

# Etiology and Treatment of Chronic Wounds

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# Disclosure

- I have no financial interests or agreements with any manufacturer of pharmaceuticals or other medical supplies.
- I will not be discussing off label use of any pharmaceutical or medical supplies

# Objectives

- Describe the etiology and treatment of venous hypertensive ulcers
- Describe the etiology and treatment of arterial insufficiency ulcers
- Describe the etiology and treatment of diabetic ulcers
- Describe an algorithmic approach to ulcer classification and treatment

# Bob



# Venous Hypertension Ulcers



# Venous Hypertension Ulcer

- Previously known as venous stasis ulcer
- Most common cause of leg ulcers
- Affects 1-2% of adult population

# Etiology of venous ulcers

- Venous valve incompetence
- Deep vein thrombosis
- Arteriovenous fistula
- Calf muscle pump failure

# Treatment of Venous Ulcers

- Good Wound Care
- Walking program
- Elevation of legs
- Compression therapy
- Medications
- Risk factor modification

# Arterial Ischemic Ulcers



# Etiology of Arterial Ulcers

- Peripheral artery disease (PAD)
- Pain, Pallor, Pulselessness
- Risk factors include smoking, hypertension, hyperlipidemia, obesity, diabetes mellitus

# Treatment of Arterial Ulcers

- Good Wound Care
- Medical Treatment
- Revascularization
- Risk factor modification

# Diabetic Ulcers



# Diabetic Ulcers

- 15% to 25% lifetime risk of developing foot ulcer
- Leading cause of amputation
- Usually multifactorial, including vascular compromise, immunodeficiency, and neuropathic

# Etiology of Diabetic Ulcers

- Motor neuropathy
- Sensory neuropathy
- Autonomic neuropathy
- Arterial Disease

# Treatment of Diabetic foot ulcers

- Good Wound Care
- Glucose control
- Off-loading

# Good Wound Care

- Assess vascular status
  - ABI
  - TBI
  - Segmental pressures
  - CTA/MRA

# Ankle Brachial Index

- More than 0.9 is normal
- Posterior tibial or dorsalis pedis
- Some arteries may be noncompressible
- Unreliable in diabetics
  - Toe-Brachial Index is preferred

# Bob

- ABI 0.5 of right leg
- ABI of 0.79 of left leg

# Bob

- An 80% focal stenosis involving the left superficial femoral artery.
- Diffuse atherosclerotic disease involving the right superficial femoral artery. The most severe stenosis is about 50%.
- The right posterior tibial vessel is occluded. There is diffuse atherosclerotic disease involving the runoff bilaterally as described above.
- There is an approximately 70% stenosis involving the distal left popliteal about 3 cm above the trifurcation.

Bob



# Good Wound Care

- Debride
  - Sharp surgical
  - Sharp selective
  - Enzymatic

# Good Wound Care

- Infection Control
  - Tissue culture
  - X-ray
  - Bone Scan
  - MRI

# Good Wound Care

- Edema Control
  - ABI 0.8, use multilayer compression (30-40 mm HG)
  - ABI 0.6-0.8 Light compression
  - ABI less than 0.6 no compression

# Good Wound Care

- Remove pressure
  - Custom orthotics
  - Ankle-foot immobilization
  - Total contact casting

# Good Wound Care

- Provide Moist Wound Environment
- Exudate Management

# Good Wound Care

- Maximize metabolic status
  - Glucose control
  - Nutritional Deficiencies
  - Risk factor modification

# Bob



Questions?

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