Rheumatoid Arthritis

Presented by

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Rheumatoid Arthritis

- Rheumatoid arthritis (RA) is a common form of inflammatory arthritis

- It is a chronic disease characterized by a clinical course of exacerbations and remissions

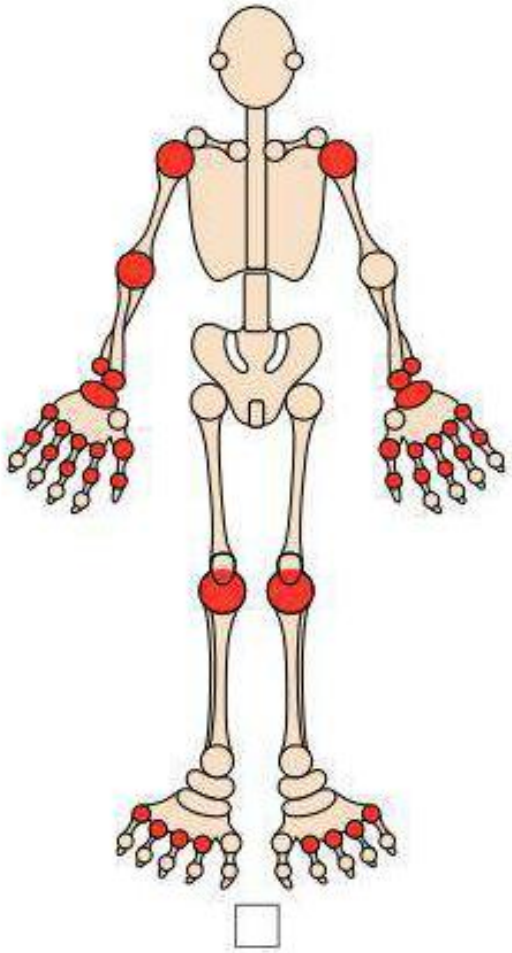
Rheumatoid Arthritis

Age: 3rd to 5th decade.

Sex: Male:Female = 1:3

Clinical features (Symptoms)

- Pain; joint swelling and stiffness of the small joints of the hands, feet and wrists(symmetrically)
- Large joints such as wrists, elbows, shoulders, knees and ankles are also affected. In some cases, there may be monoarticular presentation
- The pain and stiffness are significantly worse in the morning and may improve with gentle activity



Rheumatoid arthritis typically targets the metacarpophalangeal and proximal interphalangeal joints of the hands and metatarsophalangeal joints of the feet as well as other joints in a symmetrical pattern.

Clinical features (Signs)

The joints are usually warm, tender & swelled.

There is limitation of movement.

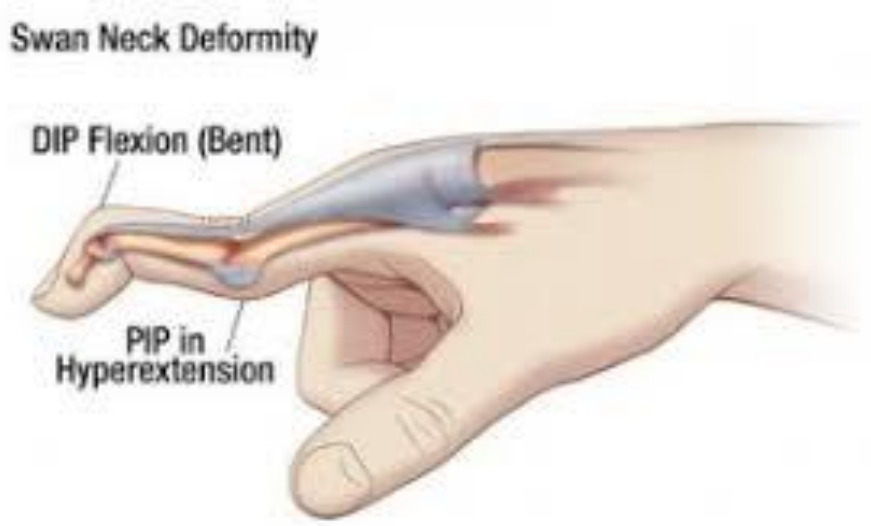
There may be muscle wasting.

