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Persistence and development of malnutrition in patients with upper-gastrointestinal cancer: a longitudinal cohort study

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In patients with cancer, malnutrition is associated with increased toxicity to oncological treatments¹, poorer quality of life² and lower overall survival³. Patients with upper-gastrointestinal (GI) cancer may be at particular risk of malnutrition in view of the tumour location. However, most studies are cross-sectional in design and measure the prevalence of malnutrition at the acute presentation of cancer. This study aimed to measure the prevalence of malnutrition in upper-GI cancer and to determine whether it persists or develops between diagnosis and the acute (3-month) and chronic (12-month) period of radical treatment.

Patients with newly diagnosed upper-GI cancer were recruited to a longitudinal cohort study and reviewed at the time of diagnosis and at 3-months and 12-months following the start of radical treatment. Nutritional assessment was performed using the Patient-Generated Subjective Global Assessment (PG-SGA), which is considered a 'gold-standard' for nutritional assessment and has been validated in the oncology setting⁴. Using this tool, two results were obtained: (a) total score (score ≥ 4 intervention needed; score ≥ 9 critical intervention needed); and (b) subjective global rating (SGA A = well nourished, B = moderately malnourished and C = severely malnourished).

In total, 80 patients (61 males, 19 females) with a median age of 66 years (range 46–89) were recruited, with oesophageal (61%), gastric (33%) and gastro-oesophageal junction (6%) tumours. Of these, 68 were reviewed at 3-months and 57 at 12-months. Mean (SD) body weight was 76.6 kg (17.2) at baseline, 74.4 kg (14.8) at 3-months and 71.6 kg (16.7) at 12-months. In those with data at both time points, the reduction in body weight between baseline and 3-months (-2.3 kg, $p = 0.003$) and between 3-months and 12-months (-4.0 kg, $p < 0.001$) were statistically significant. Body mass index also decreased between baseline 26.7 kg/m² (4.7), 3-months 25.9 kg/m² (4.1) and 12-months 25 kg/m² (4.9) ($p = 0.006$ for baseline to 3-months and $p < 0.001$ for 3- to 12-months).

The median (range) PG-SGA total score was 9 (0–28), 6 (2–26) and 7 (0–19) at baseline, 3- and 12 months, indicating that 'intervention was required'. In addition, 61%, 62% and 60% of patients respectively were considered moderately/severely malnourished (SGA B or C) at the three time points. Reduced food intake contributed to malnutrition in 61% at baseline, 48% at 3-months and 52% at 12-months. In those with data at 12-months ($n = 57$), trends in the SGA category showed that 19 (33%) patients were moderately/severely malnourished at both baseline and 12-months (malnutrition 'persisted'), while 15 (27%) were well-nourished to start but became moderately/severely malnourished by 12 months (malnutrition 'developed').

Patients with upper-GI cancer experience a progressive weight loss over time, with malnutrition either persisting or developing during the first year in the majority (60%). Optimising nutritional status throughout the treatment pathway should be considered a priority in this high-risk group, and studies that investigate the effectiveness of this on the success of oncological treatments, survival and quality of life are required.

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