

Conclusion. RD PJIs are more likely to be culture-negative than OA PJIs. Prior PJI, histopathology and better outcomes suggest biologic differences that should be explored further.

Figure 1 The Kaplan-Meier curve representing implant survivorship after prosthetic joint infection treatment for rheumatic disease(RD) was 66% at 1 year for culture negative (red) and 47% for culture positive (blue), $p=0.163$.

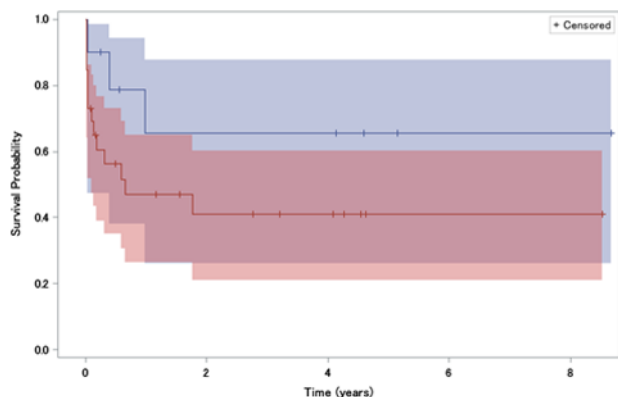


Table 1 Patient characteristics in the rheumatic disease (RD) prosthetic joint infection (PJI) group. (culture negative, CP; culture negative, CN; I&D, irrigation and debridement)

	Total RD (N=36)	CN-RD (N=10)	CP-RD (N=26)	p-value
Age	58.55 (11.41)	59.04 (10.21)	58.35 (12.02)	0.986
Body mass index	26.81 (11.48)	25.88 (9.81)	27.16 (12.23)	0.697
Sex				1.000
Female	28 (77.78)	8 (80)	20 (76.92)	
Male	8 (22.22)	2 (20)	6 (23.08)	
Joint				0.285
Knee	16 (44.44)	6 (60)	10 (38.46)	
Hip	20 (55.56)	4 (40)	16 (61.54)	
History of Smoking	4 (11.11)	1 (10)	3 (11.54)	1.000
Diabetes	5 (13.89)	0 (0)	5 (19.23)	0.293
History of prior PJI	2 (5.56)	2 (20)	0 (0)	0.071
Surgical Therapy				0.791
One Stage Exchange	1 (2.78)	0 (0)	1 (3.85)	
Two Stage Exchange	18 (50)	6 (60)	12 (46.15)	
I&D	17 (37.23)	4 (40)	13 (50)	

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384. Denosumab-Related Osteonecrosis of the Jaw: an Emergent and Potentially Complex Bone and Joint Infection

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Background. Osteonecrosis of the jaw is a known complication of antiresorptive treatment, like bisphosphonate. More recently, denosumab was validated as a treatment in the osteoporosis and bone metastasis. Its mechanism is different from bisphosphonate but induces also a decrease of bone resorption and a risk of osteonecrosis of the jaw. In case of treatment failure by a dental surgeon or in complex cases, patients could be addressed to a bone and joint infection (BJI) reference center. The aim of this study was to analyze microbiology, as well as surgical and medical care of patients who present denosumab-related osteonecrosis of the jaw (DRONJ) and who were treated in a bone and joint reference center.

Methods. All patients managed in our BJI reference center between January 2013 and December 2018 for a DRONJ were included in our retrospective observational monocentric cohort.

Results. Twelve patients (median age 71; ratio M/W 0.7) with a DRONJ (metastatic cancer, $n = 10$ (83%)) in grade 3 ($n = 5$), 2 ($n = 4$), 1 ($n = 3$) were included. Only 3 patients (25%) had a dental health control before initiating the treatment by denosumab and 7 patients (58%) had a dental surgical procedure done before the DRONJ. Eleven patients had a bone exposure, treated at least with a scaling and mucosal closure at the same time. All infections with bacterial cultures ($n = 11$ (91%)) were polymicrobial, including 8 (72%) with *Streptococcus* spp; 8 (72%) with anaerobias including 2 (18%) with *Actinomyces*; 5 (45%) with *Staphylococcus* spp; 5 (45%) with

enterobacteria; 3 (27%) with *Candida* spp; 2 (17%) with a non-fermentative Gram-negative bacilli and 7 (64%) with others bacteria. All patients ($n = 12$) received a betalactam, 8 (66%) a lincosamide or a synergistin, 5 (41%) an antifungal, 5 (41%) metronidazole, 4 (33%) a fluoroquinolone, 3 (25%) a glycopeptide and 2 (17%) other antibiotics. The median follow-up was 6 months. Eight patients were cured after a medico-surgical care and a median duration of antibiotics of 97 days (including 28.5 days in intravenous). 2 patients required a suppressive antibiotic treatment, 1 relapsed at a distance of the treatment and 1 died from some other causes.

