ABNORMAL BLOOD PRESSURE PATTERNS ON ABPM PRIOR TO PEDIATRIC HEMATOPOIETIC CELL TRANSPLANTATION (HCT): FALSE ALARM OR CAUSE FOR CONCERN?

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Background: Hypertension (HTN) influences morbidity and predicts renal and cardiovascular (CV) outcomes following HCT. Systematic misclassification of HTN may occur with the use of casual blood pressure (BP) measurements; therefore, ambulatory blood pressure monitoring (ABPM) is recommended in children and adolescents with high-risk conditions. Diagnosis of HTN by ABPM strongly correlates with risk of target organ damage. We conducted a pilot prospective observational study using ABPM to determine BP risk profile of patients (pts) undergoing first allogeneic HCT.

Materials/Methods: Pts age 5-21 yrs at Texas Children's Hospital were recruited prior to HCT from November 2018 to May 2019. Of 22 pts recruited, 16 had APBMs placed and 14 were adequate for analysis.

Results: Mean age was 14.3 (6.7-19), 7 pts were male. Mean baseline GFR was 113 ml/min/1.73m2, (SD 19.1) mean baseline LVMI 2.7 was 42.4 g/Ht^2.7 (SD 7.8) and spot urine protein/creatinine ratio (UPC) was 0.3 (SD 0.28).Two pts had severe ambulatory HTN based on elevated daytime, nighttime, and 24hr mean recordings and elevated BP load in all categories. Of the 12 remaining pts, 25% had elevated nighttime load, and 33% had attenuated nocturnal dipping despite normal office BP and normal average BP. There was no association with baseline LVMI2.7 or UPC for pts with HTN by casual BP or ABPM, elevated daytime/nocturnal load, or attenuated dipping when univariate analysis was performed.

Conclusions: Elevated BP load and abnormal nocturnal dipping were seen in our pts prior to HCT despite normal mean ABPM and office BP. According to the 2017 guidelines for pediatric HTN, this group is termed 'unclassified', but may have increased risk for end organ effects and may require closer supervision. Screening with APBM can be beneficial in this high risk population.