SPONDYLITIS

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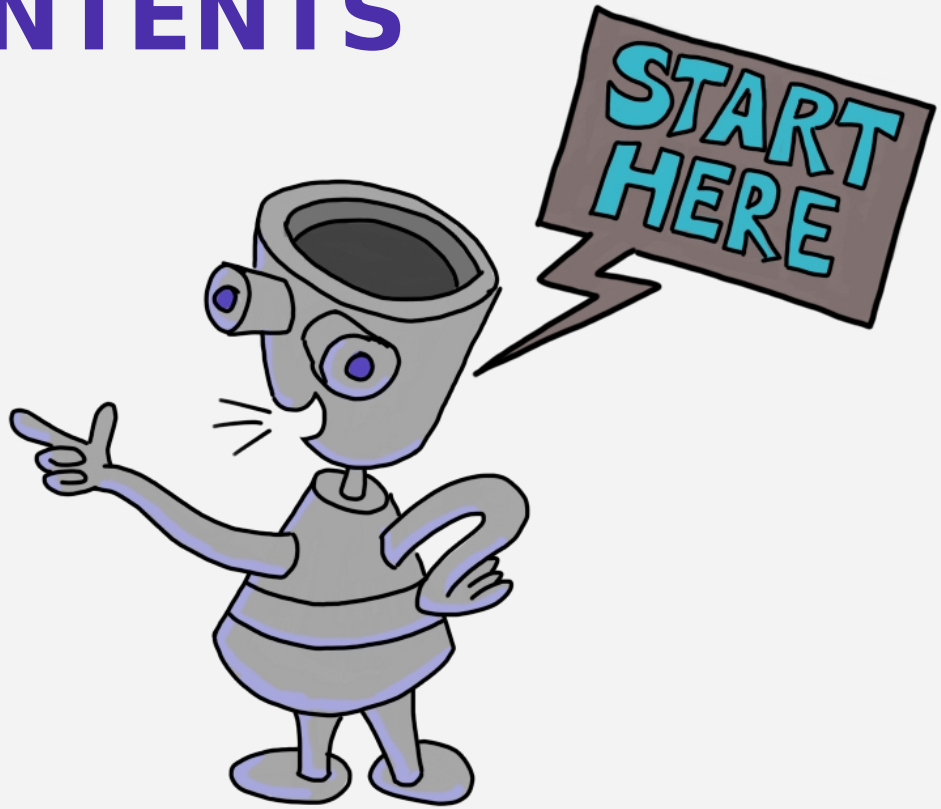
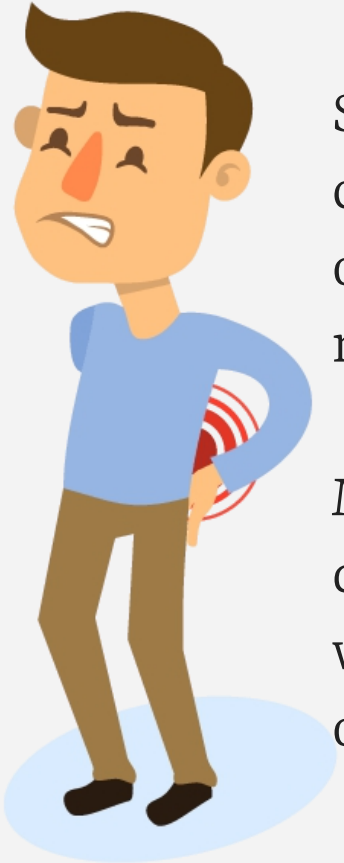


