The Diabetic foot: An overview

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It will be a tragedy if we restrict the term DF to advanced stages of the disease.
The aims of any diabetic foot service should be preservation of the limb.

If the amputation become the only option, this indicate failure of DF services.

Many studies considered amputation rate to reflect the efficacy of foot care services in a country.
What is meant by diabetic foot?
The WHO definition of the diabetic foot

- The foot of a diabetic patient that has the potential risk of pathologic consequences including infection, ulceration and or destruction of deep tissues associated with neurologic abnormalities, various degrees of peripheral vascular disease and/or metabolic complications of diabetes in the lower limb.
Any foot pathology that results directly from diabetes or its long-term complications (Boulton 2002).

Diabetes, 30 : 36, 2002.
History of the diabetic foot
- Ancient Egyptian prosthesis of the big toe

The suggestion that peripheral nerve dysfunction could lead to diabetic foot ulceration

Pryce reported a case of perforating ulcers of both feet associated with diabetes and ataxic symptoms. Lancet 2:11–12, 1887.
Only in the last 20 years progress in the understanding of the pathogenesis and management of the diabetic foot had been made.
Foot council have been formed by international diabetes associations

- In 1987: the ADA formed foot council
- In 1998: the EASD formed the diabetic foot study group
However

- There is still a gap between what is known about Diabetic foot and what is really done to the feet of the diabetic patients.
In 1996 a group of experts in the field of the diabetic foot expressed the need for an international set of definitions and guidelines on prevention and management of the diabetic foot (International working group on the diabetic foot)

3 supplements in 2003 on infection, classification and wound healing.
IWGDF search for representative all over the world to convey their messages in different countries
We are honored that one of our team: Professor Hanan Gawish become Egypt Representative of the IWGDF.
The Arabic translation of the International Consensus on the Management of the Diabetic Foot is now available.
The natural history of the diabetic foot
It is unwise to consider that major diabetic foot problems occur all of the sudden.
The natural history of the diabetic foot (Edmonds 2006)

- Stage 1: A normal foot
- Stage 2: A high risk foot
- Stage 3: An ulcerated foot
- Stage 4: An infected foot
- Stage 5: A necrotic foot.
- **Stage 1:** A normal foot
- **Stage 2:** A high risk foot
- **Stage 3:** An ulcerated foot
- **Stage 4:** An infected foot
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Types of DFU
DFU is a pivotal event in diabetic foot syndrome.
Detection of high risk foot should be first priority in any DF service

- **Stage 1:** A normal foot
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What are the risk factors for DFU
- Peripheral neuropathy
- Biomechanical dysfunction (Deformities, High plantar pressures, Limited joint mobility)
- Peripheral vascular disease
- Previous Ulcer
- Trauma (e.g. inappropriate foot wear)
- Long duration of diabetes and Elevated HbA1c.
- Diabetic nephropathy and retinopathy
- Obesity
- Diabetic patients with foot ulcerations appear to be more non-compliant. A syndrome of “willful self-neglect” has been described in patients with diabetes and foot ulcers.
- Male gender?
A critical triad!

The critical triad of:

1) Neuropathy
2) Trauma
3) Foot deformity

is present in the majority of ulcerated patients.
Paul Brand (1914–2003) was asked on US Department of Health conference to make a recommendation on reducing amputation in diabetes

Most listeners expected an answer promoting advanced technology.

They were surprised to hear that his key recommendation was a national campaign to encourage physicians to remove patients’ shoes and socks and to examine the feet.
The high risk foot is the foot that has developed one or more of the following risk factors for ulceration:

- Neuropathy
- Ischaemia
- Deformity
- Swelling
- Callus.
There is no what is called trivial lesion
The callus

- 5 percent of the United States population have corns or calluses.
- In diabetic patients dry skin in which even slight pressure and friction is sufficient to cause excessive callus formation.
- 82% of diabetic foot ulceration were preceded by a focal pressure keratosis (Sage et al 2001).
Are DFU risk factors a common problem that deserve screening?
No abnormality: 55%
Increased risk: 20%
High Risk: 5%
DFU, CLI, Gangrene: 5%
Are these figures fixed allover the world?
- Although the pathways to ulceration and amputation do not differ.

- There is racial differences in the prevalence of DFU & their risk factors and amputation.
Racial differences

- Diabetic foot syndrome was less common in Asia with contradictory results in Africa.
How can we classify our patients into different risk groups
The IWGDF had proposed a classification system.
<table>
<thead>
<tr>
<th>category</th>
<th>Risk profile</th>
<th>Check up frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No sensory neuropathy</td>
<td>Once a year</td>
</tr>
<tr>
<td>1</td>
<td>Sensory neuropathy(DN)</td>
<td>Once every 6 month</td>
</tr>
<tr>
<td>2</td>
<td>DN and PAD and/ or foot deformities</td>
<td>Once every 3 month</td>
</tr>
<tr>
<td>3</td>
<td>Previous ulcer</td>
<td>Once every 1-3 month</td>
</tr>
</tbody>
</table>
The diabetic foot service should be available for all diabetic patients.
Conclusion

- There is a lot of signs that precede major events.
- The earlier you will detect and manage your patient the better will be the prognosis.