TREATMENT OF PERIPHERAL ARTERY DISEASE

An overview

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Disclosures

- None

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Where to start?

- Always start with a thorough H&P
  - Chief complaint
    - Pain with walking (claudication)
    - Pain at rest vs non-healing wound
    - Acute vs acute on chronic vs chronic
  - Past medical
    - DM, HTN, HLD, CKD/ESRD, CAD, obesity, venous insufficiency
  - Family history
    - Aneurysms, hypercoagulable disorders, vasculitis
  - Past surgical
    - Prior vascular interventions
    - Cardiac
  - Medications

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Where to start?

- Always start with a thorough H&P
  - Physical Exam
    - Pulse exam
      - Femoral, popliteal, dorsalis pedis, posterior tibial
        - Rule out pop aneurysm
      - Palpable vs not palpable?
    - Abdominal exam
      - Rule out AAA

Work up

- Imaging Studies
  - Ankle brachial index (ABI)
    - ABI/segs
    - Exercise ABI
  - Arterial duplex
  - CT angiogram
  - Angiogram
  - Other
    - MRI, PET scan

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Diagnosis

- Peripheral artery disease
  - Claudication
- Chronic limb threatening ischemia*
  - Ischemic rest pain
  - Minor vs major tissue loss
- Refer to vascular specialist

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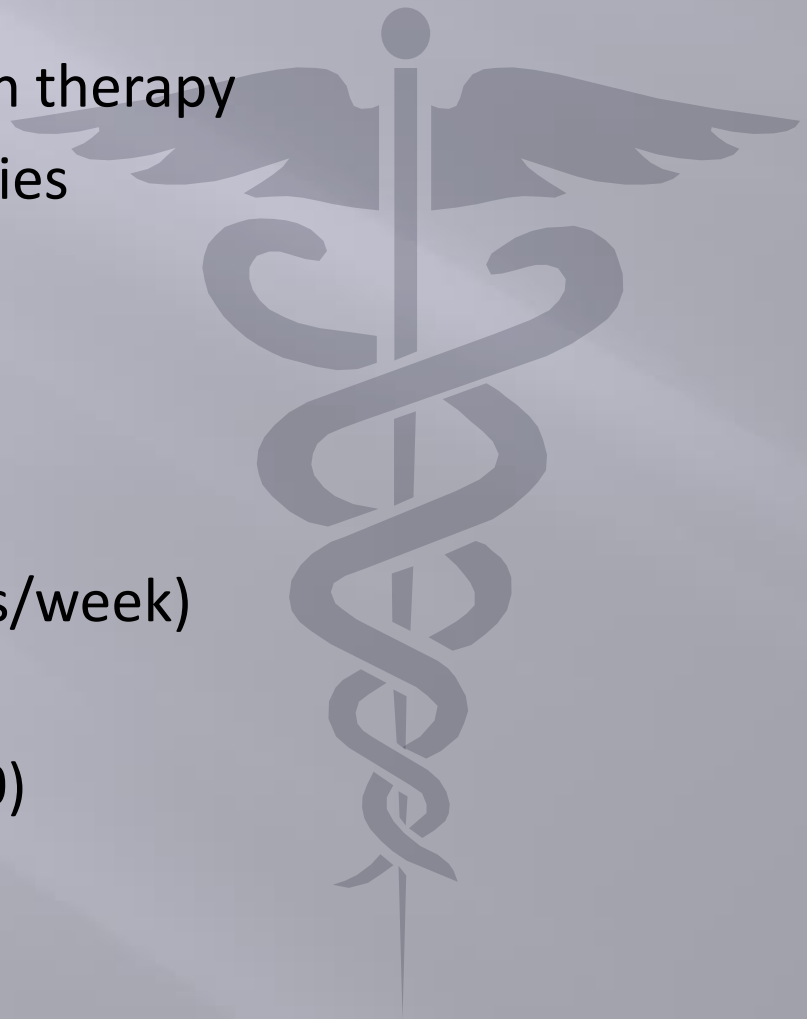
Treatment

- Medical
  - Antiplatelet and statin therapy
  - Optimize co-morbidities
    - Hgb A1C <7%
    - BP goal
      - SBP < 140, DBP < 90
    - Lipid goal < 70
  - Exercise (150 minutes/week)
  - Diet (plant-based)
  - Weight loss (BMI < 30)
  - Smoking cessation*



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Treatment

- Surgical
  - Open
  - Endovascular (endo)

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Evidence Based Revascularization

