

**EP0299**

**ePoster Session**

**MALDI-TOF: driving change in microbiology laboratories**

**Direct Maldi-Tof from blood culture bottles: evaluation of two methods and impact on patient management**

Kerry Varettas<sup>\*1</sup>, David Siebert<sup>2</sup>, Alice Kizny Gordon<sup>3</sup>

<sup>1</sup>South Eastern Area Laboratory Services (Seals), Microbiology, Sydney, Australia

<sup>2</sup>Infection Management Services, Princess Alexandra Hospital, Brisbane, Australia

<sup>3</sup>South Eastern Area Laboratory Services (Seals), Microbiology, Sydney, Australia

**Background:** The advent of MALDI-TOF mass spectrometers has increased the pressure in clinical microbiology laboratories to identify bacteria faster than ever before. In this study, two methods that enabled the same day identification of bacteria from positive blood culture bottles (BacT/Alert FAN Plus, bioMérieux) by MALDI-TOF (Bruker) were evaluated in parallel with the standard overnight culture method. The impact of same-day identification on the antimicrobial management of patients was also prospectively reviewed.

**Material/methods:** Using a 'short-incubation' method, 2 drops of blood culture broth was inoculated onto a chocolate agar plate, without streaking, and incubated for 4-hours (35°C CO<sub>2</sub>). MALDI-TOF testing was performed from the inoculum.

Alternatively, the 'pellet' method used a Vacuette gel tube inoculated with 5ml of blood culture broth. The tube was centrifuged at 2000 rpm for 15-min, the supernatant discarded and the pellet used to inoculate the MALDI target plate using a cotton swab.

Only organisms commonly isolated in this laboratory with identification to the species level (MALDI-TOF score values of  $\geq 2$ ) were included in this evaluation. *Streptococci* sp identified as *Streptococcus pneumoniae* and mixed Gram-stain results were excluded from the data.

The impact of same-day identification of isolates from positive blood cultures was prospectively reviewed.

**Results:** During the period 30/09/2014 – 09/04/2015, 376 bottles were included in the evaluation. The short incubation and the pellet method respectively identified 89.4% & 64.6% of Enterobacteriaceae, 42.9% & 0% *Pseudomonas aeruginosa*, 81.0% & 19.0% *S.aureus*, 17.9% & 9.0% of coagulase-negative Staphylococci, 41.2% & 23.5% of *Streptococci* sp and 57.1% & 35.7% of *Enterococcus* sp.

Although isolate identification was provided on the same day the blood culture bottles signalled positive, there was no change to the antimicrobial management of the patients reviewed during August – November 2015.

**Conclusions:** The 'short incubation' method is able to provide same day identification of commonly isolated bacteria from positive blood culture bottles using MALDI-TOF testing. Patient management was not altered as a result of the same-day isolate identification.