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Association of Surgical Intervention with 30-Day Re-admission and Outcomes in Patients Hospitalized for Small Bowel Neuroendocrine Tumor-Related Obstruction

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BACKGROUND

Small bowel neuroendocrine tumors (SBNETs) are associated with a significantly increased risk small bowel obstruction (SBO). Although an effective treatment strategy, recurrence of SBO after surgical resection is common and data to guide the timing of surgical resection are limited. We sought to investigate the association of surgery during index admission for SBO with 30-day readmission and outcomes among patients with SBNETs.

METHODS

This retrospective study used the 2019-2021 National Readmission Database to identify and include adult patients with an ICD-10 diagnosis of SBNETs who were admitted for SBO. Readmission was defined as the first admission to any hospital for any non-trauma diagnosis within 30 days of the index admission. We analyzed rates of 30-day readmission, 30-day overall mortality rates, and resource utilization. Multivariate regression analysis was performed to identify independent risk factors for 30-day readmissions. A p-value <0.05 was considered statistically significant.

RESULTS

A total of 11,214 patients with SBNETs were identified, of which, 1,048 (9.3%) (mean age= 66 years, females=52%) presented with SBO. A total of 554 (53%) patients underwent surgical management during index admission and 451 patients (45%) were managed conservatively. On average, 30-day readmission rate was significantly lower for patients who underwent surgical management during index admission compared to those who were managed conservatively (5.4% vs 20.8%, p=0.005). On multivariate cox regression analysis, surgical management during index admission was associated with significantly lower (OR=0.52, 95% CI- 0.38-0.82), while higher Charlson comorbidity index was associated with significantly higher odds of 30-day readmission (OR=1.22, 95% CI 1.02-1.47). Surgical management during index admission was also associated with significantly lower 30-day overall mortality rate compared to conservative management (3.6% vs 6.6%, p<0.01). No differences in average hospitalization cost (p=0.67) and length of stay (p=0.48) were noted.

CONCLUSIONS

In this retrospective analysis of patients with SBNETs presenting with small bowel obstruction, surgical management during the index admission was associated with significantly lower 30-day readmission rates and overall mortality compared to conservative management. Despite these benefits, no

differences were observed in hospitalization costs or length of stay between the two groups. These findings highlight the potential benefit of early surgical intervention in selected patients with SBNETs and SBO.

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