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Arthritis – A Review.

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ABSTRACT

Arthritis is a joint disorder featuring inflammation. A joint is an area of the body where two different bones meet. A joint functions to move the body parts connected by its bones. Arthritis literally means inflammation of one or more joints. Arthritis is not a single disease - it is a term that covers over 100 medical conditions. In this present study discussed about the various types of arthritis, causative factors and symptoms were discussed. The preventive measures, treatment and management of arthritis were discussed details.

Keywords: arthritis, osteoarthritis, elder patients

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INTRODUCTION

Arthritis is a complicated disease with many myths and misconceptions. Arthritis literally means joint inflammation. The exact cause of rheumatoid arthritis is not known. It is thought to be an interaction between genetic, environmental and hormonal factors leading to an autoimmune reaction causing inflammation and eventually destruction and deformity of the joints. Arthritis is not a single disease - it is a term that covers over 100 medical conditions. Osteoarthritis (OA) is the most common form of arthritis and generally affects elderly patients [1].

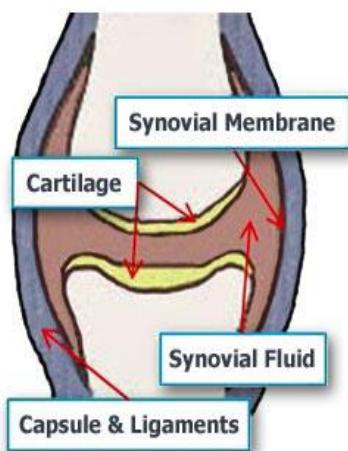
Arthritis

"Arth" refers to the joints, and "itis" refers to inflammation. Arthritis is not a single disease. Arthritis refers to a group of more than 100 rheumatic diseases and other conditions that can cause pain, stiffness and swelling in the joints. About 1% of the world's population is afflicted by rheumatoid arthritis. Nearly seven million people in India suffer from a form of arthritis the rheumatoid arthritis.

Onset is most frequent between the ages of 40 and 50, but people of any age can be affected. The warning signs for arthritis include pain, swelling and stiffness and difficulty moving one or more joints. Some rheumatic conditions can result in debilitating, even life-threatening complications or may affect other parts of the body including the muscles, bones, and internal organs. There is no cure for arthritis but there are many treatment options. Delaying diagnosis and treatment allows arthritis symptoms to worsen. Arthritis can affect anyone at any age, including children. The incidence of arthritis increases with age, but nearly three out of every five sufferers are under age 65. A new study has revealed that almost three quarters (72%) of women with Rheumatoid Arthritis suffer pain daily, despite the fact that three quarters (75%) receive pain relief medication. The two most common types of arthritis are osteoarthritis and rheumatoid arthritis [2].

What causes arthritis?

In order to better understand what is going on when a person suffers from some form of arthritis, let us look at how a joint works.



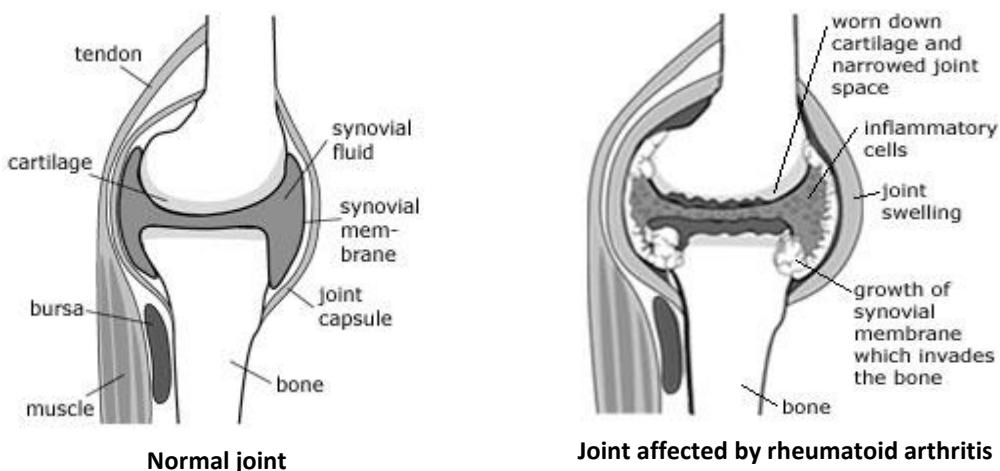
Basically, a joint is where one bone moves on another bone. Ligaments hold the two bones together. The ligaments are like elastic bands, while they keep the bones in place your muscles relax or contract to make the joint move. Cartilage covers the bone surface to stop the two bones from rubbing directly against each other. The covering of cartilage allows the joint to work smoothly and painlessly.

