

Diagnosis criteria of dengue encephalitis

Critério diagnóstico de encefalite por dengue

Neurotropic viruses are the most important cause of encephalitis worldwide, although there is considerable geographical variation in the specific agents. In endemic areas, dengue has been one of the leading causes of viral encephalitis¹. Its diagnosis should be based on clinical criterion supported by laboratorial tests. The study by Carod-Artal and colleagues² published in *The Lancet* in 2013 proposed a panel in which dengue encephalitis was defined by the following criteria: 1) Dengue central nervous system involvement, AND; 2) Presence of dengue virus RNA, IgM, or NS1 antigen in CSF, and 3) CSF pleocytosis without other neuroinvasive pathogens.

It is known that the absence of pleocytosis in the CSF has been described in more than 5% of viral encephalitis cases, especially in the early infectious illness, including in dengue^{3,4}. In addition, we should be careful considering the different laboratorial methods. The detection of specific IgM antibodies in CSF had high specificity but low sensitivity. This marker may confirm but not exclude the neurological manifestations associated with dengue. In general these antibodies are not detected before the seventh day of the infection onset. On the other hand, PCR is usually

positive for dengue virus at the first five days of infection in serum and/or CSF⁵. Based on these findings, the best tool for the diagnosis of neurological manifestations associated with dengue infection may be represented by the combined use of PCR and immunological tests in serum/CSF. Considering these data we suggest that for the definition of dengue encephalitis:

- 1) presence of fever;
- 2) acute signs of cerebral involvement such as altered consciousness or personality and/or seizures and/or focal neurological signs⁵;
- 3) reactive IgM dengue antibody, NS1 antigen or positive dengue PCR on serum and/or cerebrospinal fluid. The choice of one of these laboratorial methods should be performed according to the time of infection onset⁴;
- 4) exclusion of other causes of viral encephalitis and encephalopathy. We believe that the above criterion of dengue encephalitis could reduce the number of cases that may have been underestimated.

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Conflict of interest: There is no conflict of interest to declare.

Received 25 November 2013; Accepted 16 December 2013.