SERUM LEVELS OF IL-6 AND ITS SOLUBLE RECEPTOR, TNF-α AND CHEMOKINE RANTES IN SCORPION ENVENOMED CHILDREN: THEIR RELATION TO SCORPION ENVENOMATION OUTCOME.

Abdel-Haleem A. Abdel-Haleem a, Abdel-Raheim M.A. Meki b-*, Hanan A. Noaman c, Zaghloul T. Mohamed d

Abstract:

During the present study, 30 children in Upper Egypt (less than 12 years old) were admitted to Pediatric Intensive Care Unit because of scorpion envenomation. They were compared with 20 apparently normal children of matching age and sex as controls. The victims and controls were subjected to complete clinical examination and full blood picture. The serum levels of interleukin-6 (IL-6), soluble IL-6 receptor (sIL-6R), regulated upon activation normal T cells expressed and secreted (RANTES) and tumour necrosis factor-α (TNF-α) were determined once for the controls and twice for the victims, the first sample on admission and the second sample after 24 h. All victims showed significantly higher mean values of IL-6, sIL-6R, RANTES, TNF-α, and leucocytic count both on admission and on the follow up when compared with controls. According to the clinical manifestations of envenomation, 40% of the victims had a mild envenomation manifestation, while 60% of them had severe manifestations. The severely envenomed children showed significantly higher mean values of IL-6, sIL-6R, RANTES and leucocytic count both on admission and on the follow up samples when compared with the mild cases. The non-survival victims (five victims) showed significantly higher mean values of IL-6, sIL-6R, TNF-α, RANTES and leucocytic count on the following up samples in comparison to the survivals. Furthermore, those fatal cases showed a non-significant decline in the serum levels of IL-6, sIL-6R, TNF-α, RANTES and leucocytic count on the following up samples, while the survivals showed a significant decline in the serum levels of these parameters on the following up samples. In conclusion, these data revealed that IL-6, sIL-6R, TNF-α and chemokine, RANTES are involved in the pathogenesis of scorpion envenomation and correlated with its severity. © 2005 Elsevier Ltd. All rights reserved.

Keywords:

Scorpion envenomation; Children; Cytokines; IL-6; RANTES

Published In:

Toxicon, 47, 437-444