

# **Mental Health Disorders and Surgical Outcomes in Patients with Bone and Soft Tissue Sarcoma**

Makenzie Chambers, Caroline Gutowski, Pietro Michele Gentile, Krystal M Hunter, Tae Won Benjamin Kim, Christina J Gutowski<sup>1</sup>

<sup>1</sup>MD Anderson Cancer Center at Cooper

**INTRODUCTION:** Recent studies on the interplay between mental health and non-oncologic musculoskeletal disorders have shown that patients with a preoperative mental health diagnosis (MHD) demonstrate poorer surgical outcomes, report higher pain scores, and have longer hospital lengths of stay compared to healthy controls. This relationship has not been explored in the orthopaedic oncology patient population. We hypothesized that sarcoma patients with a preoperative MHD would demonstrate worse outcomes and more postoperative complications compared to those undergoing similar procedures without underlying mental illness.

## **METHODS:**

Retrospective review was performed on 356 patients who underwent surgical treatment for bone or soft tissue sarcoma. Patients were divided into two groups: those with a diagnosis of depression, anxiety, bipolar disorder, and/or schizophrenia; and those with no previous MHD. Statistical analysis was performed using Independent T, Mann Whitney U, and Chi-Squared tests.

## **RESULTS:**

Statistical analysis demonstrated significant differences between the MHD group and control group in three outcomes: length of stay (LOS), 90-day readmission rate, and incidence of surgical site infections (SSI). Subgroup analysis of the MHD group yielded significantly higher 90-day readmission rates in patients who were diagnosed during sarcoma treatment. Multivariate linear regression found significantly greater LOS in patients with an MHD compared to those without mental illness, when controlling for age, gender, race, BMI, sarcoma location, and CCI. Multivariate analysis also found SSI rates to be associated with MHD as well as increasing age. Multivariate analysis of ninety-day readmission rate was also associated with presence of MHD, as well as lower extremity location of sarcoma.

## **DISCUSSION AND CONCLUSION:**

Sarcoma patients with a MHD experienced longer postoperative hospital stays, increased 90-day readmission rates, and a greater risk of SSI. These differences may be driven by varying perceptions of pain, resulting in the fear of/delay in physical therapy; lack of motivation and engagement in the recovery process; increased narcotic use and the consequences of this; challenges of coping with the postoperative recovery at home; and potential nutritional and immunoregulatory issues involved in MHD. Given the rising prevalence of mental health disorders nationwide, orthopaedic surgeons should be aware of differences in postoperative outcomes between sarcoma patients with and without mental illness, and focus on developing intervention efforts to mitigate the risk of adverse outcomes.