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Evaluation of the fully automated BD MAX in a routine setting

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Real-time PCR has for many years been an important diagnostic tool for infectious diseases. Recently, the development of fully automated systems has generated the possibility for walk-away analyses that give rapid diagnosis, and save personnel resources. Evaluation of the performance and convenience criteria is important to find the most cost-effective solution in the routine setting. Norovirus infection can cause severe diarrhea and vomiting. It is highly contagious and requires Droplet Precautions in hospitals. Atypical pneumonia, especially Legionella pneumophila (Lpn) can cause severe pneumonia and needs specific antimicrobial treatment. Therefore, there is a growing need for rapid, sensitive methods for these pathogens. We evaluated the fully automated BD MAX rapid multiplex PCR assays developed by Diagenode: Enteric Viral Panel and Atypical Pneumonia assay. BD MAX has shorter turn-around-time and hands-on-time than our routine methods. One technician can process 24 specimens in 30 min. Results are ready after approximately 3 hours. For the Atypical Pneumonia assay, the overall concordance was 93.4% (298/319) between Atypical Pneumonia assay and our routine methods (real-time PCR based assays). Nine out of 16 Lpn positive samples (56.3%) was found positive by Atypical Pneumonia assay. The sensitivity for Lpn detection should be optimized before converting to this assay in the routine. For the Enteric Viral Panel, the overall concordance was 71.7% (33/46) between Enteric Viral Panel and our routine method (antigenic based assay). The reason for the low concordance was that the Enteric Viral Panel was more sensitive than our current method.

Biography

Xiaohui Chen Nielsen graduated at China Medical University in 1995. She achieved her PhD from Institute of Human Genetics at Aarhus University in Denmark in 2001. She was entitled specialist in Clinical Microbiology in 2009 and is currently a senior consultant at the Department of Clinical Microbiology at Slagelse Hospital in Denmark. Molecular diagnostics has been her main interest and she has experience of implementation and evaluation of new molecular diagnostic methods in the routine laboratory. Her main research interest is taxonomy and pathogenesis of Streptococcus and related species based on sequence analysis and comparative genomics. She has 14 publications in peer reviewed journals and book chapter and is supervisor for postgraduate and PhD students.

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