

Outcomes of Patients Presenting to a Dedicated Rapid Access Lung Cancer Clinic

Abstract:

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Abstract

We examined the outcomes of the first 500 patients referred to a dedicated Rapid Access Lung Cancer Clinic. A total of 206 patients (41.2%) were diagnosed with a thoracic malignancy; 179 had primary lung cancer and 27 had secondary or other thoracic cancers. Pulmonary nodules requiring ongoing surveillance were found in a further 79 patients (15.8%). Of those patients found to have primary lung cancer, 24 (13.4%) had Small Cell and 145 (81%) had Non Small Cell Lung Cancer. In patients with Non small cell tumours, 26 (21.1%) were stage I, 14 (11.4%) stage II, 37 (30.1%) stage III and 46 (37.4%) stage IV at diagnosis. For the 129 patients (72%) in whom the thoracic MDT recommended active treatment, primary therapy was surgical resection in 44 (24.6%), combined chemoradiation in 31 patients (17.3%), chemotherapy alone in 39 (21.8%) and radiation in 15 (8.4%).

Introduction

Lung cancer is the leading cause of cancer-related mortality worldwide and accounts for more cancer deaths than breast, prostate and colon cancer combined¹. Survival rates for lung cancer are historically very poor in Ireland with 5 year survival of only 8% in men and 10% in women². This poor survival is largely due to the fact that most patients have regionally advanced (stage III), or metastatic (stage IV) disease at time of presentation. It is probable that delays in diagnosis, staging and treatment initiation following presentation contribute to the unacceptably poor outcomes for lung cancer patients^{3,4}. In Ireland the national cancer control strategy 2006 proposed a clear organisational structure for lung cancer care formally linking thoracic surgery centres with 8 regional cancer centres⁵. Multidisciplinary teams (MDTâ s) are at the core of this structure and access to specialized multi-disciplinary team has generally been found to be associated with improved quality outcomes in cancer care⁶.

The Rapid Access Clinic is the front end of the MDT process and serves to expedite the clinical assessment of patients referred with symptoms or signs suggestive of lung cancer and provide timely lung cancer diagnostics as part of this assessment. A dedicated Rapid Access Lung Cancer clinic was commenced in 2009 in Beaumont Hospital. Patients suspected of having lung cancer are referred by general practitioners, radiologists or other clinicians to the clinic. Patients identified with malignancy are brought forward for discussion at the weekly thoracic oncology MDT. Here we describe the outcomes for the first 500 patients referred to a rapid access lung cancer clinic in Ireland.

Methods

Data were collected prospectively on the first 500 consecutive patients and entered into a patient tracking database. The parameters analysed included patient demographics, investigations and MDT outcomes. Standard descriptive statistics were employed to analyse the data. All patients had baseline clinical assessment, CT thorax, bronchoscopy and pulmonary function testing and every patient with suspected cancer diagnosis was discussed at the weekly thoracic oncology MDT meeting. Where bronchoscopy or other tissue sampling had failed to secure a tissue diagnosis, further diagnostic testing was performed at the direction of MDT and included CT guided lung biopsy or fine needle aspirate (FNA), endobronchial ultrasound and endoscopic ultrasound guided FNA. If required and appropriate surgical lung biopsy or mediastinoscopy was performed before resection. Staging investigations included positron emission tomography (PET) scan which was performed for all patients considered suitable for surgery or radical chemo-radiotherapy.

Where an alternative (non-cancer) pulmonary diagnosis was made, patients were seen for follow-up in a general respiratory clinic. Where an alternative non-pulmonary diagnosis was made speciality clinic referrals were arranged as appropriate. Patients who had no abnormalities or benign findings following assessment were discharged back to their referring clinician. Where lung cancer was not found but nodules or other suspicious changes on CT scanning that required interval follow-up were present, these patients were entered into a surveillance group.

