

CURRENT CLINICAL PRACTICES IN MANAGEMENT OF NON SMALL CELL LUNG CANCER

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INTRODUCTION

Primary lung cancer is the commonest form of malignant disease in the western world.¹ It is uncommon under the age of 45 years.^{1,2} It remains the most prevalent cancer among men over 65 years, and although the trend overall is for a reduction in all age group, in the over 75 mortality is still increasing.^{1,2} Moreover mortality in women is rising and lung cancer is now the fourth most common cancer after breast, skin and colorectal and is the second most common cause of death from cancer after breast cancer.^{1,2} In U.K there are 32,500 new cases every year.¹

AETIOLOGY

Lung cancer is a lethal disease for which a number of causal factors are known and which is largely preventable. There is clear evidence that tobacco smoking is the greatest single cause of lung cancer, accounting for at least 80% cases.^{3,4} Approximately 80% of adult smokers start smoking as teenagers.⁵ It has been estimated that of an average 1000 young adults who smoke cigarettes, one will be murdered, 6 will be killed in road accidents, and about 250 will be killed before their time by tobacco.⁵ Occupational factors include exposure to radioactive mineral, asbestos, nickel, chromium and coal gas.^{5,6} Cigarette smoking increases risk of lung cancer in people who have been

ex-posed to asbestos by approximately 5 fold.^{5,6}

CLINICAL MANAGEMENT

It falls into 3 main categories:-

- a. Primary care with prevention and early detection.
- b. Secondary care with treatment directed towards cure.
- c. Tertiary care with palliative care.

PRIMARY CARE

To date no useful screening method exists.^{5,7} The close link with cigarette smoking means that raising awareness of the lethal effect of smoking and encouraging people to stop would reduce both the incidence and prevalence of lung cancer. Early detection would be greater vigilance by general practitioners, speedy referral by whom ensures more patients reaching specialist centers in time. Approximately 50% of all lung cancer patients presenting at specialist centers have distant metastases⁸ of the remaining 50%, half have surgically irresectable disease;⁸ of the surgically resectable ones with no metastases, one half show evidence of mediastinal involvement.⁸ Objectively speaking only 12% of all referrals are suitable for a curative resection. This percentage can be improved by greater vigilance and awareness on the part of the

general practitioner and speedy and efficient referral systems.

SECONDARY CARE

Diagnosis

The presentation is variable, but in the majority of cases there are respiratory symptoms and 50% have systemic effects eg loss of appetite and weight.⁹ Clubbing is usually there.⁹ After history, examination, routine tests and chest X-ray next step is to establish a tissue diagnosis. About 70% of lung cancers can be seen and sampled at bronchoscopy.¹⁰ Fibre optic bronchoscopy, as a day case procedure, under light sedation and topical anaesthesia, is a safe and principal method for diagnosis and initial assessment. It is usual to take tumor surface brushing for cytology, multiple small biopsies for histology and 20-40 ml saline washing of the affected bronchus for cytology.¹⁰ Other methods include sputum cytology and CT guided needle biopsy for peripheral lung tumors.¹⁰

Rational treatment depends on accurate histological diagnosis. For practical purposes the disease is divided into small cell and non-small cell carcinoma. An abbreviated WHO classification of malignant lung tumors:¹¹

a. Squamous Cell Carcinoma	48%
b. Small Cell Carcinoma	24%
c. Adenocarcinoma	13%
d. Large Cell Carcinoma	10%
e. Adenosquamous Carcinoma	
f. Carcinoid Tumor	05%
g. Others	

Staging and Assessment

The thoracic Surgeon has to assess both the fitness of the patient and tumor for lung resection. Patient assessment, of history and examination, full blood count, biochemical

profile, ECG, chest X-ray and comprises assessment of lung function. Forced expiratory volume in first second (FEV_1), of 1.5-2L for pneumonectomy and 1 liter for lobectomy are taken as basal minimum.¹² More detailed lung function tests and Ventilation perfusion scan may be required for border line cases. Tumor assessment after history and examination, routine FBC, BCP, chest X-ray and bronchoscopy comprises CT thorax to assess mediastinum, abdominal ultrasound to rule out intra-abdominal metastases and brain and bone scans, if history or biochemistry suggestive of metastases.^{13,14,15,16,17} If CT Thorax does not show normal mediastinum, then further evaluation in the form of a cervical mediastinoscopy and/or mediastinotomy is required with samples obtained for histology.^{18,19,20,21}

Specialist Treatment

Surgery should be reserved for those with operable tumors, there being no place for "palliative resection."^{22,23} Only those patients are considered for surgery who have shown no evidence of distant spread (MO), have a clear mediastinum, adequate lung function, acceptable general health, and a resectable tumor.^{22,23,24,25,26,27} Pneumonectomy, and Lobectomy are the usual procedures, although for a few peripheral lesions, a segmental resection may be possible.²⁷ All macroscopic disease should be resected. Including any mediastinal nodes found at resection.

Radical radiotherapy should be reserved for those patients of good performance status with disease confined to the chest who are medically unsuitable for surgery.^{28,29} It is essential that radiotherapy is planned using a multiple field technique and highly desirable that CT facilities are available. Total dose range from 50-60 by given over 3-6 weeks.^{29,30}

The role of postop radiotherapy in preventing recurrence of disease is being

evaluated, but is not standard practice yet.^{31,32} Both postop-radiotherapy and pre-chemotherapy are being evaluated and there is a role for them in the context of clinical trials.^{33,34}

TERTIARY CARE

In the palliative treatment of lung cancer there is need to balance the gain of treatment against adverse effects. Traditional outcome measures of response survival and global performance status are necessary but insufficient end points of palliative therapy.

Palliative radiotherapy plays a vital role in the relief of symptoms.³⁵ Those of cough, hemoptyses, pain and dyspnoea, due to local disease can be palliated by a short course of radiotherapy or, in certain circumstances, endobronchial therapy such as use of stents, laser treatment, cryotherapy, brachytherapy and photo-dynamic therapy.^{35,36,37,38} The symptoms of metastases can be relieved by palliative radiotherapy and appropriate medical care.³⁸ Radiotherapy is also effective for palliation of pain due to bony metastases and in the relief of symptoms due to CNS involvement, where corticosteroid may also be helpful.^{37,38}

Quality of life assessments are essential to evaluate palliative care. These assessments should be patient rated and include measures of psychological, physical and functional well being. In clinical practice good communication, adequacy of information, support and continuity of care are all essential. Good symptom control is an integral part of lung cancer management in any treatment setting and requires attentions to psychosocial and spiritual aspects, in addition to physical problems.^{5,6,7}

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