Skin and Nail abnormalities

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Why is the diabetic foot vulnerable for skin breakdown and nail abnormalities?
The Pathogenic Triad

neuropathy

ischaemia

trauma

Falanga V. Lancet 2005; 366:1736-43
Autonomic Neuropathy

- The problem arises with the nerves that control the oil and moisture in the foot. The glands become atrophied in the presence of autonomic neuropathy.
- Changes in skin temperature (peripheral vascular mechanism)
Autonomic Neuropathy

- Alterations in sweating / perspiration of the skin (dry atrophic skin, fissures)
- The skin loses its flexibility. Therefore, it is less elastic and loses its ability to withstand trauma, which may result in skin breakdown, leading to a variety of infections
Dry skin and fissures
Atrophic skin
Callus

- Interaction footsole with shoe or floor (shearing forces)
- Relatif fixed foot on the floor (friction, vertical pressure)
- Haematoma underneath callus:
  - precursory of an ulcer
Ulcer underneath the callus

Combination of pressure and shearing
Corn (hammertoe and improper foot wear)

Local thickness of the skin
Mechanical Stress
Skin fissures, edema and maceration

Ideal climat
For a cutaneous Mycotic / fungal infection
Fungal infections of the skin and nails are commonly seen as the underlying basis for bacterial infections.
Mixed fungal / bacterial infection

- the skin splits and portals for bacteria are created
Fungal infection
Uncontrolled fungal infection

Foul odor!
Dry skin and ulceration
improper foot wear
Nail abnormalities in the Diabetic Foot

- The nail changes are associated with microangiopathy
Nail abnormalities in the Diabetic Foot

- The nail changes are associated with microangiopathy, trauma and improper care
Luxation of the nail, improper footcare and neuropathy
Nail abnormalities

- The most common cause is a fungal infection of the toenail
- Slowly progressive, damaging the nail to a greater and greater degree over time
- Starts at the tip of the nail and works its way back
Nail abnormalities

- The nail becomes thickened, crumbly, and distorted in appearance.
- Moist and warm feet contribute to the initial infection process and contribute to its spread.
Fungal infection of the nail
Fungal infection of the nail and skin
Ingrown Nail
INGROWN NAILS

- People with diabetes and or circulatory problems should see their healthcare provider if they develop ingrown toenails.
- Make sure to wear comfortable, well fitting shoes, and to trim the toenails correctly.
management of fungal problems

- patient education on the proper use of available treatment options
- proper foot care and hygiene
- Topical therapies are generally associated with fewer adverse effects than systemic antifungals
Antifungal therapy

- Sprays may be easier for elderly patients to use if they cannot easily reach their feet.
- Creams are ideal for patients with dry, cracked skin.
- Powder may be preferable for patients with infection in the interdigital spaces where it has a drying effect.
In Summary

- Fungal infection, a widespread problem with a high rate of recurrence, can be associated with serious consequences in at-risk individuals.

- Management considerations include proper diagnosis, patient education and the selection of therapy that best matches the needs of a particular patient.
Thank You