

P0427 Comparison of a recent cationic polymer technology (rapid BACpro II) procedure with an ammonium chloride erythrocyte-lysing method for blood culture using MALDI-TOF identificationGuy Prod'Hom¹, Antony Croxatto¹, Gilbert Greub*¹¹ University of Lausanne and University Hospital Center, Institute of Microbiology, Lausanne, Switzerland**Background:**

Blood culture is the best approach to establish the etiology of bloodstream infections. Several rapid identification procedures using MALDI-TOF based on bacterial pellets were described. This study is a side-by-side comparison of ammonium chloride erythrocyte-lysing procedure with a recent rapid technic based on efficient and selective preparation with propriety cationic polymer technology (rapid BACpro II).

Materials/methods:

For rapid BAC pro II, 1 ml of positive blood culture was mixed with lysis buffer and centrifuged. The pellet was resuspended in purified water and mixed with a cationic polymer and a reaction buffer. After centrifugation, the bacterial pellet was resuspended in ethanol and centrifuged. The bacterial proteins were extracted using formic acid and acetonitrile. Ammonium chloride erythrocyte-lysing procedure was applied according to previous publication (Prod'hom et al. 2010). The identification was considered valid at the species level when the score was ≥ 2 , as valid at the genus level when the score was > 1.7 and < 2 , and not valid when the score was < 1.7 . In parallel, subcultures of positive blood culture were obtained for final MALDI-TOF identification using colonies.

Results:

38 monobacterial positive blood vials (1 vial per patient) were analyzed. Using the cationic polymer technic, 33 (87%) gave a score ≥ 2 , 3 (8%) a score > 1.7 and < 2 and 2 (5%) a score < 1.7 compared to 12 (32%), 17 (45%) and 9 (24%) using the ammonium chloride procedure, respectively. For both procedures, the identifications were correct at the species or genus levels compared to final identification.

Conclusions:

The use of cationic polymer technology on positive blood culture for identification by MALDI-TOF is a very promising new procedure compared to ammonium chloride erythrocyte-lysing method allowing fast and accurate MALDI-TOF identification of the etiological agents of bloodstream infection.

