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O0847 Validation of FASTinov grampos kit for assessment of antimicrobial susceptibility directly from positive blood cultures

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Background: Early administration of suitable antimicrobial therapy is critical for the improvement of the clinical outcome of the bloodstream infections. Nevertheless, the existing methodologies available for the determination of the antimicrobial susceptibility often fail to give a response in useful time. The aim of this study was to validate the FASTinov ultra-rapid system technology for antimicrobial susceptibility testing gram positive cocci using the FASTinov® grampos kit.

Materials/methods: Blood culture bottles (BD) were spiked with 78 *Staphylococcus* spp. and 75 *Enterococcus* spp., inoculated with human donor blood and incubated until obtaining a positive flag. *S. aureus* ATCC 29213 and ATCC 43300, *E. faecalis* ATCC 29212 and ATCC 51299, *E. faecium* ATCC 700221, *E. gallinarum* ATCC 49608 and *E. casseliflavus* ATCC 700668 were included in this study as quality controls. Bacteria were extracted according with user´s instruction and inoculated in FASTinov® grampos kit. FASTinov® grampos kit (microplates containing the main antimicrobial drugs and fluorescent dyes) were incubated at 37ºC during 1h; afterwards, microplates were analyzed on a CytoFLEX flow cytometer (Beckman Coulter). Results were automatically provided by BioFAST software according to EUCAST or CLSI protocols, and compared with reference method.

Results: The overall agreement between FASTinov® grampos kit and reference method was 94.1% for EUCAST and 93.1% for CLSI. According EUCAST, all antimicrobial drugs showed a CA ≥ 90%. Regarding CLSI, only vancomycin and ampicillin showed a CA < 90% (85-89%). The highest ME discrepancies was detected with penicillin, followed by cefoxitin; the highest VME rate was detected with gentamycin high level regarding Enterococci. FASTinov® grampos kit detected correctly all true positive MRSA.

Conclusions: The results obtained from this validation demonstrated the accuracy of FASTinov technology for determination of antimicrobial susceptibility in cocci, directly from positive blood cultures in a TTR of 2h (versus 48h required for current methodologies). This will be an extraordinary benefit to provide a prompt and effective antimicrobial stewardship. Taking into account these results, the FASTinov® grampos kit is at this moment under clinical evaluation in the scope of an H2020 project.