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ABSTRACT BOOK

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EVALUATION OF BIO-SPEEDY MENINGITIS/ENCEPHALITIS PANEL FOR THE ETIOLOGICAL DIAGNOSIS OF CENTRAL NERVOUS SYSTEM INFECTIONS: A SINGLE-CENTER STUDY.

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BACKGROUND-AIM

The Bio-Speedy Meningitis/Encephalitis (ME) (Bioeksen, Istanbul, Turkey) panel is a multiplex PCR test aiming for the simultaneous, rapid (~1-h) detection of 17 pathogens (E. coli K1, H. influenzae, L. monocytogenes, N. meningitidis, S. pneumoniae, S. agalactiae, CMV, Enterovirus (EV), HSV-1 and 2, HHV-6, HPeV, VZV and Cryptococcus gatti/neoformans) from cerebrospinal fluid (CSF) specimens for in vitro diagnosing of CNS infections.
This study evaluated the Bio-Speedy ME panel's performance in a single center.

METHODS

This study included CSF specimens of 88 patients with suspected CNS infection between June 2022 and March 2023. The results of the Bio-Speedy panel were compared with gram staining/bacterial culture and the FTD Viral meningitis Kit (Fast Track Diagnostics Ltd, Luxemburg) (CE-marked for IVD use in the EU) (HSV-1, HSV-2, VZV, EV, Mumps virus, HPeV). Nucleic acid purification of viruses was performed with EZ1&2 Virus Mini Kit (Qiagen, Germany) in the EZ1 system.
Test results supported by clinical/radiologic findings and CSF cell count [UF-5000 flow cytometry system (Sysmex, Japan)] were interpreted as true positive (TP), and inconsistent results were interpreted as indeterminate positives in terms of clinical diagnosis (IP).

RESULTS

At least one pathogen was detected by at least one method in 16 (18.2%) samples, of which 12 (13.6%) were considered TP.
Nine of them [VZV (n=3), EV (n=1), S.pneumoniae (n=2), N. meningitides (n=1), H. influenzae (n=1)] were detected by Biospeedy panel, four of them were detected by FTD and also BioSpeedy panels [VZV (n=3), EV (n=1)]. One bacteria grew only culture (S.pyogenes), and two viruses detected only by FTD panel (HSV-2 and Mumps virus).
A total of five pathogens [S.pneumoniae (n=2), HHV-6 (n=2), HHV-7 (n=1)] detected only by Biospeedy were considered IP.

CONCLUSIONS

The Biospeedy molecular diagnostic panel includes a wide range of possible pathogens on a broad scale to avoid false negative results and ensure an accurate diagnosis. However, test results should interpret or confirm according to clinical and laboratory examination -especially bacteria- to avoid method-induced IP results and unnecessary treatment applications.

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CERTIFICATE

This certificate testifies that

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