SERONEGATIVE SPONDYLOARTHROPATHIES

435 medicine teamwork

[Important | Notes | Extra | Editing file]

lecture objectives:

- Not given :|

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References: Kumar + step up +master the board +slides

Seronegative Spondyloarthropathies (SPA)

General Characteristic of SPA:

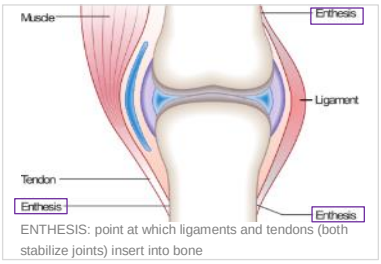
What is it:

- These comprise a group of related inflammatory joint diseases, which show considerable overlap in their clinical features and a shared immunogenetic association with the HLA-B27 antigen,**They include:**
  - Ankylosing spondylitis
  - Psoriatic arthritis
  - Reactive arthritis (sexually acquired, Reiter's disease)
  - Post-dysenteric reactive arthritis
  - Enteropathic arthritis (ulcerative colitis/Crohn's disease)

What I want u to know r those 3:
Ankylosing spondylitis
Psoriatic arthritis
Reactive arthritis

Clinical features common to SPA:

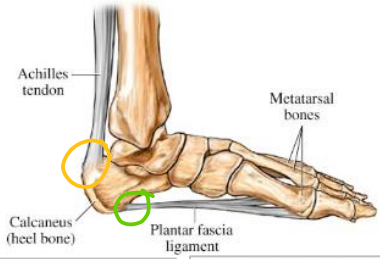
- Tendency for axial (spinal and sacroiliac) inflammation
- Asymmetrical Periphral arthritis*(lower > upper limb)(The joint involvement is usually more limited than that seen in RA and its distribution is different)
- Absence of rheumatoid factor and ACPA, hence 'seronegative'
- Inflammation of the enthesis** (See the Fig→)
- strong association with **HLA-B27**, but its aetiological relevance is unclear.
- Extra-articular features (eyes, skin, genitourinary tract)

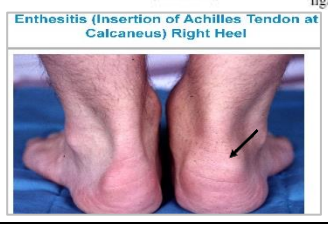


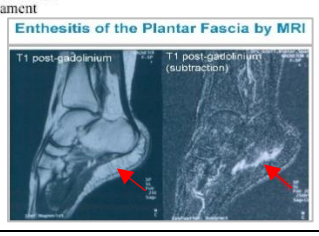
ENTHESIS: point at which ligaments and tendons (both stabilize joints) insert into bone

▸ **NOTE:**
Despite the association with HLA-B27, this is never the "best initial" or "most accurate" test for SPA. since 8% of the general population is positive.

**Enthesitis	*peripheral arthritis (MCQ!!!!)
- Symptoms:severe pain and tenderness - Relatively specific to SpA - Most common Sites: • at the insertion of the Achilles tendon into the calcaneus. • at the insertion of Plantar fascia ligament into the calcaneus	- Predominantly involves the lower extremities. - Arthritis is frequently **ASYMMETRICAL** and often affects only one to three joints. - The severity ranges from mild to disabling . - The presence of **asymmetrical oligoarthritis** is very suggestive of SpA, but its absence would not be helpful in excluding this possibility.







Ankylosing Spondylitis (AS)

What is it:

- This is an inflammatory disorder of the spine, affecting mainly young adults.
- It is both more common and more severe in men than women.(3 times more common in male than female)

Aetiology:

- The cause of AS is not completely understood
- The major gene product associated with AS and the other forms of SpA is **(HLA)-B27** MCQ!!
- HLA-B27 is present in about 80 to 95 percent of patients with AS in most ethnic groups.
  *The role of class I HLA antigens in pathogenesis is supported by the fact that HLA-B27 transgenic (الفئران المعدلة وراثيا) mice spontaneously develop arthritis, skin, gut and genitourinary lesions.
- Familial predisposition: First, second, and third-degree relatives of patients with AS have markedly increased risks of developing the disease.

