P0290
Paper Poster Session
Non-culture techniques for challenging situations in diagnostics

Rapid identification and antimicrobial susceptibility profiles of Eggerthella lenta blood culture isolates in a Swedish tertiary hospital

Karin Liderot[1], Paul Ratcliffe[1], Petra Lüthje[1], Ellinor Tidholm[1], Volkan Özenci*[2]

[1]*Karolinska University Hospital, Stockholm, Sweden*

[2]*Karolinska University Hospital, Clinical Microbiology, Stockholm, Sweden*

Background: The awareness of uncommon pathogens is increasing and efforts to detect and identify rarely occurring, fastidious organisms has been intensified. Eggerthella lenta is a non-sporulating, Gram-positive, obligate anaerobic rod-shaped bacterium, previously known as Eubacterium lenta. Initially described as an intestinal commensal, E. lenta is now regarded a potential pathogen that can cause serious invasive infections associated with high morbidity and mortality. The aim of this study was to evaluate modern diagnostic methods to improve detection and reduce the time to detection in the diagnosis of E. lenta bloodstream infections; and to establish antimicrobial susceptibility profiles of clinical E. lenta isolates.

Material/methods: A total of 18 E. lenta blood culture isolates collected at the Karolinska University Laboratory in Huddinge, Sweden, during 2008 and 2010 was included in this study. Patients' characteristics were retrieved from the Laboratory Information System. All 18 isolates were re-identified by the biochemical automated Vitek 2 test system, supported by Gram stain and basic conventional tests. Moreover, the isolates were subjected to analysis by two MALDI-TOF MS systems, the MALDI-TOF Bruker MS and MALDI-TOF Vitek MS following standard procedures as recommended by the manufacturers. Antimicrobial sensitivity for clinically relevant antimicrobial agents was assessed using E-tests.

Results: The median age of the patients was 69 years, with equal gender distribution. In 11 of the 18 patients (61%), abdominal problems were recorded. A third of the bottles showed polymicrobial growth. Time to detection for E. lenta in monomicrobial blood culture bottles varied between 55 h and 109 h, with longer times for isolates from patients under treatment with antibiotics efficient against E. lenta. All isolates were identified by the Vitek 2 system with high probability scores and further microbiological tests concurred with previous descriptions of the genus. Using MALDI-TOF MS, 17 and 18 of the isolates were identified by the Bruker MS and the Vitek MS system, respectively, all with high confidence values. Overall, antimicrobial susceptibility among the tested isolates was good. However, high minimal inhibitory concentrations were measured for piperacillin-tazobactam and penicillin G, two antibiotics which might be used for treatment of patients infected by Gram-positive anaerobes.

Conclusions: The present study shows that two MALDI-TOF MS systems and Vitek 2 are reliable methods in identification of E. lenta in the clinical routine. The observation on high resistance towards penicillin G and piperacillin-tazobactam is clinically relevant on the restrictive usage of these antimicrobials for empirical treatment of invasive infections with E. lenta.