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Ankylosing Spondylitis: An Overview

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Introduction

Ankylosing Spondylitis (AS) is a kind of arthritis in which the joints of the spine are inflamed for a long time. The joints where the spine meets the pelvis are frequently impacted. Other joints, such as the shoulders or hips, are occasionally implicated. It's also possible that you'll have issues with your eyes and bowels. Back discomfort is a common symptom of AS, and it comes and goes frequently. The damaged joints' stiffness usually develops with time.

Description

Ankylosing spondylitis has no established aetiology, however it is thought to be caused by a mix of hereditary and environmental factors. In the United Kingdom, more than 85% of people affected carry the HLA-B27 antigen, which is a specific human leukocyte antigen. Autoimmune or autoinflammatory mechanisms are thought to be at work. Symptoms are used to make a diagnosis, which is then supported by medical imaging and blood tests. AS is a kind of seronegative spondyloarthropathy, which means that testing reveal no antibodies to Rheumatoid Factor (RF). Axial spondyloarthritis is a broader term for the condition.

Ankylosing spondylitis has no known treatment. Treatments may help to alleviate symptoms and prevent them from getting worse. Medication, exercise, physical therapy, and, in rare situations, surgery may be used. NSAIDs, steroids, DMARDs like sulfasalazine, and biologics like TNF inhibitors are among the medications utilised.

Between 0.1 and 0.8 percent of the population is impacted. In most cases, the onset occurs in young adults. Both men and women are affected in the same way. The disease was once assumed to affect three times as many males as it did women. This was based on an X-ray diagnosis of the condition. Because men are more likely than women to develop bone alterations and fusion, X-rays were used to detect them. Over time, MRIs that could detect inflammation were produced. Inflammation, rather than fusion, is more common in women than in men.

Ankylosing spondylitis signs and symptoms usually occur gradually, with peak onset between the ages of 20 and 30. The first signs and symptoms are usually a chronic dull ache in the lower back or gluteal region, as well as lower back stiffness. Individuals frequently wake up in the early morning hours with discomfort and stiffness.

Loss of spinal mobility and chest expansion, as well as a limitation of anterior flexion, lateral flexion, and extension of the lumbar spine, are evident as the disease advances. Weight loss, fever, and exhaustion are all common systemic manifestations. Pain is frequently severe at rest but may improve with physical exercise; nevertheless, inflammation and pain may reoccur in variable degrees regardless of rest or movement.

AS can affect any portion of the spine or the entire spine, with pain referred from the sacroiliac joint to one or both buttocks or the back of the thigh. Hip and shoulder arthritis are also possible. Pain and swelling of big lower limb joints, such as the knees, are more likely to occur before the age of 18. Pain and swelling may appear in the ankles and feet in prepubescent instances, when heel pain and enthesopathy are common. Ectasia of the sacral nerve root sheaths is a less common complication.

Anterior uveitis, which causes eye pain, redness, and blurred vision, affects about 30% of persons with AS. This is assumed to be owing to the fact that both AS and uveitis are linked to HLA-B27 antigen inheritance. Inflammation of the aorta, aortic valve insufficiency, or heart electrical conduction system abnormalities are all possible causes of cardiovascular involvement. Progressive fibrosis of the upper section of the lung is a symptom of lung involvement.

The rheumatic disease Ankylosing Spondylitis (AS) is a systemic rheumatic disease, which means it affects the entire body. The disorder affects 1–2% of people who have the HLA-B27 genotype. Around 85% of persons with AS have the HLA-B27 genotype, indicating that there is a substantial genetic link. Ankylosing spondylitis is also linked to tumour necrosis factor-alpha (TNF) and interleukin-1 (IL-1). AS-specific autoantibodies have yet to be discovered. Anti-neutrophil cytoplasmic antibodies (ANCAs) are linked to AS, however they have no relation to the severity of the disease. [1-5]

Conclusion

Because AS is linked to HLA-B27, it's likely that the disorder involves CD8 T cells, which interact with HLA-B. This interaction has not been demonstrated to involve a self-antigen, and the antigens involved are most likely obtained from intracellular bacteria, at least in the case of the similar reactive arthritis that occurs after infections. However, since HLA-B27 appears to have a number of unusual properties, including the ability to interact with T cell receptors in association with CD4 (usually CD8+ cytotoxic T cells with HLAB antigen because it is an MHC class 1 antigen), it's possible that CD4+ T lymphocytes are involved in an abnormal way. When the outer fibres of the fibrous ring of the intervertebral discs ossify, marginal syndesmophytes form between neighbouring vertebrae, resulting in a "bamboo spine."

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