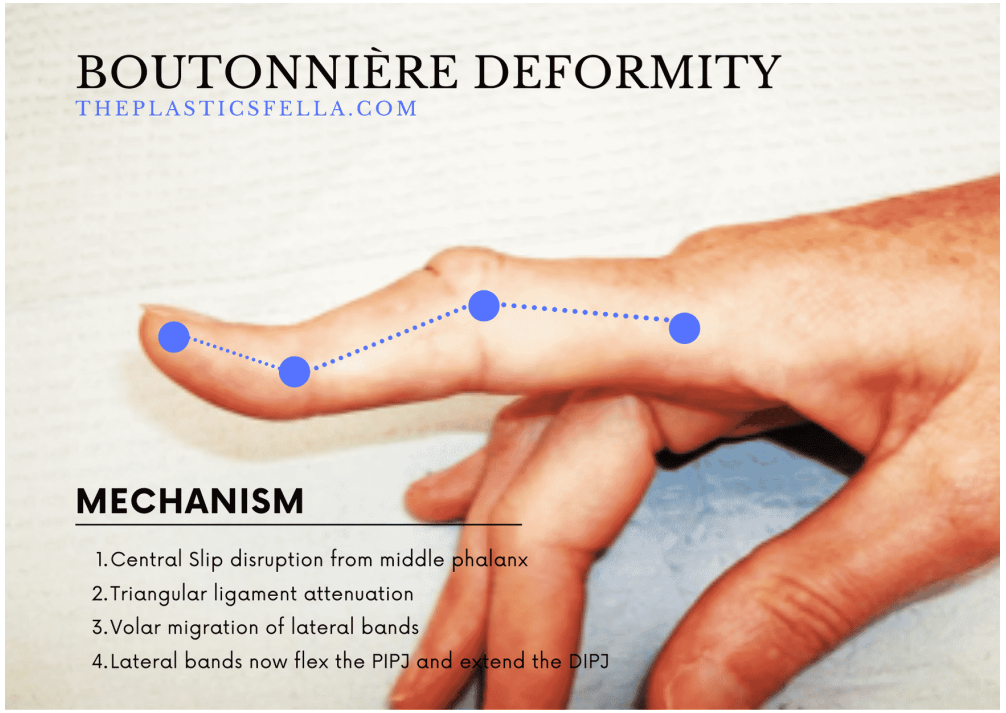
Deformities in advanced disease ---

Ulnar deviation.

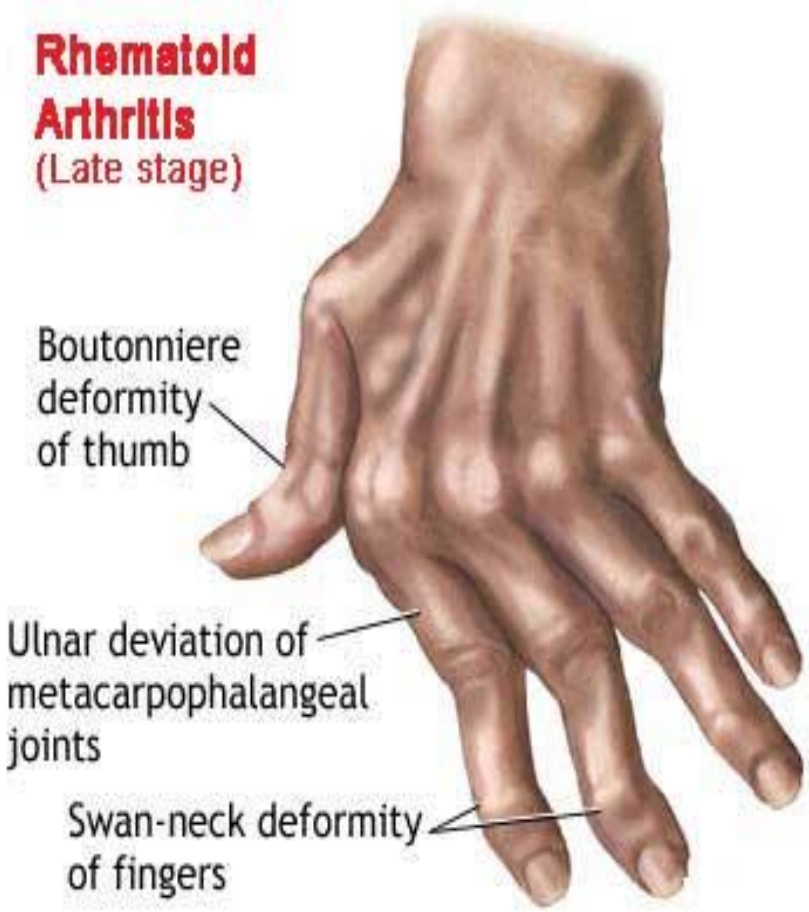
'Swan-neck' deformity.