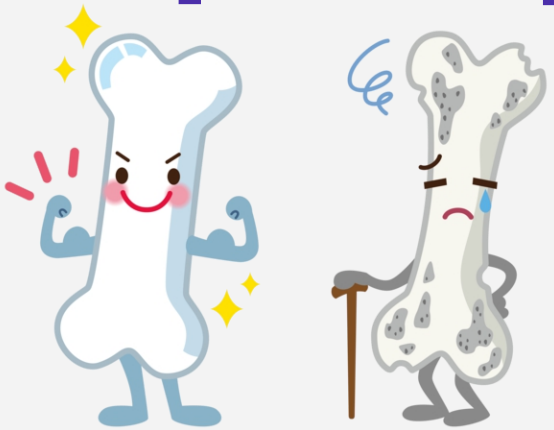
INTRODUCTION TO SPONDYLITIS



Spondylitis is an umbrella term for a group of chronic arthritis-type diseases affecting the joints of the **spine and sacroiliac region**. The sacroiliac region includes the pelvis and lower spine.

Medical professionals categorize spondylitis into different subtypes. Some subtypes cause widespread inflammation that may affect multiple organs or systems within the body.

What is spondylitis?



All types of spondylitis involve inflammation of the joints, tendons, and ligaments. Tendons are connective tissues that attach muscle to bone, while ligaments are connective tissues that attach bones to other bones.

Inflammation of the joints can cause bones to fuse and trigger excessive bone growth in the spine. Severe cases can cause excessive curvature of the spine.

Spondylitis vs. Spondylosis

Spondylitis and spondylosis are similar conditions that can both cause hip and back pain. However, the two conditions have different characteristics and causes.

Spondylitis

Spondylitis is a condition in which the immune system attacks the joints, causing inflammation, bone fusion, and excess bone formation.
Certain types of spondylitis tend to develop in teenagers and young adults.

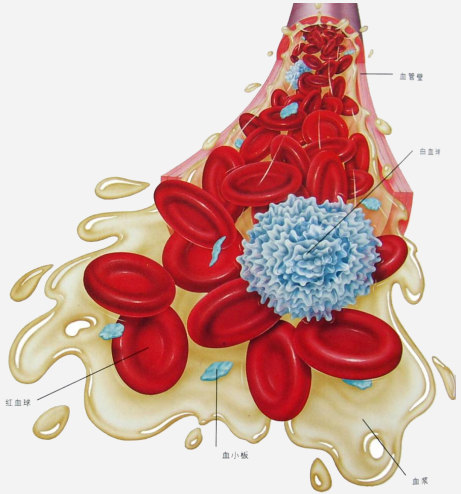
Spondylosis

Spondylosis is a type of arthritis related to aging and general wear and tear of the spine. It occurs when the joints and discs of the spine degenerate. Osteophytes, which are bone spurs that grow on the individual backbones or vertebrae, may also cause it.
Spondylosis tends to affect older people. More than 85% of people over the age of 60 have the condition.

Epidemiology

- Male to female ratio 2:1 to 10:1
- Worldwide prevalence of around 0.9%
- Affects young people around 26 (15-45) years.
- About 80% of patients develop the first symptoms at an age of 30 years, and less than 5% of patients develop symptoms older than 45 years.
- HLA-B27 is positive in around 90% of patients with AS.
- Bacteria: Klebsiella pneumoniae and some other enterobacterias like Salmonella, E. Coli, Yersinia Pestis.
- Male Patients have more structural changes, including bamboo spine, then do female patients.

Pathophysiology



There are two theories

*** Receptors Theory:** HLA B27 is a receptor for etiological factor (Bacteria, Virus etc.). The resulting Complex provokes production of cytoxic T-cells which causes damage to cells with HLA B27 molecule. So, Urinary or Bowel infection can be Trigger for AS.

*** Molecular Mimicry Theory**: Bacterial Antigen (or other damaging factor) in complex with other HLA molecule gets similar to HLA B27 properties and is been recognized by cytoxic T-cells as HLA B27 or decrease the immune reaction at pathologic peptide(immunological tolerance).

Types of Spondylitis

According to the Spondylitis Association of America, the traditional system recognizes six types of spondylitis, while the newer system consists of two broader categories encompassing all types of spondylitis.

