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High Sensitivity C-Reactive Protein in Classical Kawasaki Disease

We recruited 20 children of classical Kawasaki disease (KD) in follow up of atleast six months since diagnosis, from the pediatric rheumatology clinic at our hospital in August and September 2007. Twenty healthy age and sex matched children served as controls. Venous blood for the measurement of serum high sensitivity C-reactive protein (hs-CRP) concentrations was collected after an overnight fast and measured with a particle enhanced immunoturbidometric assay consisting of an anti-monoclonal antibody coupled to latex microparticles (Quantia CRP-US). The presence of hs-CRP resulted in an insoluble complex formation giving rise to turbidity, which was measured at wavelength between 505-578 nm and had a functional sensitivity of 0.015 mg/dL. The institutional ethics committee approved the study. Written informed consent was taken from either of the parent.

There were 13 boys with mean age of 4.5 years (range 1-12) and 7 girls with mean age of 2 years (range 0.5-3). Cardiac involvement (coronary dilatation-2, coronary aneurysm-3) was seen in 25% children in the acute phase which resolved on follow up. Intravenous immunoglobulin was received by

75% of the children and all received aspirin. Mean CRP values during acute phase of disease were 90.85 (range 7.4- 384 mg/dL; SD - 80.20); hs-CRP in patients ranged from 0.019- 0.510; SD- 0.226. After 6 months of disease onset, mean hs-CRP value in patients was significantly higher than controls (0.275 mg/dL and 0.085 mg/dL, respectively, $P=0.002$). There was no significant difference comparing the hs-CRP in boys and girls; children with and without history of cardiac involvement; and with and without immunoglobulin therapy in the acute phase of illness.

Increased CRP is characteristic during the acute phase of KD. Persistent elevation after the convalescent phase of KD validates the possibility of smouldering vasculitis playing a part in altering arterial function [1,2]. Mitani, *et al.* [3] observed that levels of CRP was elevated in KD patients with coronary artery lesions (CAL) compared to controls and other KD groups with normal coronary arteries or with regressed aneurysms. In our limited study, hs-CRP values were not different in the small number of patients with cardiac involvement in the acute phase as compared to those without. We did not have a case with residual CAL. There was no correlation between the CRP in the acute phase and hs-CRP in the follow up. Suppression of this chronic inflammatory process may be a new target for intervention, to improve arterial function. Significant reduction in serum hs-CRP levels after short-term statin treatment has been demonstrated [4].

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Contributors: NK: conceived and designed the study, diagnosed and treated the involved subjects; and supervised the manuscript for important intellectual content and will act as guarantor of the study; AA: collected data, analyzed and drafted the paper; SB: performed the hs-CRP test and helped in the design and conduct of the study. The final manuscript was approved by all the authors.

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Comparison of Alert-Verbal-Painful-Unresponsiveness Scale and the Glasgow Coma Score

To determine how the AVPU (alert, verbal, painful, unresponsiveness) scale corresponds to Glasgow Coma Score (GCS), we compared the two scales. Two months to 12 years old patients were included in the study. The median GCS score (inter quartile range) for A/V/P/U were 14 (12-15), 11 (10-12), 6 (5.5-8) and 3 (3-4), respectively.

Key words. AVPU, GCS / modified GCS, Pediatrics, PICU.

Assessment of level of consciousness forms a crucial component of the evaluation of sick children [1]. The Glasgow Coma Scale (GCS) score is one of the most commonly used methods [2-7]. The Alert Verbal Painful Unresponsiveness (AVPU) scale is a simpler method of assessment of consciousness [8]. The two scales have been compared in 3 adult studies [1,3,8]. They have not been compared in pediatric intensive care patients. We conducted this study to determine how the AVPU responsive scale corresponds with the GCS in children admitted to a pediatric intensive care unit.

This was a prospective cohort study. Children with poisoning and children who had received anticonvulsants or sedation were excluded. The pediatric registrar assessed the consciousness level at admission using the 2 scales. Pre-verbal children were assessed on the modified GCS score. Assuming the difference in mean GCS score was characterized by a variance of means of 5.5 and assuming that the common SD was 4, it was determined that at least 11 readings in each AVPU score would be needed for a one way ANOVA with 90% power to detect significance at 5% level. Accordingly the study was continued till a minimum of 11 patients were enrolled in each of the 4 categories A/V/P/U. The GCS and AVPU readings of each patient were compared. The median GCS score for each AVPU component was determined and a one way analysis of variance technique was employed. Bonferroni correlation was used for multiple comparisons.

159 patients (mean age 18 months) were enrolled to meet the sample size stipulation. Out of the total 159 cases, 99 (67%) were alert, 12 (7.55%) were responsive to voice, 37 (23.27%) were only responsive to painful stimuli and 11 (6.92%) were unresponsive.

Comparison between GCS/modified GCS and AVPU scores are shown in **Figure 1**. Those who