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Dengue and dengue hemorrhagic fever among adults: clinical outcomes related to viremia, serotypes, and antibody response.

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BACKGROUND: Clinical manifestations of dengue vary in different areas of endemicity and between specific age groups, whereas predictors of outcome have remained controversial. In Brazil, the disease burden predominantly affects adults, with an increasing trend toward progression to dengue hemorrhagic fever (DHF) noted. METHODS: A cohort of adults with confirmed cases of dengue was recruited in central Brazil in 2005. Patients were classified according to the severity of their disease. Associations of antibody responses, viremia levels (as determined by real-time polymerase chain reaction [PCR]), and serotypes (as determined by multiplex PCR) with disease severity were evaluated. RESULTS: Of the 185 symptomatic patients >14 years of age who had a confirmed case of dengue, 26.5% and 23.2% were classified as having intermediate dengue fever (DF)/DHF (defined as internal hemorrhage, plasma leakage, manifested signs of shock, and/or thrombocytopenia [platelet count, < or =50,000 platelets/mm3]) and DHF, respectively. The onset of intermediate DF/DHF and DHF occurred at a late stage of disease, around the period of defervescence. Patients with DHF had abnormal liver enzyme levels, with a >3-fold increase in aspartate aminotransferase level, compared with the range of values considered to be normal. Overall, 65% of patients presented with secondary infections with dengue virus, with such infection occurring in similar proportions of patients in each of the 3 disease category groups. Dengue virus serotype 3 (DV3) was the predominant serotype, and viremia was detected during and after defervescence among patients with DHF or intermediate DF/DHF. CONCLUSIONS: Viremia was detected after defervescence in adult patients classified as having DHF or intermediate DF/DHF. Secondary infection was not a predictor of severe clinical manifestation in adults with infected with the DV3 serotype.

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