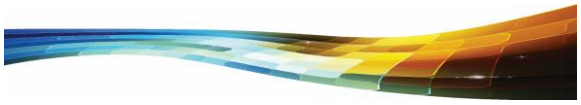
The Diabetic Foot:
First Line Defense for Saving Limbs

Fridays at the University
Skills Workshop
December 3rd 2021



Presenter Disclosure

Presenters:

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Rhonda Heintz RN BN CRN IIWCC
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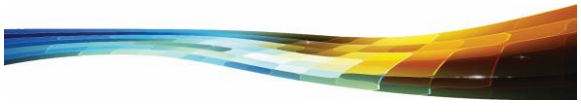
Lori McKenzie RN,IIWCC
Jane McSwiggan, MSc OT Reg. (MB) IIWCC
Tara Schmitz Forsyth RN BN MN, CVAA(c) IIWCC

- Relationships with commercial interests: None

Conflict of Interest

- Potential for conflict(s) of interest: None



Mitigating Potential Bias

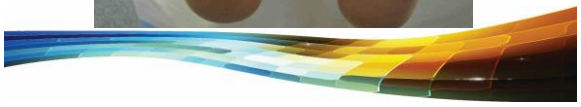
- N/A

Objectives

1. Determine etiology of diabetic foot ulcers (DFUs) recognizing neuropathies, infection & vascular impairment
2. Treat acute Charcot foot as a medical emergency
3. Use 60 second foot screen to assess risk for DFUs & implement prevention strategies
4. Understand role of wound debridement & foot offloading
5. Manage DFUs in collaboration with specialist & local resources

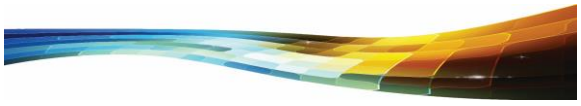
Diabetic Foot Ulcer

Diabetic Foot Ulcer



Manitoba

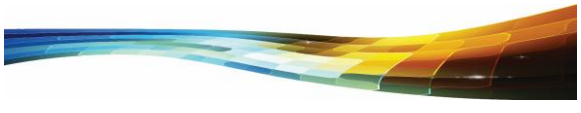
- 126,000 have diabetes
- Up to 2,400 have a diabetic foot ulcer
- Estimated increase in diabetes prevalence from 2016 to 2026 = 37%



Which Leads To…

270 amputations per year

- DFUs precede 85% of non-traumatic amputations
- Patients suffer stress, pain, lost productivity
- $70,000 per amputation



Causes of Diabetic Foot Ulcers

- 35% Peripheral Neuropathy (Sensory, Autonomic, Motor)
- 15% Vascular Disease
- 50% Combination of Neuropathy and Vascular Disease
- 55% Pivotal event, pressure or trauma

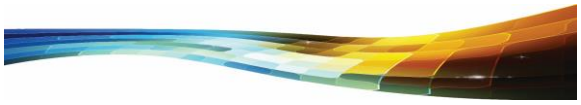
Neuropathy

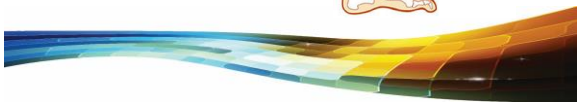
Sensory, Autonomic, Motor

1

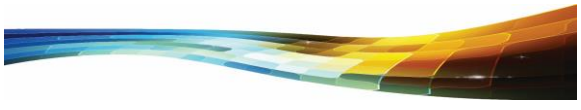
3

2





Acute & Chronic Charcot Foot



Triad of Neuropathy ⟶ Charcot Foot

- Small muscle wasting
- Decreased sensation
- Abnormal distribution of weight when standing
- Fractures occur spontaneously/with minimal stress
- Progressive bone disorganization with an increased risk of secondary ulceration

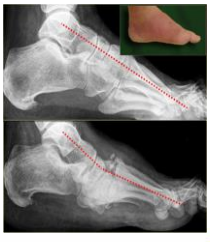
Acute Charcot Foot

Acute Charcot Foot *Medical emergency

Tarsometarsal joint Calcaneous

Image: Ivo Schoots, Mario Maas & Robin Smithuis
http://www.radiologyassistant.nl

Top x-ray is 4 months prior to bottom x-ray



05/04/2017

Management of Acute Charcot Foot

- Refer to immediately for offloading and casting.
- Plain radiographs may be normal in the early stages of the disease
- MRI should be considered with suspicion of Acute Charcot foot

