Serum cortisol in dengue and dengue hemorrhagic fever: is there any clinical implication?

Beuy Joob1*, Viroj Wiwanitkit2,3,4
1Sanitation 1 Medical Academic Center, Bangkok, Thailand
2Hainan Medical University, Haikou, China
3Joseph Ayobabalola University, Ilaje–Arakeji, Nigeria
4Faculty of Medicine, University of Nis, Nis, Serbia

1. Introduction

Dengue is an important mosquito–borne viral infection. This infection can be seen in many tropical countries and caused many infectious cases annually. The biochemical profile change during infection is very interesting. Here, the authors studied on a rarely mentioned parameter, serum cortisol. The levels of serum cortisol in the cases with dengue and dengue hemorrhagic fever were studied, reported and discussed.

2. Materials and methods

This work is a descriptive study. Overall 100 patients, 72 with dengue and 28 with dengue hemorrhagic fever were studied. For each case, after routine laboratory study, the left serum was further analyzed for the serum cortisol. The levels of serum cortisol in the cases with dengue and dengue hemorrhagic fever were studied, reported and discussed.
3. Results

The average serum cortisol levels in the patients with dengue and dengue hemorrhagic fever are equal to (646.2 ± 65.4) nmol/L and (844.6 ± 45.2) nmol/L respectively. The average serum cortisol level in the patients with dengue hemorrhagic fever is significantly higher than that of the patients with dengue fever (P<0.05).

4. Discussion

Dengue infection is still the public health threat of the world. This disease can manifest in either mild form which is called dengue fever or severe form with hemorrhagic complication which is called dengue hemorrhagic fever[5]. During infection, there are several pathophysiological changes, especially in hematological system. Focusing on the biochemical parameters, there are few reports on it.

Focusing on the cortisol, which is an important hormone, there are some reports on its level in course of dengue infection[6,7]. Myo–Khin et al. studied serum cortisol in dengue patients and reported “no cortisol insufficiency in cases of dengue hemorrhagic fever during acute and convalescent stages of illness”. In our work, we found that the average serum cortisol level in the patients with dengue hemorrhagic fever in our study was higher than that of the patients with dengue fever. This might imply that serum cortisol might be a possible biomarker for severe dengue infection. Also, as already observed by Myo–Khin et al.[8], the high level of cortisol in the patients confirmed the uselessness of steroid therapy in dengue[8,9].

The average serum cortisol level in the patients with dengue hemorrhagic fever in our study is higher than that of the patients with dengue fever. This might imply that serum cortisol might be a possible biomarker for severe dengue infection. Nevertheless, further studies are needed for final conclusion.

Conflict of interest statement

We declare that we have no conflict of interest.

References