

Species and antimicrobial susceptibility testing of coagulase negative staphylococci in periprosthetic joint infections

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Introduction:

- Coagulase negative staphylococci (CNS) are the most commonly identified bacteria in periprosthetic joint infections (PJIs)
- Aim of the study was to determine distribution of CNS species involved in PJIs and compare their antimicrobial susceptibility testing (AST)

Methods:

- Retrospective, multicenter study in the same area
- Patients diagnosed with a PJIs due to CoNS, over a 4-year period (2011-2014)
- Diagnosis confirmed with at least 2 positive periprosthetic cultures with phenotypically identical CoNS.
- Identification performed on Vitek2 (Biomérieux®, France) completed with rapid biochemical tests.
- AST performed on Vitek2 or manual diffusion agar

Results: Most frequent species were *S. epidermidis* (SE), *S. capitis*, *S. lugdunensis* (SL), *S. caprae*, *S. hominis* (SHo), *S. haemolyticus* (SHa) and *S. warneri* (SW)

	CoNS	SE	S Capitis	SL	S Caprae	S Ho	S Ha	SW	Others
Antibiotics %/n (% resistant strains)	n =188	61%/114	11%/20	10%/19	6%/11	3,5%/7	2,5%/5	2,5%/5	3,5%/7
P/OXA	83/52	92/72	85/25	68/0	55/27	71/71	80/60	40/0	29/0
E/CLI	47/34	61/48	10/0	11/11	27/18	57/29	100/40	60/0	14/0
GM	37	52	5	0	0	86	60	0	0
SXT	36	54	5	0	0	43	20	0	0
TE	29	42	5	5	0	29	40	20	0
VA/TEC	1/10	2/20	0	0	0	0	0	0	0
OFX	40	57	25	5	9	14	60	0	0
RMP	21	34	5	5	0	20	20	0	0
FOS	28	21	80	5	55	0	40	60	0

P=Penicillin, OXA=Oxacilin, E=Erythromycin, CLI=Clindamycin, GM=Gentamicin, SXT=Trimethoprim + Sulfamethoxazole, TE = Tetracyclin, VA = Vancomycin, TEC = Teicoplanin, OFX = Ofloxacin, RMP = Rifampicin FOS = Fosfomicin

- No resistant strain was found to linezolid and daptomycin
- CNS PJIs involved knees in 54 % cases, hip 39%, other sites 7%
- Among all meticillin resistant CoNS, 34%, 36%, 40%, 21%, were resistant respectively to CLI, SXT, OFX, RMP most antibiotics used orally
- The most resistant species were SE, SHo and SHa with respectively 72%, 71% , 60% meticillin resistant strains

Conclusion:

- In our population, SE remains the main and most resistant species
- Emerging species such as SL and *S. caprae* are recorded, with more sensitive AST
- Resistance to meticillin was frequent regarding 52% CNS
- Antibiotics the most frequently active in vitro were daptomycin, linezolid, followed by vancomycin and teicoplanin