'Z'-deformity of the thumb, boutonniere deformity.

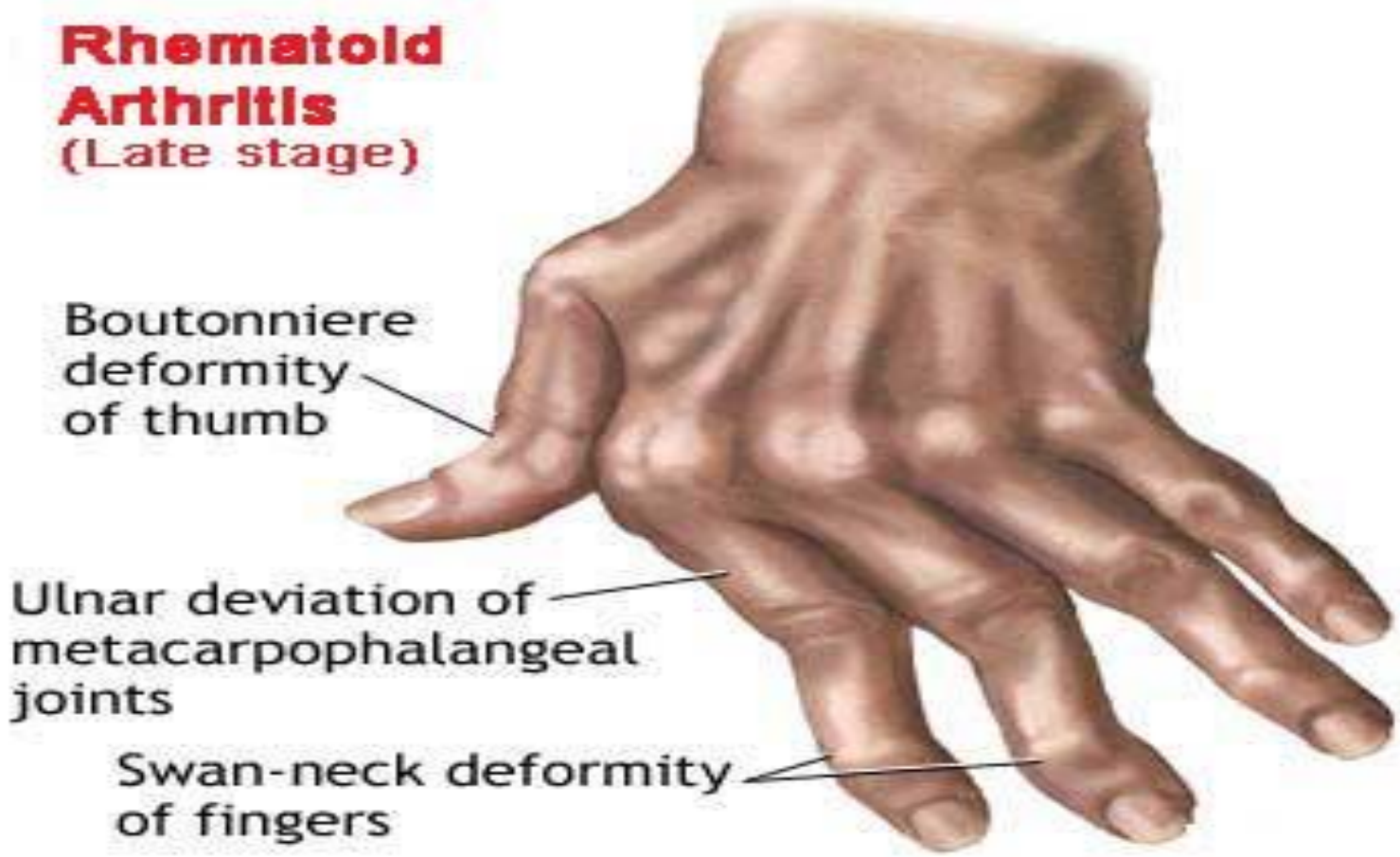




'Z'-deformity of the thumb


Rhematoid
Arthritis
(Late stage)
Boutonniere
deformity
of thumb
Ulnar deviation of
metacarpophalangeal
joints
Swan-neck deformity
of fingers

