03. RA. Rheumatoid Arthritis

RA. Chronic inflammatory — auto immune
Multisystemic disease
Main target → synovium → symetric inflammatory synovitis
↓
destruction of < cartilage / bone : erosion
↓
deformation of the joint

Cause: unknown
Triggers: * infectious agent (mycoplasma, parvovirus)
* environmental : - cigarette smoking

Sex ratio → ♀ 3:1
Age → 35 - 50

Initiation non specific inflammation → Amplification T cells activation → Chronic inflammation → Tissue injury

Predominant infiltrating cell
T- lymphocyte

HIV → ↙ T. lymph → improved RA

↑ Pro-inflammatory cytokines → pathogenic features
- TNF_α
- IL-1
- IL-6

Clinical presentation :

Articular

Symmetrical
- PIP
- MCP
- Wrists
- ankles
- knees
* Cervical C_1-C_2
  - subluxation
  - x-Ray before intubation

Spared :
→ DIP
→ Lower back
→ Sarco iliac

Backer cyst

Extra articular

→ Ligaments and Tendons damage
- Radial deviation of the wrist
- Ulnar deviation of digits

	PIP	DIP	PIP	DIP
Boutonnière deformity →	∧	f	f	e
Swan neck deformity →	V	f	e	f

→ Skin : Rheumatoid nodules (vasculitis)
Areas of mechanical stress (Occiput, Olecrancon, Achilles tendon)
Methotrexate may flare them.

→ Spleen : RA + SPNC + ↓ PNN (infections) → Felty syndrome
→ Lung : RA + pneumococcosis + lung nodules → Caplan Sd
pleural effusion : ↓ glucose
→ Heart : pericarditis, pleural disease
→ Eyes : episcleritis

Backer cyst rupture → mimic DVT
Carpal tunnel syndrome
Constitutional symptoms : (before onset of arthritis)

Criteria : 4 items

Joint swelling : PIP, MCP, Wrist for 6 weeks
3 joints for 6 weeks
symmetrical for 6 weeks

Joint stiffness : Morning > 1 h for 6 weeks

Labs: CRP or ESR
RF or anti CCP

Where : PIP, MCP, Wrists / 3 joints / symmetrical
When 6 weeks morning > 1 h
What else : CRP/ESR ; anti CCP/RF

xRay abn
nodules } not a part from criteria

Investigations

→ Labs
normo Anemia : (chronic inflam, NSAIDs ! → GI bleeding)
CRP/ESR ↑
Ab: - RF non specific
- anti CCP 95% specific

→ Imaging : Radiograph
erosion of the joints
osteopenia

→ Arthrocentesis exclude crystal / infection (RA → immunosupp → infections → septic arthritis)

Anti CCP single most accurate test

Treatment

Symptomatic control
- NSAIDs
- Steroids (bridge)

Disease Modifying Antirheumatic Drugs DMARDs

Symptomatic Control

NSAIDs
Best initial therapy for pain
Immediatly working
Do not prevent disease progression (→ DMARDs)

No therapeutic difference between NSAIDs

Steroids
- NSAIDs don't work immediat
- Work within hours
- Do not prevent disease progression of RA

- Bridge with DMARDs

Short courses only

DMARDs

DMARDs
- Methotrexate Best initial
- TNFα blockers : - Infliximab - Adalimumab - Etanercept and → Rituximab
- Hydroxychloroquine Mono in Mild to avoid toxicity Combinat° with ⊕ MTX
- Sulfasalazine and other.

Start DMARD right away Erosions!

DMARD	Use	Side Effects
MTX	Best initial if it doesn't control disease → add an anti TNF_α	Bone marrow suppression Liver. hepatitis, hepatic fibrosis Lung. pneumonitis Flair rheumatoid nodules CBC, liver enzymes } every 4-8 weeks
Anti-TNF_α infliximab adalimumab etanercept	Added if MTX fails Before using them test for hep B and TB Safe in pregnancy Used if MTX is not tolerated	TB reactivation Infection
Rituximab	Combined with MTX in those not responding to anti-TNF_α medication	Infection
Hydroxy-chloroquine	• Monotherapy in mild disease (avoiding MTX toxicity) • Combined to MTX more often Safe in pregnancy	Retinal toxicity Regular eye examination
Sulfasalazine	Add to MTX if anti TNF_α don't control the disease Safe in pregnancy Mild disease like hydroxychloroquine	Bone marrow suppression Hemolysis with G6PD deficiency Rash

MTX
Anti TNF_α
Rituximab
Sulfasalazine
Hydroxychloroquine

Safe in pregnancy
anti TNF_α
hydroxychloroquine
Sulfasalazine

Best 1st → MTX

Add ⊕ Anti-TNF_α → MTX + anti TNF_α

Use Rituximab or Sulfasalazine instead of anti TNF_α → MTX + Rituximab or MTX + Sulfasalazine

Mild disease → Hydroxychloroquine or Sulfasalazine

MTX → MTX + anti TNF_α → MTX + Sulfasalazine or MTX + hydroxychloroquine

Mild : hydroxy chloroquine
Sulfasalazine

Anti TNF_α :

Infliximab (Remicade) mAb to TNF_α

Adalimumab (Humira) mAb to TNF_α entirely human sequences

(Embrel) entirely human fusion protein

Complications / follow up.

- Aggressive disease is likely to occur with the following features:
  - Certain subtypes of HLA-DR4 ← never screened
  - Late age of onset ← Hx
  - diffuse rheumatoid nodules ← PE
  - early joint erosions ← xRay
  - high titers of RF ← Serology

Atlanto axial subluxation :

Bony or ligamentous } abnormality → excessive mvt at C1-C2 junction → subluxation

Pannus formation at the synovial joint C1-C2

↑

RA

RA → C1-C2 involvement → spinal cord involvement → Neuro Sx Paraplegia, Quadriplegia

Sx : Neck pain occipital
C2 radicular pain (paresthesia of hands and feet)
Myelopathy

Workup : 1st : xRay of the cervical spine : multiple views
further : CT or MRI
if ⊕ → spine surgeon (ortho- or neuro-)

All RA patients before intubation anesthesia } → screen for C1-C2 subluxation

Baker cyst:

- extension of inflammed synovium into the popliteal space
- Presentation :
  swollen painful calf (mimic DVT : Deep Vein Thrombosis)