

Claire Triffault-Fillit<sup>1,2</sup>, Florent Valour<sup>1,2,5</sup>, Frédéric Laurent<sup>2,3,5</sup>, Sylvain Goutelle<sup>2,4,5</sup>, Christian Chidiac<sup>1,2,5</sup>, Tristan Ferry<sup>1,2,5</sup> for the Lyon BJI Study group



<sup>1</sup> Services de maladies infectieuses et tropicales, Hospices Civils de Lyon, Rhône, Lyon, France; <sup>2</sup> Centre de référence des infections ostéoarticulaires complexes, Rhône, Lyon, France; <sup>3</sup> Institut des agents infectieux, Hospices Civils de Lyon, Rhône, Lyon, France; <sup>4</sup> Pharmacie, Hospices Civils de Lyon, Rhône, Lyon, France; <sup>5</sup> Université Claude Bernard Lyon1, Rhône, Lyon, France

## INTRODUCTION

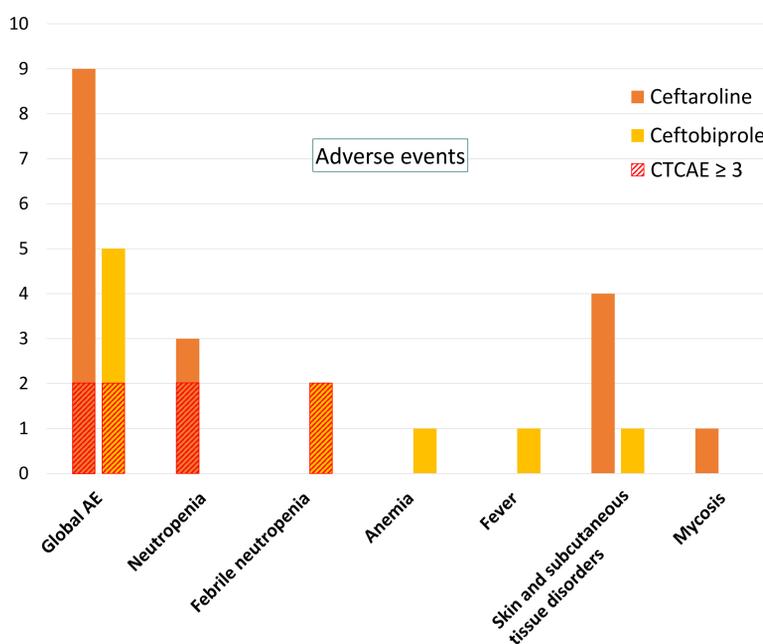
*Staphylococci*, which are the most frequent pathogen involved in prosthetic joint infections (PJI), present a growing multi-drug resistance rate to antimicrobial therapy. Despite the very bad tolerance profile of vancomycin, this agent is still recommended as empirical microbiological therapy, while awaiting the culture results. Ceftaroline and ceftobiprole could be interesting alternatives to vancomycin due to their bactericidal activity and the potential barrier to staphylococci resistance.

