

CAN VITAMIN E SUPPLEMENTATION MODIFY THE OUTCOME OF DENGUE FEVER AND DENGUE HAEMORRHAGIC FEVER IN CHILDREN?

P.W.P. Chaturangana¹, D.B.D.L. Samaranayake², V.G. Quieters³, V.P. Wickramasinghe⁴

¹Professorial Paediatric Unit, Lady Ridgeway Hospital for Children, Colombo, ²Department of Community Medicine, Faculty of Medicine, University of Colombo, ³Professorial Paediatric Unit, Lady Ridgeway Hospital for Children, Colombo, ⁴Department of Paediatrics, Faculty of Medicine, University of Colombo

BACKGROUND

Dengue fever, postulated to have directed its tissue injury through oxidative stress, causes considerable morbidity and mortality. Therefore it could be postulated that antioxidants could play a role in its management.

OBJECTIVES

To evaluate the effects of vitamin E supplementation on the clinical course of DF and DHF in 5-12 year old Sri Lankan children.

DESIGN, SETTING AND METHOD

A triple-blind controlled interventional trial was conducted at a tertiary care hospital in Sri Lanka. 5-12 year old children with clinically suspected dengue infection within 84 hours of onset of illness were randomly allocated to receive an age-adjusted dose of vitamin E or placebo. Standard ward management for DF/DHF was provided for both groups. Clinical, biochemical (AST, ALT, serum albumin, serum cholesterol, serum calcium) and haematological (WBC, Platelets, PCV) parameters were monitored regularly throughout the course of the illness. The project was approved by Ethics Committee, Faculty of Medicine, Colombo and Ministry of Health. Trial is registered in the SLCTR (Registration No: SLCTR/ 2015/ 012).

RESULTS

Ninety subjects (treatment arm 43) were analysed after they were confirmed of dengue infection (NS1 or IgM positive). Age distribution and day of presentation were similar in both groups. The temporal distribution patterns of WBC, platelets, serum albumin, serum cholesterol and serum calcium levels were higher, while PCV, serum AST and ALT levels were lower in the treatment group compared to placebo. Day 3 (159.8 Vs 122.9, $p=0.005$) and day 3.5 (136.9 Vs 118.3, $p=0.047$) platelet count, day 3 PCV (38.6 Vs 39.9, $p=0.043$), day 5 ALT (60.2 Vs 96.8, $p=0.053$), day 2.5 cholesterol (4.53 vs 3.79, $p=0.042$) and day 6 calcium (2.41 Vs 2.39, $p=0.035$) were significantly improved in the treatment group. There was no difference in the duration of stay or occurrence of leaking; however the duration of leaking was significantly lower in the treatment group (30.7 Vs 44.2hours, $p=0.046$).

CONCLUSIONS

Treatment with vitamin E shows a significant improvement in clinical, haematological and biochemical parameters in children with DF and DHF.