Chronic Charcot Foot

Management of Chronic Charcot Foot

- TCC – PRN
- Cast Boot – Rescue situations/Transition
- Offloading to accommodate deformity
- Custom Molded insoles and shoes
- Leather Lacer/Gauntlet
- CROW Charcot Restraint Orthotic Walker

Infection

Limb threatening vs.
Non-limb threatening

Non-limb threatening	Limb-threatening	
Superficial infection (NERDS) • Non-healing • Exudate increased • Red, friable granulation tissue, bleeds easily • Debris in wound • Smell	Deep wound infection (STONEES) • Size increased • Temp of wound increased • Os: Probes to bone • New satellite areas • Exudate increased • Erythema >2cm wound margin • Edema • Smell PLUS • Pain • Flu-like symptoms • Erratic glucose control	Systemic Infection Deep wound infection PLUS • Fever • Rigour • Chills • Hypotension • Multi-organ failure

Challenges to Identifying Infection

- Normal immune response to infection in a person with diabetes is dampened
- May not have fever, chills, an increased WBC count or erythema
- Infection may present as hyperglycemia

Emergency Signs & Symptoms of **Deep Tissue** Infection in DFU

THE BIG 3

1. Pain in the neuropathic foot
2. Erratic glucose control
3. Flu-like symptoms

Onychomycosis- is it a big deal?

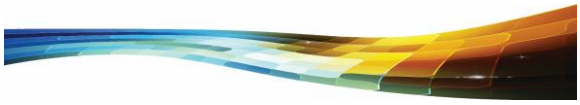
Temperature Changes

Acute Charcot Foot

Deep wound infection

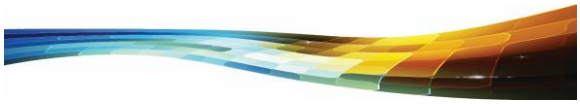
Infrared Thermometry: Acute Charcot

- Patients with a high-risk foot should take temperature of plantar aspect of the foot daily to detect localized temperature increases.
- A high temperature elevation (4°F-15° F) over the mirror image on the opposite foot in a person without a foot ulcer may indicate an Acute Charcot Foot
- Patients who detect high temperature can restrict ambulation, and decrease the incidence of repetitive trauma–initiated neurotropic foot ulcers.

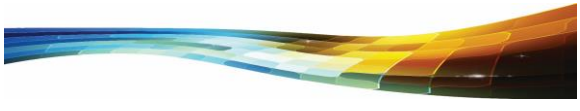


Infrared Thermometry: Infection

- A temperature difference of greater than 3°F between a wound and mirror anatomical site, with 2 or more other clinical signs, is highly suggestive of deep infection.



Vascular Assessment



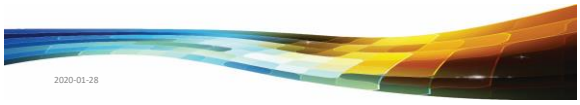
Clues to Vascular Disease

Perfusion

- Dependent rubor/pallor on elevation
- Cool temperature
- Ischemic rest pain: improved when legs dependent
- Intermittent claudication
- Gangrene

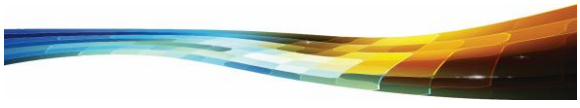
Skin changes

- Hair loss/nail changes
- Shiny, taut, thin, dry skin



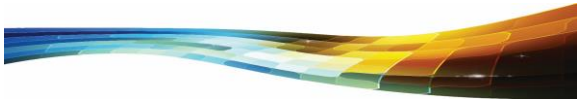
60 Second Foot Examination

Demonstration of 60 second foot examination



Skills Stations

- You will be assigned to break out rooms with one of the presenters
- You will practice a 60 Second Foot Screen with a “patient”
- The goal is to pull together the learning objectives on neuropathies and Charcot Foot



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