## MATERIEL ET METHODES

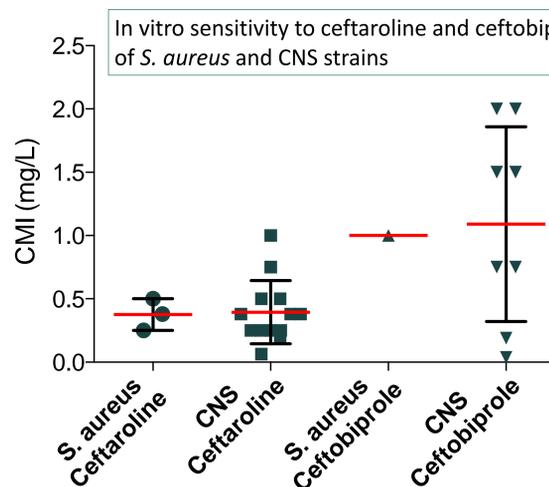
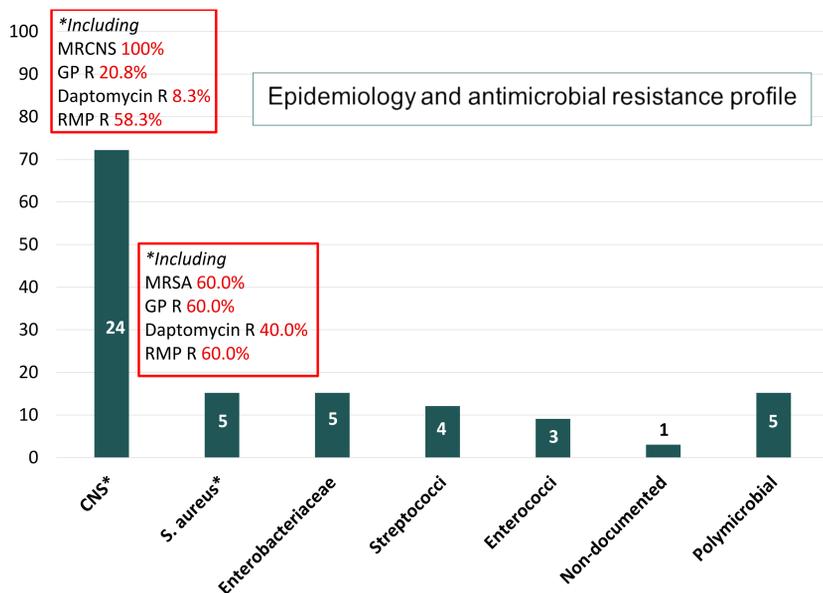
- Retrospective cohort study in a reference center for the management of complexe PJIs
- Included population : all adult patients managed for a BJI between 2013 and 2019, who received either ceftaroline or ceftobiprole.
- Definition of adverse event (AE) : Any unfavorable and unintended sign (including an abnormal laboratory finding), symptom, or disease temporally associated with the use of a medical treatment.
- Classification according to the Common Terminology Criteria for Adverse Events (CTCAE), and considered as severe for CTCAE  $\geq 3$

## RESULTATS

Total population N=30	
<b>Demographics</b>	
Sex (male)	22 (73.3%)
Age (y)	71.0 (63.0 -82.8)
<b>Comorbidities</b>	
BMI (kg/m <sup>2</sup> )	26.6 (21.3-32.8)
BMI < 18	1 (3.4%)
BMI > 30	9 (31.0%)
Diabetes	7 (24.1%)
Modified Charlson's comorbidity index	4 (2-7)
<b>Infection</b>	
PJI	28 (93.3%)
Prosthesis	24 (80.0%)
Hip	10 (33.3%)
Knee	14 (46.7%)
Osteosynthesis	4 (13.3%)
Native BJI	9 (30.0%)
<b>Chronology</b>	
Early (< 3 months)	9 (30.0%)
Delayed (3-12 months)	17 (56.7%)
Late (>12 months)	5 (16.7%)
Prior septic surgery	19 (79.2%)



Antimicrobial therapy	Ceftaroline N=24	Ceftobiprole N=11
<b>Companion drug</b>		
Daptomycin	13 (54.2%)	11 (100.0%)
Rifampin	3 (12.5%)	1 (9.1%)
Linezolid	3 (12.5%)	0 (0.0%)
Clindamycin	2 (8.3%)	0 (0.0%)
Metronidazole	1 (4.2%)	1 (9.1%)
Monotherapy	2 (8.3%)	0 (0.0%)
<b>Treatment indication</b>		
Prior documentation	8 (33.3%)	7 (63.6%)
Empirical antimicrobial therapy	6 (25.0%)	8 (72.7%)
Documented antimicrobial therapy	18 (75.0%)	3 (27.3%)
First line	13 (54.2%)	9 (81.8%)
<b>Treatment modalities</b>		
Treatment duration (days)	20.5 (12.8-40.0)	16.0 (6.5-19.5)
Posology (mg/kg)	14.1 (11.9-22.4)	17.9 (15.7-23.3)
Reason for treatment interruption		
Planned interruption	12 (50.0%)	2 (18.2%)
Optimisation	11 (45.8%)	6 (54.5%)
AE	3 (12.5%)	3 (27.3%)
Global AE	9 (37.5%)	5 (45.5%)
Delay of AE occurrence (days)	15 (12-40)	12 (12-17)
Resolution after treatment discontinuation or posology adjustment	8 (100.0%)	5 (100.0%)



## CONCLUSIONS

Ceftaroline and ceftobiprole seem to be interesting alternative drug options in case of multiresistant staphylococci. Even if their use remain of label in PJI, those betalactams are helpful, especially in post operative period as empirical antimicrobial therapy. Nevertheless, their tolerance profile advocates for caution and close monitoring of patients on-going those treatments for drug-related AE.