



Pulmonologists and lung cancer: pivotal role in multidisciplinary approach

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The pulmonologist plays a vital role in the multidisciplinary approach to lung cancer diagnosis and management <http://ow.ly/oALXp>

Lung cancer carries a huge disease burden: the death toll is high, the disease severely impacts the quality of life of patients and their families, and it is associated with considerable costs for patients and health systems. It remains the leading cause of cancer mortality in the world, with approximately 1.4 million deaths per year. Lung cancer morbidity and mortality needs to be reduced, mainly through implementation of prevention strategies (including smoking cessation, reduction of occupational exposure and lifestyle measures), and most importantly by early diagnosis and prompt and targeted treatment. The role of the pulmonologist is pivotal in the diagnosis, staging and management of lung cancer and this role is comprehensively described in the joint American Thoracic Society (ATS)/European Respiratory Society (ERS) statement published in the August issue of the *American Journal of Respiratory and Critical Care Medicine* [1].

Pulmonologists are responsible for, and involved with, lung cancer patients from their initial diagnosis and staging through treatment and re-staging. They are also involved in the management of comorbidities and, importantly, complications, either from the tumour itself or the treatment, as well palliative and end-of-life care. Due to their knowledge of lung physiology, they are the appropriate physicians to estimate respiratory reserve, which is crucial for management decisions, and are thus best qualified to deal with lung-related morbidity and respiratory failure. This is even more important since many patients with lung cancer have respiratory comorbidities that affect their performance status and need to be taken into account in management decisions, the most common comorbidity being chronic obstructive pulmonary disease.

Early and specific diagnosis is very important in lung cancer, and recent studies demonstrated important advances that promise to decrease death rates over time [2, 3]. The National Lung Screening Trial (NLST), which included more than 50 000 patients at high risk of lung cancer, showed a relative reduction of 20% in lung cancer mortality with low-dose computed tomography screening [3]. The evaluation of lung nodules and other abnormalities detected at screening or diagnostic work-up requires tissue sampling and accurate histological and molecular characterisation of the tumour [4, 5].

This characterisation is crucial as various lung cancer cell types respond very differently to treatment. Current standards of care for lung cancer assign treatment not only on standard histology but also on the presence of specific molecular markers, including the presence of epidermal growth factor receptor mutation and anaplastic lymphoma kinase translocation status for adenocarcinoma [6, 7]. Tissue sampling can be performed by the pulmonologist with the use of guided bronchoscopy procedures, such as electromagnetic navigation, endobronchial ultrasound and virtual bronchoscopic navigation [8–11]. Recent

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studies have shown that endobronchial ultrasound-guided transbronchial needle aspiration and transoesophageal ultrasound are less invasive and at least as accurate as mediastinoscopy [12, 13]. Thus, pulmonary physicians have important roles in educating and advising patients about the benefits and risks of screening procedures, and in managing findings in those patients who participate in screening programmes, as well as in patients who present with radiological findings and symptoms suggestive of lung cancer [14].

Pulmonologists also fulfil an important role in lung cancer treatment. Lung cancer care varies widely from country to country and sometimes even within countries. In many European countries, the management of lung cancer, including chemotherapy, is provided by pulmonologists, whereas in others, similar to the USA, chemotherapy is prescribed by medical oncologists. Palliative endoscopic techniques such as stents and endobronchial laser therapy are also performed by pulmonologists. In all cases, physicians involved in lung cancer care should be specifically trained in thoracic oncology as this cancer behaves very differently from other cancers, such as breast, ovarian, colon or prostate carcinoma, and recent evidence suggests that multidisciplinary teams and high-volume centres provide better care and have better overall outcomes [15]. In order to standardise lung cancer care, the ERS has asked for the collaboration of the European Society for Thoracic Surgeons, the European Society for Medical Oncology and the European Society for Radiotherapy Oncology, and is currently already working on a syllabus and a curriculum in thoracic oncology [16, 17]. Following this, an examination leading to the European Diploma in Thoracic Oncology will be soon established. We firmly believe that this initiative will promote optimal patient care.

Optimal lung cancer care requires a multidisciplinary team of specialists who care for a significant number of patients on a regular basis [15, 18]. Although recommended by scientific societies, multidisciplinary management is not yet uniformly available. Ideally, centres managing patients with thoracic malignancies should have a multidisciplinary thoracic oncology board to make decisions on individualised management, based on evidence-based data. The multidisciplinary team should ideally include representatives of all specialties involved in the management of thoracic malignancies: pulmonologists, thoracic surgeons, medical oncologists, radiation oncologists, pathologists, radiologists and nuclear medicine specialists, as well as nurses, pharmacists, physiologists and palliation specialists. Treatment plans using surgical, radiotherapeutic and pharmacological approaches should be reviewed by the entire team. Moreover, there is evidence that high-volume centres and multidisciplinary teams are more efficient in managing lung cancer patients than low-volume or non-multidisciplinary centres, by providing more complete staging and better adherence to guidelines, leading to increased survival [15, 18]. Data supporting multidisciplinary teams are included in national guidelines for lung cancer centres under the coordination of chest physicians [19]. In many European countries and the USA, tumour boards are required for cancer programme accreditation but this is not the case everywhere.

Lung cancer care, however, is not only a matter of medical education and experience, or even a thoracic oncology board: it is also a matter of resources, medical tests for early diagnosis, prompt access to surgical and radiotherapy units, effective medications and psychological support. The recent ERS task force for “Quality management in lung cancer care” that assessed usual practice and the resources available in the countries of the European Union, as well as in those represented at the national level in the ERS, reports very important differences in the standards of care. Similar disparities in health and welfare costs have already been reported [20].

International societies such as the ATS and the ERS must liaise with health policy makers and push for acceptable and, ideally, uniform standards of care across all countries. The ERS has been working towards this end through various actions and yearly presidential summits that bring together healthcare providers, patients, policy makers and the pharmaceutical industry in order to discuss the unmet needs in current practice and possible ways to move forward [21, 22]. With regards to lung cancer in particular, research into pathogenetic mechanisms and into new drugs is very important, and pulmonologists should be involved in these research projects. Moreover, all the aforementioned involved parties must ensure that research leading to effective and cost-effective medications will be supported, acknowledging that better medications are needed but also that healthcare systems must be sustainable in the long term, and healthcare costs can continue to be met [23]. The role of the pulmonologist in this complex patient management and decision-making process is pivotal. The need for provision of personalised care in each individual lung cancer patient requires the specific skills of pulmonary physicians described above. The requisite pathway leads through pulmonology fellowship programmes that should offer extensive training and experience in lung cancer management so that pulmonologists will be well qualified to manage all aspects of care of these patients. Highly trained and qualified pulmonologists can play a central role in multidisciplinary lung cancer management teams, and can contribute effectively to the improvement of lung cancer outcomes and quality of the lives of patients and their families, and the reduction of the cost and impact on society.

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