

TÍTULO: GENETIC AND BIOLOGICAL CHARACTERIZATION OF DENGUE VIRUS SEROTYPE 2 (STRAIN BEL 61082) ISOLATED FROM A TRANSVERSE MYELITIS CASE: IN VIVO AND IN VITRO STUDIES.

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Introduction: Dengue fever (DF) is current reported throughout tropical areas with occurrence of mild and severe forms of the disease: dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS). The causative agent, dengue virus (serotypes 1-4) is transmitted mainly by the mosquito vector *Aedes aegypti*. The vector dispersal and the human movement among different geographic areas are the most important factors that provide virus spreading, and in consequence, large epidemics explosions in areas where dengue have been not previously reported. These factors also could be related with the increasing of severe disease cases.

Material and Method: Dengue 2 virus (DENV2) strain BEL 61082, isolated in Belém, Pará, Brazil in the 2000 year from a patient with symptoms of transverse myelitis, dengue 2 virus New Guinea C strain, dengue 2 virus 44-2 strain (DF) and yellow fever virus (YFV) 17D strain. The DENV2 was genetically characterized by the nucleotide sequencing of the entire structural genomic region; neurovirulence studies in suckling mice have been also conducted. The susceptibility of primary neuron cultures and glial cell lines was also studied.

Results: Mice neurovirulence was only apparent with the DENV2 neuroadapted New Guinea C strain. Genomic RNA of the strain BEL 61082 and DENV2 New Guinea C could be detected by RT-PCR in mouse brain suspensions.

Conclusion: Experimental evidence of apoptosis event was obtained after infection of primary cultures of neurons and glial cells with New Guinea C and BEL 61082 viruses. Nucleotide sequencing of the studied DENV2 strain revealed a significant change in the M protein at the amino acid 28 position, a pro-apoptotic region. Further studies need to be carried out in order to verify if the M protein changes observed to the strain BEL 61082 is implicate in apoptotic events.

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