

CLINICAL FEATURES OF PEDIATRIC PATIENTS WITH SEVERE HYPERTENSION (HTN) REQUIRING INFUSION IN THE PEDIATRIC INTENSIVE CARE UNIT (PICU)

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Background: Data regarding PICU management of severe HTN, defined as receiving continuous antihypertensive infusions (antiHTN), are scarce. We aimed to describe the clinical characteristics of this population.

Materials/Methods: A medication order report from January 2017-July 2018 identified pts 2-22 years receiving antiHTN infusions in the PICU. Vasopressors 6 hrs prior to antiHTN, cardiac surgery, neurosurgery, or ECMO were reasons for exclusion. For comparison among age groups, we defined systolic and diastolic blood pressure index (sBPI,dBPI) as the ratio of absolute BP to the threshold for stage 2 HTN [95th percentile + 12 mmHg for age, sex, and height (< 13 yrs) or 140/90 (≥ 13 yrs)] based on 2017 guidelines. Acute kidney injury (AKI) was defined by KDIGO guidelines. Left ventricular hypertrophy (LVH) was defined as left ventricular mass index (LVMI) > 51 g/m^{2.7}.

Results: All 78 pts (11.7 +/- 5.3 years, 56% male) had sBPI ≥ 1 and 85% had dBPI ≥ 1 at antiHTN initiation. Nicardipine was the most common antiHTN (90%). The most common symptoms (64.1%, 50/78) were neurologic, (headache, altered mental status, seizure); 22% were asymptomatic. Neuroimaging was performed in 49 pts of which 68% (33/49) were abnormal. 45% (35/78) had AKI. Only 21 pts had eye exams; 19% (4/21) had retinopathy. 68% (53/78) had echocardiograms of which 53% (28/53) had LVH. There was no association between LVH and sBPI (95% CI 0.7 to 647, p0.07) or dBPI (95% CI 0.2 to 115.5, p0.32), when age was accounted for. Pts with chronic HTN had a higher odds of having LVH (OR 3.98, 95% CI 1.1-15.0, p 0.04).

Conclusions: A significant number of children who present with severe HTN have evidence of end organ damage on assessment. Neurologic findings are common and frequently accompanied by abnormal neuroimaging. LVH is common and more likely present in patients with chronic HTN