- A tale of two modalities/trials
  - Open vs Endo
  - Trials
    - BEST-CLI
      - Demonstrated superiority of single segment greater saphenous vein (GSV) bypass over endovascular therapy for CLI
    - BASIL-2
      - Demonstrated a vein bypass first revascularization strategy was associated with an increased risk of major amputation or death from any cause compared with a best endovascular treatment first revascularization strategy

Endovascular Therapy

- Angiogram
  - Diagnostic & therapeutic
- Treatment
  - Plain balloon angioplasty
  - Drug-coated balloon angioplasty
  - Atherectomy
    - Directional
    - Orbital
  - Shockwave
    - Calcified lesions

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Open Surgery

- CT angiogram
  - Diagnostic only
- Treatment
  - Open bypass
    - Autogenous vein
      - GSV
      - Composite arm vein
    - Cadaver
    - Prosthetic
      - Dacron
      - Polytetrafluoroethylene (PTFE)

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Vascular Research

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Preliminary Experience with the use of Endoscopic Vein Harvest of the Greater Saphenous Vein for Infrainguinal Arterial Reconstruction

Monica A. Silva DO, Bryan R. Foster PA-C, Laurie M. Kuestner MD, James L. Ebaugh MD, Harold W. Hsu MD, Zane Young MD
Jose R. Borromeo MD, Alik Farber MD, David K. Chew MBBS

Society for Clinical Vascular Surgery

- Introduction
  - Open is BEST?
  - Endoscopic vein harvest (EVH) remains controversial
- Objective
  - Feasibility of EVH for greater saphenous vein (GSV) based infrainguinal arterial reconstruction

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- Methods
  - Prospective
  - Single institution
  - Total patients n=36
  - Consecutive bypass patients (June 2022 – Aug 2023)
  - Data collected
    - Demographics, indication for procedure, operative time, length of stay, wound complications, post op narcotic use, graft patency
  - Follow up arterial duplex and ankle brachial indices (ABI) at 1 month and 3 month intervals post op

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- Results

Indication	n	%
Tissue loss	15	41.6
Ischemic rest pain	12	33.3
Disabling claudication	3	8.3
Popliteal aneurysm	6	16.6

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- Results

Artery	Inflow artery	Outflow artery
Common femoral	22 (61.1%)	0
Superficial femoral	13 (36.2%)	0
Above-knee popliteal	0	7 (19.4%)
Below-knee popliteal	1 (2.7%)	10 (27.7%)
Tibial vessels	0	18 (50%)

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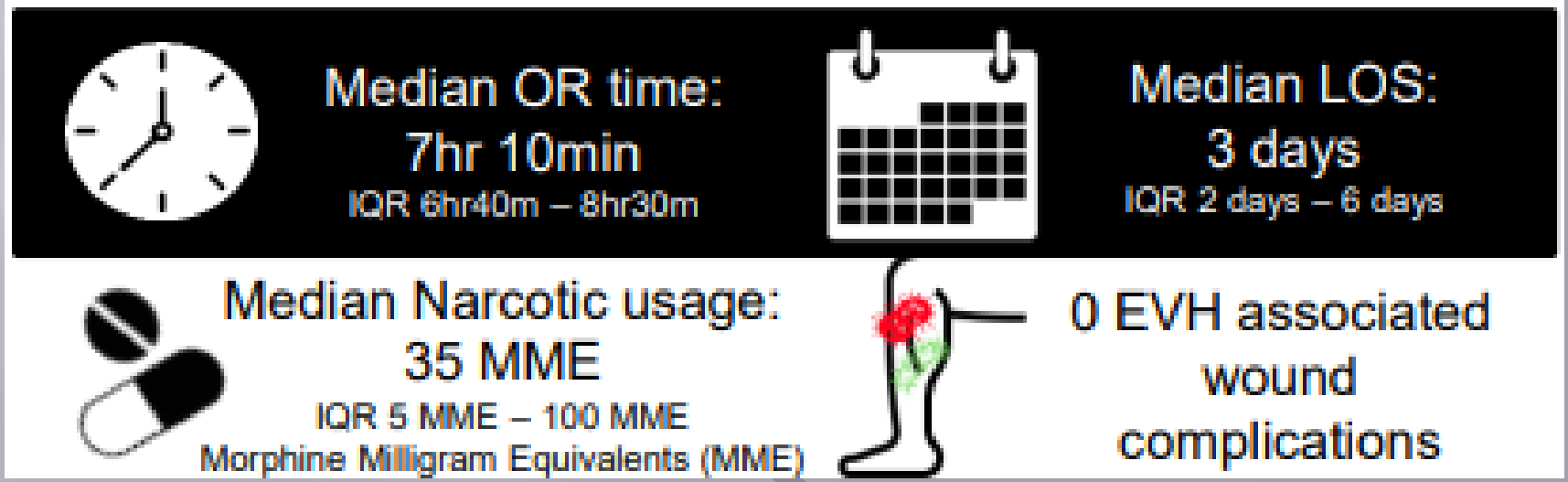
- Results



