

QUESTION 5: What antibiotic therapy and duration should be used in surgical site infection/periprosthetic joint infection (SSI/PJI) caused by *Mycobacterium tuberculosis* (TB)?

RECOMMENDATION: TB PJI must be treated in collaboration with an infectious diseases specialist noting that the duration of treatment (minimum six months and up to two years) and the type of antimicrobials (usually a combination of four drugs) is determined based on the resistance profile of the pathogen.

LEVEL OF EVIDENCE: Limited

DELEGATE VOTE: Agree: 96%, Disagree: 1%, Abstain: 3% (Unanimous, Strongest Consensus)

RATIONALE

The review of the available literature on PJI caused by TB is mainly based on retrospective cohort studies and case reports. Our exhaustive search of the literature revealed a total of 44 publications reporting on 62 patients with PJI caused by TB, over a period of 40 years [1–44].

Eight of the studies did not report on the type of antibiotic treatment utilized [1–8]. In other studies, reporting on the antimicrobial treatment, 3 patients were treated by a two-drug combination regimen [9] and 23 patients received a three- or four-drug therapy [10–32]. Four patients were treated with more than four drugs [33–36]. Regarding the length of treatment [37], it was 6 to 9 months in 10 patients [38], 9 to 18 months in 21 patients and more than 18 months in 19 patients [39]. Based on the literature, only three patients had less than six months of antimicrobial therapy [40], but this may relate to the fact that two patients died during treatment.

The date related to surgical treatment was also evaluated. Eleven patients underwent debridement and retention of the prosthesis (DAIR) [41], 38 had resection arthroplasty and reimplantation [42], while 13 patients had no surgical treatment [43].

Due to the scarcity of the data related to PJI caused by TB, we are unable to draw definitive recommendation for the antimicrobial treatment of surgical treatment for that matter. However, based on the recommendations of the World Health Organization (WHO) [44] for the treatment of osteomyelitis caused by drug-susceptible TB, we feel that the four drugs regimen (isoniazid (H) with pyridoxine, rifampin (R), pirazinamide (P) and ethambutol (E)) for two months followed by a two-drug regimen (rifampin (R) and isoniazid (H) with pyridoxine) for a total treatment duration of six to nine months (i.e., four to seven months two drugs) may be the most optimal management of PJI caused by drug-susceptible TB.

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