Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Type: Poster Presentation

Final Abstract Number: 59.008
Session: Diagnosis
Date: Saturday, April 5, 2014
Time: 12:45-14:15
Room: Ballroom

Microbiology of the nasopharynx in children hospitalized with suspected pulmonary tuberculosis

F.S. Dube, M. Kaba, L.E. Ah Tow, S. Africa, H. Zar, M.P. Nicol

University of Cape Town, Cape Town, South Africa

Background: Lower respiratory tract infections are among the leading causes of death in children but diagnosis and defining aetiology are challenging. Up to quarter of children treated for pulmonary tuberculosis (PTB), have microbiologically confirmed TB; most are treated based on clinical and radiological features. We wished to identify the presence of other potential respiratory pathogens in nasopharyngeal samples from children presenting for care with symptoms suggestive of tuberculosis.

Methods & Materials: Nasopharyngeal swabs were collected from a cohort of children presenting with suspected PTB to Red Cross War Memorial Children's Hospital, Cape Town, South Africa, from July 2011 through to May 2012. Total nucleic acid was extracted and screened for the presence of 33 common respiratory pathogens using a multiplex real-time PCR assay, which includes probes for 21 viral, 11 bacterial and one fungal pathogen. Mycobacterial liquid culture was performed on sputum obtained from each participant. Children were categorised as definite TB (culture confirmed), not TB (improvement without TB treatment on follow-up) and possible TB (all others)

Results: Nasopharyngeal swabs were obtained from 214 children, median age 36 months (interquartile range, [IQR] 5 – 17 months). Overall, 34 (16%) of the children had definite TB, 86 (40%) had possible TB and 94 (44%) were classified as not TB. *Moraxella catarrhalis* (64%), *Streptococcus pneumoniae* (42%), *Haemophilus influenzae* (29%) and *Staphylococcus aureus* (22%) were the most common bacteria detected. Other bacteria detected include *Mycoplasma pneumoniae* (9%), *Bordetella pertussis* (7%)and *Chlamydophila pneumoniae* (4%). The most common viruses included metapneumovirus (19%), rhinovirus (15%), influenza C (9%), adenovirus (7%), cytomegalovirus (7%) and coronavirus OC43 (5.6%), the last of which was associated with definite TB ($p = 0.024$). *M. catarrhalis* and *S. pneumoniae* appeared concurrently in 49% of cases where at least one was detected. There was no clear difference in the distribution of respiratory pathogens between children with and without TB when assessed using linear discriminant analysis.

Conclusion: There was no clear relationship between TB categorization and coinfection/colonization with other pathogens detected. Further work is needed to explore possible pathogen interactions and determine the prevalence, in a control group of children, of nasopharyngeal colonisation with the pathogens identified.

http://dx.doi.org/10.1016/j.ijid.2014.03.1170

Type: Poster Presentation

Final Abstract Number: 59.009
Session: Diagnosis
Date: Saturday, April 5, 2014
Time: 12:45-14:15
Room: Ballroom

Evaluation of the novel FAplus, FNplus, and PFplus Blood Culture Bottles (BacT/Alert) – Performance with conventional and MALDI-TOF protocols

H. Seifert[1], T. Hoppe[2], U. Aurbach[2], H. Wisplinghoff[1]

[1] *University of Cologne, Cologne, Germany*
[2] *laboratory medicine cologne, Cologne, Germany*

Background: Bloodstream infections are an important cause of morbidity and mortality. To avoid adverse clinical outcome, early and adequate antimicrobial therapy is important. Fast and accurate diagnostic methods are an essential part in guiding treatment for bloodstream infections. Novel formulations of the BactAlert blood culture media using adsorbent polymeric beads have become available throughout the past year aiming to replace the current charcoal based formulations.

Methods & Materials: This study was conducted to evaluate the performance of the new BacT/Alert blood culture media (FAplus (aerobic), FNplus (anaerobic), and PFplus (pediatric)) using a conventional protocol as well as a standardized protocol to perform matrix-assisted laser desorption/ionisation time-of-flight mass spectrometry (MALDI-TOF MS) directly from the positive bottles. Comparison was made to the respective current media (FA FAN (aerobic) FN FAN (anaerobic), and PF FAN (pediatric)) using standardized inoculation with human blood and 15 of the most commonly encountered pathogens including gram-positive and gram-negative, anaerobic and anaerobic bacteria as well as *Candida* spp. in concentrations from 1 to 100 cfu/ml.

Results: Time to positivity averaged 11.8, 13.8, and 13.5 hours in gram-negatives and 12.3, 13.5, and 13.5 hours in gram-positives (FAplus, FNplus and PFplus, respectively). When novel and current media were compared, time to positivity with the plus media was a mean of 0.58 and 0.26 hours shorter in gram-negatives and gram-positives, respectively. Detection of gram-positive pathogens in microscopy was faster, mainly due to the substitution of activated charcoal (FAN media) with adsorbent polymeric beads (plus media). Using the same protocol, there were no significant differences with regard to MALDI-TOF performance or results, suggesting that the addition of adsorbent polymeric beads does not have a negative effect on direct processing or MALDI-TOF.

Conclusion: In our study performance of the FAplus, FNplus, and PFplus media was comparable to the currently used FA FAN, FN FAN, and PF FAN media when conventional and MALDI-TOF protocols were used.

http://dx.doi.org/10.1016/j.ijid.2014.03.1171