Rhematoid Arthritis
(Late stage)



26.53 Extra-articular manifestations of rheumatoid disease

Systemic

- Fever
- Weight loss
- Fatigue
- Susceptibility to infection

Musculoskeletal

- Muscle-wasting
- Tenosynovitis
- Bursitis
- Osteoporosis

Haematological

- Anaemia
- Thrombocytosis
- Eosinophilia

Lymphatic

- Felty syndrome (Box 26.54)
- Splenomegaly

Nodules

- Sinuses
- Fistulae

Ocular

- Episcleritis
- Scleritis
- Scleromalacia
- Keratoconjunctivitis sicca

Vasculitis

- Digital arteritis
- Ulcers
- Pyoderma gangrenosum
- Mononeuritis multiplex
- Visceral arteritis

Cardiac

- Pericarditis
- Myocarditis
- Endocarditis
- Conduction defects
- Coronary vasculitis
- Granulomatous aortitis

Pulmonary

- Nodules
- Pleural effusions
- Pulmonary fibrosis
- Obliterative bronchiolitis
- Caplan syndrome
- Bronchiectasis
- Pneumothorax

Neurological

- Cervical cord compression
- Compression neuropathies
- Peripheral neuropathy
- Mononeuritis multiplex

Amyloidosis

15.9 Criteria for diagnosis of rheumatoid arthritis*

Criterion	Score
Joints affected	
1 large joint	0
2–10 large joints	1
1–3 small joints	2
4–10 small joints	5
Serology	
Negative RF and ACPA	0
Low positive RF or ACPA	2
High positive RF or ACPA	3
Duration of symptoms	
<6 wks	0
>6 wks	1
Acute phase reactants	
Normal CRP and ESR	0
Abnormal CRP or ESR	1

Patients with a score ≥6 are considered to have definite RA.

*European League Against Rheumatism/American College of Rheumatology 2010 Criteria.
(ACPA = anti-citrullinated peptide antibodies; CRP = C-reactive protein; ESR = erythrocyte sedimentation rate; RF = rheumatoid factor)

26.55 Investigations and monitoring of rheumatoid arthritis

To establish diagnosis

- Clinical criteria
- Erythrocyte sedimentation rate and C-reactive protein
- Ultrasound or magnetic resonance imaging
- Rheumatoid factor and anti-citrullinated peptide antibodies

To monitor disease activity and drug efficacy

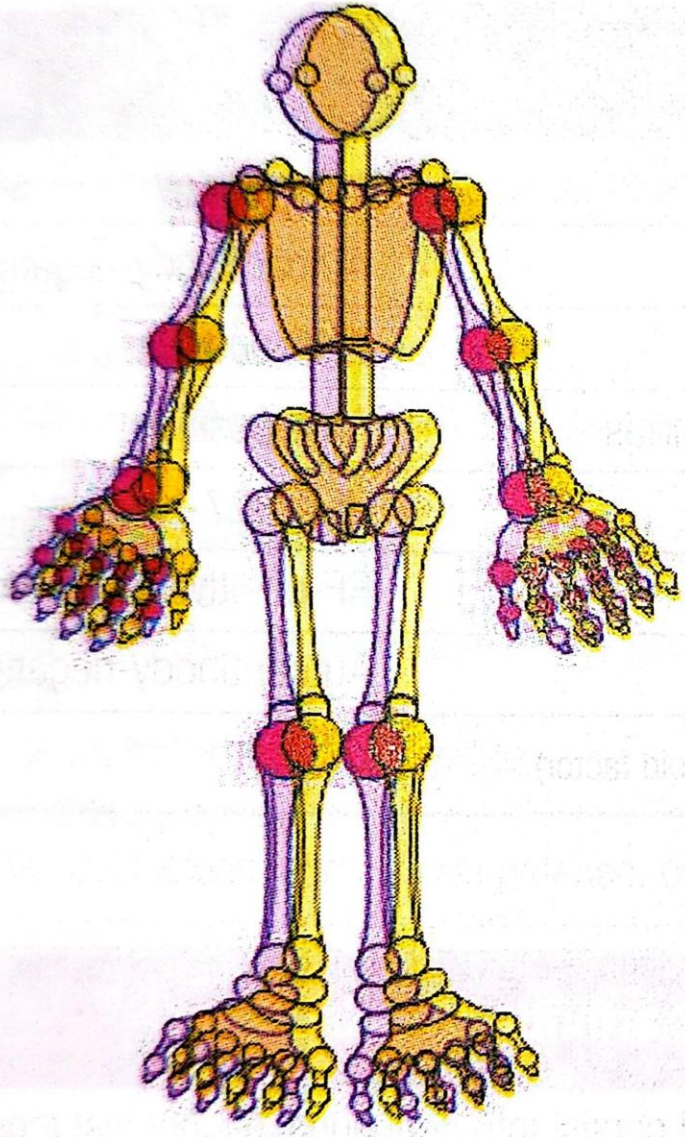
- Pain (visual analogue scale)
- Early morning stiffness (minutes)
- Joint tenderness
- Joint swelling
- DAS28 (Fig. 26.37)
- Erythrocyte sedimentation rate and C-reactive protein

