P1507
Poster Session VI
Epidemiology with molecular typing

DIVERSILAB® BACTERIAL KIT VERSUS SPECIES-SPECIFIC DIVERSILAB® KITS FOR REP-POLYMERASE CHAIN TYPING OF NOSOCOMIAL PATHOGENS.

S. Desmet[1], A.M. Van den Abeele[1]

[1]Microbiology Laboratory, General Hospital Sint-Lucas, Ghent, Belgium

Diversilab® (DL) repetitive sequence polymerase chain reaction (rep-PCR) typing implies the use of specific kits per bacterial species. A pan-bacterial test system, the Diversilab® Bacterial kit, is also available. The use of this universal kit with greater flexibility and instant availability can be attractive in outbreak management. Therefore, the value of the Bacterial DL kit was compared to a limited set of species-specific DL kits.

Objectives: To evaluate the performance of the DL Bacterial kit compared to the species-specific DL kits for five commonly isolated species in hospital outbreaks: *Staphylococcus aureus*, *Enterobacter cloacae, Escherichia coli*, *Pseudomonas aeruginosa* and *Klebsiella pneumoniae.*

Methods: Strains were selected based on their DL species-specific typing results. Per species, minimum 5 different DL types were selected. 53 strains derived from outbreak related samples were analyzed: *S.aureus* (n=10), *E.cloacae* (n=12)*, E.coli* (n=10), *P.aeruginosa* (n=12) and *K.pneumoniae* (n=9). All strains were typed with both the species-specific DL kit and the Bacterial DL kit according to the manufacturer's instructions. The peak-patterns were analyzed with the web-based DL software using Pearson correlation coefficients to determine the degree of similarity between the strains (similarity index). Strains with two peak difference were designated as closely related, strains with more than two peak difference were different. Discordant results were analyzed with pulsed field gel electrophoresis (PFGE).

Results: With the Bacterial kit, we could not amplify the repetitive sequences of the *S. aureus* strains. Only one strain had interpretable peak patterns. A re-analysis did not give better results. For *E. cloacae*, one discordant result was found between the DL Bacterial and DL Enterobacter kit. In contrast to the DL Enterobacter kit and PFGE typing, one strain could not be distinguished with the Bacterial kit from two other strains. Similar results were found for *E. coli.* One strain could not be distinguished from others by the Bacterial kit while the DL species-specific kit could. For *P. aeruginosa*, the species-specific kit and Bacterial kit gave identical results, except for one strain where the Bacterial kit was more discriminatory compared to the DL Pseudomonas kit and PFGE. The Bacterial kit showed low discriminatory power for the *K.pneumoniae* strains. 8 of the nine peak patterns had a similarity-index of more than 94 percent and had no discriminatory peak differences.

Conclusion: The DL Bacterial kit is not useful for typing of *S. aureus* and *K. pneumoniae*. On the other hand, compared to the species-specific kits, concordant results for *E. cloacae*, *E. coli* and *P. aeruginosa* were found. Although confirmation of related strains is necessary, these findings can be of value in critical outbreak settings, when species-specific kits are not always instantly available. The DL Bacterial kit can be used as screening tool to rule out an outbreak.