



Lung cancer treatment in New Zealand: physicians' attitudes

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Abstract

Aims To determine treatment practices of New Zealand physicians who manage non-small cell lung cancer (NSCLC).

Methods A questionnaire on the treatment of NSCLC was emailed to all respiratory physicians, medical oncologists, and radiation oncologists in New Zealand. Respondents were asked to select the treatment they would offer in six lung cancer case scenarios.

Results Thirty-one (81%) respiratory physicians, 15 (71%) medical oncologists, and 8 (30%) radiation oncologists responded to the questionnaire. Surgery was selected (by all groups) as the best option for early-stage disease NSCLC. Radiotherapy or combination chemo/radiotherapy (for locally advanced disease) was favoured by 37% of respiratory physicians for stage IIIa and 28% for stage IIIb—compared with medical oncologists (100% and 80%) and radiation oncologists (86% and 28%). Chemotherapy for 'fit' patients with advanced disease was favoured by only 11% of respiratory physicians, compared with 67% of medical oncologists and 33% of radiation oncologists. Best supportive care (BSC) was the favoured treatment for patients with advanced disease with poor performance patients.

Conclusion This study demonstrates considerable heterogeneity in the choice of treatment for NSCLC between specialities, particularly for locally advanced and advanced disease. These findings suggest international guidelines are not being adhered to, and variations in treatment may potentially have outcome implications for patients.

Lung cancer remains the leading cause of cancer death in NZ with over 1500 reported cases presenting each year.¹ The most common type of lung cancer is non-small cell lung cancer (NSCLC), which represents approximately 75 % of cases. The 5 year survival is less than 10%.

The investigation and initial management of lung cancer in New Zealand is mainly undertaken by respiratory physicians, and subsequently referred on to oncologists or surgeons for treatment (either on an individual basis or via multidisciplinary meetings or clinics). Although surgery alone is currently considered the best available treatment (when a primary lung cancer is localised), there is considerable debate over the optimal treatment of locally invasive and extensive stage lung cancer.

In spite of several recent clinical trials that appear to show improved survival rates using newer chemotherapeutic agents and multi-modality treatments, there is still significant variation in the use of these therapies internationally. There are, however, several published international guidelines on the management of lung cancer published by different organisations, which include: The Scottish Intercollegiate

Network (SIGN), the British Thoracic Society (BTS), the American Society of Clinical Oncology (ASCO), and (recently) The Australian Cancer Network (ACN).²⁻⁵ Although there are no specific New Zealand Guidelines, the ACN guidelines have been contributed to and endorsed by the Thoracic Society of Australia and New Zealand (TSANZ).

The aim of our study was to determine treatment practices by New Zealand lung cancer specialists, and to determine whether the treatment decisions are in accordance with the currently available guidelines.

Methods

A questionnaire was developed and circulated to physicians involved in the non-surgical treatment of lung cancer. These physicians included all New Zealand adult respiratory physicians who were active members of the TSANZ, as well as all medical and radiation oncologists who were active current members of New Zealand Clinical Oncology Group (NZCOG).

The questionnaire consisted of six case scenarios of varying stages of NSCLC summarised in Table 1. The information provided in the case scenarios included a brief clinical summary, which included patient symptoms, performance status (ECOG), exercise tolerance, existing co-morbidities. Also, histology, simple spirometry, relevant blood test results, and results of staging CT and mediastinoscopy where appropriate (ie, enough to determine performance status and stage of tumour). The surveyed physician was asked to indicate which treatment they would offer. Results were then forwarded to the principal investigator (TC).

Table 1. Case summaries

Case 1	56-year-old man with early-stage disease and good performance status, NSCLC, stage Ia, T1N0M0, ECOG performance I.
Case 2	72-year-old man, heavy smoker, poor lung function which clearly precluded surgery. NSCLC Stage I, T2N0M0, FEV ₁ /FVC 0.9/2.0, ECOG II.
Case 3	65-year-old woman with locally advanced disease, NSCLC stage IIIa, T1N2M0, normal exercise tolerance, ECOG II.
Case 4	52-year-old man with locally advanced but unresectable disease, NSCLC stage IIIb, T2N3M0, ECOG I.
Case 5	46-year-old woman with extensive disease but good performance status, NSCLC, stage IV, T3N3M1, ECOG I.
Case 6	72-year-old woman with extensive disease and poor performance status, NSCLC, stage IV, T2N3M1, 10 kg weight loss, ECOG IV.

