NOGCA | National Oesophago-Gastric Cancer Audit

NOGCA short report

Postoperative nutritional management among patients with oesophago-gastric cancer in England

NOGCA: short report 2022

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The National Oesophago-Gastric Cancer Audit is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing, and National Voices. Its aim is to promote quality improvement in patient outcomes, and in particular, to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP holds the contract to commission, manage, and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP), comprising around 40 projects covering care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual projects, other devolved administrations and crown dependencies www.hqip.org.uk/national-programme

CONTENTS

GLOSSARY

Oral nutrition – nutrition that is taken by mouth; nutritional products that are eaten or drunk to supplement inadequate intake of normal food and drink.

Enteral nutrition – nutrition that is delivered directly into the stomach or small bowel by a tube; used when nutritional requirements cannot be met by mouth but the digestive tract is otherwise working. Includes nasoenteral, gastrostomy and jejunostomy tubes.

Parenteral nutrition – nutrition that is delivered directly into the blood stream through a drip; used when patients are unable to absorb nutrients through the digestive tract.

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EXECUTIVE SUMMARY

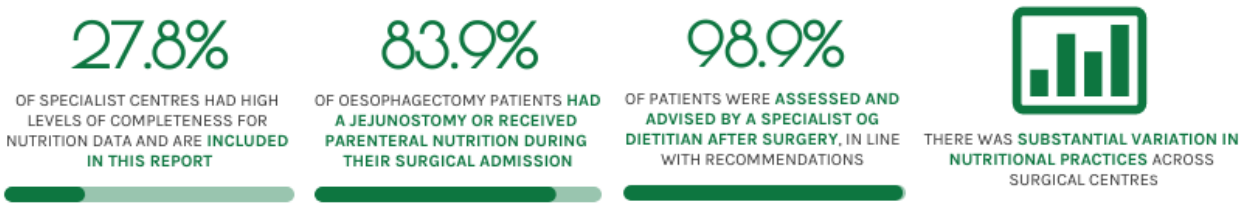
It is well established that poor nutritional status is directly associated with adverse outcomes from surgery. This is particularly pertinent in oesophago-gastric (OG) cancer as patients face a number of nutritional challenges on diagnosis and throughout their treatment pathway. However, evidence-based guidelines about optimal timing and modality of nutritional intervention in OG cancer, particularly in perioperative care, is lacking. This short report provides insight into current postoperative nutritional practices in ten (27.8%) OG cancer specialist centres across England, among 617 patients who underwent curative surgery after being diagnosed with OG cancer between April 2019 and March 2020.

For patients who had oesophagectomy, the most commonly reported nutritional management strategy was enteral nutrition delivered via a jejunostomy during the admission and continued on discharge (51.0%). The majority of oesophagectomy patients (83.9%) had a jejunostomy or received parenteral nutrition during their surgical admission. This is consistent with the NICE recommendation that people undergoing curative surgery for oesophageal or gastro-oesophageal junctional cancers should be offered immediate enteral or parenteral nutrition. Among patients undergoing curative gastrectomy, oral nutrition during admission and on discharge was the most commonly reported nutritional management strategy (60.9%). There was substantial variation in nutritional practices across surgical centres, reflecting the lack of evidence on the role of specific nutritional management strategies in improving surgical outcomes.

The majority of patients (86.2%) were assessed and advised by a specialist OG dietitian before their treatment began, and a further 6.5 % were seen by a general dietitian (or one whose role was unspecified). The remaining patients had no contact with a dietitian, either because it was considered not required (7.1%) or because no dietitian was available (0.2%). Almost all patients (98.9%) were assessed and advised by a specialist OG dietitian after surgery, in line with NICE recommendations. However, the findings suggest that a small number of patients were not assessed by a dietitian either before or after surgery.

Only specialist centres with high levels of data completeness were included in this report. It is possible that centres with good nutritional practices are over-represented in the findings. The current audit dataset also does not enable centres to describe more complex patterns of nutritional management, such as the use of multiple interventions during the perioperative period and the duration of nutrition support.

Despite these limitations, the observed organisation-level variation in nutritional management highlights the need for clearer evidence-based guidance in this area, to reduce variation in care and improve outcomes.



Recommendations

1. Review the nutritional management of patients undergoing surgery for OG cancer to ensure that all patients have access to appropriate dietetic input as recommended by NICE (Audience: multidisciplinary teams, NHS commissioners).
2. Review processes for the collection and submission of nutrition data for NOGCA and improve the completeness of data items where it is currently low (Audience: clinical leads, multidisciplinary teams, local audit teams).
3. Work with specialist dietitians to increase engagement with the audit and to refine the NOGCA nutrition data items (Audience: NOGCA team, specialist OG dietitians).