The traditional spondylitis classification system categorizes spondylitis into six types. These are :

Ankylosing Spondylitis

Ankylosing spondylitis (AS) is a form of chronic joint inflammation that primarily affects the spine. The term “ankylosis” refers to joint stiffness resulting from injury or disease. In AS, a fusion of the spinal vertebrae causes stiffness and limited movement in the spine. AS usually begins during the teenage years or in early adulthood.

Symptoms

Symptoms of AS may develop slowly over time and may come and go. They may include:

- fatigue
- back pain and stiffness
- pain and swelling in various areas of the body due to inflammation in the joints and tendons

Causes

Experts do not know the exact cause of AS. However, 9 out of 10 people who have AS carry the gene human leukocyte antigen B27 (HLA-B27). This suggests that the gene may predispose a person to AS but does not mean that a person with the gene will develop the condition. Researchers estimate that 8 in every 100 people have the HLA-B27 gene, but most do not develop AS.

Reactive Arthritis

Reactive arthritis (ReA) is a type of inflammatory arthritis that typically presents several days or weeks following a gastrointestinal infection or sexually transmitted infection (STI).

Experts sometimes describe ReA as a triad of inflammatory conditions, though most people Trusted Source do not present with all three. The three conditions are:

- arthritis
- conjunctivitis
- urethritis

Symptoms

Symptoms of ReA may include:

Arthritis: Swelling and pain in the joints.

Conjunctivitis: Inflammation of the eyes accompanied by a sticky discharge.

Urethritis: Genital and bladder inflammation and pain while urinating.

Causes

- Reactive arthritistypically results from a bowel infection or certain STIs. People may also develop ReA following a bout of glandular fever or erythema infectiosum.
- In ReA, the immune system overreacts to infection and begins attacking healthy tissues. This leads to inflammation.
- Research also links reactive arthritis to the HLA-B27 gene. Scientists estimate that 30–50%Trusted Source of people with ReA carry the gene. However, some hospital studies have found this number to be as high as 60–80%.

Psoriatic Arthritis

Psoriatic arthritis (PsA) is a chronic inflammatory disease that affects the joints and areas where ligaments and tendons attach to bone. The disease is associated with the inflammatory skin condition psoriasis. For many people, PsA develops about 10 years after psoriasis, but some people develop PsA first or without ever having psoriasis. Psoriatic arthritis can present at any age but typically affects people aged 30–50.

Symptoms

Symptoms of PsA may include:

- Dactylitis, which is swelling in the toes and fingers
- Changes to nails, such as pitting of the nail beds
- Eye pain and redness
- Pain and stiffness in one or more joints
- Reduced range of motion
- Fatigue

Causes

A person may develop PsA in a joint following an injury. The disease may also have a genetic link. Researchers estimate that at least 10% of the population inherits one or more genes that predispose a person to psoriasis.

Enteropathic Arthritis

Enteropathic arthritis (EnA) is a type of chronic inflammatory arthritis associated with inflammatory bowel diseases (IBDs), such as ulcerative colitis (UC) and Crohn's disease (CD). Approximately 1 in 5 people with UC or CD also develop EnA. Enteropathic arthritis typically affects joints in the arms, legs, and spine.

Symptoms

The symptoms of EnA may include those related to IBD, as well as those related to arthritis. Examples include:

- Abdominal pain
- Bloody diarrhea
- Swelling and pain in the joints

Causes

Experts do not know the precise cause of EnA but believe the disease is associated with inflammation in the bowel. Chronic bowel inflammation may allow bacteria to enter the damaged bowel wall and move through the bloodstream. The body's reaction to these bacteria may cause further inflammation and pain. Enteropathic arthritis is also associated with the gene "HLA-B27".

Undifferentiated Spondyloarthritis

Undifferentiated spondyloarthritis (USpA) is a diagnosis a doctor may give when a person presents with a variety of symptoms that doctors cannot classify as a specific rheumatoid disorder.

