

Inflammatory mediators in patients with Dengue infection: role in early endothelial damage

Silvana Vielma, MD, PhD.

Departamento de microbiología e inmunología, Universidad de Los Andes. Mérida. Venezuela.

[CONFERENCIA]

Abstract

Several mechanisms have been proposed to explain the pathogenesis of dengue virus (DENV) infection. One of the most important finding is the production of pro-inflammatory cytokines as responsible of endothelial cells activation, plasma leakage and subsequently, disease severity.

Methods: Our aim was to determined levels of inflammatory mediators (IL-8, TNF- α), soluble cell adhesion molecules (sICAM-1 and sVCAM-1) and soluble lymphocyte activation markers (sIL-2R α , sTNF-RII/p75) during the course of DENV infection. Serum samples from fifty-two patients with confirmed DENV infection were collected during the acute (0-3 days after fever onset) and critical/recovery (4-7 days after onset) phases of the diseases. As controls, sera from non-febrile individuals were included. Patients were classified as dengue without warning signs (DwoWS), dengue with warning signs (DwWS) and severe dengue (SD).

Results: Levels of sIL-8 and sTNF- α were significant higher in cases of DwWS during the critical phase of the disease. A significant increase of sICAM-1 and sVCAM-1 were detected during the critical phase of the disease compare with controls, however, the highest levels of sVCAM-1 were observed during the acute phase of SD. Finally, sIL2-R showed a significantly increased during the acute phases of SD, while sTNF-RII/p75 was elevated in DwWS during the critical stage of infection.

Conclusion: sIL2-R and sVCAM-1 may be early markers of lymphocyte and endothelial damage in the acute phases of DENV infection in patients with SD.

Keywords: Pro-inflammatory cytokines, Endothelial damage, sICAM-1, sVCAM-1, sIL-2R α , sTNF-RII/p75, dengue without warning signs (DwoWS), dengue with warning signs (DwWS) and severe dengue (SD).