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P0811 Arboviruses in aseptic meningitis in central Tunisia: a multi-centre study

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Background: Arboviruses are some of the major causes of central nervous system (CNS) infections in the Mediterranean basin. In Tunisia, data on arboviruses-related CNS infections are limited. The aim of this study was to identify the role of arboviruses in the occurrence of aseptic meningitis in central Tunisia.

Materials/methods: The study was performed in the five referral university hospitals of Central Tunisia during a 5-month period (July-November 2017). Clinical samples (serum**/**CSF) were prospectively collected from adult patients admitted for aseptic meningitis of unidentified aetiology. All CSF was bacterial pathogen-free, PCR assays for Herpes simplex virus (HSV1/2) and Enteroviruses were presumed non-reactive. Commercial serological assays were employed to screening in serum the presence of IgG and IgM arboviruses:

- *Flaviviridae* family, genus Flavivirus: West Nile virus (WNv), Tick-borne encephalitis virus (TBEv) and Usutu virus (USUv),

- *Bunyaviridae* family, genus Phlebovirus: Toscana (TOSv) and Rift Valley fever virus (RVFv)/ genus Nairovirus: Crimean-Congo haemorrhagic fever virus (CCHFv).

Arboviral-RNAs were investigated in serum-CSF pairs using multiple RT-PCR assays.

Results: Thirty one patients were enrolled (mean age: 31 years, Sex-ratio= 0.8). Twenty cases (64.5%) had meningitis and 11 (35.5%) meningoencephalitis. All sera and CSF were negative for RT-PCR arbovirus. WNv-IgM was reactive in 4 sera (12.9%), associated to positive WVv-IgG in 2 cases. Seroneutralization tests for IgG/IgM reactive samples are in progress. Simultaneous IgG and IgM reactivity was identified in one case for TBEv and in 2 cases for TOSv. No CCHFv and RVFv seroreactivity was detected. Five patients (16.2%), with simultaneous IgG and IgM reactivity, were considered as probable arboviral infections. A favorable outcome without sequelae was noted in all patients. In addition, a past arbovirus-contact (exclusively IgG reactivity) was identified in 16 cases (51.6%): TOSv was the most arbovirus detected (19.3%), followed by WNv (12.9%) and USUv (9.7%). No CCHFv and RVFv past contact was detected. Increasing age and rural area was significantly associated with past arbovirus contact.

Conclusions: Our study highlights the role of WNv, TBEv and TOSv in the occurrence of aseptic meningitis of unknown etiology in central Tunisia. These results should be supported by further studies in other regions.