A capsule surrounds the joint. The space within the joint - the joint cavity - has synovial fluid. Synovial fluid nourishes the joint and the cartilage. The synovial fluid is produced by the synovium (synovial membrane) which lines the joint cavity. If you have arthritis something goes wrong with the joint(s). What goes wrong depends on what type of arthritis you have. It could be that the cartilage is wearing away, a lack of fluid, autoimmunity, infection, or a combination of many factors.

Rheumatoid arthritis

Rheumatoid arthritis is a long-term disease that leads to inflammation of the joints and surrounding tissues. It is an autoimmune disease and affects 1.3 million adults in the United States. In rheumatoid arthritis, a person's own immune system attacks cells within its own joint capsule. Chronic inflammation associated with rheumatoid arthritis destroys cartilage, bone, and ligaments, leading to possible deformity and disability. Women are affected more often than men. Rheumatoid arthritis usually affects joints on both sides of the body equally. Wrists, fingers, knees, feet, and ankles are the most commonly affected. The disease often begins slowly, with symptoms that are seen in many other illnesses, fatigue, loss of appetite, low fever, swollen glands and weakness. Eventually, joint pain appears.¹⁶

FIGURE NO: 1 Effect of rheumatoid arthritis on joints



The first change is swelling of the inner lining of the joints (synovial membrane) with accumulation of white blood cells. The inflammation of synovial membrane may result in leakage and accumulation of synovial fluid in the joint space. In later stages, the synovial membrane thickens and projects into the joint cavity in the shape of long fingers. The thick, swollen, congested, synovial membrane creeps over and under the auricular cartilage (pannus formation). This pannus gradually erodes the auricular cartilage and the underlying bone over a period of time, leading to reduction in joint space and loss of free movement at the joint.

Pathophysiology and causes of Rheumatoid arthritis

Rheumatoid arthritis is a form of autoimmunity, the causes of which are still incompletely known. It is a systemic disorder principally affecting synovial tissues.

The key pieces of evidence relating to pathogenesis are:

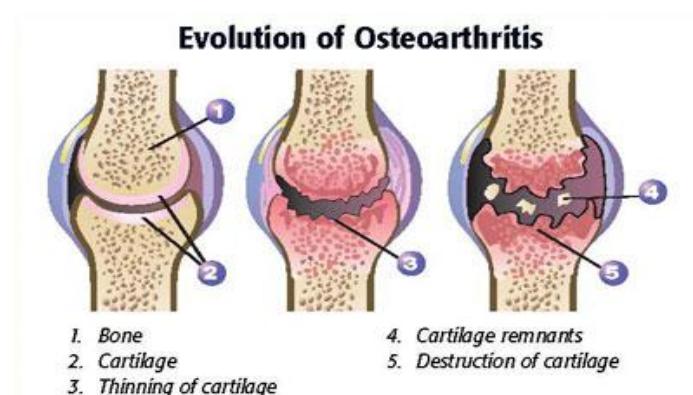
- Genetic link with HLA-DR4 and related types of MHC Class II and the T cell-associated protein PTPN22.
- A link with cigarette smoking that appears to be causal.
- A remarkable deceleration of disease progression in many cases by blockade of the cytokine TNF (alpha).
- A similar dramatic response in many cases to depletion of B lymphocytes, but no comparable response to depletion of T lymphocytes.
- A more or less random pattern of whether and when pre disposed individuals are affected.
- The presence of auto antibodies to IgGFc, known as rheumatoid factors (RF), and antibodies to citrullinated peptides (ACPA).

Symptoms of Rheumatoid Arthritis

- Morning stiffness, which lasts more than 1 hour, is common. Joints can even become warm, tender, and stiff when not used for as little as an hour.
- Joint pain is often felt on both sides of the body.
- The fingers (but not the fingertips), wrists, elbows, shoulders, hips, knees, ankles, toes, jaw, and neck may be affected.
- The joints are often swollen and feel warm and boggy (or spongy) to the touch.
- Over time, joints lose their range of motion and may become deformed.

Osteoarthritis

FIGURE NO: 2



Osteoarthritis is a type of arthritis that is caused by the breakdown and eventual loss of the cartilage of one or more joints. Cartilage is a protein substance that serves as a "cushion" between the bones of the joints. Osteoarthritis is also known as degenerative arthritis. The pressure of gravity causes physical damage to the joints and surrounding tissues, leading to pain, tenderness, swelling and decreased function. Initially, osteoarthritis

is non-inflammatory and its onset is subtle and gradual, usually involving one or only a few joints. The joints most often affected are the knees, hips hands and spine.

