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Body mass index and unconscious bias in limb-salvage rates among pediatric sarcoma patients

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Introduction:

Disparities in limb-salvage surgery have been reported among adult sarcoma patients. This may include unconscious bias towards amputation. The purpose of this study was to explore how body mass index affects treatment patterns in a cohort of pediatric sarcoma patients.

Methods:

A retrospective review was conducted of all consecutive patients under the age of 18 treated for sarcoma at the study institution with diagnoses from 1999 to 2012 who underwent surgery for limb salvage or amputation. Statistical analysis of patient body mass indices at time of diagnosis was performed to assess for factors associated with limb salvage surgery.

Results:

Fifty-one records were identified as pediatric patients who underwent surgery for extremity sarcoma in the defined study period. Thirteen records were excluded due to inadequate availability of body mass index, body site or surgery type documentation, leaving a cohort of thirty-eight patients. The rates of limb salvage among those whose BMI was 85th percentile or greater was approximately 15 percent, versus those with a normal BMI being 48 percent. Those patients who were overweight or obese were more likely to undergo amputation (11 of 13) compared to those with normal BMI (13 of 25) with odds ratio of 5.08 (CI (0.92, 27.8)). Conversely, while those with normal BMI had approximately equal chance at receiving limb salvage versus amputation, those with elevated BMI were less likely to receive limb salvage with odds ratio of 0.20 (CI 0.03, 1.08)

Conclusions:

Our pilot data suggests that body mass index appears to be a predictor of amputation in a cohort of pediatric sarcoma patients undergoing surgical treatment, and could potentially benefit by expanding the study to other centers. Further research should be devoted to elucidating unconscious bias as a contributing factor for amputation over limb salvage as it pertains to body mass index among pediatric sarcoma patients.