



Lung cancer: an update on the multidisciplinary approach from screening to palliative care

Georgia Hardavella¹, Joanna Chorostowska-Wynimko ² and Torsten Gerriet Blum³

¹4th–9th Department of Respiratory Medicine, “Sotiria” Athens’ Chest Diseases Hospital, Athens, Greece. ²Department of Genetics and Clinical Immunology, National Institute of Tuberculosis and Lung Diseases, Warsaw, Poland. ³Department of Pneumology, Lungenklinik Heckeshorn, HELIOS Klinikum Emil von Behring, Berlin, Germany.

Corresponding author: Georgia Hardavella (georgiahardavella@hotmail.com)



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This issue of *Breathe* aims to provide a succinct overview of the current state of play in various aspects in thoracic oncology <https://bit.ly/3XQexmp>

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Introduction

The management of patients with lung cancer and pleural malignancies is quite complex mainly due to their multiple comorbidities. This complexity along and the ongoing progress in thoracic oncology highlights a clear need for an integrated multidisciplinary approach [1, 2]. Beyond presentation, the diagnostics and management of lung cancer and pleural malignancies across all stages require the application of best practices as mandated by local/international guidelines. This is complemented by the optimal coordination of available resources, expertise and capacity, which are required to safeguard appropriate patient care. The landscape of lung cancer and pleural malignancies care in the entire pathway extending from screening to palliative care is changing at lightning speed. Considering the continuous involvement of multiple healthcare professionals throughout the pathway and all levels of care provided (primary, secondary, tertiary), it is important for healthcare professionals to stay abreast of rapid advances. Acknowledging this challenge, this dedicated collection of reviews in *Breathe* aims to provide a succinct overview of the current state of play in lung cancer care and it will also include highlights regarding care of pleural malignancies. These reviews resulted from a multidisciplinary collaboration among lung cancer and mesothelioma experts from various European centres. All co-authors are active members of the European Respiratory Society (ERS) Thoracic Oncology Assembly, and include early career members, and they have worked closely together combining the latest developments and their expertise.

Lung cancer care with progress-tinted spectacles

The field of lung cancer has experienced many recent breakthroughs with many promising new therapeutic options. The reviews in this issue of *Breathe* are designed as a primer to assist healthcare professionals to stay ahead of the curve in lung cancer care.

Lung cancer screening and early-stage resectable non-small cell lung cancer

A multidisciplinary team, led by S.M. Janes, describes the current state of play in lung cancer screening (LCS) [3]. To date, there are only three official national LCS programmes in Europe (Czech Republic, Croatia, Poland). LCS implementation faces many challenges including the lack of European guidelines for LCS implementation [3]. To partially address this gap, the ERS has recently published technical LCS standards as well as management protocols for incidental findings in LCS [4, 5]; however, further unified standardisation is required. There are no optimal biomarkers to be implemented in LCS, but radiomics and artificial intelligence can play a significant role in diagnosis of indeterminate lung nodules [6, 7]. CHARPIDOU *et al.* [8] shed light on diagnostic pathology and molecular biomarkers in the diagnosis and subtyping of lung cancer. The main distinction between lung adenocarcinoma and squamous cell carcinoma relies on the use of the immunohistochemical markers TTF1 and p40. Molecular diagnosis is the next step to inform



treatment decisions regarding targeted treatments and/or immune checkpoint inhibitors (ICIs). Recent evidence has consolidated ICIs in the adjuvant and neoadjuvant setting, even in early-stage resectable disease. A. Bhowmik and co-workers review the treatment of stage I and II nonsmall cell lung cancer (NSCLC) reporting on possible combinations of surgery, radiotherapy and systemic treatment [9]. They unravel the new role of ICIs in the neoadjuvant setting of early-stage disease and they also clarify the follow-up protocols which may occasionally raise confusion in daily clinical practice. In addition to improving clinical outcomes, the use of ICIs in the neoadjuvant setting has set new challenges for thoracic surgeons as reported by HARDAVELLA *et al.* [10]. Beyond clarification of the pre-surgical assessment pathway, the authors report on the impact of neoadjuvant ICIs in surgical experience and outcomes, thereby offering a useful insight.

Locally advanced and metastatic NSCLC

Stage III NSCLC represents a wide range of tumour (T1 to T4) and nodal (N0 to N3) components, and therefore, has variable management options. A forthcoming review from ASMARA *et al.* [11] offers a succinct summary of recent developments in the diagnosis, staging and multimodal therapies for stage III NSCLC with the goal of helping healthcare professionals to understand this rapidly changing field. The review offers an overview of landmark trials that led to the administration of ICIs (durvalumab, atezolizumab) and tyrosine kinase inhibitors (osimertinib, alectinib) in the adjuvant setting [12–15] and ICIs in the neoadjuvant and perioperative setting (both neoadjuvant and adjuvant) [16, 17]. The review clarifies the treatment sequence in this very complex and diverse disease stage. TEZVERGIL *et al.* [18] report on recent advances in the management of stage IV NSCLC with an emphasis on the sequence of personalised treatments and the sequence of care in disease progression. Interventional bronchoscopy plays an integral role as part of a multimodality approach in lung cancer treatment. ROZMAN *et al.* [19] review various therapeutic approaches using both rigid and flexible bronchoscopy with an emphasis on the treatment of central airway stenosis. The review highlights the relevance of interventional bronchoscopy in alleviating severe symptoms, improving the functional status of patients, and creating opportunities for subsequent multimodal treatments, ultimately extending the possibilities for improved survival rates. Palliative care is at the mainstay of patient support in metastatic disease and a prompt referral to specialist services is strongly advised. A forthcoming review from D. Jovanovic and co-workers will summarise an integrated approach to palliative care that can be applied in primary, secondary and tertiary care.

Small cell lung cancer and neuroendocrine tumours

Small cell lung cancer (SCLC) and neuroendocrine tumours account for almost 20% of all lung cancer cases and they can present with paraneoplastic phenomena. A forthcoming review I. Pandjarova and co-workers will summarise the diagnostic and treatment pathway in SCLC and neuroendocrine tumours. The review presents the classification of neuroendocrine tumours and carcinomas which improves the readers' understanding and communication with other healthcare professionals in daily clinical practice. The introduction of ICIs in the treatment of extensive SCLC is thoroughly discussed as well as the role of prophylactic cranial irradiation.

Pleural malignancies: updates in management

Malignant pleural effusions remain a significant clinical problem as they result in patient discomfort and distress as well as numerous hospital admissions. Medical pleurodesis and medical thorascopies remain the mainstay of treatment depending on availability and expertise as highlighted by CASTALDO *et al.* [22] and AUJAYEB and ASTOUL [23]. Recent advances in the field and consolidation of healthcare professionals' expertise have offered patients the opportunity to spend more time away from clinics or wards and make use of ambulatory care where available. This contemporary approach enhances patient autonomy and provides home-based self-care either alone or with a carer's input rather than being frequent attenders at the emergency department. Mesothelioma has faced significant developments in recent years with an increasing yet limited number of new treatment strategies which have been reviewed by NEILLY *et al.* [24].

Conclusions

We often think of thoracic oncology as an ever-changing field where it is difficult to catch up due to the ongoing progress in treatment modalities and the interchangeability in their application to patients. Indeed, this is a non-static area; however, the current issue of *Breathe* provides a clear and succinct update across the entire lung cancer pathway and includes important highlights from pleural malignancies. Better understanding of the molecular profile of tumours and the tumour microenvironment as well as the understanding of a stratified treatment approach may help corroborate the multidisciplinary collaboration and communication across healthcare professionals in primary, secondary and tertiary care.

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