

Poster presentation

## Enterovirus and herpes virus family as the etiologic agents of children and adult meningitis

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### Background

Meningitis is a central nervous system infection with a world-wide distribution. Approximately 90% of the cases are due to the group of the enterovirus (coxsackievirus or echovirus) with several different serotypes. Enterovirus can be geographically confined; some serotypes can be endemic, with a gradual mutation year to year. Meningitis by herpes simplex virus (HSV) is less frequent. Meningitis is responsible by a significant number of tertiary care healths attending in the town of Curitiba, Paraná, Brazil. Around 50% of the hospital admissions by meningitis, in the hospitals of Curitiba, are attributed to the meningitis. The objective of this study was the characterization of the etiologic agents of viral meningitis.

### Materials and methods

It was studied 460 cerebrospinal fluid (CSF) samples, from 3 hospitals of the Curitiba city (south of Brazil), in the period of July of 2005 to June of 2006. The CSF samples were collected by lumbar puncture in sterilized tubes, RNase and DNase free. The samples were sent to the virology lab of the Hospital de Clínicas, UFPR, under cooling in the maximum period of 24 hours, with the epidemiological form. All CSF samples were from patients with clinical suspicion of meningitis with cellular and biochemistry characteristics of viral meningitis (increase of cells with predominance of lymphocytes, normal glucose and lactic acid  $\leq 3.5$  mmol/L). The PCR methodology identified the viruses: enterovirus; HSV-1, HSV-2, CMV,

EBV, HHV-8 (PCR pan Herpes I) and VZV, HHV-6A, HHV-6B, HHV-7 (PCR pan Herpes II).

### Results

Age interval varied from 3 days to 85 years, with a predominance of samples in the age group of 1 to 8 years, 60% were male. It was observed a greater number of samples collected during fall. Of 460 CSF samples included in the study 59 (12.8%) were positive; of these 48 (82%) for enterovirus, 7 (12%) for HSV, 2 (3%) for EBV and 2 (3%) for HHV6. CMV, VZV, HHV-7, HHV-8 was not found in the samples studied.

### Conclusion

Enterovirus was the most frequent virus, in accordance with was described in the literature. The standardization of the molecular biology technique confirms the validity of PCR method for detection of RNA enterovirus and DNA herpesvirus in CSF. It is rapid and sensitive for the detection of etiologic agent in CSF samples with suspicion of viral meningitis.