

Preoperative Nutritional Assessment in Gastric Cancer Patients: A Single Center Experience

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ABSTRACT

Introduction: Gastric cancer (GC) is one of the most frequently diagnosed cancers worldwide and is the leading cause of cancer-related deaths. Over half of the patients who undergo gastric resection for gastric cancer are at moderate to severe risk malnutrition (1, 2, 3). Recent research has shown that preoperative malnutrition in patients undergoing gastric cancer resection is associated with higher rates of complications, longer hospital stays, increased mortality, readmissions, and higher healthcare costs (2, 4–8). Screening for malnutrition before major surgery is essential, as it can identify patients at risk of malnutrition who may benefit from preoperative nutritional interventions. There are numerous screening tools available, but according to ESPEN guidelines, the recommended screening tool is the nutrition risk screening 2002 (NRS-2002). GC patients identified as being at nutritional risk through screening should be referred to a registered dietitian nutritionist for a comprehensive nutrition assessment and intervention. However, managing the preoperative nutritional status of GC patients presents several challenges, including a lack of knowledge and established protocols, time constraints, and limited access to registered dietitian nutritionist. The purpose of this study is to evaluate the current provision of preoperative nutritional assessment and intervention pathways in GC patients before elective operation.

Patients and methods: Currently, at the Department of General and Abdominal Surgery, University Medical Centre Maribor, we are engaged in an ongoing study

titled ‘Irisin as a Prognostic Biomarker for Gastric Cancer Patients: Assessing Its Predictive Value in the Context of Sarcopenia.’ As part of our ongoing research efforts, we have conducted a partial analysis of the data collected thus far, focusing on specific aspects related to preoperative nutritional assessment pathways for gastric cancer patients undergoing surgical resection between August 2022 and August 2023 at our institution. Data was collected prospectively. All patients were discussed at our multidisciplinary meeting and procedures were performed according to outcome of these discussions. Only patients who underwent R0 surgical procedures (subtotal or total gastrectomy) were included in this analysis.

Results: 57 patients were included in this descriptive study (64.3% men, 35.7% women). The mean age was 69.9 ± 10.1 years (43–87 years; ≥ 70 years: 60.7%). The mean weight of the patients before the surgical resection was 81.1 ± 17.9 kg and the mean BMI was 27.9 ± 5.8 kg/m². A total of 57 patients (100%) underwent preoperative screening for nutritional risk prior to the surgical resection. Of these, 13 patients (22.8%) had an NRS-2002 score of 2, 15 patients (26.3%) had an NRS-2002 score of 3, 7 patients (12.3%) had an NRS-2002 score of 4, 10 patients (17.5%) had an NRS-2002 score of 5, and 12 patients (21.1%) had an NRS-2002 score of 6. Notably, 44 patients exhibited nutritional risk before the surgical procedure, with 22 of them (39.3%) classified as having severe nutritional risk. Furthermore, 20 (46.5%) of them received nutritional support following consultations with a registered dietitian nutritionist. It’s worth noting that only five patients with severe nutritional risk were referred

to an RDN. The duration of preoperative nutritional treatment varied among the patients: 2 patients (10%) received treatment for less than 1 day, 3 patients (15%) for 5 days, and 14 patients (70%) for more than 7 days. The study subsequently conducted an analysis to compare the incidence of general and surgical complications between patients with severe nutritional risk and those without it. The incidence of general complications was notably higher in patients with severe nutritional risk (11.76% vs. 45.45%, $p = 0.004$). Nevertheless, the overall incidence of surgical complications displayed no significant difference (17.65% vs. 31.82%, $p = 0.220$).

Conclusions: Preoperative malnutrition is a widely prevalent and modifiable risk factor in patients undergoing surgery for GC. At the University Medical Centre Maribor, nearly half of all patients participating in the study underwent thorough preoperative nutritional assessment and received appropriate preoperative nutritional support, following established guidelines. These outcomes are comparable to those observed in other, generally more developed countries with advanced healthcare systems. The proven benefits for the patients justify the considerable efforts to foster implementation of these current guidelines in clinical practice.

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