Demographic and hematological profiles in a long-term dengue epidemic: implications for epidemiological management and conducts

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Dengue fever (DF) epidemics may be extended for a long period (2-6 months). In medium-sized cities (from 100.000 to 250.000 inhabitants) of São Paulo State, Brazil, after reaching the incidence of 150 cases/100,000 inhabitants, dengue diagnosis is made by clinical and epidemiological criteria. During this period, occurrence of other seasonal infectious diseases with similar DF clinical signs and overcrowding of health care facilities are the principal drawbacks. In order to find specific markers to distinguish DF and to prevent the severe dengue hemorrhagic fever (DHF), this study aimed to confirm DF diagnosis by serological test and to assess demographic and hematological profiles of patients classified by clinical criteria during the 2007 outbreak in Marilia City, northwestern of São Paulo State. From March to June 2007, 456 patients diagnosed with DF by clinical criteria were submitted to a serologic test for non-structural 1 (NS1) Dengue virus (DENV) antigen. Individual outcomes of such test were used in comparative analysis of demographic (gender, age) and hematological (leukocyte and platelet counts, percentage of atypical lymphocytes) profiles. Temporal patterns were evaluated by subdivision of data according to time of the first attendance, using the recorded variables as predictors of DENV infection in logistic regression models and ROC curves. Serological detection of DENV was positive in 70.6%. Leukopenia and thrombocytopenia were the most important factors in predicting infection (median: DENV + = 3,715 cells/mL and DENV - = 6,760 cells/mL, and median: DENV + = 134,896 cells/mL and DENV - = 223,872 cells/mL, respectively). Demographic and hematological data exhibited a temporal pattern maintained during the outbreak period. Maintenance of demographic and hematological profiles over the time of a DF outbreak revealed a conservative pattern at early stages of the epidemic wave, which can be used to improve its management for all the remaining period.

Keywords: clinical diagnosis, demography, dengue epidemics.

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