Treatment options for each scenario included surgery alone, surgery plus adjuvant treatment (chemo or radiotherapy) radical radiotherapy (RT), combined chemo/radiotherapy (chemo/RT), chemotherapy alone, best supportive care (BSC; defined as palliative treatment which could include analgesics, steroids and palliative radiotherapy but not including the other treatment options), and other.

A follow-up email of the questionnaire was sent to individuals who did not respond, and subsequent attempts to contact them were made by phone.

Results

Completed questionnaires were received from 31 (81%) respiratory physicians, 15 (71%) medical oncologists, and 8 (30%) radiation oncologists. Forty-four (77%) of those respondents reported having immediate access to thoracic surgery in their town/city, 51 (89%) have radiotherapy, and 100% have access to chemotherapy

Survey results are summarised in Table 2.

Table 2. Favoured treatment options by specialist for each case scenario (expressed as percentage)

	Thoracotomy	Rad RT*	Res + adj Chemo or RT†	Chemo alone‡	Combined Chemo + RT§	BSC	Other
CASE 1							
Respiratory Physician	97	0	3	0	0	0	0
Medical Oncologist	100	0	0	0	0	0	0
Radiation Oncologist	100	0	0	0	0	0	0
CASE 2							
Respiratory Physician	0	45	0	0	0	50	5
Medical Oncologist	0	40	0	0	7	47	7
Radiation Oncologist	0	72	0	0	0	14	14
CASE 3							
Respiratory Physician	0	8	16	0	13	55	8
Medical Oncologist	7	7	13	7	60	0	7
Radiation Oncologist	0	57	0	0	29	14	0
CASE 4							
Respiratory Physician	0	0	0	8	21	71	0
Medical Oncologist	0	20	0	40	40	0	0
Radiation Oncologist	0	0	0	14	14	71	0
CASE 5							
Respiratory Physician	0	0	0	8	3	82	8
Medical Oncologist	0	0	0	67	0	20	13
Radiation Oncologist	0	0	0	29	14	57	0
CASE 6							
Respiratory Physician	0	0	0	0	0	98	2
Medical Oncologist	0	0	0	0	0	93	7
Radiation Oncologist	0	0	0	0	0	100	0

*Radical radiotherapy.

†Resection plus adjuvant chemotherapy or radiotherapy.

‡Chemotherapy alone.

§Combined chemotherapy and radiotherapy.

^{||}Best supportive care.

Discussion

This study examines what treatment is likely to be offered to patients (with different stages of NSCLC) by New Zealand lung cancer specialists. It demonstrates there is considerable heterogeneity in treatment preferences between different specialties, and suggests that treatment for lung cancer may depend significantly on the type of specialist the patient is referred to. It also suggests that respiratory physicians tend to be the most conservative in their treatment preferences.

Although the actual treatment given to patients with lung cancer can only be determined by reviewing case notes of treated cases of NSCLC, this data is consistent with other studies.⁶ Access to treatment, particularly chemotherapy, does not appear to be a barrier to delivery of treatment.

There is consistent agreement among practitioners (and current guidelines) that surgery is the most appropriate treatment for early stage disease. However, treatment of locally advanced and extensive disease with good performance status appears to be more controversial. The preferred treatment for locally advanced disease (Case 3 and Case 4) by respiratory physicians was BSC, and only a small percentage considered active therapy for these cases compared with medical oncologists. Medical oncologists were much more likely to offer radical RT or combined/RT than respiratory physicians. In advanced disease, only 8% of respiratory physicians would consider the use of chemotherapy compared with 67% medical oncologists.

These results are similar to those found in a survey of UK lung cancer specialists (predominantly respiratory physicians) where only 9% would offer combined chemo/RT for locally advanced disease, and only 11% would consider chemotherapy for advanced metastatic disease.⁷

Gregor et al showed that diagnosis of lung cancer in Scotland was made by respiratory physicians 66% of the time, and 75% of those patients were usually managed or reviewed by respiratory physicians during the first 6 months after diagnosis. However, only 8.2% of these patients received chemotherapy, and 10.4% radical RT for localised disease.⁸

In contrast, Muers et al reported that respiratory physicians were more likely to refer for RT and chemotherapy than general physicians who often look after non-small cell cancer patients in UK District General Hospitals.⁹

If this situation is similar to New Zealand, then lung cancer patients in smaller New Zealand provincial centres may be less likely to receive active treatment than patients in larger centres where there is easier access to thoracic surgery or oncology services.

