NHS treated cancer patients receiving major surgical resections

NCIN Data Briefing

KEY MESSAGE:

There is a large reduction with age in the percentage of patients receiving a major resection, even for patients over 50.

For patients aged 80 and over, less than 2% had a record of a major resection for six of the thirteen cancer sites analysed.

Background

Understanding the proportion of patients who undergo an operation to remove their tumour is important to help inform the drive to improve outcomes for cancer patients.

National analyses of major surgical resections for thirteen cancer sites have been undertaken, with results by age group and deprivation index. The analysis has used routinely available datasets with the close engagement of clinicians to understand the use of surgical codes.

There is no definitive "right or wrong" when examining data in this way. These results show what the current data tells us. They are presented here to show where variations exist, but it is not clear the extent to which all these variations relate to data quality or to real differences in clinical practice. These findings should therefore be seen as a starting point so that we can begin to improve the quality of data relating to surgical practice in cancer enabling us to more reliably study what factors affect surgery rates, and how these relate to clinical outcomes for cancer patients.

Routinely collected Hospital Episode Statistics (HES) were used to ascertain which NHS treated patients had a record of a major resection, defined as a surgical operation that when performed on a cancer patient would be an attempt to remove the tumour. Patients diagnosed in England in 2004-2006 with cancers of the colorectum, breast, lung, stomach, oesophagus, liver, pancreas, ovary, cervix, uterus, prostate, bladder and kidney were included in the analysis. Variations in the percentage of patients who had a record of a major resection were then investigated for different age groups and by socio-economic deprivation.

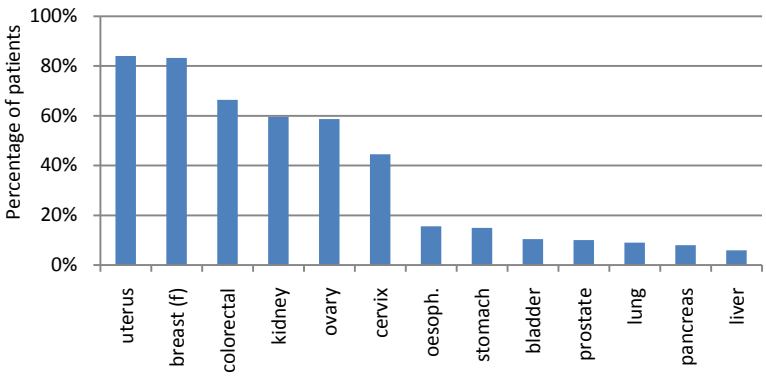
Data

Hospital records for all patients who are treated within the NHS are captured within HES. By linking records for patients treated as inpatients or day cases, surgical operations have been assigned to cancer registrations in order to analyse which patients had a record of a major resection as part of their treatment. Operations recorded within HES are coded using OPCS4 codes, a coding classification system for surgical procedures and operations.

By working with clinicians from the NCIN's Site Specific Clinical Reference Groups (SSCRGs), particular operations recorded within HES were classified as 'major' resections for diagnosed cancer patients. Operations were attributed to the treatment of a particular cancer diagnosis when the operation took place within six months after diagnosis date. For cancers of the breast, ovary, cervix and uterus, this timeframe was extended to 12 months to allow for chemotherapy that often occurs before surgery.

Data are not currently routinely available for patients who receive private hospital treatment. These results are therefore a reflection only of patients who are treated within the NHS. Patients whose diagnosis was purely on the basis of a death certificate were excluded from the analysis.

Percentage of patients with a record of a major resection, by cancer site, diagnosed 2004-2006, followed up to 2007



Overall rates

The percentage of NHS treated patients that had a record of a major resection varied widely by cancer site, from over 80% of uterine and female breast cancer

patients to only 6% of liver cancer patients. The overall percentage was also less than 10% for patients diagnosed with cancers of the bladder, prostate, lung and pancreas.

It should be noted that for some cancer sites, the percentage of patients undergoing any type of surgical procedure for their cancer will be significantly higher than those receiving an operation classified in this analysis as a 'major' resection.

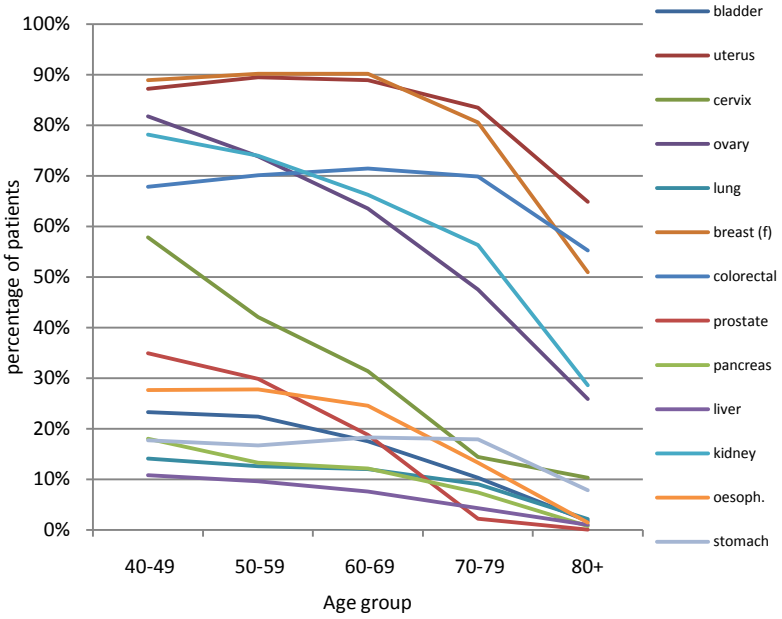
Age at diagnosis

There is a notable reduction in the percentage of patients undergoing major resection with age for all cancer sites. This fall is apparent in many cancers for patients from age 40-49 to age 50-59, though, not surprisingly, the largest reduction was in the most elderly group.

