Osteoarthritis

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Osteoarthritis
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Introduction
The vast majority of patients who come for surgery at the Institute for Orthopaedic Surgery present with some degree of Osteoarthritis (OA).

OA is a slow-progressing inflammatory joint disorder that significantly reduces a person’s quality of life (QOL) (Ashford, 2014).

OA is the most common form of arthritis and the leading cause of disability with symptoms arising in adults ages forty to sixty years old, and becoming more noticeable in the seventh decade (Shelton, 2013).

OA affects nearly 27 million Americans worldwide and is increasing in prevalence and incidence. It is predicted that 67 million people in the United States (U.S.) will be diagnosed with this disease by the year 2030 (Ashford, 2014).

This form of arthritis most frequently affects the weight-bearing joints and is characterized by the destruction of articular cartilage, subchondral bone, chronic inflammation of the synovium, and formation of osteophytes (Ashford, 2014).

Although there is no cure for OA, individuals who seek primary care are capable of maintaining an active lifestyle through the initiation of early therapy using self-management techniques to decrease the debilitating effects of joint destruction (Ashford, 2014).

Signs and Symptoms
- The hand, spine, hip, and knee are most affected by the disease.
- Band: nodules and Bouchard nodes
- Cervical and lumbar spine: neuroopathy and radiolucency from nerve compression
- Hip: groin or buttck pain that radiates to medial thigh or knee
- Knee: crepitus present in more than 90% of patients (Shelton, 2013)

Symptoms of OA may include:
- Pain, stiffness, and trouble performing activities of daily living

Signs of OA include:
- Joint swelling and loss of joint space
- Crepitus
- Bone enlargement
- Postural loss of alignment
- Nutritional factors

There are also biomechanical factors that include:
- Obesity
- Quantitative muscle weakness
- Joint injury
- Joint trauma

Molecular Pathogenesis of Osteoarthritis

- A 65-year-old female patient walks into clinic with a limp.
- A detailed history and physical exam are reviewed.
- The patient states she has significant pain in her right knee that feels like grinding. Patient states that her pain is increasingly getting worse over the years and she cannot stand it anymore.
- The patient also states that her right knee is swollen, stiff, and beginning to affect her daily routines, especially going down stairs.
- Upon physical examination crepitus, instability, joint tenderness, and deformity of the right knee was noted.
- X-ray confirms osteophyte formation and narrowing joint space.

Risk Factors
- Gender (more prevalent in women than in men after the age of 55 with a female to male ratio of 12:1)
- Race/ethnicity
- Bone density
- Postural loss of alignment
- Nutritional factors

Heredity

Until recently, pathophysiological research concerning OA has focused on articular cartilage and has not resulted in either biomarkers of UH activity or disease targets for disease-modifying therapy (Aron & Racine, 2013).

The current standard for OA considers the involvement of all joint tissues and shows that in late stages of OA, bone blood flow and oxygen content are noticeably decreased (Aron & Racine, 2013).

This reduction causes a harmful effect on bone cells inducing them to release cytokines that contribute to bone remodeling and cartilage breakdown (Aaron & Vincent, 2016). A realistic future vision may include identifying specific pharmacological approaches that target some of these pathways (Shelton, 2013).

Current joint preserving interventions under development include lifestyle modification, pharmacological intervention, and manipulation modalities (Glyn-Jones et al., 2015).

An improved understanding of the pathogenesis of OA can facilitate advances in the prevention and treatment of this disease.

Primary care providers aim to manage OA through the utilization of both nonpharmacological and pharmacological strategies to reduce pain and stiffness, improve joint mobility, decrease functional disability, and improve QOL (Sheridan, 2013).

Implications for Nursing Care
- Assist in diagnosing and assessing the patient’s functional and psychosocial impacts (Antonelli & Starz, 2012).
- Holistic pain and function assessment
- Education on osteoarthritis
- Exercise & weight loss advice (Edwards, 2015)
- Provide medication and pain management
- Monitor disease progress
- Coordinate care with other providers (physical, occupational, and psychosocial therapists) (Antonelli & Starz, 2012).

References
References