**PEDIATRIC PATIENTS HAVE PRESERVED LEFT VENTRICULAR LONGITUDINAL STRAIN EARLY AFTER HEMATOPOIETIC STEM CELL TRANSPLANTATION DESPITE EXPOSURE TO CARDIOTOXIC AGENTS**

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**Background:**Hematopoietic Stem Cell Transplantation (HSCT) offers a cure for many neoplastic and non-neoplastic disorders, however pre-HSCT anthracycline (ANT) chemotherapy and conditioning chemotherapy and/or radiation can be cardiotoxic. Some of these patients have severe anemia which can affect cardiac function. Longitudinal strain (LS) can detect early changes in left ventricular (LV) mechanics. This study aimed to evaluate LV LS in pediatric patients following HSCT.

**Methods:**Retrospective study of pediatric patients treated with HSCT with echocardiograms adequate for strain analysis 6 to 12 months after HSCT. Patients with neoplastic and non-neoplastic disorders were included. Patients with congenital heart disease were excluded. Patients were divided in 3 groups based on pre-HSCT ANT exposure (ANT+ or ANT-), blood transfusions (BT+ or BT-) and intensity of HSCT conditioning regimen (myeloblative [MAC+] or MAC-). Group 1: MAC+, ANT+, BT+. Group 2: MAC+, ANT-, BT-. Group 3: MAC-, ANT-, BT+ or -. Shortening fraction (SF), LV ejection fraction (EF) and LV LS was measured.

**Results:**Forty-four patients were identified, 17 in group 1, 9 in group 2, and 18 in group 3. Age (years) at HSCT and time of echocardiogram (days) after HSCT were similar among the groups (11±6 vs 8±7 vs 12±5, p=0.30; 292±148 vs 286±119 vs 294±123, p=0.99). Comparing the treatment groups, we found no significant difference in LV SF (%), LV EF (%) or global LV LS (%) after HSCT (34±4 vs 36±3 vs 38±5, p=0.49; 66±8 vs 63±7 vs 63±6, p=0.31; -20.36±3.44 vs -22.24±2.77 vs -21.57±2.53, p=0.32).

**Conclusion:**In our cohort of pediatric HSCT patients, LV global LS was similar 6 to 12 months after HSCT regardless of exposure to ANT, MAC or blood transfusions. These results reflect that the impact of these factors may be subtle and not detectable at early follow up. Longer follow up after HSCT is needed to determine if this population is at risk of developing abnormal LV mechanics and clinical LV dysfunction.