

## Lecture 4

### immunology

**Ankylosing spondylitis** is an inflammatory disease that, over time, can cause some of the small bones in your spine (vertebrae) to fuse. This fusing makes the spine less flexible and can result in a hunched-forward posture. If ribs are affected, it can be difficult to breathe deeply.

**Ankylosing spondylitis** affects men more often than women. Signs and symptoms typically begin in early adulthood. Inflammation also can occur in other parts of your body — most commonly, your eyes.

**There is no cure for ankylosing spondylitis, but treatments can lessen your symptoms and possibly slow progression of the disease.**

### **Symptoms**

Early signs and symptoms of ankylosing spondylitis might include pain and stiffness in your lower back and hips, especially in the morning and after periods of inactivity. Neck pain and fatigue also are common. Over time, symptoms might worsen, improve or stop at irregular intervals.

The areas most commonly affected are:

- 1- The joint between the base of your spine and your pelvis
- 2- The vertebrae in your lower back
- 3- The places where your tendons and ligaments attach to bones, mainly in your spine, but sometimes along the back of your heel
- 4- The cartilage between your breastbone and ribs
- 5- Your hip and shoulder joints

### **Causes**

Ankylosing spondylitis has no known specific cause, though genetic factors seem to be involved. In particular, people who have a gene called HLA-B27 are at a greatly increased risk of developing ankylosing spondylitis.

However, only some people with the gene develop the condition.

### **Risk factors**

- 1- Sex. Men are more likely to develop ankylosing spondylitis than are women.
- 2- age. Onset generally occurs in late adolescence or early adulthood.
- 3- heredity. Most people who have ankylosing spondylitis have the HLA-B27 gene. But many people who have this gene never develop ankylosing spondylitis.

### **Ankylosing Spondylitis Complications**

AS can cause pain and inflammation throughout your body, including in your:

- 1- Spine.** In rare cases, your vertebrae may become weak, making them more likely to fracture or break. Damaged vertebrae can press on or

irritate a group of nerves in the bottom of your spinal cord called the cauda equina. You might have trouble controlling your bowels or bladder, or a loss of reflexes.

- 2- Eyes.** About 40% of people with AS have an eye problem called uveitis. It's a kind of eye inflammation that's painful and can blur your vision and make you sensitive to bright light. If you have uveitis, your doctor might check for AS even if you don't have any other symptoms.
- 3- Heart valve.** Rarely, AS can enlarge your aorta, the largest artery in your body. This can change the shape of your aortic valve, allowing blood to leak back into your heart. Your heart won't pump as well, which can leave you tired and short of breath.

People with AS are also more likely to get certain types of cancer.

### **Ankylosing Spondylitis Diagnosis**

AS can be tough to spot because so many people have back pain, its main symptom. A diagnosis may be even trickier for women because the condition is much more common in men.

There's also no single test to confirm AS. Your doctor may rely on your symptoms, a physical exam, and blood tests.

also might have an X-ray or an MRI. But this doesn't always help, because joint damage may not show up right away on imaging tests.

## **Treatments**

Medications help some people. But staying active is one of the keys to managing AS.

**Exercise.** The less you sit or lie down, the better you'll feel. Exercise helps you stand straighter and keeps your spine limber. Staying active may even banish your pain without medication.

**Physical therapy.** You'll need to practice good posture, learn how to stretch tight muscles and keep your spine stable, and use other techniques that can lower your pain. You can do them at home, but most people benefit more from working with a professional physical therapist or with a group.

### **Medication**

Prescription nonsteroidal anti-inflammatory drugs (NSAIDs) like indomethacin (Indocin) help most people who have AS. But they can lead to stomach bleeding, heart problems, and other side effects.

If your condition is severe, your doctor may have you try stronger medications like biologics. These are made with things like proteins. But they may cause serious side effects, including infections.