

Diabetic foot

Diabetic foot syndrome (also diabetic foot) is one of the chronic complications of diabetes mellitus . The disease leads to destructive involvement of the foot tissues distal to the ankle. The occurrence of chronic infection, diabetic ulcers, and diabetic osteoarthropathy is common .

Pathophysiology

The development of the syndrome occurs gradually as a result of **chronic hyperglycemia** in poorly compensated diabetes mellitus. The dominant element is mainly diabetic polyneuropathy and **chronic ischemia** .

With polyneuropathy, there is a gradual **weakening of the interdigital muscles** and, subsequently, a collapse of the natural arch of the foot . The heads of the metatarsals then push against the mat when walking. With diabetic polyneuropathy, there is also a **decrease in sensitivity** to various injuries, which, moreover, heal poorly in the field of chronic ischemia .

Clinical picture

Diabetic foot is most often manifested by the following symptoms:

- ulceration
 - superficial – affects only the subcutaneous tissue,
 - deep – affects fascia, muscles, tendons and in the case of very deep ulceration can also affect bones or joints,
- gangrene
- necrosis of the skin and adjacent structures,
- deep soft tissue infections,
- osteomyelitis ,
- Charcot osteoarthropathy .



Diabetic Foot Syndrome

Classification of the diabetic foot

The most widely used diabetic foot classification system is the **Wagner classification** :

- **Grade 0** – no skin damage, leg with a high risk of ulceration
 - accompanying symptoms include hyperkeratoses, hammertoes, bone deformities, dry skin, signs of neuropathy
- **Grade 1** – leg with superficial ulceration to the depth of the dermis
- **Grade 2** – deeper ulceration of the subcutaneous tissue
- **Grade 3** – deep ulceration with tissue infection (phlegmon, abscesses, osteomyelitis)
- **Grade 4** – localized gangrene
- **Grade 5** – gangrene of the entire leg

Diagnostics

Anamnesis

During the examination, we ask patients if they have:

- walking problems,
- presence or absence of rest pain,
- changes in sensitivity to heat or cold,
- changes in the sweating of the feet.

Physical exam

In patients, we notice whether they have:

- changes in the skin – change in color, quality of the skin, violation of the skin cover,
- change in skin temperature, weakened or non-palpable peripheral pulsations, murmurs of peripheral arteries,
- changes in surface and deep sensation, changes in thermal sensation,
- wounds, ulceration, secretion, visible necrosis.



Diabetic foot syndrome

Therapy

The treatment of diabetic foot syndrome is multidisciplinary, complex and strictly individual. The basis of the therapy is the authorization of the diabetologist in the podiatric clinic.

Prevention

Preventive measures for diabetic foot syndrome are:

- **diabetes compensation,**
- regular foot hygiene and pedicure,
- remediation of fungal infections ,
- suitable special diabetic shoes.

Treatment of complications

In the formation of diabetic ulcers:

- inimization or restriction of movement of the affected limb,
 - debridement ,
 - removal of infected bone fragments of osteomyelitis ,
 - covering the limb with sterile bandages with antiseptics, immobilizing the limb in a plaster bandage,
 - in case of infection, systemic and local antibiotic therapy (based on Dalacin , i.e. clindamycin),
 - redistribution of pressure from the ulcer site,
- **gangrene** therapy – mostly conservative procedure for *dry* gangrene; surgical resection for *wet* gangrene,
- revascularization in indicated patients with non-healing ulcers ,
- additional physical therapy, suitable physiotherapy.

Links

related articles

- Diabetes mellitus
- Complications of diabetes mellitus

Reference

1. KLENER, Pavel, et al. *Internal Medicine*. 4th edition. Prague: Galén: Karolinum, 2011. 0 p. p. 741. ISBN 978-80-246-1986-6 .

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