Clinical Features:

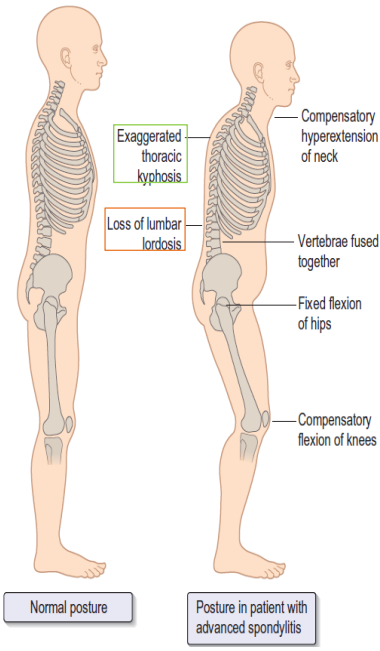
CARDINAL features:

The typical patient is a young man (late teens, early 20s) who presents with is **low back pain and early morning stiffness with radiation to the buttocks or posterior thighs.Pain and stiffness improve with exercise but not with rest.**
There is a progressive loss of spinal movement.

Inspection of the spine reveals two *characteristic* abnormalities:

- ✓ Loss of lumbar lordosis[1] and increased kyphosis (تحدب)(See the Fig→).
- ✓ Limitation of lumbar spine mobility

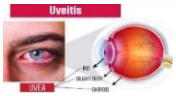
[Reduced spinal flexion is demonstrated by the Schober test(video,u should watch it!!)]



Other features include:

Enthesitis: Achilles tendinitis (most common'mcq') and plantar fasciitis إلتهاب اخمص القدم	**Tenderness** around the pelvis and chest wall.	Transient **peripheral arthritis** of knees, hips, and shoulders (50%) MCQ!! What type of peripheral arthritis is associated with AS? Mono(large joint)or Asymmetrical oligoarthritic	**Reduction in chest expansion** (due to costovertebral joint involvement).

Non-articular features include:

MOST COMMONLY: ***Acute ANTERIOR uveitis*:** لايلخبطونكم بالخيارات تراها انتيريور Acute, unilateral ,spontaneous remission(Not related to disease activity,mcq!!) ,Recurrent, Related to HLA-B27. First line treatment is topical steroid 	**Psoriasis** is present in up to approximately **10** percent of patients with AS. (Psoriasis is associated with all forms of SpA)	**Rarely:** aortic incompetence, cardiac conduction defects and apical lung fibrosis.

Box 11.14 Back pain criteria for diagnosing ankylosing spondylitis[a]

- Age of onset <50 years
- Insidious onset
- Improvement of back pain with exercise
- No improvement of back pain with rest
- Pain at night with improvement on getting up

The presence of four of the five criteria suggests AS with 80% sensitivity. [a]All criteria have high sensitivity.

لا تحفظون اي كرايتيريا

[1] Loss of lumber inward inversion

Investigations:

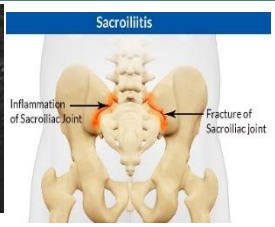
1) **Best Initial Test** is an x-ray of the sacroiliac (SI) joint.
2) ESR and CRP are often raised.
3) **The Most Accurate Test** is an MRI. MRI detects abnormalities years before the x-ray becomes abnormal.MRI shows **sacroiliitis** before it is seen on plain X-ray.
4) HLA-B27 testing is not usually performed.bc it's not a confirmatory diagnostic test since 8% of the general population is positive.