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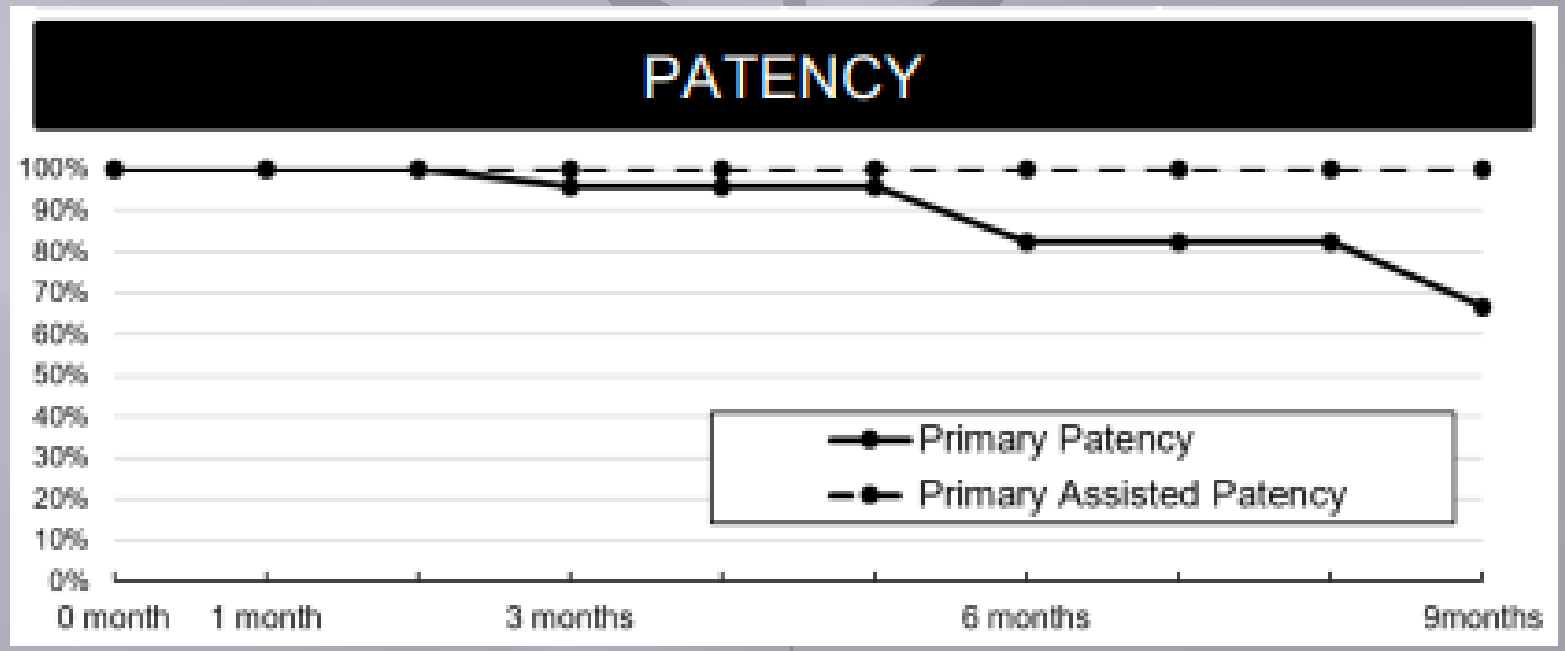
- Results



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- Discussion
  - EVH is safe, technically feasible and offers multiple benefits
  - Zero EVH wound complications
  - No vein injuries
  - Less post op pain is an interesting finding
  - Further evaluation of long-term durability is ongoing

Resources

- Clinical practice guidelines
  - Global vascular guidelines on the management of chronic limb-threatening ischemia
    - DOI: https://doi.org/10.1016/j.jvs.2019.02.016
  - The intersocietal IWGDF, ESVS, SVS guidelines on peripheral artery disease in people with diabetes mellitus and a foot ulcer
    - DOI: https://doi.org/10.1016/j.jvs.2023.07.020

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Thank You