgesic (Singh et al 1972), also has antioxidant properties, antimicrobial activity (Indian Journal of Exp. Biology), and promotes general physical fitness.

The probable mode of action of kalka application is that it improves vascularity of affected joint. It aids in reduction of the symptoms by restricting the excessive joint movement due to the limitation in knee joint movement followed by partial fixation bandage. Specific therapeutic effect of medicine used in kalka bandhan (leaves of eranda, shIgru, Imli, Nirgundi) where in they alleviate Vata (Vata Shamaka). The probable mode of action of traction could be increased joint space that is temporary, increased movement of the knee joint, increased flexibility in the joint, muscle, ligament and tendon strengthening and pain relief because bony fragment remains separate.

**CONCLUSION:**

By analyzing the observations and results it is clear that the combined therapy with Lakshadi Guggulu, Kalka bandhan and traction therapy in the management of OA of the knee joint is very effective. So above said treatment may provide holistic approach in the management of osteoarthritis of Knee joint. It is essential to evaluate the clinical efficacy in a large population.

**THE STEP OF KALKA PATRA BANDHAN**
*(PARTIAL FIXATION OF KNEE JOINT)*
X-Ray Knee Joint – Before Treatment      X-Ray Knee Joint – After Treatment

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