Symptoms

Symptoms of USpA vary but may include:

- Persistent pain in the lower back, which develops before age 45
- Joint pain in small and large joints
- Heel pain
- Swelling in the hands and feet
- General stiffness
- Inflammation of the eye
- Bumpy rash
- Urinary tract and genital symptoms, such as pain and discharge
- Intestinal inflammation
- Diarrhea

Peripheral Spondyloarthritis

Peripheral spondyloarthritis (pSpA) typically causes inflammation in the joints and tendons outside the spine and sacroiliac joints. The disease usually affects the following areas:

- Hands Shoulders
- Wrists Elbows
- Knees Ankles
- Feet

A person with pSpA may experience dactylitis, which is inflammation of the toes and fingers, or enthesitis, which is inflammation in areas where ligaments and tendons attach to bone.

This category includes the following forms of spondylitis:

- Reactive arthritis
- Enteropathic arthritis
- Undifferentiated arthritis

Axial Spondyloarthritis

Axial spondyloarthritis (AxSpA) causes inflammation and pain in the pelvis, the spine, or both. This category covers a broad range of spondylitis types and includes people with and without sacroiliac joint fusion and damage.

Diagnosis

There is no definitive test to diagnose spondylitis. Doctors will carry out a physical examination that includes questions about a person's symptoms and medical history. They will also ask if the person has a family history of autoimmune diseases, including psoriasis and spondyloarthritis.

Blood Tests	Imaging tests	X-rays
MRI Scans	Ultrasound Scans	Genetic testing for the HLA-B27 gene

Treatment

There is no cure for spondylitis. However, treatments can help manage the condition and alleviate symptoms.

Treatment options may include the following:

medications to reduce inflammation and pain, such as:

- Non-steroidal anti-inflammatory drugs (NSAIDs)
- Corticosteroids
- Anti-tumor necrosis factor (TNF) medication
- Disease-modifying anti-rheumatic drugs (DMARDs) to decrease inflammation and slow progress of spondylitis.