Results

Demographics

Of the five hundred consecutive patients referred to the clinic 301 (60.2%) were men and the median age was 68 years (range 18-89). The average length of time from receipt of referral to rapid access clinic assessment was 5.5 days (range 0-26). The target of clinic assessment within 2 weeks of referral was met in 98.3% of cases. A total of 206 patients (41.2%) were diagnosed with a malignancy. Patients with a malignancy were discussed at the MDT a median of 5 days from first clinic assessment (range 0-31). Overall 294 patients (58.8%) referred to the rapid access clinic were found not to have a malignancy. Seventy nine patients (15.8%) were identified as having suspicious nodules that required further surveillance and 68 patients (13.6%) had an alternative pulmonary disease that required follow up. Twenty nine patients (5.8%) had a non-respiratory condition and were referred to the relevant specialist. The remaining 118 (23.6%) were reassured and discharged to their referring doctor (figure 1).

Diagnostic work-up

Of the 206 patients diagnosed with thoracic malignancy, 64 patients (29%) required a CT guided biopsy for diagnosis and 21 patients (10.2%) underwent a surgical biopsy or excision to secure a tissue diagnosis. Eighty-two patients (38.9%) had a PET scan as part of their staging investigations.

Tumour characteristics

One hundred and seventy nine (35.8%) patients were diagnosed with primary lung cancer with a further 27 (5.4%) patients diagnosed with secondary lung cancer or other thoracic malignancy including sarcoma, lymphoma and neuroendocrine tumours. Of the 179 patients diagnosed with primary lung cancers, pathological diagnosis was achieved in 157 (87.7%) with the remaining 22 diagnosed on clinical and radiological grounds. This occurred either when the patient was deemed unfit for or declined further investigation and the clinical diagnosis was always made by the MDT. All patients who had a clinical diagnosis were considered to have a non small cell cancer and thus of the 179 patients with primary lung cancer, 145 (81%) were non small cell lung cancers (NSCLC), 24 (13.4%) were small cell lung cancers, 5 (2.8%) were mesothelioma, 2 (1.1%) carcinoid tumours and 3 other thoracic tumours(1.6%).

Figure 1: Outcomes of 500 consecutive patients referred to a rapid access lung cancer clinic.

Figure 2: Stage at presentation of patients diagnosed with Non Small Cell Lung Cancer (NSCLC) and Small Cell Lung Cancer (SCLC). N=169 patients.

Tumours were staged according to the International association for the study of lung cancer 6th edition until august 2010 following which they were staged according to the 7th edition⁷. Of the 145 patients diagnosed with NSCLC, 123 (84.8%) had confirmed tissue diagnosis and staging; 26 patients (21.1%) were stage I, 14 (11.4%) stage II, 37 patients (30.1%) were stage III and 46 (37.4%) were stage IV at diagnosis (figure 2).

Treatment

Of the 179 patients with primary lung cancer best supportive care was recommended in 39 (21.8%) and referral was made for palliative care and hospice as appropriate. Eleven patients (6.1%) who were not symptomatic and were unfit for or refused treatment were offered clinical follow-up in the respiratory clinic. For the remaining 129 (72%) in whom MDT recommended active treatment, primary therapy was surgical resection in 44 (24.6%), combined chemoradiation in 31 patients (17.3%), chemotherapy alone in 39 (21.8%) and radiation in 15 (8.4%) (table 1). All patients who underwent resection were reviewed post-operatively by the MDT and 7 were referred for adjuvant therapy; 4 had adjuvant chemotherapy and 2 had post-operative chemotherapy and radiation. One patient with a superior sulcus tumour underwent pre-operative chemoradiation prior to resection.

Figure 3: Diagnostic outcomes of 500 patients referred to a Rapid Access Lung Cancer Clinic. * Includes 22 patients in whom histological diagnosis was not achievable and a radiological diagnosis of NSCLC was made. NSCLC: non-small cell lung cancer; SCLC: small cell lung cancer.

