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ANTIBIOTIC PROPHYLAXIS IN DEVICE SURGERY: AN OBSERVATIONAL STUDY

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Antibiotic prophylaxis has proved to reduce significantly infective complications in patients undergoing pacemaker or cardioverter-defibrillator (ICD) surgery.

The estimated infection rate is between 1% and 2%, although it ranges in literature from 0.13% to 12.6%.

Environmental factors (OR vs EP room) may play a role.

Methods

All consecutive patients undergoing device surgery, from January 2004 up to January 2010 were included.
Antibiotics delivered

- Cephazoline 2g: 2309 patients
- Cephazoline 2g + Gentamycin 2mg/kg: 132 patients
- Clindamycin 1200mg: 101 patients
- Vancomycin: 15 patients

Total patients: 2557
End Points

- Occurrence of local or systemic infection at 12-months follow up after device surgery.

- Other local non-infective complications.
Results

In this 6-year period:

- 1,785 devices were Implanted.
- 772 were Replaced.
- For a total of 2,557 Surgical procedures.
- 1,630 were Pacemakers and 927 were Cardiac Implantable Electronic Devices.
Complications at the 12-months follow up

<table>
<thead>
<tr>
<th></th>
<th>Pacemaker implantation (n=1115)</th>
<th>Pacemaker replacement (n=515)</th>
<th>ICD implantation (n = 670)</th>
<th>ICD replacement (n=257)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pending Skin erosion</td>
<td>1</td>
<td>4</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Hematoma</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>
Results

- 4 patients (0.15%) had pocket infections:
  - 1 at implant (0.06%)
  - 3 at replacement (0.38%)

- 10 patients had pocket haematoma requiring re-operation: 0.5% at device implant, and 0.1% at replacement

- 20 patients had pending erosion:
  - 0.5% at device implant
  - 1.4% at replacement
Pocket Hematoma was associated to the use of subcutaneous LMWH.

Skin erosion was significantly associated to device size (ICD).
Conclusions

- The infection rate was <0.2% at the 12-months follow-up, that compares favourably with literature, where it ranges from 0.4 to 2%.

- Given the population characteristics, it is extremely unlikely that factors other than the antibiotic regimen may explain the results.
Acknowledgments

I would like to thank Mauro Biffi, Marta Balbo, Monica Salomoni and Federica Bonfatti for their helpful cooperation in data collection.
We learn other people’s ideas and knowledge, and stop there. Instead, we should acquire and develop them.

M.E. de Montaigne