

OP2.1: INC047

Effectiveness of Methylprednisolone in the Treatment of Dengue Fever: An Observational Study

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Introduction: Dengue infection can cause intense immune activation causing cytokine overproduction and Cytokine Storm Syndrome (CSS). Steroids are known to have an action on CSS. Abolition of overproduction of Cytokines can mitigate manifestations of Dengue hemorrhagic fever (DHF).

Objective: The objective of this study was to study the effectiveness of Methylprednisolone (MP) as a steroid in the treatment of dengue fever.

Methods: Clinical data for this observational descriptive study was collected from the diagnosed adult dengue patients (n=496) admitted to Teaching hospital Peradeniya and Base Hospital, Gampola. Data was collected regarding the use of MP by the physicians for the treatment of dengue fever. A total of 100 dengue patients from Base hospital Gampola were treated with 12 mg of MP by the physicians while providing standard treatment for all the patients from Teaching hospital, Peradeniya. Parameters for the clinical improvement of both groups, those who received MP treatment and those who did not received MP, were compared at the significance level of $p < 0.05$.

Results: Mean age of the participants were 32.96 ± 14.55 years including 223 females (45%) and 273 males (55%). Mean hospital staying duration of patients under MP was 3.89 days and no deaths while it was 4.18 days with three deaths in control group and the mean difference was significant ($p = 0.039$). Patients went under MP had a mean of 2.05 days to increase platelet counts and it was 2.83 days for control group and the mean days of the two groups were significantly different ($p < 0.001$). Time taken to reduce ALT/AST levels did not show any significant differences in both groups.

Conclusions: Results of this observational study shows evidence for effective application of MP in the treatment of DHF. Randomized controlled trials (RCTs) are recommended to establish a strong relationship between steroid treatment and dengue fever.

Keywords: Dengue fever, Methylprednisolone, Effectiveness