Candidal periprosthetic joint infection: a rare difficult-to-treat infection

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Background: Candidal periprosthetic joint infection (CPJI) is a rare difficult-to-treat infection. The purpose of our study was to evaluate clinical characteristics and treatment outcomes of CPJI according to different surgical and antifungal treatment approaches.

Material/methods: We conducted a multicenter retrospective study of all CPJI diagnosed between 2003 and 2014 in 13 Spanish hospitals. CPJI defined as the presence of: 1) symptoms/signs of PJI and ≥2 positive deep cultures for *Candida* spp. or 2) fistula/pus found during surgery around the prosthesis and ≥1 positive deep cultures. Cure was defined as the absence of signs and symptoms of infection after a follow-up of ≥ 2 years. Failure was defined as infection-related death, persistence or relapse of the infection or need for suppressive antifungal therapy.

Results: 36 cases: 28/36 (77.8%) women, median age: 74 years, IQR 68-78. Overall, 50% had comorbidities and 38.9% had had a previous bacterial PJI. Prosthesis involved were 23 hips, 12 knees and 1 shoulder. Twenty-one (58.3%) were chronic, 10 (27.8%) acute, 3 (8.3%) hematogenous and 2 (5.6%) positive intraoperative cultures. Etiology was: *C. albicans* in 22, *C. parapsilosis* in 13, *C. tropicalis* in 2, and *C. glabrata* in 1 (2 patients had 2 different species simultaneously).

Three patients were followed ≤2 years and 5 died for other reasons not related to CPJI. Among 28 evaluable cases, failure rates depending on surgical and antifungal treatment are shown in figure below. Failures were due to relapse in 7, persistence in 3, need for suppressive therapy in 3 and death related to CPJI in 3. Four patients who had failed were re-treated. All had a resection arthroplasty, 1 received only azoles and the other 3 a regimen containing an antibiofilm agent. All of them were cured.

Conclusions: According to our experience, CPJI is usually a chronic PJI in patients with comorbidities and a previous bacterial PJI. Success rate is low. Treatment with resection arthroplasty and with antibiofilm agents (amphotericin-B spacer and/or amphotericin-B or echinocandin therapy) seems to improve outcome.