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[FP44] INFECTION AFTER OSTEOSYNTHESIS: GOOD RESULTS IN BAD BUGS

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Aim: Management of infection after osteosynthesis (IAO) poses a significant challenge in the setting of multidrug resistant organisms (MDRo). We have analysed whether IAO with MDRo has an adverse outcome.

Method: We have retrospectively analysed patients with IAO from January 2001 to November 2016 with a minimum follow up of 12 months after the discontinuation of antibiotics.

Results: 62 patients with a mean age of 49.76 years presenting a mean 135 days after onset of infection. 40 of them had associated comorbidities, commonest being diabetes mellitus. Majority of the patients were on empirical antibiotics prior to presentation.

Deep cultures taken after implant removal in all cases at our institute grew 77 organisms {25 Gram positive (Gm+), 52 Gram negative (Gm-)}, commonest being *pseudomonas aeruginosa* (n=32). 12 patients had a mixed Gm+ and Gm- infections. 41/ 77 organisms cultured were multi-drug resistant (MDR) (Table 1). Infection remission was achieved in 56 patients (90.3%) at a mean follow up of 42.2 months, with 1 persistent infection, 2 amputations and 3 deaths. Union was achieved in 47/51 non unions.

Conclusions: Radical debridement beyond infection with removal of implants, complemented by targeted local and systemic antibiotics along with a good soft tissue cover, surgical stabilization and bone grafting as needed can help achieve good results in spite of MDR organisms.

Table 1: Antibiotic susceptibility pattern

Micro organism	Open fracture	Closed fracture	Total
Gram positive			
Methicillin-sensitive staphylococcus aureus(MSSA)	2	7	9
Methicillin-resistant staphylococcus aureus (MRSA)	3	9	12
Methicillin- resistant CONS	0	1	1
Gram negative			
Fluroquinolones resistant	12	20	32
Aminoglycosides resistant	11	13	24
Pan susceptible	2	11	13
Extended spectrum beta lactamase (ESBL)	7	5	12
Extended spectrum beta lactamase plus (ESBL Plus)	4	9	13
Carbapenem resistant (CR)	4	7	11
Carbapenem resistant plus (CR Plus)	2	0	2
Multidrug resistant (MDR)	5	9	14
Extensively drug resistant (XDR)	4	7	11
Pan drug resistant (PAN DR)	3	0	3

[FP45] DIAGNOSING CHRONIC PERIPROSTHETIC JOINT INFECTION: DEFINITION MATTER

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Aim: Apart from other biomarkers isolated in the synovial fluid, alpha-defensin appears to be a promising diagnostic tool to confirm a periprosthetic joint infection (PJI) in the hip or knee. The purpose of this study was to evaluate the sensitivity and specificity of an alpha defensin lateral flow (ADLF) test compared to usual standard classifications in the diagnostic management of PJI.

Method: This investigation was set up as a multicenter prospective cohort study. Synovial fluid was obtained by means of joint aspiration or intra-operative tissue biopsies. A presumptive PJI diagnosis was made according to criteria outlined by the Musculoskeletal Infection Society (MSIS), the Infectious Diseases Society of America (IDSA) and the European Bone and Joint Infection Society (EBJIS). The intention to treat by the surgeon was logged. Sensibility and specificity for the ADLF test was plotted for each aforementioned diagnostic algorithm. Spearman correlations between all scores were analyzed. Multiple logistic regression was used to determine the contribution of independent variables to the probability of PJI.

Results: Hundred thirty six patients with a painful arthroplasty were assessed for infection and rated by the treating surgeon as potentially infected or not on the basis of clinical and laboratory information. According to the EBJIS criteria sixty-eight patients were deemed infected, fifty according to the IDSA criteria, forty one according to the MSIS criteria and forty according to the ADLF test. However, the sensitivity of ADLF test was 87.8% for MSIS, 70% for IDSA and 55.8% for EBJIS. The specificity of ADLF test was between 94% - 97%. Good correlation was observed between synovial fluid culture and ADLF test (r = 0.73). Low to excellent correlations between the ADLF test and the EBJIS (r = 0.58), IDSA (r = 0.68), and MSIS score (r = 0.84) were observed. The surgeon's intention to treat correlated well with the MSIS score (r = 0.86), and moderately with the EBJIS (r = 0.59).

Conclusions: ADLF test sensibility was variable, but its specificity was excellent. Most of the cases, not retained by MSIS but classified by EBJIS as infected, got a negative microbiological result. Considering an accepted 20% negative microbiological result rate in PJI diagnostic, EBJIS is clearly overestimating the number of infected cases. MSIS score correlates with the surgeon intention to treat and ADLF test.