

## Oral Abstracts

### Free Papers A

#### [O13] ALPHA-DEFENSIN TEST\* FOR EVALUATION OF PERIPROSTHETIC JOINT INFECTION

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**Aim:** Quantitative assessment of alpha-Defensin offers a promising approach for diagnosing a periprosthetic joint infection (PJI) with sensitivities and specificities ranging from 97% to 100% and 95% to 100%, respectively. However, to the best of our knowledge and after due inquiry little information exists concerning qualitative measurements of alpha-Defensin. The aim of this study was to assess the diagnostic accuracy of the alpha-Defensin test, a lateral flow test for the qualitative detection of alpha-Defensin.

**Method:** In this study, 50 patient with indicated revision surgery met the inclusion criteria due to septic or aseptic loosening. In addition to clinical standard diagnostics of PJI, the alpha-Defensin test\* for the assessment of the qualitative alpha-Defensin in the synovial fluid was performed. The results were compared with the sensitivity and specificity of currently available clinical tests, specifically C-reactive protein (CRP), frozen section, definitive histology, bacteriology and sonication.

**Results:** Based on the Musculoskeletal Infection Society's (MSIS) definition of PJI, 36 cases were categorized as aseptic and 13 as septic revisions. Due to the lack of an indicated control line ("C"), one alpha-Defensin test\* was inconclusive. Qualitative alpha-Defensin had an area under the curve, sensitivity, specificity, and positive and negative likelihood ratios of 0.82, 69%, 94%, 12.46, and 0.33, respectively. Adjusted p-values using the method of Hochberg showed that the alpha-Defensin test\* is significantly at least as good when diagnosing PJI as histology ( $p=0,0042$ ) and bacteriology with at least one positive culture ( $p=0,0327$ ).

**Conclusions:** Qualitative alpha-Defensin tests could be an effective supplement in diagnosing PJI with a diagnostic accuracy comparable to histology and bacteriology ( $\geq 1$  positive culture).

\*Synovasure™