INTRODUCTION

Curative surgery for oesophago-gastric (OG) cancer involves the partial or total removal of the oesophagus (oesophagectomy) or stomach (gastrectomy). People who undergo these procedures are unable to eat a normal diet for an extended period after surgery and are at significant risk of malnutrition and weight loss. A number of nutritional management strategies (oral, enteral and/or parenteral) are used to support patients during the perioperative period, along with dietary counselling on food choices and eating habits.

Guidance from the National Institute for Health and Care Excellence (NICE) on the assessment and management of OG cancer (NICE 2018) recommends that people undergoing curative surgery for OG cancer should be offered:

- nutritional assessment and tailored specialist dietetic support before, during and after surgery, and
- immediate enteral or parenteral nutrition after surgery for oesophageal or gastro-oesophageal junctional cancers.

A number of other clinical guidelines outline the importance of optimising nutritional status throughout the multimodal pathways for surgery and oncology patients (Arends et al 2017; Lobo et al 2020; Low et al 2019; Weimann et al 2021). Studies suggest that providing some form of nutritional support improves outcomes, such as reducing surgical complications and postoperative length of stay (Yan et al 2017). However, evidence about optimal management strategies to provide nutrition support for people after OG surgery and throughout their oncological pathway is lacking, and NICE have highlighted this as a priority area for research (NICE 2018).

The objective of this short report is to describe current postoperative nutritional practices in OG cancer specialist centres. Whilst all specialist centres in England and Wales were eligible for inclusion, only centres in England met the inclusion criteria. The findings of this report can inform the design of future research to identify optimal nutritional management strategies to improve patient care and outcomes among people with OG cancer.

METHODS

The National Oesophago-Gastric Cancer Audit (NOGCA) collects information to assess the quality of care received by people diagnosed with OG cancer in England and Wales. NOGCA added new items to its dataset in 2019 to capture patterns of nutrition support for patients with OG cancer. The data items focused on primary nutritional management (oral, enteral or parenteral) at two time points: during the surgical admission and on discharge. The audit also collected information about the involvement of specialist dietetic support at two points in the care pathway: (i) between diagnosis and treatment, and (ii) postoperatively.

The study included patients diagnosed with OG cancer between 1 April 2019 and 31 March 2020, who had a record of curative surgery. Submission of nutrition data was not mandatory during the period for which data are available. Of the 36 NHS specialist surgical centres participating in the audit, 15 did not provide any information about postoperative nutrition

management. Among the 21 remaining centres, only 10 (all in England) provided valid information about nutrition support for more than 80% of patients who had curative surgery. The analysis described in this report is limited to the data from these 10 NHS specialist centres.

The postoperative nutrition interventions that clinical staff could record in the NOGCA dataset were: (i) the primary form of nutrition support used during the surgical admission, (ii) the primary form of nutrition support on discharge, and (iii) the frequency of specialist dietitian involvement. Postoperative nutritional practices were described for the whole cohort and by type of procedure (oesophagectomy versus gastrectomy). Due to the relatively small number of gastrectomy procedures, nutritional management strategies by patient and surgery characteristics (age, sex, clinical stage, use of enhanced recovery after surgery protocols) were only described for patients undergoing oesophagectomy. Differences in the use of nutritional management strategies across surgical centres were also explored. The statistical significance of differences in the proportions across patient subgroups was assessed using Chi-squared tests.

RESULTS

Patient cohort

The 10 NHS specialist surgical centres included in this report were distributed across seven of the 21 English Cancer Alliance regions:

- East Midlands
- East of England – North
- Northern
- South East London
- Thames Valley
- Wessex
- West Midlands

Of the 658 patients diagnosed with OG cancer in 2019-20 who had curative surgery at one of the included surgical centres, 617 (93.8%) had complete information about postoperative nutrition. Of these, 410 (66.5%) had undergone oesophagectomy and 207 (33.5%) had gastrectomy. A quarter of patients (24.8%) were aged under 60 years, 79.4% were male, and a third (32.8%) had stage 1-2 disease.

Information about the use of Enhanced Recovery after Surgery (ERAS) protocols was available for 604 patients. Among these, 73.7% of patients were on an ERAS pathway while the remaining 26.3% followed a standard surgical pathway.

Nutritional management strategies

The postoperative nutritional management strategies that were most commonly recorded in the NOGCA dataset are described in Table 1.

For patients undergoing curative oesophagectomy, the most common nutritional management strategy was enteral nutrition support delivered via a jejunostomy during the admission and continued on discharge, and was used for 51.0% of patients. This was followed by the combination of parenteral nutrition during admission and oral nutrition on discharge (16.8%), oral nutrition during admission and on discharge (14.4%), and enteral nutrition via a jejunostomy during admission and oral nutrition on discharge (11.9%). The majority of oesophagectomy patients (n=344, 83.9%) had enteral or parenteral nutrition during the admission, while 16.1% (n=66) received oral nutrition. The NOGCA data items did not distinguish between the use of oral nutritional supplements and oral dietary intake.

