



## 15TH ANNUAL MEETING OF THE EUROPEAN SOCIETY FOR CLINICAL VIROLOGY AND JOINT MEETING WITH THE EUROPEAN SOCIETY FOR VETERINARY VIROLOGY

### POSTER PRESENTATIONS 8. VIRAL INFECTIONS OF THE CNS

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#### VIRAL INFECTIONS OF THE CENTRAL NERVOUS SYSTEM - USE OF A MULTIPLEX PCR MICROARRAY FOR ITS DIAGNOSIS

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**Objectives:** Viruses are the main etiologic agent of central nervous system (CNS) infections as encephalitis and aseptic meningitis. A rapid molecular diagnosis with a broad panel for CNS viral agents is recommended as a helpful tool for clarifying the aetiology of infection and to improve the therapeutic management of patients.

The aim of this study is to recognize the main neurotropic viruses in CNS samples from patients presenting neurologic symptoms, by a multiplex PCR approach.

**Methods:** From September 2011 to April 2012 a total of 254 cerebrospinal fluid (CSF) specimens from patients presenting neurologic symptoms were analysed. Viral DNA and RNA were isolated using the automated NucliSens® easyMAG™ (bioMérieux). A multiplex RT-PCR DNA microarray (CLART® ENTHERPEX, Genomica) was used to simultaneously detect and identify the eight human herpesviruses (HSV-1, HSV-2, EBV, CMV, VZV, HHV-6, HHV-7 and HHV-8) and the human enteroviruses.

**Results:** Overall, 52 patients (median age 44 years, range from 8 months to 88 years) had a positive CSF sample (20.5%), either for a single agent (n=42, 80.8%), or for two different agents (n=10, 19.2%). Among samples with single agent, EBV was the most frequently detected (n=20, 47.6%), followed by HSV-1 (n=8, 19.0%) and HHV-7 (n=6, 14.3%). In the 10 samples where two viruses were simultaneously detected, the main combinations were EBV with VHH7 and EBV with CMV (3 each, 30%). Although EBV was in general the most frequently found agent, it occurred mostly in immunosuppressed patients (HIV-positive), suggesting that these results should be interpreted with caution and clinically framed. Interestingly, the majority of HHV-6 and HHV-7 positive samples were from young non-HIV patients (median age 22.5 years), in contrast to the other herpes viruses which were more common in older patients (median age 50.3 years).

**Conclusion:** This multiplex PCR microarray showed to be a valuable molecular diagnostic tool for single and mixed virus infections of the CNS. The role of HHV-6 and HHV-7 in neurological disorders in young apparently immunocompetent hosts needs to be further investigated.

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