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Short Communication

Efficacy of indefinite chronic oral antimicrobial suppression for prosthetic joint infection in the elderly: a comparative study

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SUMMARY

Background: During prosthetic joint infection (PJI), surgical management is sometimes impossible and indefinite chronic oral antimicrobial suppression (ICOAS) may be the only option. The outcomes of elderly patients who benefited from ICOAS with strictly palliative intent were evaluated.
Methods: A national retrospective cohort study was performed in France, involving patients aged >75 years with a PJI who were managed with planned life-long ICOAS from 2009 to 2014. Patients who experienced an event were compared to those who did not. An event was defined as a composite outcome in patients undergoing ICOAS, including local or systemic progression of the infection, death, or discontinuation of antimicrobial therapy because of an adverse drug reaction.
Results: Twenty-one patients were included, with a median age of 85 years (interquartile range 81–88 years). Eight of the 21 patients experienced an event: one had an adverse drug reaction, three had systemic progression of sepsis, and two had local progression. Two of the 21 patients died. No death was related to ICOAS or infection. There was no significant difference between the population with an event and the population free of an event with regard to demographic, clinical, and microbiological characteristics ($p > 0.05$).
Conclusions: ICOAS appeared to be an effective and safe option in this cohort.
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Introduction

Medical advances have led to an increased number of elderly patients benefiting from orthopaedic prosthesis implantation (Kurtz et al., 2007; Zhan et al., 2007). However, these patients are susceptible to prosthetic joint infection (PJI), which is the most dramatic complication of arthroplasty. In such cases, the optimal management strategy consisting of surgery followed by high doses of antibiotics is not always possible due to the high risks associated with these procedures in this frail population. Thus, indefinite chronic oral antimicrobial suppression (ICOAS) may sometimes be the only option to prevent acute sepsis (SPILF, 2009; Osmon et al., 2013), even if it does not cure the PJI.

The aim of this study was to evaluate the outcomes of elderly patients who benefited from ICOAS with strictly palliative intent

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(i.e., no surgery, no initial parenteral antimicrobial therapy, and no high dose of antimicrobial).

Patients and methods

A national retrospective cohort study involving infectious diseases, orthopaedics, internal medicine, and geriatric wards in France was performed. Investigators were solicited by the French Infectious Diseases Society (SPILF) and the French Society of Geriatrics and Gerontology (SFGG) network through mailing lists.

Between October 2014 and February 2015, all participating physicians identified and included patients according to their own methodology: extraction from the electronic patient records, health information systems, or memory. To avoid any bias, they were asked to include patients who had been seen in the last 5 years (2009–2014). They had to fill out standard anonymized questionnaires after reviewing the medical charts from the most recent appointment.

Patients included in the study were aged >75 years and had a PJI that was under planned life-long management with ICOAS (even if

Table 1
Characteristics and outcomes of 21 patients with prosthetic joint infections treated with indefinite chronic oral antimicrobial suppression.

Patients	Without event (n = 13)	With event (n = 8)
Age (years), median (IQR)	86 (82–90)	83 (79–88)
Male sex, n (%)	6 (46.2)	6 (75.0)
Place of residence, n (%)		
Home	10 (71.4)	6 (75)
Nursing home	3 (23.1)	2 (25)
Walking, n (%)		
Without assistance	5 (38.5)	2 (25.0)
With assistance	6 (46.2)	5 (62.5)
Bedridden	1 (7.7)	1 (12.5)
Bedsores, n (%)	0	1 (12.5)
Cognitive disorders, n (%)	3 (23.1)	4 (50.0)
Localization of infection, n (%)		
Hip	10 (76.9)	6 (75.0)
Knee	2 (15.4)	2 (25.0)
Shoulder	1 (7.7)	0 (0)
Initial fistula, n (%)	7 (53.8%)	3 (37.5%)
Previous PJI, n (%)	4 (30.8)	5 (62.5)
WHO score, median (IQR), n (%)	2.0 (1–3)	2.5 (2–3)
0	3 (21.4)	1 (12.5)
1	4 (28.6)	1 (12.5)
2	3 (23.1)	2 (25.0)
3	3 (23.1)	4 (50.0)
4	1 (7.7)	0
McCabe score, median (IQR), n (%)	1 (1–2)	1 (1–2)
1	9 (69.2)	5 (62.5)
2	4 (30.8)	1 (12.5)
3	0	2 (25.0)
Positive microbiological documentation, n (%)	12 (92.3)	8 (100)
Pathogen identification, n (%)		
MS *Staphylococcus aureus*	3 (23.1)	2 (25)
MR *Staphylococcus aureus*	1 (7.7)	1 (12.5)
MS CoNS	2 (15.4)	1 (12.5)
MR CoNS	2 (15.4)	1 (12.5)
Enterobacteriaceae[a]	1 (7.7)	2 (25)
Corynebacterium spp	2 (15.4)	0
Streptococcus spp	0	1 (12.5)
Anaerobes[b]	1 (7.7)	0
Type of microbiological sample, n (%)		
Arthrocentesis	7 (53.8)	6 (75.0)
Surgical sample	2 (15.4)	2 (25)
Fistula	4 (30.8)	1 (12.5)
Blood culture	0	1 (12.5)
Therapeutic fistula, n (%)	3 (23.1)	2 (25.0)
ICOAS monotherapy, n (%)	11 (84.6)	6 (75)
Event		
Death, n (%)		2 (9.5)
Median delay (months) (range)		20.1 (8.1–32.2)
Discontinuation or switch of ICOAS		1 (4.8)
Median delay (months)		8.6
Local worsening		2 (9.5)
Median delay (months) (range)		18.2 (17.1–19.2)
Systemic progression of inflammation		3 (14.3)
Median delay (months) (range)		53.5 (39.0–55.8)
ICOAS treatment duration		
Median delay (months) (range)	4.6 (1.3–55.8)	26.0 (8.1–56.5)
Overall follow-up		
Median delay (months) (range)	12.1 (3.9–55.8)	25.5 (1.3–56.6)

IQR, interquartile range; PJI, prosthetic joint infection; WHO, World Health Organization; MS, methicillin-susceptible; MR, methicillin-resistant; CoNS, coagulase-negative staphylococci; ICOAS, indefinite chronic oral antimicrobial suppression.

[a] Including *Proteus spp, Escherichia coli, Klebsiella spp.*
[b] *Bacteroides, Peptostreptococcus, Propionibacterium acnes.*