To monitor disease damage

- X-rays
- Functional assessment

To monitor drug safety

- Urinalysis
- Full blood count
- Chest X-ray
- Urea and creatinine
- Liver function tests



Calculation

- Count swollen joints
- Count tender joints
- Measure erythrocyte sedimentation rate*
- Note patient global health assessment (1–100)
- Enter data into calculator: www.4s-dawn.com/das28

Interpretation

• > 5.1	High activity
• ≥ 3.2–5.1	Moderate activity
• 2.6–3.2	Low disease activity
< 2.6	Remission

Fig. 26.37 Calculation of the Disease Activity Score 28 (DAS28).
*Erythrocyte sedimentation rate or C-reactive protein can be used for the calculation.

Treatment (Non-pharmacological therapy)

- **Patient Education** .
- **Rest** and splinting. This is necessary where practical for any acute flare-up of arthritis.
- **Exercise**. It is important to have regular exercise, especially walking and swimming. Have hydrotherapy in heated pools.
- **Smoking cessation**. This is strongly recommended.
- **Joint movement**. Each affected joint should be put daily through a full range of motion to keep it mobile and reduce stiffness.

Treatment （Pharmacological ）

NSAIDs.

➤ Classical DMARDs: Methotraxate, sulfasalazine, hydroxychloroquine, leflunomide.

➤ Targeted Synthetic DMARDs : Tofacitinib, Baricitinib, Filgotinib, Upadacitinib

➤ Corticosteroid: For induction of remission.

Treatment (Pharmacological)

- **Biological drugs (*monoclonal antibodies*) used in the treatment of RA**:
  - Anti-TNF therapy: Etanercept, Infliximab, Adalimumab.
  - Anti-B cell therapy: Rituximab.
  - Inhibitor of T-cell activation: Abatacept.
  - Anti-IL6: Tocilizumab.
  - Anti-IL17 : Secukinumab
  - Anti-IL1 : Anakinra

Treatment

Synovectomy of the wrist or finger tendon sheaths of the hands may be required.