For cervical cancer patients, 58% of patients age 40-49 had a record of a major resection compared to 42% of patients aged 50-59 and only 10% of patients aged 80 and over. For ovarian cancer patients, the percentage ranged from 82% to 26%.

A large reduction with age in the proportion of patients with a record of a major resection was also seen for kidney cancer patients with 78% of patients aged 40-49 compared to just 29% of patients aged 80 and over, whilst for prostate cancer patients, the percentage fell from 35% to 0%.

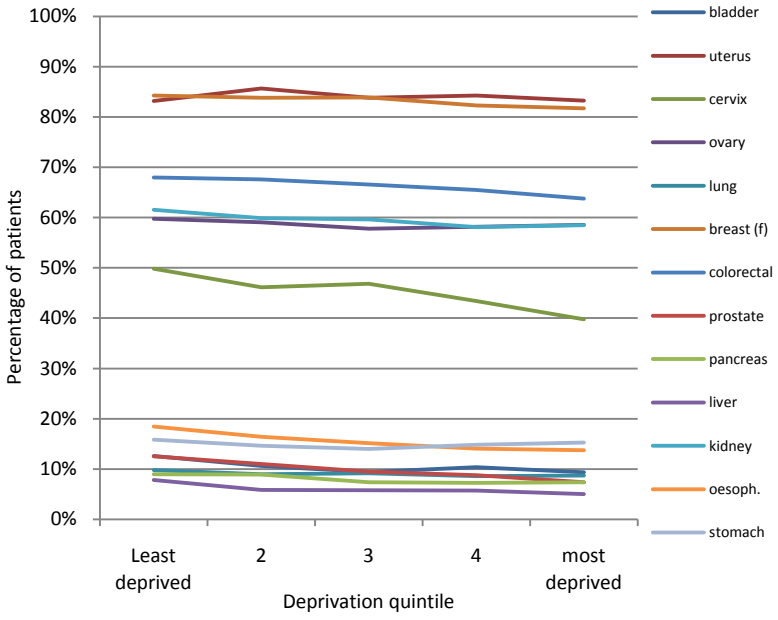
Percentage of patients with a record of a major resection, by age and cancer site, patients diagnosed 2004-2006, followed up to 2007



Less than 2% of patients aged over 80 who were diagnosed with cancer of the lung, prostate, pancreas, liver, oesophagus or bladder had a record of a major resection.

Socio-economic deprivation

Percentage of patients with a record of a major resection, by cancer site and deprivation quintile, patients diagnosed 2004-2006, followed up to 2007



There was little difference in the overall major resection rates for patients of all ages by deprivation groups. Cervical cancer showed the biggest difference between major resection rates for the most deprived and least deprived quintiles, with 50% of the least deprived NHS treated patients having a record of a major resection compared to 40% of the most deprived.

Further work needs to be undertaken to investigate whether there is a link between cervical screening uptake and the difference in major resections between deprivation quintiles.

Resection rates for patients treated within a private hospital are not included, which may affect overall percentage of patients by deprivation quintile (as the proportion of patients treated in a private hospital is likely to be strongly associated with socio-economic status).

Limitations

There are various factors which limit our ability to interpret these data. The most important being that we have not been able to adjust the surgical rates for the stage of disease since it is not universally recorded for all cancer sites at a national level. There are surgical procedures which it is not possible to assign as 'major' resections without knowing the stage of disease for that patient. For early stage cervical patients, for example, operations which are coded as biopsies would have been undertaken to remove the tumour, whereas for patients with later stage disease, this would be a diagnostic procedure.

There are also concerns over the quality of data within HES which was not set up with the direct intention of analysing the details of surgical operations. However, it is a routinely available data source which we can use to gain a better understanding of cancer patients' treatment. In order to use such data to understand differences in clinical outcomes for patients, we need to ensure that surgical procedures are coded properly, that data input is comprehensive and that the linkage with cancer registrations is improved. Clinicians need to take more reponsibility for how their activity is recorded.

Further work

These data provide a starting point for further investigations into differences in the proportion of patients receiving what might be considered potentially curative surgery. National work of this type is already underway for some of the cancer types discussed here, but more is to be encouraged. There is also a need for more international comparative work to help establish benchmarks of what might be considered 'ideal' resection rates.

Many cancer patients receive multiple forms of treatment during the course of their disease. As other data sources become available, including details of radiotherapy and chemotherapy, we can develop a greater understanding of the complexity of how patients are treated nationally, which can then be related to the impact of practice on outcomes for patients.

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A more detailed report and methodology will be available to download from the NCIN website by the end of November 2010.

FIND OUT MORE:

National Cancer Intelligence Network
www.ncin.org.uk

United Kingdom Association of Cancer Registries
www.ukacr.org

Other useful resources within the NCIN partnership:
Cancer Research UK CancerStats – Key facts and detailed statistics for health professionals
http://info.cancerresearchuk.org/cancerstats/

The NCIN is a UK-wide initiative, working closely with cancer services in England, Scotland, Wales and Northern Ireland, and the National Cancer Research Institute (NCRI), to drive improvements in standards of cancer care and clinical outcomes by improving and using the information it collects for analysis, publication and research. In England, the NCIN is part of the National Cancer Programme.