• Patients with Diabetes Mellitus (DM) (types I and II) are at increased risk of complications in the perioperative period:
  o Surgical site infection
  o Amputation
  o Cardiac events
  o Respiratory complications
  o Blood glucose disturbances (hyper/hypoglycemia)
  o Acute kidney injury
  o Wound healing complications

• Foot and Ankle surgeons frequently operate on patients with DM, and must optimize them preoperatively to avoid complications
  o Focus on **modifiable** risk factors

1. Infection:

  o ~4-fold increased risk of surgical site infection (SSI) in DM versus non-DM
  o What are risk factors for infection in the setting of DM?
    o Male
    o Charcot neuroarthropathy
    o Neuropathy
    o Tobacco use*
    o Ulceration (current or historical)
    o Peripheral arterial disease*
    o Poor blood glucose control (Hb A1C >8.0%)*

* - modifiable

• What can we do?
  o Tobacco use:
    ▪ Multidisciplinary team approach to tobacco cessation
    ▪ Patient education
    ▪ Delay elective surgery until tobacco-free
  o Peripheral arterial disease:
    ▪ Recognize and diagnose early
    ▪ Know your angiosomes!
    ▪ Vascular surgery assessment
  o Blood glucose control:
    ▪ Delay elective surgery until HbA1C <8.0%
    ▪ Involvement of multidisciplinary team (nursing, dietician, endocrinology)
2. Amputation:

- ~15% amputation risk over 5 years in patients with charcot neuroarthropathy or diabetic foot ulcer
- What are risk factors for amputation?:
  - HbA1C > 9.0% *
  - BMI > 30 *
  - Peripheral arterial disease *
  - Chronic kidney disease
  - Ulceration
  - Older age
  - Male
  - Surgical site infection

*: modifiable

- What can we do?
  - Blood glucose control:
    - Delay elective surgery until HbA1C < 8.0%
    - Involvement of multidisciplinary team (nursing, dietician, endocrinology)
  - BMI > 30
    - Delay elective surgery until weight management plan in place
    - Multidisciplinary approach (nursing, dietician, patient education)
    - Referral to bariatric surgery
      - Good short term results for weight loss
      - Improvement of blood glucose management
  - Peripheral arterial disease:
    - Recognize and diagnose early
    - Know your angiosomes!
    - Vascular surgery assessment

3. Angiosomes:

- Definition:
  - A three dimensional block of tissue supplied by a specific source artery
- Foot consists of 5 angiosomes supplied by 3 source arteries
  - Anterior tibial artery (1 angiosome)
  - Peroneal artery (1 angiosome)
  - Posterior tibial artery (3 angiosomes)
Planning surgical incisions based on angiosome anatomy can reduce incisional complications
Some evidence to support revascularization targeted to specific, insufficient angiosomes

4. Nasal Decolonization:

- ~4% rate of MRSA positive nasal cultures reported in literature
  - Higher incidence of surgical site infection with MRSA if positive nasal cultures
- Nasal decolonization can reduce the incidence of surgical site infections in orthopaedic procedures
  - Mupirocin ointment most common method of decolonization reported
  - Reduction in gram positive and staph. Aureus infections (MSSA, MRSA)
    - Relative risk 0.40
  - Reduction in surgical site infection rates regardless of results of nasal cultures

References:


