

Osteoarthritis

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Osteoarthritis is the most common type of arthritis and affects more than 20 million Americans. Almost everybody greater than age 65 has radiographic evidence of osteoarthritis, (with or without clinical findings). Most cases of osteoarthritis are idiopathic, or primary, and often associated with advancing age, obesity or occupational joint overloading. Often there is also a familial preponderance. Osteoarthritis may also develop as a secondary process after trauma, infection, osteonecrosis or congenital joint abnormalities as epiphyseal dysplasia. It can also be secondary to either inflammatory arthritis or metabolic diseases such as hemophilia, hemochromatosis, or other metabolic processes.

There are specific joint changes, which take place in the joint including effects on chondrosites and the joint collagen matrix. The primary process is that of articular cartilage degeneration and often there are secondary inflammatory responses, decreased synovial fluid viscosity and eventually altered joint biomechanics.

These interarticular pathologic features eventually cause impaired joint function with pain and stiffness. There may be involvement of many joints although the main impact results from involvement of large weight-bearing joints, which cause pain and limit mobility. The progression of the disease is usually slow and very variable.

Joint pain is usually the result of altered biomechanics of the involved joints with stress and strain on periarticular structures, such as involvement of tendons, muscles, and nerves. The hallmark symptom of osteoarthritis is joint stiffness in the morning and after long periods of inactivity. Joint pain occurs and often begins insidiously and although there is morning stiffness this usually lasts under 30 minutes. Joints most commonly involved include hips, knees, spinal joints, first carpal metacarpal joint of the thumb and interphalangeal joints of the hands and feet. Swelling is typically not present.

Diagnosis can usually be made clinically although x-rays are sometimes helpful to either establish diagnosis or document severity or progression of the disease. Typical radiographic findings include asymmetric joint space narrowing, osteophytes, and subchondral sclerosis. If concomitant/related spinal nerve root abnormalities are suspected, than testing such as MRI to assess spinal stenosis or EMG testing may be considered. There are no specific blood studies, which would offer information in this disease process.

The goals in arthritis treatment include pain relief, optimizing joint function and improving quality of life. There is a pyramid/spectrum of treatment options, which are available in osteoarthritis. Initially education and counseling are key elements. Patients also must have realistic goals of their treatment plan. Reassurance, patient education, and protection of the joint involved from trauma or overuse is critical.

Physical therapy is usually beneficial and can significantly reduce pain and improve function. Heat modalities are often helpful such as hot packs, warm therapeutic pool, ultrasound treatment for deeper level of heating and paraffin baths for small joints such as involvement of fingers and hands. Icing, although used to decrease inflammation, often is tolerated poorly by osteoarthritic patients. Physical therapy treatment may include strengthening, flexibility and stretching, as well as aerobic/cardiovascular exercises. Exercises strengthen joints and help stabilize specific adjacent muscles. Exercises, depending on patient specification needs, may be either isometric or isotonic.

Splinting may be helpful for joint unloading or protection. Alteration of biomechanics with use of orthotics is often helpful, such as shoe inserts for patients with genu varus or valgus deformity. Often symptom relief for weight-bearing joints is achieved with use of assistive devices, such as canes or walkers.

Other lifestyle modifications such as weight reduction, stress management, biomechanical and ergonomic alterations often are helpful to reduce pain.

Treatment often includes various medication regimens. The first medication in the pyramid approach includes acetaminophen products. If this does not prove effective then other nonsteroidal anti-inflammatory (NSAIDS) medications may be more efficacious. Older NSAID medications such as ibuprofen are still very effective. If, however, there were difficulties because of side effects such as gastric bleeding or peptic ulcer disease, then newer COX2 inhibitors should be considered. [There is also some concern that nonsteroidal anti-inflammatory medications may cause undue renal and hepatic problems and in addition may in the long-term inhibit joint repair by interfering with prostaglandin synthetase.]

Pain medications, such as narcotics are sometimes utilized. Adjunct medications for pain management may include topical agents, antispasmodic medications, or antidepressants. If response is inadequate consideration of more aggressive interventional techniques such as joint aspiration and injection of interarticular cortisone is in order. Most joints are easily approached with specific techniques.

In most cases conservative care management proves helpful for management of osteoarthritic symptoms and to increase quality of life. Only in advanced or recalcitrant disease processes is surgical intervention required. Patients usually are able to get additional life out of the joint and additional years of function, with more conservative treatment management. Surgery includes techniques such as arthroscopic debridement, osteotomy or total joint replacements.

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