Rheumatoid arthritis

Causes, development and consequences [1, 2] (1)

A

Autoimmune process? Triggered by an infection?

Cells of the synovial membrane multiply aggressively and invade foreign tissues

Cartilage and bone tissue close to cartilage are attacked and may be destroyed

Pain and inflammation

Typical cartilage and bone damage in rheumatoid arthritis:

- joint gap narrowing
- swelling in area of joint
- decalcification close to joint
- loss of bone substance
- stiffening
- dislocation/misalignment
- interruption of the layer between cartilage and bone

In addition, numerous other organs may be involved!

Conservative treatment [3, 4, 5]

B

- Painkillers
  - Oral glucocorticoids

- Intraarticular glucocorticoids (into the joint)

- Disease-modifying antirheumatic drugs (long-acting antirheumatics and disease-controlling medicines with various mechanisms of action)

Physical therapy (e.g. cold therapy, movement therapy)

Occupational therapy

Radiosynoviorthesis (radiotherapy of the synovium)

Surgical procedures [3, 6]

C

For treatment of joint damage:

- Synovectomy (removal of synovial membrane), joint replacement, stiffening, joint removal

(1) modified from: Hettenkofer. Rheumatologie. 5th edition. Thieme-Verlag. 163
Rheumatoid arthritis

A Causes, development and consequences [1, 2]

Rheumatoid arthritis is a chronic and mostly progressive inflammatory disease of the joints.

Autoimmune malfunction (the immune system is targeted against the body’s own substances), which might be triggered by viruses or bacteria, is assumed to be the cause.

A genetic predisposition to the disease may play a role.

Rheumatoid arthritis is manifested by aggressive proliferative growth of the synovial cells (cells of the synovial membrane of the joint) into foreign tissues, leading to destruction of bone and cartilage. The condition typically presents as a symmetrical polyarthritis with a preference for the small joints.

The disease leads to loss of bone substance, decalcification, swellings, stiffening and dislocation/misalignment of the joints. These, together with the damage to the ligament apparatus, lead to characteristic deformations.

This is a systemic disease which also affects other organs, e.g. blood cells and vessels, eyes, skin, lung, heart, liver, kidneys and nervous system.

B Conservative treatment [3, 4, 5]

Treatment aims to provide pain relief and slow progression of the disease.

Glucocorticoids have an anti-inflammatory action and are administered systemically and intraarticularly (into the joint).

Disease-modifying antirheumatic drugs have a long-term disease-controlling action. They include methotrexate, numerous other active substances and novel therapeutic agents, which are intended to influence the disease process through molecular biology (e.g. antibodies, soluble receptors and antagonists against inflammation-mediating proteins).

Movement therapy is essential. All joints must be moved at least once a day (if possible in warm water). Inactivity leads to more rapid progression of the disease!

In radiosynoviorthesis (radiotherapy of the synovial membrane), beta emitters are injected into the joints. The radiation leads to connective-tissue transformation of the synovial membrane. The intention is to slow down the tumour-like growth of the synovial cells.

C Surgical procedures [3, 6]

In synovectomy (in the early stage), the synovial membrane is removed in order to slow down its cell growth. This procedure is also appropriate in combination with radiosynoviorthesis.

The aims of joint replacement, stiffening and joint removal are better stability and less pain.