Sarcopenia in Soft Tissue Sarcoma Population

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INTRODUCTION:
In recent years, there has been a push towards trying to optimize patient's nutritional status through proper dietary regimens and nutritional supplementation. Previous studies have looked at the best measures to assess nutritional status and the impact of nutritional supplementation on muscle mass, but to our knowledge, there has not been previous research examining the impact of these supplements on wound healing in the sarcoma population.
This is particularly important for sarcoma patients who undergo neoadjuvant radiation therapy. Previous studies have demonstrated wound complications in this population approaching 35%. With this high rate of wound healing issues, finding treatment modalities to minimize these complications is of paramount importance.
METHODS: Between June 2020 and May 2021, all extremity sarcoma patients receiving care in our department received two weeks of twice daily amino acid supplementation starting on the first postoperative day. We analyzed their wound healing, the primary outcome, at all follow up appointments with final-end point being six months after surgery. Non-healing wounds were defined as any wound requiring packing at 6 months post-operatively, any wound requiring a return visit to the OR for debridement or any wound requiring IV antibiotics (ABX) for healing concerns. The patient cohort was compared with a similar historical patient cohort using the chi-square test. In a subgroup of participants with body composition measurements, we also compared changes in mean fat mass, lean mass, and psoas index from pre-operative baseline to 6 months post-operative using generalized linear models.
RESULTS: A total of 33 consecutive patients were supplemented with a branched chain amino acid (BCAA) formulation. The historical cohort included 146 participants from the previous seven years (2010 - 2017). Looking exclusively at patients who underwent neoadjuvant radiation, 26% of patients in the historical cohort experienced wound complications compared to 30% in the supplemented group. This difference was not statistically significant. There were 39 participants in the historical cohort with psoas index data at both baseline and 6 months post-operative. We found a statistically significant decline in psoas index but no changes in BMI in the historical cohort.
DISCUSSION AND CONCLUSION: In our limited sample size, there was no difference in wound healing complications between sarcoma patients treated with neoadjuvant radiation therapy who received post-operative BCAA supplementation and those who were not supplemented. Patients who did not receive supplementation had a significant decline in post-operative psoas index following operative sarcoma removal.