Why is there so little agreement between these groups over the role of non-surgical treatments of lung cancer? In particular, what is the role of chemotherapy alone or in combination with RT? Are respiratory physicians too nihilistic, or is this a reflection of medical oncologists over enthusiasm with chemotherapy?

Firstly, the reluctance to offer chemotherapy to lung cancer patients may be due to the commonly held belief that lung cancer is a (self inflicted) disease of the elderly, which precludes them from chemotherapy. This is supported by Brown et al who found that chemotherapy was utilised in 21% of patients with NSCLC (aged under 65

years) compared with 0% in those over 65 years—thus suggesting age is an important factor in determining whether chemotherapy is adopted.¹⁰ However, performance status rather than age has been shown to be the major factor in determining benefit from chemotherapy.¹¹

Secondly, the failure by respiratory physicians to offer chemotherapy may reflect scepticism about the benefits of chemotherapy among physicians. In a UK survey, 60% of cancer specialists reported that they would seek an overall improvement in survival of greater than 10% before considering chemotherapy. This is an unrealistic expectation in view of published data.⁸

The recently written ACN Guidelines recommend chemotherapy as an appropriate treatment option for good performance (ECOG <2) lung cancer patients with advanced disease. Radical radiotherapy is also recommended for good performance status patients with inoperable locally advanced disease as is combined chemo/radiotherapy.⁵ The low numbers of respiratory physicians prepared to offer chemotherapy in New Zealand does not appear to reflect inability to access chemotherapy.

The use of chemotherapy alone or in combination with radiotherapy in NSCLC is supported by a large meta-analysis of 52 published randomised controlled trials (RCTs) published in 1995.¹² This analysis showed that the addition of modern chemotherapy (defined as platinum based chemotherapy) significantly improved survival for NSCLC, particularly the advanced-disease group where chemotherapy treatment resulted in a modest but highly statistically significant improvement in survival when compared with BSC alone. This has been confirmed in recent randomised trials.^{12,13}

Mean survival was however only increased by 6–8 weeks. Chemotherapy has also been shown to be cost-effective in palliation of symptoms and improving quality of life.¹⁴ The addition of chemotherapy to radical radiotherapy also showed a modest but significant improvement in survival in patients with locally advanced NSCLC. This has been confirmed in RCTs although improvement is traded off against increased toxicity.^{12,15}

Although it is difficult to show major improvements in 5-year survival in these studies, countries that have adopted more aggressive treatment policies seem to have greater overall survival rates. Based on the best currently available figures, New Zealand has a dismal survival rate—5%. This is comparable to Scotland, a country with similar clinical practice to New Zealand, but contrasts with Australia's 11% and 14% in some European countries.^{6,8,16,17}

The study design can be criticised on the basis that cases are hypothetical rather than actual cases (and there are obviously many factors other than stage of tumour and clinical fitness which determine treatment). This does not, however, detract from the finding that there appear to be significant differences in treatment preferences between lung cancer specialist groups, and (at worst) demonstrates concerning nihilism—particularly among respiratory physicians.

A possible bias in this study is that it is more likely to over-estimate the aggressiveness of treatment by physicians—as it does not take any account other factors such as patient preferences.¹⁸

Major variation shown in the attitudes to treatment of lung cancer between specialty groups is likely to be multifactorial; however, it highlights a need for standardisation of treatment—this is best achieved through multidisciplinary clinics and implementation of guidelines.

There are many guidelines currently available; however, the most appropriate for New Zealand are the Australian Cancer Network guidelines, endorsed by the TSANZ and available in the Internet.⁵ These guidelines provide summaries of relevant RCTs and meta-analyses, as well as treatment statements that can be used to guide treatment decisions. However, it is likely that adherence to these guidelines will have implications in terms of increasing oncology services costs. These economic implications will have to be weighed up against the public's expectations if we wish to improve outcomes for patients with lung cancer.

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