Among patients undergoing curative gastrectomy, oral nutrition during admission and on discharge was the most commonly reported nutritional management (60.9%). This was followed by enteral nutrition via a nasojejunal tube during admission and oral nutrition on discharge (12.1%). In contrast to patients who had oesophagectomy, only 10.1% of patients had enteral nutrition via a jejunostomy during admission and continued on discharge (10.1%) and 7.2% had parental nutrition during admission and oral nutrition on discharge.

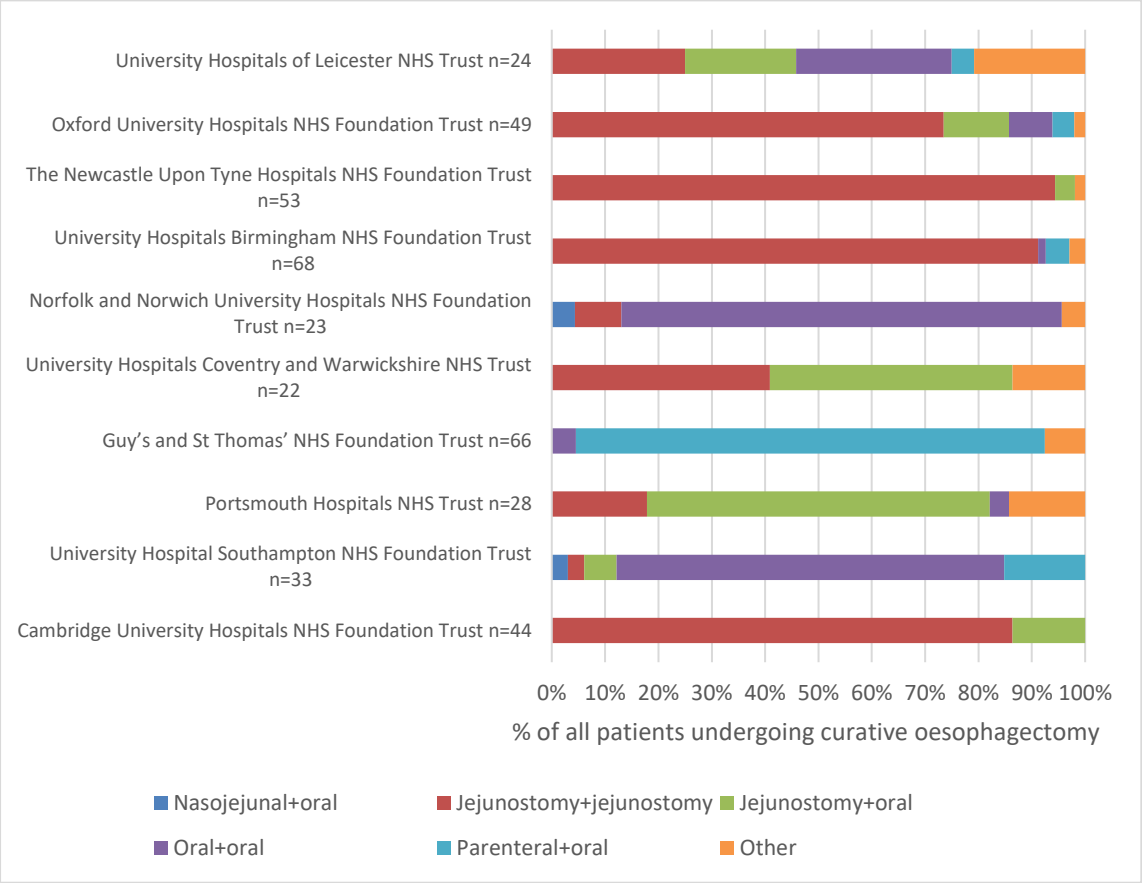
Table 1: Common postoperative nutritional management strategies among patients undergoing curative resection for OG cancer diagnosed 2019-20, by type of procedure

Nutritional management		**Oesophagectomy**	**Gastrectomy**	**All patients**
During admission	**On discharge**	**N (%)**	**N (%)**	**N (%)**
Jejunostomy	Jejunostomy	209 (51.0%)	21 (10.1%)	230 (37.3%)
Oral	Oral	59 (14.4%)	126 (60.9%)	185 (30.0%)
Parenteral	Oral	69 (16.8%)	15 (7.2%)	84 (13.6%)
Jejunostomy	Oral	49 (11.9%)	1 (0.5%)	50 (8.1%)
Nasojejunal	Oral	2 (0.5%)	25 (12.1%)	27 (4.4%)
Other combination		22 (5.4%)	19 (9.2%)	41 (6.6%)
Total		410	207	617

Among patients who had oesophagectomy, postoperative nutritional practices did not differ by patient age (p=0.229), sex (p=0.711) or clinical stage (p=0.848). However, nutritional management strategies were different for patients on an ERAS pathway compared to those on a standard surgical pathway (p<0.001). Notably, the use of a jejunostomy to deliver nutrition during admission and on discharge was more common among patients on a standard pathway (72.9%) than among those following an ERAS protocol (42.8%), while the combination of parenteral nutrition during admission and oral nutrition on discharge was less common among patients on a standard pathway (3.1%) than among ERAS patients (21.7%).

