Mannose-Binding Lectin (MBL) levels and the development of thrombocytopenia in patients with dengue

Teixeira, V.G.S.¹,²; Mola, C.¹,²; Carmo, R.F.¹,²; Vasconcelos, L.R.S¹,²; Baptista, P.N.²; Cordeiro, M. T.³; Cavalcanti, M.S.M.¹,²; Moura, P.¹,²

¹Institute of Biological Sciences, ICB-UPE, PE; ²University of Pernambuco, UPE, PE; ³Research Center Aggeu Magalhães/FIOCRUZ, PE, Brazil.

Dengue is an important arbovirosis and in Brazil it affects mainly young adults, but the number of severe cases in children has increased. Innate immunity, involving complement system (CS), may be involved in dengue immunopathology, influencing, for example, the occurrence of thrombocytopenia. Mannose-Binding Lectin (MBL) activates CS by recognition of pathogen-associated molecular pattern of Dengue virus (DENV). Then, the MBL levels could influence disease progression and has been associated with severity of dengue. The objective of this study was to evaluate the association of serum MBL with age (<15/15-40/>40 years), presence or absence of thrombocytopenia (≤100,000/>100,000 cells/µL), days of symptoms and types of infection (primary or secondary) in patients infected with DENV. It was used an ELISA that detected high molecular weight oligomers of MBL in the serum of 227 patients with positive serology for dengue, attended at HUOC/UPE in 2010, and data were analyzed using nonparametric tests. The results showed that MBL levels were higher in serum at the 3rd day of symptoms and decreased on the 8th day (p = 0.0347), while the platelet count has peaked on the 2nd day, with lower median on the 9th day (p = 0.0176). There were no association between MBL levels and type of infection (p = 0.4948), age (p = 0.8131), or groups with or without thrombocytopenia (p = 0.8133). The recognition of DENV by MBL and complement activation could be influencing the decrease in platelet count. However, further studies are needed to unravel the role of MBL in DENV infection.

Word Keys: Age, complement, Dengue, MBL, thrombocytopenia.