

## 16. OSTEOARTHRITIS OF KNEE

Osteoarthritis is also known as degenerative joint disease (DJD). Osteoarthritis of the knee joint is the most common problem seen in geriatric age group. More than 60% of the patients attending the out patient department complain of knee pain and stiffness either alone or associated with other problems. It is a disease of abnormal articular cartilage repair and remodeling with production of proteolytic enzymes by chondrocytes leading to cartilage and joint destruction.

**Risk factors** Obesity (BMI > 3), prolonged squatting, lifting heavy weights, and walking long distances.

**Symptoms**

- < 30 minutes of morning stiffness
- Chronic progressive pain
- Knee movements associated with pain and crepitus
- Aggravated by standing, weight bearing and stair climbing
- Relieved by rest

### Signs

- ♦ Mild knee effusion
- ♦ Minimal synovial thickening
- ♦ Atrophy of surrounding muscles
- ♦ Restricted range of movements in the knee

**Diagnostic criteria** One of the following

- Morning stiffness of short duration less than 30 minutes
- Crepitus during knee motion
- Knee pain with osteophytes on x-ray

### X- ray of knee AP & lateral (weight bearing)

- ♦ Joint space narrowing
- ♦ Lateral tibial subluxation
- ♦ Medial osteophyte formation
- ♦ Medial tibio femoral joint space narrowing
- ♦ Patellofemoral joint space narrowing

**Knee aspiration Indication** non traumatic monoarticular effusion

### Procedure

The technique involves insertion of the needle 1 cm above and 1 cm lateral to the superior lateral aspect of the patella. The needle is tilted beneath the patella at a 45-degree angle. This procedure is carried out under local anesthesia and aseptic precautions. Compression bandage is applied

**Findings** Fluid is clear, minimally turbid and WBC < 200/mm<sup>3</sup>

### Treatment guidelines of Osteoarthritis of the Knee

#### Nonpharmacologic treatment

Patient education and support

Physical therapy

Local cold , or Heat therapy, Interferential therapy

Exercise, Weight loss, Joint protection

Assisted devices with cane / walker

Occupational therapy home visit

Bath benches, Raised toilet seat, Grab bars, Object reachers

## **Pharmacologic agents**

Acetaminophen (Paracetamol) up to 4 g per day in divided doses

NSAID in a low dosage, 400 mg of ibuprofen four times daily

Nonacetylated salicylate such as choline magnesium trisalicylate

Topical capsaicin cream (e.g., ArthriCare) applied four times daily, if needed

### **If joint effusion is present**

## **Aspiration**

Intra-articular injection of corticosteroid, (such as 40 mg of triamcinolone)

intra-articular injections of a hyaluronic acid in selected cases

If the response is inadequate refer the patient for

Joint lavage

Arthroscopic debridement

Corrective osteotomy

Total knee Replacement [TKR]

## **☞ General Measures**

- Lower extremity strengthening exercises
  - ◆ Educate patient regarding importance of exercise
  - ◆ Exercise knees 20-30 minutes per day
  - ◆ Physical therapy to improve lower extremity strength
    - Quadriceps strengthening
    - Gait training
    - Active range of motion of hip, knee, and ankle
    - Instruction in use of cane
    - Graded elastic band use
  - ◆ Modestly effective in reducing knee pain
  - ◆ Avoid high knee impact activities
    - Running
    - Stair climbing
  - ◆ Avoid prolonged standing, kneeling, or squatting
  - ◆ Consider biking, swimming
  - ◆ Re-evaluate after 4 to 6 weeks

## **☞ Analgesia**

- ◆ Acetaminophen (Paracetamol)◆ NSAIDs in the elderly under supervision
- ◆ COX2 Inhibitors offer no benefit over standard NSAIDs
- ◆ Sodium hyaluronate or Hyaluronic acid benefit controversial
- ◆ Glucosamine sulfate and Chondroitin sulfate

## **☞ Intra-articular Corticosteroid**

- Offers short-term relief
- Reserve for special occasion (e.g. pre-vacation)
- For persistent pain not relieved with above
- Depot glucocorticoid (triamcinolone hexacetonide)
- Avoid more than 3 times per year

## **☞ Chronic Unrelenting Pain**

- ◆ Topical capsaicin creams
- ◆ Transcutaneous electrical nerve stimulation(TENS)
- ◆ Local massage
- ◆ Acupuncture
- ◆ Decreases pain scores by 40% and improves function
- ◆ Amitriptyline
- ◆ Pain management counseling and support groups