PUBLIC OSTEOMYELITIS (PO): EPIDEMIOLOGY AND FACTORS ASSOCIATED WITH MANAGEMENT FAILURE in two French Reference Centres

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EBJIS, 8 September 2017
BACKGROUND

- BJI: a public health issue (CRIOAc)
- One of the less well reported BJIs: mostly case reports
- Unclear risk of treatment failure
- Importance of multidisciplinary approach

AIM

- To describe PO epidemiology
- To look for factors associated with treatment failure
METHOD

Population
- Retrospective cohort study (2003-2016)
- 2 centres: CRIOAc Lyon – Lille-Tourcoing

Statistical analysis
- Descriptive analysis of patient characteristics
- Rate of treatment failure
- Factors associated with treatment failure
- Univariate Cox analysis
- Kaplan-Meier curves with log-rank test
# RESULTS

## 25 patients

<table>
<thead>
<tr>
<th>Total (n=25)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>67 [54-71]</td>
</tr>
<tr>
<td><strong>ASA</strong></td>
<td>3 [2-3]</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>19 (76%)</td>
</tr>
<tr>
<td><strong>Haematogenous</strong></td>
<td>6 (24%)</td>
</tr>
<tr>
<td><strong>Postoperative</strong></td>
<td>19 (76%)</td>
</tr>
<tr>
<td><strong>Pelvic history</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cancer</strong></td>
<td>15 (60%)</td>
</tr>
<tr>
<td><strong>Pelvic surgery</strong></td>
<td>19 (76%)</td>
</tr>
<tr>
<td><strong>Radiotherapy</strong></td>
<td>12 (48%)</td>
</tr>
</tbody>
</table>

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Agathe Becker, 8 September 2017
Haematogenous PO

Chronic postoperative PO
## Risk factors associated with treatment failure

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Success (n=14)</th>
<th>Failure (n=11)</th>
<th>Total (n=25)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelvic cancer history</td>
<td>6 (40%)</td>
<td>9 (60%)</td>
<td>15 (60%)</td>
<td>0.089</td>
</tr>
<tr>
<td>Clinical sinus tract</td>
<td>1 (12%)</td>
<td>7 (88%)</td>
<td>8 (32%)</td>
<td>0.011</td>
</tr>
<tr>
<td>Abscess</td>
<td>9 (45%)</td>
<td>11 (55%)</td>
<td>20 (80%)</td>
<td>0.343</td>
</tr>
<tr>
<td>Enterobacteria</td>
<td>3 (25%)</td>
<td>9 (75%)</td>
<td>12 (48%)</td>
<td>0.072</td>
</tr>
<tr>
<td>Non-fermenting GNB</td>
<td>0 (0%)</td>
<td>3 (100%)</td>
<td>3 (12%)</td>
<td>0.005</td>
</tr>
<tr>
<td>Multi-resistant bacteria</td>
<td>1 (12%)</td>
<td>7 (88%)</td>
<td>8 (32%)</td>
<td>0.116</td>
</tr>
<tr>
<td>MSSA</td>
<td>6 (86%)</td>
<td>1 (14%)</td>
<td>7 (28%)</td>
<td>0.169</td>
</tr>
<tr>
<td>Methi-R CoNS</td>
<td>2 (33%)</td>
<td>4 (67%)</td>
<td>6 (24%)</td>
<td>0.014</td>
</tr>
<tr>
<td>Polymicrobial</td>
<td>5 (31%)</td>
<td>11 (69%)</td>
<td>16 (64%)</td>
<td>0.090</td>
</tr>
</tbody>
</table>

**Log-rank p-values:**
- Pelvic cancer: 0.067
- Clinical sinus tract: 0.005
- Polymicrobial: 0.001
CONCLUSION

**Haematogenous PO**
- Minority
- Monomicrobial *S. aureus*
- Young athletic patients without comorbidity
- No surgery if no abscess or bone sequestrum
- Favourable outcome

**Chronic postoperative PO**
- Predominant
- Polymicrobial, Multi-resistant
- Comorbidity, with cancer, surgery, radiotherapy
- Complex antibiotic therapy
- High risk of relapse
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• **Clinical research assistant** – Eugénie Mabrut

http://www.crioac-lyon.fr
definitions

PO was defined by

- a clinical or radiological sinus tract communicating with the pubis,
- and/or symptoms associated with compatible radiological signs (collections in contact with pubis, bone erosion, osteolysis, para-symphysyal fracture),
- and/or inflammatory signs on histological examination of intra-operative samples,
- and/or a reliable microbiological culture (blood culture, joint fluid or abscess aspiration, or bone biopsy taken in strict aseptic conditions).

Treatment failure was defined by:

- persistence of clinical signs despite well-conducted treatment;
- clinical relapse with the same microorganisms;
- infection recurrence with one or more different microorganisms;
- new signs of infection (abscess, sinus tract) in the same area, without microbiology.