Patient Guide: Diabetic Foot Ulcers

Disease Description:

Diabetes, also known as high blood sugar disease, occurs when the hormone insulin, which regulates blood sugar, is either not produced properly or the body's tissues do not respond to it correctly.

The feet and ankles are highly prone to developing diabetic ulcers. Swelling in these areas can interfere with wound healing. Diabetic individuals are more prone to calluses and nerve damage in the feet than non-diabetics. These conditions increase the risk of open wounds and infections.

Symptoms of Diabetic Foot Ulcers:

- Corns and calluses
- Bone deformities of the foot
- Fever, redness, swelling, or other signs of infection
- Formation of new infected tissue at the wound site
- Ulcers caused by nerve damage or poor blood circulation (often on the ankle, under the big toe, or areas under pressure from poor footwear)
- Changes in the muscles, skin, or bones of the foot due to neuropathy and poor circulation
- Delayed wound healing
- Thickening of skin and clubbing of the toes

Causes of Infection in Diabetic Ulcers:

1. Nerve damage (Neuropathy):

   In this condition, the sensation of pain is lost in the feet, so a person may not notice a wound or blister until it becomes infected.

2. Weakened immune system:

   A compromised immune system increases susceptibility to infections, even from minor wounds.

3. Narrowed arteries:

   Arterial narrowing reduces blood flow to the wound area, which delays healing and increases the chance of infection.

Complications:

- Infection
- Amputation

Diagnosis:

- Evaluation of symptoms and medical history by a healthcare provider
- Wound cultures to detect infection
- X-ray or imaging studies to check for bone involvement

- MRI or CT scans if needed
- Vascular studies to assess blood circulation in the feet
- Blood tests (e.g. WBC count) to identify infection

Treatment Options:

Before Ulcer Development:

- Foot care and daily monitoring
- Antibiotics: Sometimes used preventively when signs of infection appear
- Blood sugar control is essential, as high glucose levels weaken the immune response and delay wound healing

Once an Ulcer Develops:

Immediate treatment is essential—even for superficial wounds—to prevent infection due to diabetes-related complications.

Treatment may include:

- Antibiotic therapy
- Skin grafting for wound coverage
- Debridement (removal of dead tissue around the wound) to promote healing
- Surgery to improve blood flow in the leg arteries and prevent amputation
- Oxygen therapy (in certain cases)

When to See a Doctor:

- At the first sign of a wound on the foot
- For ongoing treatment and follow-up

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Sources:

- Brunner & Suddarth's Textbook of Medical-Surgical Nursing, 2022
- Websites: www.nhs.com, www.clinic.com

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