

Staphylococcus lugdunensis characteristics compared to *Staphylococcus epidermidis* and *Staphylococcus aureus* Periprosthetic Joint Infections

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INTRODUCTION

- *S. lugdunensis* (SL) is a coagulase negative staphylococcus considered part of the normal flora of human skin. It expresses common properties with *S. aureus*
- SL is responsible for endocarditis, septicemia, osteomyelitis
- In Periprosthetic Joint Infections (PJIs), *S. aureus* (SA) and *S. epidermidis* (SE) are frequently found
- SL PJI are increasingly reported.

METHODS

- Retrospective multicentric study in the same area
- Solid (bones and tissues) samples bead-milled on sterile vials; Liquid samples inoculated in blood culture bottles.
- Cultures were incubated for 15 days

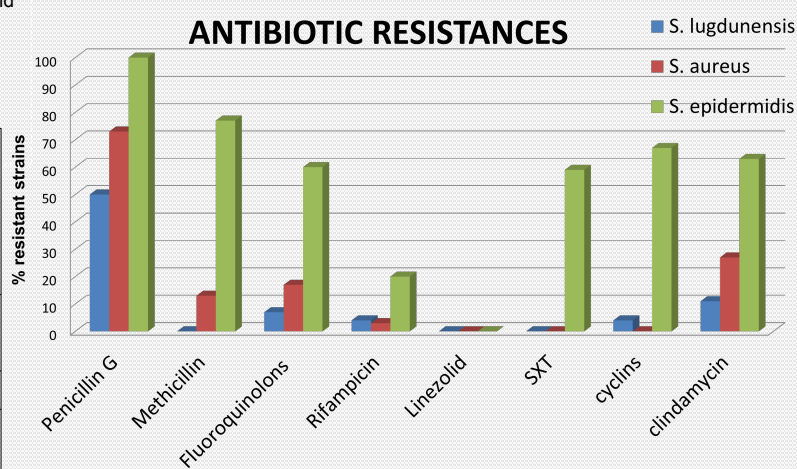
RESULTS

		S. lugdunensis (28)	S. aureus (30)	S. epidermidis (30)
	age (years)	66	60	64
	sex (M/F)	15/13	20/10	21/9
prosthesis site	knee/hip	16/10	19/9	12/16
clinical signs	fever	15	9	3
	local signs of inflammation	13	8	4
surgery type	irrigation and debridement	11 (39%)	10 (33%)	6 (20%)
	one stage surgery	5 (18%)	11 (37%)	15 (50%)
	two stage revision	11 (39%)	9 (30%)	9 (30%)
surgery/ infection	delay surgery/ infection (weeks)	12	48	72
Samples	positive/number of samples	3+/4	4+/5	4+/5
Treatment	duration (weeks)	7	7	7
Outcome	positive (number of patients)	89%	83%	97%

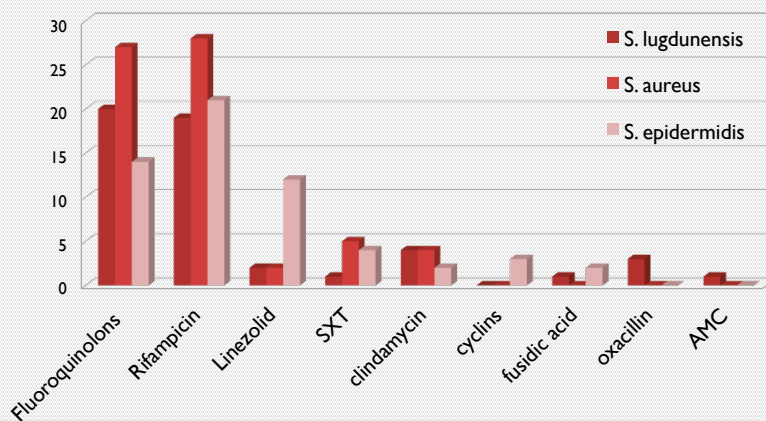
RESULTS

- Clinical signs are more frequently reported in SL and SA PJIs
- Average delay between surgery and infection is shorter for SL
- Outcome is favorable in most cases of *Staphylococci* PJIs with adapted antibiotherapy
- SL strains are very susceptible to antibiotics (only resistant to PeniG)
- SA strains are more often resistant to meticillin or quinolones.
- SE strains are very resistant especially to β -lactams, quinolones, trimetoprim, tetracyclins

ANTIBIOTIC RESISTANCES



PJI's TREATMENT



• SL strains are very susceptible to antibiotics (only resistant to PeniG)

• Reference treatment is levofloxacin+rifampicin (SPILF 2009*)

• 29% of SL and 47% SE PJIs are treated with second line antibiotics (trimetoprim-sulmethoxazole/clindamycin/linezolid)

*SPILF: French Society of Infectious Diseases

CONCLUSION

- ❖ SL is not an emerging pathogen in PJIs.
- ❖ Clinical manifestations of SL are quite similar to SA PJIs.
- ❖ They often occur early after surgery, and therefore could be successfully treated by an adapted surgery and 6-8 week antibiotic combination.
- ❖ *S. lugdunensis*, classified as a coagulase-negative Staphylococcus could be recognized as a pathogen as *S. aureus*, but in most cases the outcome was favorable.