Radiological changes in AS (in chronological order):

Patients with early disease can have normal X-rays, and if clinical suspicion is high, MRI should be performed

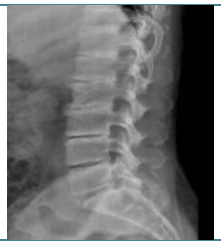
الشى الي مهم مهم تعرفونه ان:
MRI is very good in early diagnosis

MRI appearances in sacroiliitis. in early ankylosing spondylitis. Bone marrow oedema (circles) is present around both sacroiliac joints, which show irregularities due to erosions (arrows)



↓ ↓

The EARLIEST radiological appearances in the spine X ray are (**BLURRING)** of the upper or lower vertebral rims at the thoracolumbar junction (best seen on a lateral X-ray) ,caused by an enthesitis at the insertion of the intervertebral ligaments



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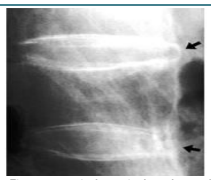
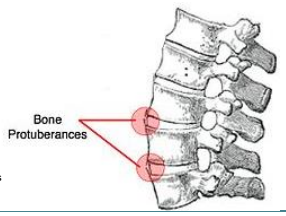
This heals with new bone formation resulting in bony spurs **(SYNDESMOPHYTES)** 'syndesmophytes is a bony growth originating inside a ligament'



Fine symmetrical marginal syndesmophytes typical of ankylosing spondylitis (arrow).



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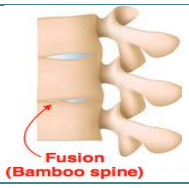
In advanced disease: Progressive calcification of the interspinous ligaments and syndesmophytes eventually produce the (**BAMBOO SPINE)**



Management:

التريتمنت هذي اهم جزئية ابغاكم تعرفونها
وشي انواعها مابيكم تعرفونها anti TNF α→NSAID is first line of treatment if failed
*وكمان في معلومه مره مره مره مهمه ان كل الدراسات اثبتت ان الكورتيكوستيرويد مالها فايده اذا عطيته بالفم لانها ماتوصل للعمود الفقري

- The key to effective management of AS is Early diagnosis and treatment ,which is essential to prevent irreversible syndesmophyte formation and progressive calcification. With effective treatment most patients are able to lead a normal active life and remain at work.
- Morning exercises to maintain posture and spinal mobility.
- **Medications:**
  1) **FIRST LINE OF TREATMENT:**NSAIDs(taken at night are particularly effective in relieving night pain and morning stiffness)
  2) If NSAID failed give→TNF-α-blockers(are highly effective in active inflammatory disease and improve both spinal and peripheral joint inflammation)
  3) If anti TNF α failed give→ IL 17 inhibtor (secukinumab) newly approved medication بس ماودي اعلمكم اشياء وتضيع عليكم البيسك

▸ **NOTE:**Methotrexate & sulfasalazine:helps the peripheral arthritis but NOT SPINAL DISEASE

Psoriatic Arthritis

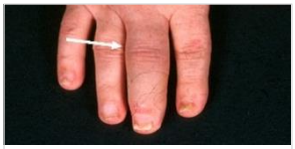
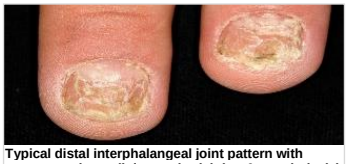
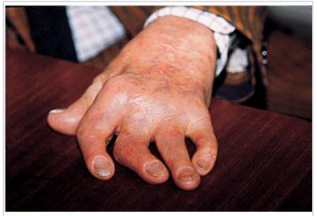
What is it:

- Arthritis occurs in 20% of patients with psoriasis, particularly in those with nail disease and may precede the skin disease.

