The autoimmune disease lupus erythematosus belongs to the collagenoses and can show very different clinical symptoms: The symptoms range from mild conditions to severe organ manifestations which makes the diagnosis not easy sometimes. Read all the important facts about lupus erythematosus here to be prepared for the exam and the subsequent medical daily routine.

Definition of Lupus

The systemic lupus erythematosus as autoimmune disease

Lupus erythematosus belongs to the group of autoimmune diseases and further to the group of collagenoses. In the group of collagenoses, it is associated with diseases of the rheumatic spectrum disorders.
Etiology of Lupus

Causes of the systemic lupus erythematosus

The exact etiology is unknown but there are certain predisposing genetic factors, e.g. the surface molecules HLA-DR2 and HLA-DR3. Furthermore, external factors like hormonal changes, stress, infects, increased light exposure or drugs can "trigger" a lupus.

Pathophysiology of Lupus

The development of systemic lupus erythematosus

The pathomechanism is a precipitation of immune complexes at the basal membrane of the cell walls. This happens with connective tissue of the skin but also with vessels. The precipitations can lead to a vasculitis there and can be seen as so called “lupus band” under the microscope when staining the immune complexes with immunofluorescence stain.

These precipitating immune complexes consist of DNA, antibodies against this DNA, complement and fibrin. They develop due to a misdirected immune response against internal cell nucleus components. These are falsely distinguished as foreign by the immune system and further antibodies are produced.

Clinical Picture of Lupus

Symptoms of systemic lupus erythematosus

In most cases, systemic lupus erythematosus appears with unspecified general symptoms which can complicate the diagnosis. Fever, weakness, weight loss and swelling of lymph nodes can belong to these.
Skin changes that gave the disease its name (lupus=wolf, due to the wolf’s face-similar scars that stay after healing of the skin defects) manifest themselves nearly as often. The characteristic skin changes are a butterfly-like erythema on the cheeks and nasal bridge. Vibrant, scaling papules are found at the subform of discoid lupus.

Furthermore, polyarthritis and myositis are some of the more common symptoms.

Eventually, SLE can lead to neurological symptoms. In these, the peripheral nervous system is affected more commonly. The infestation becomes apparent due to a decrease of vigilance, depression, epilepsy or stroke for example.

**Common signs and symptoms of systemic lupus erythematosus**

- **Systemic:**
  - Low-grade fever
  - Photosensitivity

- **Mouth and nose**
  - Ulcers

- **Muscles**
  - Aches

- **Joints**
  - Arthritis

- **Face**
  - Butterfly rash

- **Psychological**
  - Fatigue
  - Loss of appetite

- **Pleura**
  - Inflammation

- **Pericardium**
  - Inflammation

- **Fingers and toes**
  - Poor circulation

Common signs and symptoms of systemic lupus erythematosus.
Renal changes in systemic lupus erythematosus: The lupus nephritis

The lupus nephritis that occurs in over half of the patients, is crucial for the prognosis of SLE. The complexes of DNA and anti-DNA antibodies lead to the clinical picture of a classic immune complex glomerulonephritis. This can express itself with different clinical symptoms from asymptomatic proteinuria to chronic renal failure.

It is divided into six different types by the world health organization WHO that are treated differently. The therapy consists of immunosuppression and an optimal blood pressure adjustment in most cases.

Summary of the symptoms of systemic lupus erythematosus

All in all, you should think of a systemic lupus erythematosus with the following symptoms:

- Fever, weakness, weight loss
- Butterfly rash
- Polyarthritis, myositis
- Cardiopulmonary changes
- Lupus nephritis
- Neurological changes

Diagnosis of Lupus

Laboratory diagnostics for systemic lupus erythematosus

The anti-dsDNA antibodies that are increased in 70% of the cases of lupus, and the anti-nuclear antibodies (ANA) that are nearly always increased, are characteristic. Yet, these can also be found in healthy individuals in low concentrations.

Further antibodies can also be positive: anti-Sm, anti-Ro, antiphospholipid antibodies (APA). The circulating antibodies often lead to a decrease of the cell count of different cell types such as thrombocytopenia and lymphocytopenia.

Note:

- Increase of ANAs in 95 % of the cases
- Increase of anti-dsDNA antibodies in 70 % of the cases

Therapy of Lupus

Treatment of lupus erythematosus

The first therapeutic approach is always to find possible triggers like drugs and to avoid them afterwards. It should be taken care of sufficient light protection in affected people. The therapy is adjusted to the severity of the exacerbation. In milder cases, NSAR are often combined with hydroxychloroquine and glucocorticoids.
More powerful immunosuppressive drugs like methotrexate (MTX) are used for more severe cases or in the case of steroid intolerance.

The **blood pressure** has to be optimally adjusted to prevent renal damage. Furthermore, a sufficient **prophylaxis of osteoporosis** should follow.

**Prognosis of Lupus**

**Survival probability in systemic lupus erythematosus**

The rate of survival is very good with optimal therapy. Lupus patients mostly die from cardiovascular complications.

**References**


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