Conclusion. DRONJ is a potential complex BJI, for which some patients could benefit from medical care in a BJI reference center.

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385. Arthroscopic vs. Open Surgery for Septic Arthritis of the Knee: A Systematic Review and Meta-Analysis

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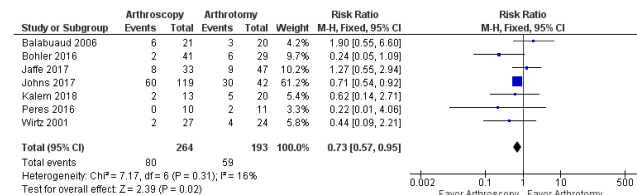
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Background. Septic arthritis is a joint-threatening and life-threatening infection, with the knee representing the most frequently involved joint. There is no definitive treatment algorithm for the management of this condition, which typically includes surgical debridement to decompress the joint, followed by organism-specific intravenous antibiotics.

Methods. Search Methods. MEDLINE (1965–2018), SCOPUS (1973–2018), The COCHRANE Library (2006–2017), EMBASE (1974–2018), reference lists, and scientific meetings were searched for relevant studies on the treatment of native knee septic arthritis by three independent reviewers. No language restrictions were used. Selection criteria included all studies reporting on native knee septic arthritis in adults treated with arthroscopy and open arthrotomy with irrigation and debridement. Data Collection and Analysis Studies were identified, subjected to inclusion and exclusion criteria, and reviewed by three independent reviewers. Patient characteristics, interventions, and outcomes were extracted, and the trials were rated for quality based on established criteria. A meta-analysis was conducted for the primary outcome, reoperation occurring after arthroscopic vs. open arthrotomy irrigation and debridement for the treatment of septic arthritis. We used a qualitative analysis for secondary outcomes physical function and hospital length of stay.

Results. From 624 abstracts, eight trials met inclusion criteria, one randomized controlled trial and seven retrospective cohorts. Quantitative meta-analysis showed arthroscopic irrigation and debridement resulted in fewer reoperations compared with open arthrotomy (RR = 0.76; 95% CI 0.59–0.97, $P = 0.03$, $I^2 = 24\%$), Figure 1. A qualitative summary of seven included studies assessing physical function showed arthroscopic debridement results in improved functional outcomes and range of motion compared with open arthrotomy. Based on four trials, qualitative summary demonstrated that arthroscopic debridement results in decreased hospital length of stay compared with open arthrotomy.

Conclusion. Arthroscopic irrigation and debridement is favored over open arthrotomy with regard to lower rates of reoperation, improved functional outcomes, and shorter hospital length of stay.



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386. Blue Light Reduces Cutibacterium (Propionibacterium) Acnes Bacterial Burden: Orthopedic Shoulder Infection Prevention Strategy?

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Background. *Cutibacterium acnes* (*C. acnes*) is a common shoulder periprosthetic joint infection (PJI). Blue light (BL) is effectively used in the dermatologic clinical setting against acne vulgaris caused by *C. acnes*. Photodynamic therapy (PDT) is the use of light source and photosensitizer (PS) to enhance antimicrobial activity. We studied the effect of PDT using BL and PS *in vitro* on shoulder PJI isolates of *C. acnes*.

Methods. 19 strains were grown in thioglycollate medium and diluted in sterile normal saline (NS) to a turbidity of 0.5 McFarland standard; OD₆₀₀ of 0.1 to 0.15. 250 μ L with PS added were placed in 96-well plates at 37°C, exposed to BL (415 nm) placed 1 cm above for 0 to 60 minutes at 15-minute intervals. Susceptibility to BL alone, and BL with PSs such as riboflavin (R, Vit B2), fluorescein (F) or demeclocycline (tetracycline antibiotic, "D") were studied. After serial 10-fold dilution with NS, 3 μ L of each well were spotted onto Brucella Blood Agar plates and incubated anaerobically