Clinical Features:

The Clinical features of psoriatic arthritic is almost similar to AS BUT the hand involvement is more aggressive ,
طيب كيف نفرق بينهم بالتشخيص!! شوف مين الي ظهر اول اذا التحدب بالظهر طلع قبل الصدفيه فهذا AS
اما اذا التغيرات بالجلد والصدفيه طلعت قبل تحدب والام الظهر فهذا Psoriatic arthritis,

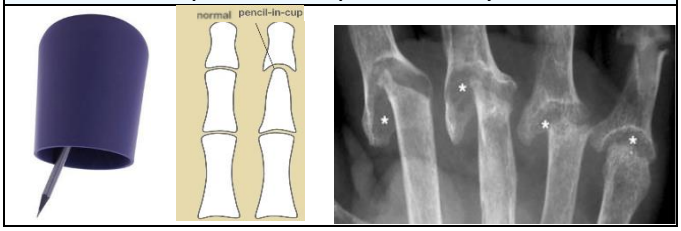
There are several types:

Asymmetrical involvement of the small joints of the hand, including the distal interphalangeal joints	- which is the most typical pattern of joint involvement in psoriasis. - Characteristic findings are: **Dactylitis(Sausage digits)**&Nail dystrophy(pitting&onycholysis تقشر الاظافر)  'Sausage' middle finger of a patient with psoriatic arthritis  Typical distal interphalangeal joint pattern with accompanying nail dystrophy (pitting & onycholysis). Oncycholysis:is separation of a fingernail from its nail bed ▸ some notes regarding dectylitis: ○ Dectorylitis also can be found in reactive arthritis(Occasionally) ○ unlike synovitis, in which swelling is confined to the joints, with dactylitis:the entire digit is swollen. ○ dactylitis is not specific for spa and may also be seen:(tuberculosis ,syphilis,sarcoidosis,sickle cell disease,tophaceous gout)
Symmetrical seronegative polyarthritis	resembling Rheumatoid Arthritis
Arthritis mutilans	a severe form with destruction of the small bones in the hands and feet *('telescopic' fingers)* اسهل طريقه تفرقين بين روماتويد هاند والسورايتك هاند الي هي DIP not involved in RA  Figure 11.22 Hand showing psoriatic arthritis mutilans. All the fingers are shortened and the joints unstable, owing to underlying osteolysis.
Sacroiliitis	unilateral or bilateral.

Investigations:

1) **Best Initial Test** is an x-ray of the joint showing a 'pencil in cup' deformity in the IPJs (bone erosions creates a pointed appearance and the articulating bone is concave).
2) Routine blood tests are unhelpful in the diagnosis. The E SR is often normal.

'pencil in cup' deformity



Treatment:

- This is with **analgesia** and **NSAIDs**.
- Local synovitis responds to intra-articular **corticosteroid injections**.
- In SEVERE cases **methotrexate or TNF-blocking** drugs control both the arthritis and the skin lesions.

Reactive Arthritis

General Characteristic:

- Reactive arthritis is a STERILE synovitis, which occurs secondary to:
  - Gastrointestinal infection:with ***Shigella***, ***Salmonella***, ***Yersinia*** ,***campylobacter,****or* ***clostridium difficile***
  - Sexually acquired infection: – non-specific urethritis in the male or cervicitis in the female due to infection with ***Chlamydia trachomatis*** *(in urineMCQ,!!*لوقالولي اكتب سؤال واحد بكتبها*)*or Ureaplasma urealyticum.
- Persistent bacterial antigen in the inflamed synovium of affected joints is thought to drive the inflammatory process.

اهم اهم الاشياء الي ابغاكم تعرفونها في الرياكتف ارثرايتس:
*الاورقانزم ال٦ كلها مهم تعرفوها.
*it occurs secondary to GIT or Sexual infection ONLY لو جاك سؤال فيه ريسبايرتوري انفكشن على طول استبعد الرياكتف ارثرايتس
*the onset of arthritis takes(2-4 wks)not before!!!! اذا قبل فكر بشي ثاني زي السيبتك ارثرايتس

Clinical Features:

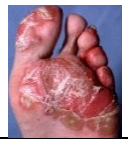
Typical Features:

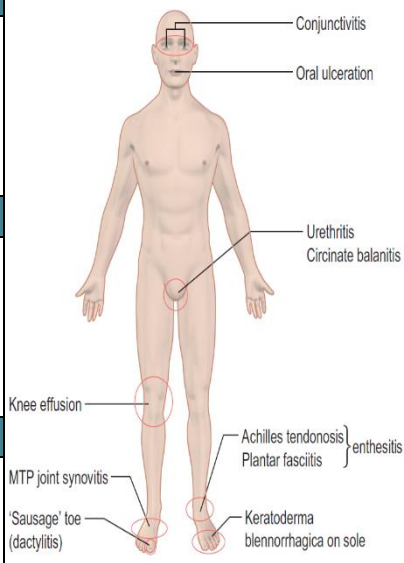
The **typical case** is a **young** man who presents with an acute arthritis shortly (within2- 4 weeks 'NOT BEFORE!!') **after** an enteric or sexually acquired infection, which may have been mild or asymptomatic.
The joints of the **LOWER LIMBS** are particularly affected in an **ASYMMETRICAL** pattern; (Large joints) the knees, ankles and feet are the most common sites.

Additional features:

classic triad of Reiter's syndrome: (urethritis, Asymmetrical reactive arthritis and conjunctivitis). *but most patients do not have the classic findings of Reiter's syndrome	**Enthesitis** (plantar fasciitis, Achilles tendonitis)	**acute anterior uveitis**	A few patients develop **sacroiliitis and spondylitis**.

The skin lesions resemble psoriasis:

keratoderma blenorrhagica: (kerato-) skin (derma-) mucousy (blenno-) discharge (-rrhagia) Red plaques and pustules that resemble pustular psoriasis are found on the palms and soles of the feet. 	**Circinate balanitis:** causes superficial ulcers around the penile meatus.	**Nail dystrophy** may also occur.



Clinical features of reactive arthritis.

Investigations:

1) There is no specific test for reactive arthritis,**THE DIAGNOSIS IS CLINICAL**:If any patient has acute asymmetric arthritis that progresses sequentially from one joint to another→reactive arthritis should be in the differential diagnosis.
2) Send synovial fluid for analysis (to rule out infection or crystals): →Aspirated synovial fluid is **sterile**, with a high neutrophil count.
3) The ESR is raised in the acute stage.

Management:

- The acute joint inflammation responds well to **NSAIDs** and local **corticosteroid injections**.
- Any persisting infection is treated with antibiotics(Antibiotics do not reverse reactive arthritis once joint pain has started)
- Most patients have a single attack; relapsing cases are treated with **sulfasalazine** or **methotrexate** and **TNF-blocking** drugs in severe cases.

Enteropathic Arthritis

What is it:

- Enteropathic arthritis is a large-joint mono- or ASYMMETRICAL oligoarthritis occurring in 10–15% of patients with ulcerative colitis or Crohn's disease.
- It usually parallels the activity of the inflammatory bowel disease and consequently improves as bowel symptoms improve.

Treatment:

- The arthritis often remits with treatment of the bowel disease but DMARD and biological treatment is occasionally required.

▸ **NOTE:**Patients with inflammatory bowel disease may also develop sacroiliitis (16%) and AS (6%), which are clinically and radiologically identical to classic AS. These can predate or follow the onset of bowel disease and there is no correlation between activity of the Ankylosing spondylitis and bowel disease IBD تذكروا نفس الي أخذناه بالتيرم الاو ل مع ال

