

ABSTRACT

In dengue viral infection the overproduction of matrix metalloproteinase-2 (MMP-2) and MMP-9 result plasma leakage through degradation of vascular endothelial. To determine whether acute and convalescent phases of MMP-2 and MMP-9 serum are associated with various clinical spectrum of viral dengue infection, and with acute phase hematocrite. The MMP-2, MMP-9, and hematocrite were measured on 80 subjects consisted of 26 with DF, 29 with DHF, and 25 with DSS Besides the primary and secondary infection were recorded as confounding factor. This was an analytical observational study with a cross sectional design and repetitive measure admitted to Hasan Sadikin General Hospital from February 2010 to December 2012. The association between MMP-2 and MMP-9 serum with clinical spectrum of dengue viral infection was analyzed using Mancova repeated measure, while the association of MMP-2 and MMP-9 serum with acute phase hematocrite was analyzed using linear regression. The result showed that MMP-2 serum in acute phase was lower than convalescent phase in all clinical spectrum of dengue viral infection, respectively DF (681.06; 697.90 ng/mL), DHF (642.431; 736.32 ng/mL), DSS (506.02; 719.57 ng/mL) ($p < 0.005$). The MMP-9 serum in acute phase was lower than convalescent phase in all clinical spectrum of dengue viral infection, respectively DF (95.09; 253 ng/mL), DHF (125.33; 277.70 ng/mL), DSS (160.40; 362.50 ng/mL) ($p < 0.001$). The increase of MMP-2 and MMP-9 serum in acute phase were followed by the decrease of acute phase hematocrite, respectively $p = 0.032$ and $p = 0.024$.

The conclusion of this study shows that MMP2 and MMP-9 serum are significantly associated with clinical spectrum of dengue viral infection. The MMP-2 and MMP-9 serum in acute phase are associated with acute phase hematocrite.

Key words: *Dengue virus, hematocrite, matrix metalloproteinase, plasma leakage*