

OP 1**Sphingosine 1-Phosphate in acute dengue infection**

Gomes PLR¹, Fernando S¹, Fernando RH¹, Wickramasinghe N¹, Shyamali NLA¹, Ogg GS², Malavige GN¹

¹*Faculty of Medical Sciences, University of Sri Jayewardenepura,* ²*Weatherall Institute of Molecular Medicine, Oxford*

Objectives: Many mediators have been implicated in the vascular leak in dengue which is a hallmark of severe dengue. Sphingosine 1-Phosphate (S1P) has been shown to counteract the effects of other mediators that cause increase vascular permeability. Moreover, S1P has been shown to be important in barrier integrity. Therefore, we investigated the role of S1P in acute dengue. This has not been investigated previously.

Methods: Serum samples from acute dengue patients were collected 12 hours apart throughout the course of their hospital stay. S1P levels in 32 patients with acute dengue and 12 healthy individuals were assessed using ELISA.

Results: S1P levels were significantly lower in patients with acute dengue ($p=0.002$) and the levels in patients with DHF were significantly lower than those with dengue fever ($p=0.005$). S1P levels were low throughout the course of illness and S1P levels were $< 0.5 \mu\text{M}$ in 12/23 patients with DHF when compared to 1/9 with dengue fever (DF). Majority of patients with DHF had lower S1P levels especially in the critical phase. Some patients with DF also had quite low levels at certain time points during the course of the illness. The serial S1P levels in patients with both DF and DHF significantly correlated with the serial platelet counts (Spearman's $r = -0.18$, $p=0.04$).

Conclusions: Low levels of S1P in acute dengue infection are likely to contribute to increased vascular permeability. Therefore S1P analogue may have a place in the treatment of acute dengue.