Summary

Seronegative Spondyloarthropathies				
This title describes a group of conditions that share certain clinical features: - A predilection for axial (spinal and sacroiliac) inflammation - Asymmetrical peripheral arthritis - Absence of rheumatoid factor, hence 'seronegative' - inflammation of the enthesis - A strong association with HLA-B27, but its aetiological relevance is unclear.				
	Ankylosing spondylitis	**Psoriatic Arthritis**	**Reactive arthritis**	**Enteric Arthritis**
S & S	The cardinal feature is low back pain and early morning stiffness with radiation to the buttocks or posterior thighs. Symptoms are exacerbated by inactivity and relieved by movement.	Characteristic findings are: Dactylitis(Sausage digits)&Nail dystrophy	- The **typical case** is a **young** man who presents with an acute arthritis shortly (within 4 weeks) **after** an enteric or sexually acquired infection, which may have been mild or asymptomatic. The joints of the **LOWER LIMBS** are particularly affected in an **ASYMMETRICAL** pattern; the knees, ankles and feet are the most common sites. - **classic triad of Reiter's syndrome:** (urethritis, Asymmetrical reactive arthritis and conjunctivitis).*but most patients do not have the classic findings of Reiter's syndrome	Enteropathic arthritis is a large-joint mono- or Asymmetrical oligoarthritis occurring in 10–15% of patients with ulcerative colitis or Crohn's disease.
D X	**Best Initial Test** is an x-ray of the sacroiliac joint. **The Most Accurate Test** is an MRI	**Best Initial Test** is an x-ray of the joint showing a 'pencil in cup'	- There is no specific test,**THE DIAGNOSIS IS CLINICAL**. - Send synovial fluid for analysis (to rule out infection or crystals) →Aspirated synovial fluid is sterile, with a high neutrophil count.	**Best Initial Test** is an x-ray
	Despite the association with HLA-B27, this is never the "best initial" or "most accurate" test for SPA.			
R x	**First line** NSAIDs injectons:reliving pain *TNF-α-blockers:are highly effective in active inflammatory disease and improve both spinal and peripheral joint inflammation *Methotrexate& Corticosteroid:helps the peripheral arthritis but not spinal disease.			

Ankylosing spondylitis back pain vs Mechanical back pain (IMPORTANT IN YOUR CAREER)		
Features	Inflammatory back pain	Mechanical back pain
Morning stiffness	Prolonged more than 1 hour	Less than 45 min
Max pain\stiffness	Early morning	Late day
Activity	Improve symptoms	Worsens symptoms
Duration	Chronic	Acute or chronic
Age of onset	9 -40 yrs	20-65 yrs
Radiographs	Sacroiliitis,vertebral ankylosis,syndesmophytes	Osteeophytes(bony projection associated with cartilage degeneration) malalignment(displacement)

MCQs

Taken from 500 Single Best Answers in MEDICINE

1)A 30-year-old man presents to his GP with a 1-week history of painful, swollen knees and a painful right heel. Further history reveals that he has been experiencing burning pains while urinating for the past 2 weeks and that his eyes have become red and itchy. What is the most likely diagnosis?

A. Septic arthritis
B. Gout
C. Ankylosing spondylitis
D. Enteropathic arthritis
E. Reactive arthritis

2)A 23-year-old man presents to the rheumatology clinic with lower back and hip pain. These have been occurring every day for the past two months. Pain and stiffness are worse in the mornings. He also mentions that his right heel has been hurting. He is previously fit and well, but had occasions of lower back pain when he was a teenager. His symptoms have stopped him from playing tennis. Recent blood tests organized by his GP have shown a raised C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR). What is the most appropriate treatment?

A. NSAID and spinal exercises
B. NSAID and bed rest
C. Oral prednisolone
D. Methotrexate plus sulfasalazine
E. Bed rest

3)A 20-year-old man presents to accident and emergency with sudden onset pain in the right eye, with associated blurred vision and discomfort when gazing at the lights. He has a history of back pain and has recently been diagnosed with ankylosing spondylosis. What is the most likely cause of his eye pain?الدكتور قال يمكن يجيكم سؤال كذا

A. Conjunctivitis
B. Retinal detachment
C. Anterior uveitis
D. Corneal ulceration
E. Acute glaucoma

4)A 45-year-old woman presents to the rheumatology outpatient clinic with a three month history of stiff hands and wrists. She mentions that the pain is particularly bad first thing in the morning. On examination, the wrists, metacarpophalangeal joints and proximal interphalyngeal joints are swollen and warm. A diagnosis of rheumatoid arthritis is suspected. Which of the following investigations is most specific for confirming the diagnosis?ستايلهم بالأسئلة;)

A. X-rays
B. Rheumatoid factor levels
C. Anti-citrullinated peptide antibody (anti-CCP) levels
D. C-reactive protein
E. Erythrocyte sedimentation rate

Answer key:

1 (E) | 2 (A)| 3(C) | 4 (C)

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