Discussion

The Rapid Access Clinic serves to expedite diagnosis of lung cancer and is now the principle pathway to the Lung Cancer MDT in Beaumont Hospital. Of the first 500 referrals to the clinic there was a predominance of males (60.2%). The median age of patients referred was 68 years. There was a wide range of ages reflecting the National Cancer Control Programme guidelines for referral which are radiological and symptom based and not age specific. The median ages of patient with and without cancer were similar, 68 (range 19-89) and 65 (range 18-88) years respectively. The median age of male with lung cancer was 69 years and female was 66 years. This corresponds to the figures of the Irish national cancer registry 2000-2004 but is somewhat younger than that reported since 2004 by the National Lung Cancer Audit (LUCADA) database from England and Wales of 71 years.

In this study, 87.7% of patients with primary lung cancer received a tissue diagnosis and staging information was available on all but 22 patients (15.2%) of patients. These numbers compare very favourably with a clinical diagnosis rate of 22% overall from the LUCADA database. Tissue diagnosis and staging, in particular mediastinal lymph node staging are important quality indicators in a lung cancer programme as they determine appropriate management and prognosis. In our cohort presenting through the rapid access lung clinic, approximately one third had stage I or II (21.1% and 11.4% respectively), a further thirty percent presented with stage III and 37.4% had metastatic, stage IV disease. These rates of early (stage I and II) cancers are more than double those of the Irish cancer registry collected within the last decade. This registry reported stage I disease in only 8.9% and stage II in 5.6% cohort of patients presenting to a rapid access clinic are ambulant, possibly younger and might be expected to be at an earlier stage it is encouraging for us that earlier disease is being detected where opportunities for intervention and potential for cure is greater.

⁸. While the

All patients assessed and diagnosed through the rapid access clinic were discussed at the thoracic oncology MDT and almost 80% were referred on following MDT discussion for active treatment; 24.6% had surgical resection, 43.6% received chemotherapy, 27.4% received radiotherapy and 19% combined chemoradiotherapy. Only 21.8% were deemed unfit for any tumour directed treatment and these patients were referred to palliative care where appropriate or received clinical follow-up. These rates of active treatment are far higher than those ever reported from Ireland. In 2001, the last reported year with complete data from the National Cancer Registry, almost 50% of patients had no form of tumour directed treatment; only 12.5% of lung cancer patients underwent surgical resection, 18.2% chemotherapy, 36.6% radiotherapy and 9.1% chemoradiotherapy. While our data represents a single centre experience for ambulant patients referred to a dedicated clinic and there is the possibility of referral bias arising, the majority of lung cancer referrals to our MDT are now coming from the Rapid Access clinic with over two thirds of all referrals to our MDT in 2010 coming from the clinic, compared to approximately half in 2009.

While we cannot yet say that more treatment has resulted in improved survival in all likelihood better outcomes for our patients have resulted. In particular we believe the rapid access to the MDT that the service provides may be single biggest determinant of the success of our programme. In the United Kingdom, lung cancer MDTs have been shown to improve time to diagnosis and affect disease management resulting in increasing numbers of patient undergoing surgical resection, chemotherapy or radiotherapy with curative intent. Almost 60% of patients referred (294 of 500) had no malignancy. In a significant proportion of these an alternative respiratory diagnosis was provided and follow-up arranged in the general respiratory clinic. Approximately 16% of the patients referred had either solitary or multiple pulmonary nodules requiring follow-up. These patients have entered a surveillance clinic group and will be a continued burden on the service as many will require 2 years or longer of clinical and radiological follow-up.

In conclusion over 40% of those referred to our Rapid Access Clinic had a thoracic malignancy, demonstrating that appropriate patients are being referred. Target times for assessment were achieved in 98.3%. A higher percent of early stage lung cancers are being identified when compared to most recent figures from National Cancer Registry of Ireland and treatment rates including resection and combined modality therapies are far higher than those reported to date. A significant number of referrals will require ongoing surveillance for pulmonary nodules.

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