

**Why do patients with a curative treatment plan
for oesophago-gastric cancer not go on to receive surgery?**

NOGCA: short report 2019

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Introduction

The main curative treatment option for patients with localised oesophago-gastric (OG) cancer is surgery to remove the tumour, usually in combination with chemotherapy or chemo-radiotherapy.¹ However, surgery is only suitable for patients who are appropriately fit.

Due to many patients being diagnosed with OG cancer at advanced stages, just 30% of patients are considered candidates for curative surgery.² Furthermore, the National Oesophago-Gastric Cancer Audit (NOGCA) has reported that only two-thirds of patients with a plan for curative surgery go on to have a surgical resection recorded in the audit. This difference is not wholly explained by non-submission of surgical information by hospitals (estimated case ascertainment 89%).² In this short report, we examine the potential reasons for this 'gap' between planned and actual treatments, with the aim of facilitating effective communication with patients about treatment plans and expectations.

Methods

This short report is based on 6,249 patients diagnosed with OG cancer in England and Wales between 1 April 2015 and 31 March 2017, who had a record of curative surgery in NOGCA as part of their planned treatment (surgery alone or in combination with other treatment).

Among these patients, the proportions who had a subsequent record of surgery submitted to the audit were derived for a number of patient characteristics (age at diagnosis, sex, pre-treatment TNM stage, and performance status) and by tumour site (oesophageal/gastro-oesophageal junction (GOJ) or stomach), as well as the whole cohort. We also assessed variation in the proportion of patients having a record of surgery by NHS Trust / local health board. Finally, we examined the other treatments (chemotherapy, radiotherapy, palliative endoscopic or radiologic therapies) that these patients received.

For English patients diagnosed with oesophageal/GOJ cancer between April 2015 and March 2016, the patient records in NOGCA could be linked to records from the national Radiotherapy Dataset (RTDS). RTDS data for Welsh patients was not available for this analysis because the time period coincided with the roll-out of RTDS within Wales. The prescribed dose of radiotherapy recorded in RTDS was analysed to gain further insight into whether patients received curative (neoadjuvant or definitive) oncological treatment.

Results

Of 6,249 patients reported as having curative surgery as their planned treatment, 4,329 (69.3%) had a record of surgery submitted to the Audit.

Overall, older patients were less likely to have a record of surgery than younger patients (56.2% of those aged 80-89 years had a surgical record compared to 73.5% of those under 60). This difference was more marked among patients with oesophageal or GOJ cancer than those with stomach cancer (Table 1). Patients with more advanced cancer were also less likely to have a record of surgery (39.3% of patients with stage 4 cancer), as were patients with stage 0 cancer (55.1% of patients with stage 0 cancer). Again, these differences were greater among patients with oesophageal or GOJ cancer. Similarly, patients with worse performance status were less likely to have a surgical record (34.3% of patients with performance status 3 or 4, compared to 72.9% with performance status 0), with a greater effect among patients with oesophageal or GOJ cancer (20.3% of patients with stage 3 or 4 oesophageal cancer, compared to 61.1% of patients with stage 3 or 4 stomach cancer). While patient sex was not associated with the likelihood of having a record of surgery in the whole sample of patients, among those with oesophageal or GOJ cancer, the proportion of women who had a surgical record was slightly less than the proportion of men.

Table 1: Characteristics of oesophago-gastric cancer patients with a plan for curative surgery (alone or as part of multimodal treatment) and presence of surgical records in the national audit, by tumour site

| Characteristic | All patients | | | Patients with oesophageal or GOJ cancer | | | Patients with gastric cancer | | |
|--------------------------------|--------------|------------------------|---------|---|------------------------|---------|------------------------------|------------------------|---------|
| | N | % with surgical record | P-value | N | % with surgical record | P-value | N | % with surgical record | P-value |
| | 6249 | 69.3% | | 4563 | 66.5% | | 1686 | 76.7% | |
| Age at diagnosis | | | <0.001 | | | <0.001 | | | 0.565 |
| Under 60 years | 1441 | 73.5% | | 1075 | 72.3% | | 366 | 77.1% | |
| 60-69 | 2041 | 73.0% | | 1646 | 71.6% | | 395 | 78.5% | |
| 70-79 | 2164 | 66.6% | | 1550 | 62.7% | | 614 | 76.7% | |
| 80-89 | 603 | 56.2% | | 292 | 37.3% | | 311 | 74.0% | |
| Sex | | | 0.083 | | | 0.001 | | | 0.647 |
| Male | 4630 | 69.9% | | 3509 | 67.8% | | 1121 | 76.4% | |
| Female | 1612 | 67.6% | | 1051 | 62.3% | | 561 | 77.4% | |
| Pre-treatment TNM stage | | | <0.001 | | | <0.001 | | | <0.001 |
| 0 | 78 | 55.1% | | 49 | 46.9% | | 29 | 69.0% | |
| 1 | 1213 | 70.9% | | 807 | 65.4% | | 406 | 81.8% | |
| 2 | 1654 | 74.4% | | 1070 | 71.7% | | 584 | 79.5% | |
| 3 | 2334 | 72.0% | | 2021 | 71.1% | | 313 | 78.0% | |
| 4 | 183 | 39.3% | | 120 | 32.5% | | 63 | 52.4% | |
| Stage unknown | 787 | | | 496 | | | 291 | | |
| Performance status | | | <0.001 | | | <0.001 | | | 0.004 |
| 0 | 3433 | 72.9% | | 2600 | 71.8% | | 833 | 76.2% | |
| 1 | 2276 | 67.8% | | 1623 | 62.9% | | 653 | 79.9% | |
| 2 | 435 | 57.2% | | 271 | 49.8% | | 164 | 69.5% | |
| 3 or 4 | 105 | 34.3% | | 69 | 20.3% | | 36 | 61.1% | |

GOJ – gastro-oesophageal junction

There was variation in the proportion of patients with a record of surgery by diagnosing NHS provider. Among the 107 providers that submitted data for at least 10 patients with planned curative surgery, the median proportion of patients with a surgical record was 70.8% (IQR 48.0 to 82.2%).

