Dengue is a viral disease transmitted by the mosquito Aedes aegypti, and whose etiological agent is dengue virus (DENV), a member of the Flaviviridae family. Evidences support that liver is as an important site of viral replication, which causes hepatic damage culminating with metabolic alteration in the infected patients. Besides, the plasma proteins and clotting factors secreted by the liver can be potentially related with hemostatic disorders observed in dengue disease. Previously, our group showed that hepatic cell infection with DENV alters the secretion alpha-enolase, a glycolytic metalloenzyme, also described as a plasminogen receptor that modulates its activation. This result led us to hypothesize an association between the secretion of alpha-enolase and the disease progress to the severe forms. Here we analyze the alpha-enolase levels in the plasma from DENV infected patients with different clinical manifestations and healthy donors. Samples of 47 patients of Hospital Naval Marcilio Dias (RJ) were analyzed. Plasma samples were treated for albumin depletion using Cibacron Blue 3GA resin. Subsequently, they were submitted to SDS-PAGE followed by Western blot for alpha-enolase detection. The results supported the initial hypothesis, demonstrating that compared to healthy donors alpha-enolase plasma levels were increased in about ~10% in patients with dengue fever, ~20% in patients dengue with alarming signs and ~30% in patients with the most severe form of disease. Variations in plasma alpha-enolase concentration were also associated to patients profile, with old-aged patients and those who presented other inflammatory diseases exhibiting lower and higher levels of the circulating protein, respectively. Therefore, we propose that alpha-enolase may be a marker of disease prognosis.

Keywords: alpha-enolase; dengue virus; disease severity