

Free Papers A

[O15] AGREEMENT BETWEEN PREOPERATIVE JOINT ASPIRATION RESULTS AND CAUSATIVE PATHOGENS IN PATIENTS WITH PROSTHETIC HIP AND KNEE INFECTIONS TREATED WITH A TWO-STAGE REVISION

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Aim: Preoperative joint aspiration cultures (PJACs) are of great value in diagnosing prosthetic joint infections (PJIs). Studies investigating the predictive value of PJACs to identify causative pathogens in PJI, which is off course relevant for the correct initiation of antimicrobial treatment, are limited. The objective of this study was to investigate whether the PJACs are in agreement with causative pathogens in PJIs.

Method: A retrospective monocentric study was conducted at the 40-bed orthopedics department of a tertiary centre. Medical files of patients with proven prosthetic knee or hip infection with PJACs from maximum 6 months prior to the first stage of a two-stage revision admitted between March 2010 and December 2014 were evaluated. A proven PJI was defined as at least two positive preoperative or intraoperative cultures, the presence of purulent synovial fluid or purulence at the implant site or surrounding the prosthesis without other identifiable causes, the presence of acute inflammation upon histopathological examination of the periprosthetic tissue at the time of surgery or the presence of a sinus tract communicating with the prosthesis. In order to identify the causative pathogen(s) per patient, a multidisciplinary team, consisting out of a microbiologist, a septic orthopedic surgeon, two infectious diseases specialists and two clinical pharmacists, assessed the relevance of pathogens cultured in the PJACs and intraoperative deep samples based on the current 2012 IDSA guidelines. Per patient, agreement of PJACs corresponding to the retained causative pathogen(s) was investigated in two ways: 1) on species level and 2) on Gram stain or fungi level.

Results: Forty six patients (66 ± 10 years; 26 males; 23 knee and 23 hip; 25 first revisions and 21 with multiple revisions) were included. PJACs remained sterile in seven patients. In 25 of 46 patients (54%) there was agreement in terms of causative pathogen species. In 39 of 46 patients (85%), there was agreement in terms of Gram staining or fungi results. In the other 7 patients, PJACs remained sterile, but with positive intraoperative culture results.

Conclusions: Only half of PJAC results corresponded to the retained causative pathogens. Therefore, PJACs should not be used to initiate directed antimicrobial therapy; directed therapy should only be instituted when also intraoperative cultures are known. Initially, a (combination of) broad spectrum agent(s) should be preferred. Also preliminary narrowing of the spectrum can be implemented based on the Gram staining or fungi results of PJACs, as was seen in our study.