

Value of C - reactive protein in assessing adverse outcomes of dengue fever

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Introduction

Dengue fever is a mosquito borne infection endemic to Sri Lanka. Its incidence is rapidly rising and 7900 cases were reported from January to July 2004. Dengue is associated with many adverse and fatal outcomes including, hypotension, shock and bleeding.

As there are no biochemical markers to predict such adverse outcomes we studied whether measurement of C-reactive protein (CRP), which is a marker of acute phase reaction in early dengue infection could predict an adverse outcome.

Methodology

Thirty seven patients admitted with dengue fever to professorial Medical unit, Teaching Hospital Galle from June to September were included in the study. Dengue fever was diagnosed according to the WHO criteria. CRP value was assessed on the third or the fourth day of fever using a standard method and values equal or over 6mg/L was considered as positive. Patients were followed up to detect thrombocytopenia (platelet counts $<50000/\text{mm}^3$), bleeding manifestations, pleural effusion and whether intravenous plasma was given.

Results and Discussion

Out of 37 subjects six had CRP over 6mg/l. The results were analyzed using Fishers two tailed exact test.

Out of positive CRP group all six had pleural effusions.(100%)whereas CRP negative group only eight had pleural effusions(25.8%) and the difference was statistically significant ($p<0.001$).

Bleeding was present in three (50%) of CRP positive group and ten (32.3%) of CRP negative group. ($p=0.64$), OR=2.1, (95% CI 0.35-12.31)

Platelet count $<50000/\text{mm}^3$ was detected in four (66.7%) in CRP positive group and 16 (51.6%) in CRP negative group. ($p=0.67$), OR=1.87, (95% CI 0.24-11.77)

Plasma was given in three (50%) of CRP positive group and five (16.8%) of CRP negative group. ($p=0.10$), OR=5.2,(95%CI 0.80-33.56).

Conclusion

According to our study a positive CRP at early dengue infection was 100% predictive of development of pleural effusion. CRP positive group had a positive trend towards development of thrombocytopenia, bleeding, and needed plasma therapy. As the sample size was small these differences were not statistically significant.

References

Dahler-Eriksen, B.S., Lassen, J.F., Lund, E.D., Lauritzen, T. and Brandslund, I. *Creactive protein in general practice – how commonly is it used and why?* Scand J Prim Health Care 1997; 15: 35-38.

Editor's note *Dengue – deadly but preventable* The News Letter of the Sri Lanka Medical Association.