

OTR9 - Identification of IgG epitopes to plasminogen in patients with dengue: absence of crossreactivity to dengue protein E

Salvatore G De-Simone^{1*}; Luciano P Gomes²; Katia Felisbino²; Thatiane Santos De-Simone²

1 - CDTS/FIOCRUZ;

2 - IOC/FIOCRUZ.

Introduction:

Plasminogen has been hypothesized as one cross-reactive factor involved in the pathogenic mechanism of dengue hemorrhagic fever (DHF). Its amino acid sequence has only 4% homology with dengue viruses (DENV) envelope protein (E), a viral attachment protein with hemagglutination and fusion activity.

Objective:

The objective of the present study was to determine the percentage of plasminogen positive patients in a Brazilian population with dengue and identify the crossreactive epitopes.

Methodology:

The presence of antibodies anti-plasminogen in 51 patients with dengue and 30 blood bank donor was investigated by enzyme-linked immunosorbent assay. Those positive were pooled and used to identify the plasminogen protein E cross-epitopes by the SPOT synthesis microarray peptides and bioinformatics tools.

Results:

IgG anti-plasminogen were positive in 16% of the dengue-positive sera and none of blood bank donor was positive. Sixteen epitopes were detected in the plasminogen by SPOT synthesis but none of them correlated with protein E or any other DENV protein sequences.

Conclusion:

We conclude and corroborate previous works that a small but significant percentage of patients with dengue presented antibodies anti-plasminogen. In addition we showed that this response does not appear due to crossreactivity

with DENV proteins as hypothesized and therefore is not the reason of DHF. The presence of these antibodies antiplasminogen in patients with dengue is fortuity and might result from other autoimmune disease.

Keywords: dengue, pathogenicity, epitopes, plasminogen