Pathogens identified by Film Array, in numbers

| Pathogen | Frequency |
|----------|-----------|
| Entero- | 35 |
| Salmonella | 30 |
| Streptococcus | 20 |
| Staphylococcus | 15 |
| Pseudomonas | 10 |
| Klebsiella | 5 |
| Enterobacter | 2 |
| Escherichia coli | 1 |

Frequency of Enterovirus

| Month | Frequency |
|-------|-----------|
| January | 2 |
| February | 3 |
| March | 4 |
| April | 5 |
| May | 6 |
| June | 7 |
| July | 8 |
| August | 9 |
| September | 10 |
| October | 11 |
| November | 12 |
| December | 13 |

Clinical diagnosis

- aseptic meningitis
- pyogenic
- meningitis/epidural abscess
- septic cerebral venous thrombosis
- meningitis
- Traumatic brain injury

CSF bacterial culture

Aerococcus viridans
Streptococcus species
Micrococcus luteus
Aeromonas salmonicida
Pseudomonas species
Klebsiella Pneumoniae
Klebsiella Pneumoniae

Disclosures. All authors: No reported disclosures.

1399. A Prospective Cohort Study Regarding the Impact of BioFire® FilmArray® Meningitis/Encephalitis (FA) Panel in Children with Suspected Central Nervous System Infection

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Background. Rapid detection of pathogens involved in central nervous system (CNS) infections could be important for the optimal patient management and overall hospitalization cost. The aim of the study was to evaluate the possible benefits with the use of BioFire® FilmArray® meningitis/encephalitis (FA) panel in children with suspected CNS infection.

Methods. A prospective cohort study, was performed on children admitted to a tertiary pediatric hospital, over a period of 1 year (April 2018–April 2019), with possible CNS infection and cerebrospinal fluid (CSF) pleocytosis (>15 cells/mm³). For each child that FA was used for the diagnosis, an age-matched control was selected, and separate molecular CSF microbiological tests were sent according to pediatrician’s discretion. Conventional microbiological procedures were performed in all children. Length of hospital stay, duration of antimicrobials, and total cost of hospitalization were compared between groups. FA enables rapid automated cerebrospinal fluid testing for 14 common viral, bacterial and yeast pathogens that cause CNS infections. The cost was estimated according to ICD-10 diagnosis standard cost, adding additional daily hospitalization cost, FA or other molecular microbiological tests costs.

Results. A total of 142 children were included in the study (71 cases). The median age of cases and controls was 2.5 months (IQR: 1–7.2) and 2 months (IQR: 0.7–3.6) respectively (P = 0.157). A pathogen was detected in 38/71 (53.5%) children with the use of FA and in 16/71 (22.5%) in the control group (P < 0.001). In aseptic meningitis cases a virus was detected in 27/60 (45%) and in 11/64 (16.4%) controls (P < 0.001). Length of stay in cases with meningitis was 5 days (IQR: 4–8) and 8 (IQR: 6–10) respectively (P < 0.001). The median duration of antimicrobials in cases was 4 days (IQR: 2–5.7) and 7 (IQR: 5–10) respectively (P < 0.001). The hospitalization cost was calculated in cases and controls 1,042 (IQR: 932–1,372$) and 1,522 (IQR: 1,301–1,743$) respectively (P < 0.001).

Conclusion. The use of FA was able to reduce significantly the hospitalization days and the total cost comparing to the control group in children with suspected CNS infection.

Disclosures. All authors: No reported disclosures.

1400. Impact of a Multiplex Polymerase Chain Reaction Meningitis/Encephalitis Panel and Antimicrobial Stewardship Bundle on Antimicrobial Use in Patients with Suspected Meningitis or Encephalitis

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Background. Optimal treatment of meningitis relies on prompt diagnostic evaluation and initiation of appropriate antimicrobials. The meningitis/encephalitis panel (MEP) is a multiplex rapid polymerase chain reaction, with the ability to detect 14 community-acquired pathogens in 1 hour. The purpose of this study was to evaluate impact of the MEP on de-escalation of antimicrobials in adult inpatients with suspected meningitis at a large community teaching hospital.

Methods. This single-center retrospective quasi-experimental pre/post study included adults admitted for >48 hours and initiated on antimicrobial therapy for suspected meningitis. Those with healthcare-associated meningitis, immunosuppression, initiation of antimicrobials >36 hours prior to lumbar puncture (LP), and use of antimicrobials for another indication were excluded. The pre-group included patients admitted prior to MEP implementation. The post-group included patients with the MEP performed. An antimicrobial stewardship bundle consisting of a meningitis order set, provider education, and use of a real-time meningitis alert in clinical decision support software was also implemented in the post-group. The primary outcome was percentage of patients experiencing antimicrobial de-escalation >48 hours after LP. Secondary outcomes included time to de-escalation, total duration of antimicrobial therapy (DOT), and hospital length of stay (LOS).

Results. A total of 45 patients were included in the study (23 pre-group and 22 post-group). Baseline characteristics were similar between groups. The percentage of patients experiencing de-escalation of antimicrobials ≤48 hours after LP increased by 44% in the post-group (82% vs. 38%, P = 0.005). The overall median time to de-escalation of antimicrobials decreased by 35 hours [11.1 (IQR 5.6, 17.6) vs. 46.1 (IQR 18.4, 66.5); P = 0.002] and the median time to de-escalation after LP decreased by 38 hours [13.6 (IQR 8.3, 20.3) vs. 51.6 (IQR 44.2, 69.8); P < 0.001]. No statistically significant difference in hospital LOS or total DOT was seen.

Conclusion. Implementation of the MEP and antimicrobial stewardship bundle increased the percentage of patients de-escalated in 48 hours and decreased the time to de-escalation. However, this did not impact the total DOT or hospital LOS.

Disclosures. All authors: No reported disclosures.