There were substantial organisation-level differences in nutritional practices across surgical centres (Figure 1).

Figure 1: Common postoperative nutritional management strategies (during admission + on discharge) among patients undergoing curative oesophagectomy for OG cancer diagnosed 2019-20, by NHS specialist surgical centre



Dietetic involvement

Information about pre-treatment dietetic support (between diagnosis and primary treatment) was available for 494 patients. Of these, 86.2% (n=426) were assessed and advised by a specialist OG dietitian and a further 6.5 % (n=32) were seen by a general dietitian (or one whose role was unspecified). Among the remaining patients, 7.1% (n=35) had no contact with a dietitian as it was considered to not be required. One patient had no pre-treatment dietetic involvement because no dietitian was available.

Among 616 patients with complete information about postoperative dietetic involvement, 98.9% (n=609) were assessed and advised by a specialist OG dietitian, while 0.8% (n=5) were seen by a general or unspecified dietitian. Only two patients (0.3%) were reported to have had no postoperative contact with a dietitian; of these two patients, one had received pre-treatment assessment and advice from a specialist dietitian, but one had no pre-treatment contact with a dietitian due to lack of staff.

CONCLUSION

This analysis of patients who had curative surgery at 10 NHS specialist surgical centres in England found that 84% of patients undergoing oesophagectomy received enteral nutrition via a jejunostomy or parenteral nutrition during their surgical admission. This is consistent with the NICE recommendation that people undergoing curative surgery for oesophageal or gastro-oesophageal junctional cancers should be offered immediate enteral or parenteral nutrition. The majority of patients undergoing gastrectomy received oral nutrition during their surgical admission, while a sizeable minority had enteral nutrition (delivered via nasojejunal or jejunostomy tube).

The analysis highlights substantial variation in nutritional practices for oesophagectomy patients across the surgical centres, with many using mainly enteral nutrition via a jejunostomy during the surgical admission and others using mainly parenteral nutrition, while patients in some centres were reported to have primarily received oral nutrition during and after surgery. These organisation-level differences probably reflect the lack of evidence on the role of specific nutritional management strategies in improving surgical and oncological outcomes, and emphasise the need for research to identify optimal nutritional management for OG cancer patients.

Almost all patients undergoing curative surgery at the 10 specialist surgical centres included in this report were assessed postoperatively by a specialist OG dietitian, in line with NICE recommendations. The majority of patients for whom data were available (86%) were also assessed and advised by a specialist dietitian before their treatment began. However, the findings suggest that a small number of patients are not assessed by a dietitian either before or after surgery. The care pathways for such patients should be reviewed.

> **Recommendation 1:** Review the nutritional management of patients undergoing surgery for OG cancer to ensure that all patients have access to appropriate dietetic input as recommended by NICE (Audience: multidisciplinary teams, NHS commissioners).

However, there are limitations with the study that need to be considered when interpreting the report findings. First, limited data on postoperative nutritional management were submitted to NOGCA after the introduction of the data items. Only specialist centres with high levels of data completeness were included in this report, and it is possible that centres with good nutritional practices and access to specialist dietetic support are over-represented in the current findings.

> **Recommendation 2:** Review processes for the collection and submission of nutrition data for NOGCA and improve the completeness of data items where it is currently low (Audience: clinical leads, multidisciplinary teams, local audit teams).

Second, the current audit dataset does not capture more complex patterns of nutritional management, such as the use of multiple interventions during the perioperative period and the duration of nutrition support following surgery.

> **Recommendation 3:** Work with specialist dietitians to increase engagement with the audit and to refine the NOGCA nutrition data items (Audience: NOGCA team, specialist OG dietitians).

Despite some limitations, this report provides insight into current postoperative nutritional practices for OG cancer across specialist centres covering several regions in England. The demonstration of organisation-level variation in nutritional practices highlights the need for research to identify optimal nutrition strategies, which can inform the development of evidence-based guidance in this area. This would be expected to reduce the variation in care and improve outcomes for patients.

As data quality improves, next steps for the Audit will be to repeat this analysis to describe nutritional management across all OG cancer specialist centres, and to explore the relationships between nutritional management strategies and surgical outcomes.

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