In later stages of the disease: Osteotomy, arthrodesis, arthroplasties

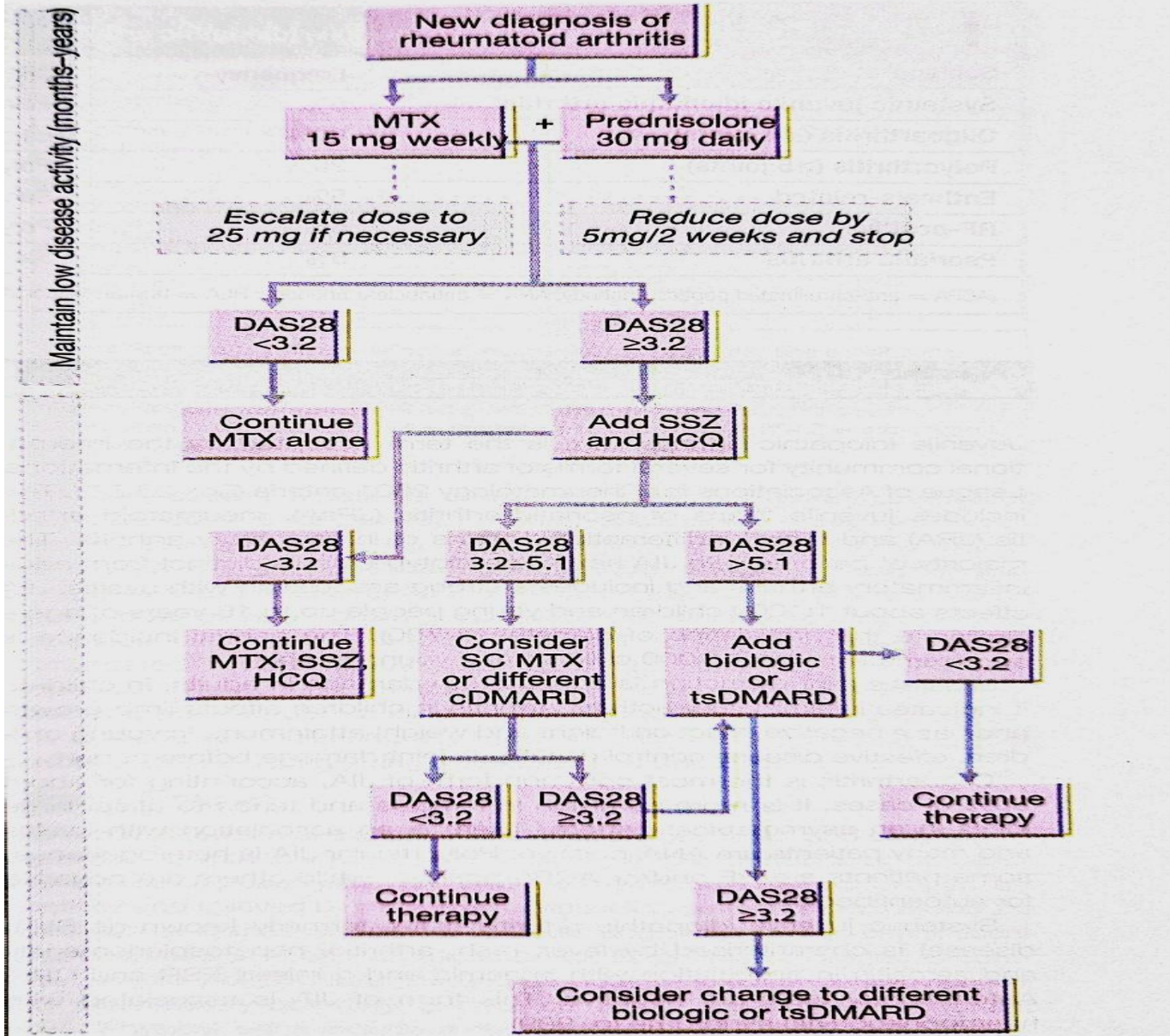


Fig. 26.38 **Algorithm for the management of rheumatoid arthritis.**
(DAS28 = Disease Activity Score 28; DMARD = disease-modifying antirheumatic drug; HCQ = hydroxychloroquine; MTX = methotrexate; SSZ = sulfasalazine; ts = targeted synthetic; SC = subcutaneous)

Remission Criteria of RA

Table 1. American College of Rheumatology preliminary criteria (1) for remission of rheumatoid arthritis (RA)*

A minimum of 5 of the following for at least 2 consecutive months:

- Morning stiffness not to exceed 15 minutes
- No fatigue
- No joint pain
- No joint tenderness or pain on motion
- No soft tissue swelling in joints or tendon sheaths
- ESR (Westergren method) <30 mm/hour (women) or 20 mm/hour (men)

* Exclusions prohibiting a designation for complete clinic remission: clinical manifestations of vasculitis, pericarditis, pleuritis, myositis, unexplained recent weight loss, or fever secondary to RA. ESR = erythrocyte sedimentation rate.

Complications

1) Joint deformity.
2) Disability.
3) Tendon rupture.
4) Bursitis.
5) Osteoporosis.
6) Muscle wasting.
7) Scleritis & episcleritis.
8) Pericarditis, myocarditis, endocarditis.
9) Pleural effusion.
10) Fibrosing alveolitis.
11) Susceptibility to infection.
12) Vasculitis.
13) Cervical cord compression.
14) Peripheral neuropathy.
15) Sub-luxation of atlanto-axial joint

THANK YOU