P2522 Comparison of paediatric to paired blood-culture bottles in the culturing of sonicate-fluid of suspected periprosthetic joint infection

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Background: Sonication is a cornerstone in the diagnostic procedure of periprosthetic joint infection (PJI). However, the approach to culturing has a relevant influence on the diagnostic performance. The use of blood culture bottles (BC) for culturing was evaluated for different types of specimens including sonication-fluid. However, implementation of this can lead to an increased need of resources in the lab.

Our objective was to evaluate diagnostic performance of pediatric BC, compared to paired BC for adults in regards to accuracy and time to detection.

Materials/methods: From January 2018 until March 2018 we prospectively collected samples of explanted prosthetic joints sent for sonication and subsequent culturing. Incubation was performed in pediatric BC (PF) with 4ml as well as aerobic and anaerobic BC (FA/FN) with 8ml (each) for 14 days or until detection of growth. In addition a primary plate cultures were incubated until growth was detected or for up to 48h.

Results: 138 Samples sent for sonication were prospectively included. In 67 samples no growth was detected. In 57 samples the same microorganism was detected from FA/FN as well as PF. In 11 samples growth in FA/FN but not in PF was detected. In 3 samples growth was detected in PF but not in FA/FN. 5 samples resulted in growth of a different pathogen in FA/FN then PF. The latter were not included into further evaluation. Sensitivity and specificity of PF were 82.5% and 95.7% respectively, when compared to FA/FN. In 52 samples growth was detected within 24 hours. The last 28 samples with a detected growth were evaluated for differences of time to positivity. Differences were ≤ 1h in 22 samples, ≤ 4h in 2 samples, ≤ 6h in 1 sample, ≥ 12h in 1sample ≥ 1d in 1 sample and ≥ 2d in 1 sample.

Conclusions: The use of pediatric blood culture bottles instead of paired blood culture bottles could be an option in settings with limited resources. However, a potential drawback in sensitivity might exist.