CEFTOBIPROLE IN EMPIRICAL TREATMENT OF BONE AND JOINT INFECTIONS: SURVEY OF THE PRESCRIPTIONS, RESPECT OF THE PROTOCOL AND ECONOMIC EVALUATION OVER 6 MONTHS

M. DEBAILLIEUL1, J. DI PAOLO1, S. GENAY1, H. DEZEOUGE1, E. SENNEVILLE1, S. PUTMAN1, H. MIGAUD1, C. LOIZE2, B. DECAUDIN1, P. ODOU1

1. Use of efficient antibiotics on Methicillin Resistant Staphylococci (MRS) and Gram Negative Bacilli (BGN)
   - Before January 2018: Daptomycin (10 mg/kg/day) + Cefepime (2g 3X/day)
   - After January 2018: Ceftobiprole (500 mg 3X/day)

2. Search for gene mecA indicating resistance to methicillin
   - Obtained without 2 hours after the sampling
   - Test GenXpert MRSA SA SSTI®

Patient inclusion criteria:
- Surgery for bone and joint prosthetic device infections
- With materials (no external fixator)
- No previous history of MRS

PURPOSE

- Respect of this protocol
- Economic impact of using ceftobiprole instead of daptomycin-cefepime combination

MATERIALS AND METHODS

- Prospective monocentric study: 15th January – 15th July 2018
- Data were collected by analysis of all prescription by Sillage® and pharmacist participation at multidisciplinary team meeting: Indications, previous history of MRS, prescriptions (monotherapy, way of administration, posology), results of expression of mecA, number of administration and switch
- Comparison of cost: Number of ceftobiprole used vs theoretical cost of daptomycin (10 mg/kg/day)- cefepime (2g 3X/day) combination on the same period before the switch

RESULTS

N=154 patients
- Administration way: 100%
  - 154 patients: intravenous
  - 154 patients: 500 mg 3X/day
- Dosage: 100%
- Indications: 99%
  - Osteoarticular prosthesis: 55% (84/154)
  - Osteosynthesis: 38% (59/154)
  - Induced membrane technique: 6.5% (10/154)
- No previous history of MRS: 5 patients previous history of MRS
- Monotherapy: 99%
  - 152 patients: Ceftobiprole monotherapy
  - 2 patients: Ceftobiprole - cefepime

RESULT OF SEARCH OF mecA GENE

- Switch to cefepime: 94%
  - 130 patients
- 4% Negative
- 6% Positive
- 90% Uninterpretable

NUMBER OF INJECTIONS

- 34 500 €

CONCLUSION

- Only 8 (5%) of the prescriptions did not comply with the protocol: indications (6;4%) (external fixator, history of MRS), monotherapy (2;1%)
- If search mecA gene is negative, switch was appropriate mainly by cefepime
- Economic gain was demonstrated over this period. It will be reassessed with the arrival of the daptomycin generic.
- Preserving daptomycin: risk of resistance selection

COST

- Theoretical cost of daptomycin-cefepime: 54 920 €
- Ceftobiprole cost: 340 injections, 30 420 €
- Economic gain over six months: 24 500 €