There are various reasons why these patients may not have proceeded to surgery. First, it is possible that they did not proceed to surgery after neoadjuvant therapy, either due to complications making the patient unsuitable for surgery or due to a good response to therapy which meant that surgery was no longer required. In this cohort, there were 3329 patients who had neoadjuvant therapy (as recorded in a pathology record or oncology

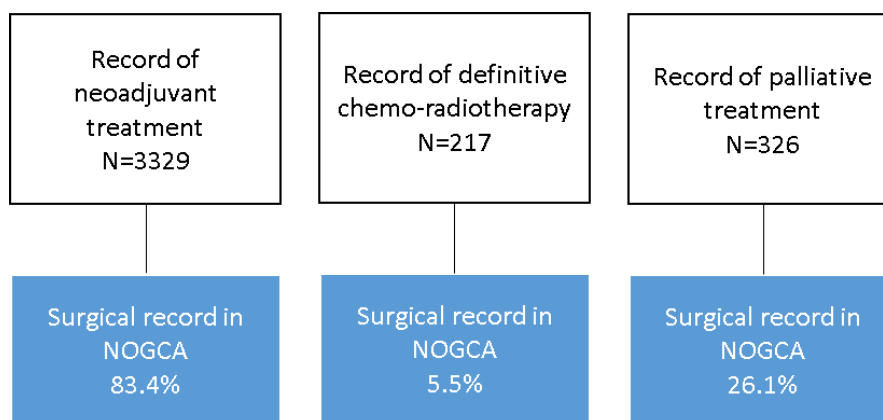
record). Of these patients, 16.6% (n=553) did not have a corresponding surgery record (17% of those with oesophageal cancer, 14% of those with gastric cancer), suggesting they may not have continued with their multi-modal treatment (Figure 1).

Second, an alternative to curative surgery for some patients with oesophageal cancer is definitive chemo-radiotherapy, and patients may have changed to this option after their initial treatment plan was recorded. Within this cohort, 217 patients with oesophageal cancer (4.8%) were recorded as having definitive chemo-radiotherapy in an oncology record. The vast majority of these patients (n=205, 94.5%) did not have a surgical record, suggesting that definitive chemo-radiotherapy was completed as expected.

Third, it is possible that the initial curative intent was not followed because of disease progression. Within the cohort, 194 patients (3.1%) had palliative chemotherapy and/or radiotherapy and an additional 132 patients (2.1%) had a record of palliative endoscopic or radiological treatment. Finally, the initial curative intent may not have been followed because of changes in patient preferences. The audit does not have any information on patient preferences and so it is unclear how great a role this plays.

Among those patients with oesophageal or GOJ cancer and a linked record in RTDS, the dose of radiotherapy was consistent with recommended regimens for definitive chemo-radiotherapy in 28% of patients (n=74), with a typical dose of 50 Gy in 25 fractions. There were 83 (31%) patients prescribed a dose consistent with palliative treatment (typically 20 Gy in 5 fractions, or 30 Gy in 10) or treatment to stop bleeding or reduce pain (8-10 Gy in 1). The other 41% of patients were prescribed a dose consistent with neoadjuvant treatment (45 Gy in 25 fractions).

Figure 1: Treatment pathways of patients with a record of planned curative surgery



Conclusions

Almost a third of patients who were recorded in NOGCA as having treatment plans involving curative surgery at the time of the multidisciplinary team (MDT) meeting do not appear to proceed to surgery (as indicated by the absence of a surgical record). That differences arise between treatment plans and what actually occurs is to be expected given the number of specialists involved in identifying the potential treatment options for a patient, some of which may require further investigations after an MDT meeting. Patient preferences may also evolve. However, the variation between NHS providers suggests there is a lack of consistency in how information on treatment plans are being recorded, and we encourage local MDTs to reflect on their practice and whether the number of instances when plans differ from the actual treatment can be reduced.

The relationships observed between different patient characteristics and the likelihood of not proceeding to surgery highlights the complex nature of MDT discussions. Some patients, particularly those who are older, frailer and with more advanced disease, may become unsuitable for curative surgery due to poor health, complications of neoadjuvant treatment or cancer progression. This appears to be more likely to occur among patients with planned surgery for oesophageal or GOJ cancers than those with gastric cancers, which is to be expected given that oesophagectomies are higher risk procedures associated with greater rates of complications than gastrectomies.

Patient preferences and tumour characteristics may also change before treatment commences, leading to a change of plan e.g. patients with squamous cell oesophageal cancer may choose definitive chemo-radiotherapy. Some patients will respond very well to neoadjuvant treatment, and will no longer require surgery or feel well and elect not to have surgery. There will also be a small number of patients who undergo treatment outside of NHS hospitals, for whom we do not have information in NOGCA.

This report reflects an initial exploration of this issue and the NOGCA project team will evaluate it further. We expect the subsequent work will enable specific recommendations to be formulated to support local quality improvement. In the meantime, we encourage local MDTs to examine how information about treatment plans are being recorded to ensure this is done consistently.

References

1. National Institute for Health and Care Excellence, *Oesophago-gastric cancer: assessment and management in adults: NICE guideline NG83*. 2018, NICE: London.
2. NOGCA project team, *National Oesophago-gastric Cancer Audit 2018: Annual Report*. 2018, Healthcare Quality Improvement Partnership: <https://www.nogca.org.uk/reports/2018-annual-report/>.

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