Pressure ulcer-related pelvic osteomyelitis
Evaluation of a two-stage surgical strategy (debridement, negative pressure therapy and flap coverage) with prolonged antimicrobial therapy

Prospective cohort study in a tertiary hospital referral center
Inclusion period: 01/01/12 and 04/30/16

Objectives
- Description of the experience of our regional reference center for the management of complex BJJ with a two-stage surgical strategy with prolonged antimicrobial therapy in patients with pressure ulcer-related osteomyelitis
- Secondary objectives:
  - Evaluation of microbiological epidemiology.
  - Risk factors for treatment failure
  - Risk factors for superinfection

Inclusion criteria
- Adults (≥ 18 yo) with sacral or ischial pressure ulcer with contiguous pelvic osteomyelitis defined on the basis of clinical, morphological, microbiological and therapeutic criteria

- Treatment failure: septic-related indication of additional surgical procedure after flap reconstruction or relapse at the same site after antibiotic stop or infection-related death
- Superinfection: additional microbiological findings at flap reconstruction

Microbiological diagnosis: virulent microorganisms (e.g., S. aureus, Enterococci, P. aeruginosa) on ≥2 bone samples; potentially contaminants (CoNS, Corynebacteria, P. acnes) on ≥2 bone samples and taken into account by the treating physician

Included population
- 64 pressure ulcer-related osteomyelitis in 61 patients
Males, 72% – Median age 47 (IQR, 36-63)
Pressure ulcer evolution delay: 36 (IQR, 14-110) weeks
- Underlying condition/Context:
  - Para (64%), tetra (19%) or hemi (3%) plegia
  - Geriatrics (5%)
  - ICU (2%)

Microbiology at DEBRIDEMENT
- Plurimicrobial: 73% - S. aureus: 47% (MR: 13%)
- ENB: 44% (3GC-R: 15%)
- Anaerobes: 44% (Actinomyces: 11%)
- Streptococci: 36%

Microbiology at FLAP COVERAGE
- Positive bone sample(s): 68%
  - Infection persisting: 22%
  - Superinfection: 91%
- Risk factors for superinfection:
  - High ASA score
  - OR 5.7 (p=0.022)
  - Efficient empirical treatment OR 0.07 (p=0.031)

Conclusions
1. High superinfection rate (60%)
2. High failure rate (23%), at least in part linked to superinfection
3. Important consumption of broad-spectrum antimicrobials

Two different strategies to limit the occurrence of superinfection

ONE-STEP STRATEGY

NPT
- Debridement
- Flap coverage
- ATB
- Flap coverage

Two-stage strategy

NPT
- Debridement
- ATB
- Flap coverage

Follow-up duration: 59 (IQR, 37-121) weeks
FAILURE RATE: 23%
Delay of failure: 12 (IQR, 7-28) weeks after coverage
Risk factors for treatment failure:
- Previous pressure ulcer (OR 5.7 – p=0.025)
- Actinomycy (OR 9.5 – p=0.027)