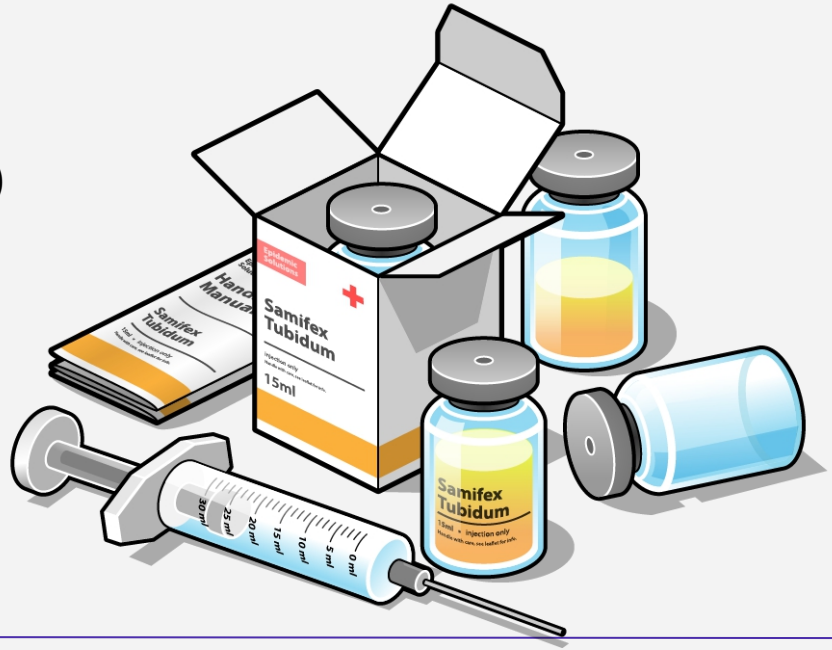
Treatment

- Short-term use of pain relievers and muscle relaxants to relieve severe pain and reduce muscle spasms.
- Physical therapy(which may include massage and spinal manipulation to improve and maintain spine flexibility) and exercise to strengthen back muscles, maintain flexibility, and promote an ideal posture.
- Physical therapy, exercises to alleviate joint pain and stiffness breathing exercises to ensure normal chest expansion
- Surgery – to replace a joint, to place rods in the spine, or to remove parts of thickened and hardened bone. In some cases, doctors may also recommend surgery to repair severely damaged joints or correct extreme curvature of the spine. However, surgery for spondylitis is rare compared with other treatment approaches.

Pharmacological Treatment

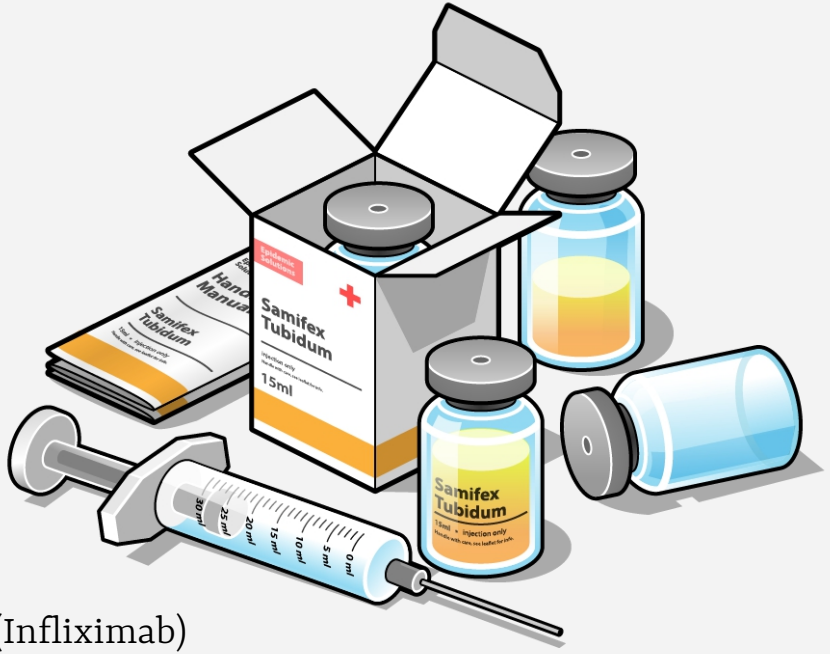
Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

- IBUPROFEN (Generic NSAID)
- ARTHROTEC (Diclofenac and Misoprostol)
- NAPROSYN, ALEVE and Others (Naproxen)
- MOBIC (Meloxicam)
- INDOCIN (Indomethacin)
- VOLTAREN (Diclofenac)
- CELEBREX (Celecoxib)



Pharmacological Treatment

- **Sulfasalazine**
  AZULFIDINE (Sulfasalazine)
- **Methotrexate**
  RHEUMATREX (Methotrexate)
- **Corticosteroids**
- **TNF Inhibitors**
  - ENBREL (Etanercept)
  - HUMIRA (Adalimumab)
  - REMICADE (Infliximab)
  - SIMPONI (Golimumab)



Pharmacological Treatment

IL-17 Inhibitors

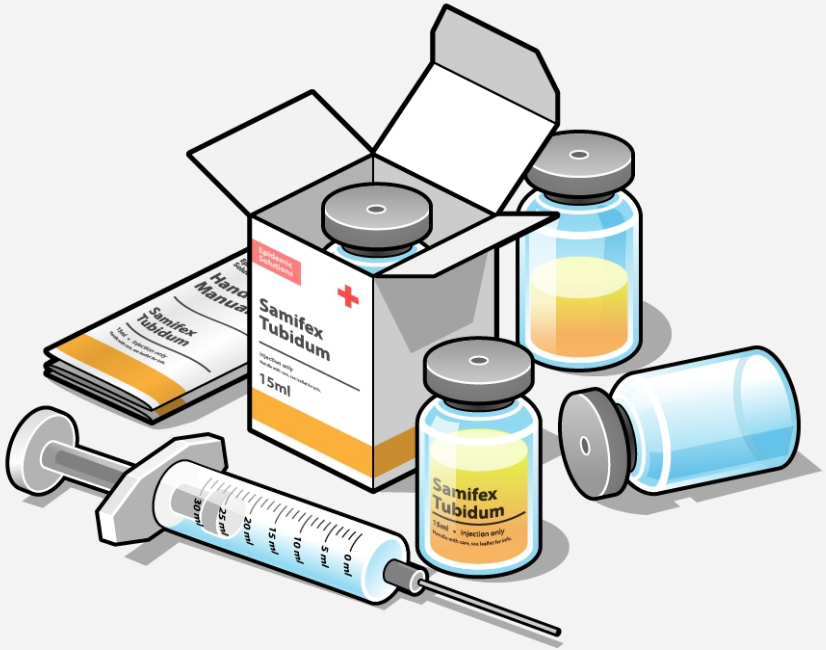
- COSENTYX (secukinumab)
- Taltz (ixekizumab)

IL 12/23 Inhibitor

- STELARA (ustekinumab)

JAK Inhibitors

- Xeljanz and Xeljanz XR (tofacitinib)
- Rinvoq (upadacitinib)



Life Style Modifications

- 1. Eat nutritiously/Maintain a healthy weight.(Cut down on saturated fat.)
- 2. Quit smoking (or don’t start).
- 3. Practice good posture.
- 4. Get quality sleep.
- 5. Get moving.

CASE STUDY

Case Study 1

David is a 35-year-old man with a 10-year history of ankylosing spondylitis, diagnosed in the UK. David has symptoms of low back pain and stiffness, which is eased with anti-inflammatories. The patient has been taking long-term anti-inflammatories for the past seven years. David has not been to see a rheumatologist in the last six years. David had routine bloods performed in a clinic which revealed an impaired renal function: urea = 11.5, creatinine =162. There is no history of urinary tract infection or pyelonephritis. The patient had an ultrasound scan of the kidneys that showed normal kidney size with no evidence of pyelonephritis. Urine sample showed a plus of protein. The urine culture for organisms was negative. The patient was asked to stop taking the anti-inflammatories completely and subsequently his kidney function recovered sub- stantially.

Case Study 2

Mary is a 25-year-old accountant who has had a diagnosis of ankylosing spondylitis for two years. The patient has been on adalimumab injections twice a month for treatment of the ankylosing spondylitis. Mary has virtually no symptoms of back pain or stiffness on this treatment. Mary is just back from a four-week trip in India and presents to the clinic with a four-day history of malaise, night sweats and cough. Examination of the patient revealed a pyrexia of 38ºC and bilateral lung crepitations. Mary was admitted to hospital for further assessment. The chest x-ray revealed miliary changes in both lung fields. Diagnosis of pulmonary tuberculosis was made and the patient was commenced on antituberculosis therapy. The anti-tumour necrosis factor treatment was stopped on a temporary basis.

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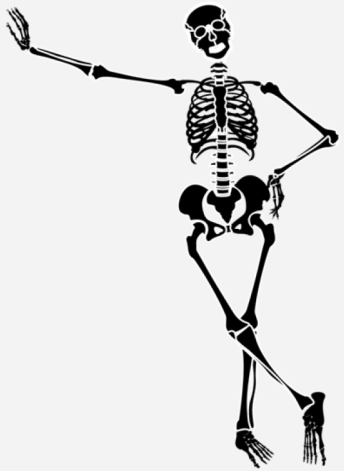

Any Questions?

thank you!