

P-236

**Hyperuricemia and renal dysfunction after cardiac surgery with extracorporeal circulation in pediatric patients**

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**OBJECTIVE:** Hyperuricemia and renal dysfunction are common problems after cardiac surgery with extracorporeal circulation (EC), but published data regarding incidence and severity of these complications vary widely. Our study was aimed at evaluating the incidence of significant hyperuricemia, the correlations with risk factors, and the efficacy of treatment with urate oxidase among children undergoing cardiac surgery with EC for various congenital anomalies of the heart. **DESIGN:** Retrospective chart review. **SETTING:** Pediatric patients in a university hospital setting. **Patients:** Our review identified 175 consecutive patients aged from one day to 17 years who had cardiac surgery with cardiopulmonary bypass between January 2000 and July 2005. **MEASUREMENTS AND MAIN RESULTS:** The data collected from the records included demographic and biometric data, diagnosis, surgical risk factors, postoperative serum creatinine, uric acid and urea, and any medication of interest for the study. The mean ( $\pm$ SD) duration of EC and aortic clamping (AC) was  $119 \pm 51$  and  $65 \pm 33$  min, respectively. Serum uric acid, urea and creatinine levels all increased significantly during postoperative days 1-3. Overall, 26.1% of the patients had an increase in their serum uric acid level to 8 mg/dl or more, with no significant correlation with the duration of EC or AC. Only one patient required peritoneal dialysis postoperatively. Thirteen patients (7%) were treated with allopurinol, and six (3%) with urate oxidase (3 with the conventional enzyme, uricozyme, and 3 with the recombinant preparation, rasburicase). Serum uric acid levels fell promptly within hours in all patients treated with uric oxidase and reached subnormal concentrations within 24 hours. No adverse effects were observed. **CONCLUSION:** These data suggest that urate elevations are common in the postoperative course after cardiac surgery and may reach significant levels. Urate oxidase may be effective and safe for the treatment of postoperative hyperuricemia in pediatric patients.