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ePoster Session

Improving molecular diagnosis of blood-borne infections

Rapid diagnostic tests in patients with bacteraemia: evaluation of their impact on decision making and clinical outcomes

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OBJECTIVE We performed a systematic review and meta-analysis of the data regarding rapid diagnostic tests and their advantages or limitations on patients' clinical outcomes.

METHODS PubMed and Scopus databases were searched independently by two reviewers. Eligible molecular methods could be performed on positive blood culture or directly on blood sample. Mortality was the primary outcome.

RESULTS 25 relevant articles were retrieved. Most studies compared rapid tests with blood cultures. Comparative mortality data was available in 8 studies. Although not observed in all studies, only those that compared rapid tests in conjunction with antimicrobial stewardship programs (ASP) showed a mortality benefit. Three showed a non-significant decrease from 3% to 8%, while 3 others showed a significant decrease ranging from 7.6% to 12.1%. Two studies showed an increase in mortality (5% and 24.1%). When all studies were pooled, no difference in all cause mortality was seen (RR 0.87, 95% CI 0.60-1.26). Similarly, when data from studies combining APS with rapid tests were pooled, no difference in mortality was seen (0.81, 0.50-1.29). Data also suggested that the persistence of high bacterial levels in patients' blood, measured by polymerase chain reaction, may predict a poor clinical outcome. Additionally, a reduction in hospital or intensive care unit length of stay was observed in almost all studies when the rapid tests, with or without ASP, were used. Finally, treatment decisions were taken earlier in the rapid test groups.

CONCLUSIONS The currently available data can only support the complementary use of rapid tests in daily practice. Despite a faster treatment decision making, a clear mortality benefit was not seen. It is crucial to differentiate the influence of rapid tests from that of ASP and clarify the actual effect of each factor separately.