

Survival of small cell lung cancer patients undergoing surgery in England 1998-2009

NCIN Data Briefing

Background

Chemotherapy or chemo-radiotherapy is the recommended treatment for small cell lung cancer (SCLC). Surgery is inappropriate for the majority of SCLC patients, since they usually present with metastatic disease. However, on rare occasions patients present with apparently early stage, resectable lung cancers, which are found to be SCLC on biopsy. There may be a role for surgery in stage I SCLC based on favourable outcomes in case series, but there is concern amongst thoracic surgeons and oncologists as to its appropriateness.

In order to try to answer the question of the appropriateness of surgery for SCLC, we analysed data from the National Cancer Data Repository on patients with SCLC and non-small cell lung cancer (NSCLC) undergoing surgery. The principle outcome was survival of surgically resected SCLC patients relative to resected NSCLC patients, and specifically whether the diagnosis of SCLC had been made prior to surgery.

Methods

Data on 359,873 patients who were diagnosed with a first primary lung cancer in England between 1998 and 2009 were grouped according to histology (SCLC; NSCLC) and whether they underwent a surgical resection.

Information on surgical resection was retrieved from linked Hospital Episode Statistics records. Data on surgery from one month before to six months after the date of diagnosis were included. Based on the days between diagnosis and surgical resection, resected SCLC patients were classified as “incidental” cases (-28 days to 7 days between surgical resection and diagnosis date) and “elective” cases (>8 days).

Survival functions curves were estimated for each group using the Kaplan-Meier method, and corresponding five-year survival estimates with 95% confidence intervals were calculated.

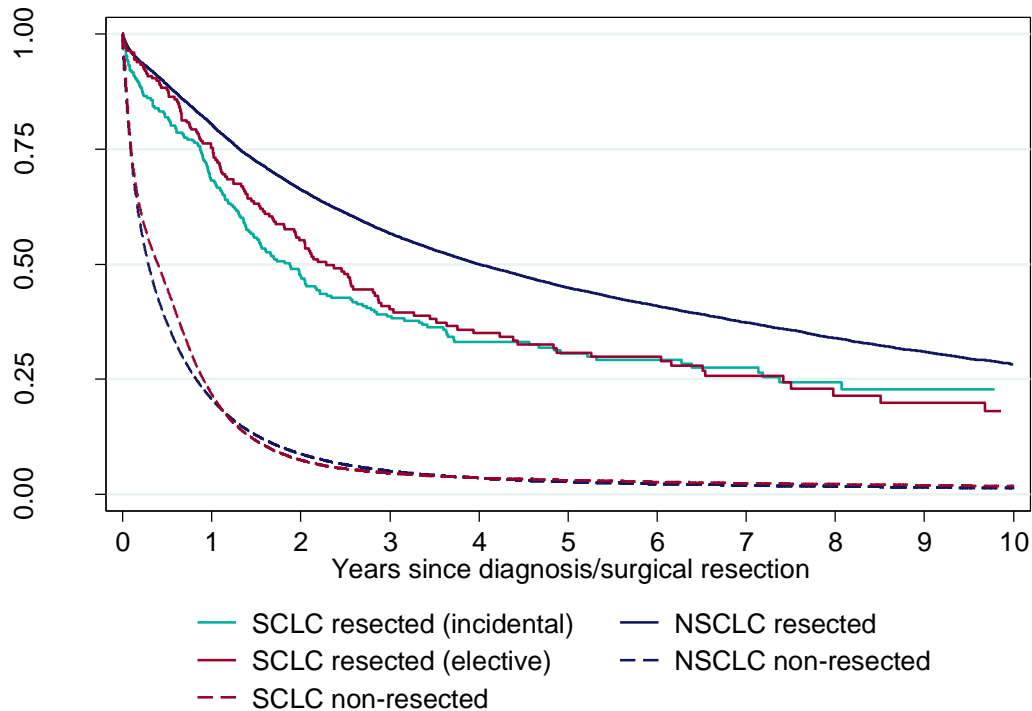
Results

Of the 359,873 primary lung cancer patients, 45,848 (13%) were diagnosed with SCLC, 465 (1%) of whom underwent surgical resection, whereas 29,670 (9%) of NSCLC patients had surgery. Figure 1 shows that survival was highest among NSCLC patients who underwent surgical resection; five-year survival was 45% (95% CI 44%-46%). Survival among SCLC patients who underwent surgical resection was lower at 31% (26%-36%), but considerably higher than the survival among NSCLC and SCLC patients who did not undergo surgery (3%).

KEY MESSAGE:

Based on cancer registry data, small cell lung cancer patients who undergo a surgical resection for apparently early stage disease were found to have survival that approached that experienced by non-small cell lung cancer patients undergoing surgery.

The subgroup dominated by incidental SCLC diagnosis (n=267; green survival function) had higher mortality than the subgroup dominated by elective resection of known SCLC (n=198; red survival function). However, the two survival functions were quite similar, and converged from the third year of follow-up onwards.



Conclusion

These data serve as a natural experiment testing the surgical management of SCLC according to NSCLC principles. SCLC patients treated surgically for early stage disease may have survival outcomes that approach those of NSCLC, supporting the emerging clinical practice of offering surgical resection to selected SCLC patients.

Acknowledgment

This work is taken from the following publication: Survival of patients with small cell lung cancer undergoing lung resection in England, 1998-2009. Lüchtenborg M, Riaz SP, Lim E, *et al.* Thorax. 2014 Mar;69(3):269-73.

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Public Health England

The London Knowledge and Intelligence Team is the lead for lung cancer and mesothelioma

www.gov.uk/phe

Other useful resources:

What cancer statistics are available and where can I find them? - <http://ncin.org.uk/item?rid=2494>

The National Cancer Intelligence Network (NCIN) is a UK-wide partnership operated by Public Health England. The NCIN coordinates and develops analysis and intelligence to drive improvements in prevention, standards of cancer care and clinical outcomes for cancer patients.