With osteoarthritis, the cartilage gradually breaks down. Cartilage is a slippery material that covers the ends of bones and serves as the body's shock absorber. As more damage occurs, the cartilage starts to wear away, or it doesn't work as well as it once did to cushion the joint. As an example, the extra stress on knees from being overweight can cause damage to knee cartilage. That, in turn, causes the cartilage to wear out faster than normal. As the cartilage becomes worn, cushioning effect of the joint is lost. The result is pain when the joint is moved. Along with the pain, sometimes you may hear a grating sound when the roughened cartilage on the surface of the bones rubs together. Painful spurs or bumps may appear on the end of the bones, especially on the fingers and feet [3].

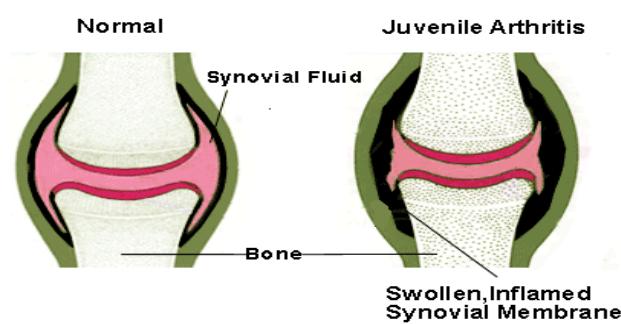
Symptoms of osteoarthritis may include:

- Deep, aching pain in a joint
- Difficulty dressing or combing hair
- Difficulty gripping objects
- Difficulty sitting or bending over
- Morning stiffness for less than an hour
- Pain when walking
- Swelling of joint

Juvenile Arthritis

Juvenile rheumatoid arthritis occurs in children under the age of 16 (most commonly, in girls under the age of 8) and causes inflammation and stiffness in the joints. Juvenile arthritis is a general term for all types of arthritis that occur in children. Juvenile rheumatoid arthritis is the most prevalent type of arthritis in children.

FIGURE NO: 3 Joint Affected by Juvenile Arthritis



Anxiety and Arthritis

A recent study regarding anxiety in rheumatoid arthritis found that people with arthritis exhibit higher levels of anxiety than the general population. Furthermore, the relationship between rheumatoid arthritis and anxiety is stronger with individuals also diagnosed with depression. The pain associated with arthritis can severely limit mobility

and level of participation in activities creating increased social stress. People may find themselves unable to function normally in everyday situations or are unable to maintain the level of functioning that they had previously been used to. The chronic stress and pain may affect one's mind and body manifesting itself psychologically as depression, generalized anxiety disorder, panic attacks, and decreased overall well being.

In light of the apparent association between arthritis and anxiety disorders, one must consider whether current treatments for arthritis have an effect on the development of depression and panic disorder. It has been theorized that an emotional stress reaction is a means by which arthritis patients use to cope with the pain: However, arthritis sufferers often must cope with frustrating pain and disability [4-6].

Treatment

Rheumatoid arthritis has no satisfactory treatment in modern medicine. However, it is often possible to prevent further damage to the joints with proper early treatment. Rheumatoid arthritis usually requires lifelong treatment, including medications, physical therapy, exercise, education, and possibly surgery. Early, aggressive treatment can delay joint destruction.

Analgesics and anti-inflammatory drugs, including steroids are used. Disease-modifying anti-rheumatic drugs (DMARD) are required to halt the underlying immune process. However, these medications can also increase the risk of cancer, other autoimmune conditions. Current drugs for rheumatoid arthritis inhibit tumor necrosis factor (TNF), an inflammatory molecule known to play a role in regulating the immune system. However, these medications can also increase the risk of cancer. The use of corticosteroids are unfortunately a double-edged sword since suppressing the immune system renders one susceptible to bacterial and viral infections as well as cancer [7,8].

Rheumatoid Arthritis – Management

- Reduce pain and inflammation
- Delay disease progression
- Preserve joint movement and prevent deformities
- Rest to the joint effectively reduces pain and relieves muscle spasm.
- Exercises for maintaining joint mobility and muscle strength without aggravating the pain and inflammation are an important part of management.
- Maintaining ideal weight is essential for reducing the stress on the diseased joints of lower limbs.

CONCLUSION

Rheumatoid arthritis (RA) is a long-term disease that leads to inflammation of the joints and surrounding tissues. Various treatments are available. Non-pharmacological treatment includes physical therapy, orthoses, occupational therapy and nutritional therapy but these do not stop the progression of joint destruction. There is no known cure for

rheumatoid arthritis, but many different types of treatment can alleviate symptoms and/or modify the disease process. The goals of treatment include minimizing clinical symptoms such as pain and swelling, as well as preventing bone deformity and radiographic damage (for example, bone erosions visible in X-rays), and maintaining the quality of life in terms of day-to-day activities. These can be achieved by a combined approach involving physical therapy, medical therapy and if required, surgery.

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