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New Treatment Options for Lung Cancer

George Brown*

Editorial office, JOMHMP

***Corresponding author:** George B, Chaussee de la Hulpe 181, Box 21, 1170 Watermael-Boitsfort, Brussels, Belgium biomolecules@molecularbiologyjournals.com

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Non-small cell lung cancer (NSCLC) accounts for around 27% of all cancer-related deaths worldwide, making it a major public health concern. Healing necessitates the complete and permanent removal of the tumour (generally by surgery or radiation [RT]), while significant shrinkage (usually by systemic therapy) may result in long-term disease control. In the absence of treatments, host-tumor interactions, which are major factors in disease progression in the natural history, will have a considerable impact on disease progression, with treatments primarily aiming at shifting the host-tumor balance toward improvement or, if possible, healing. As a result, complete tumoral excision (and, if possible, oligometastatic sickness) remains the preferred treatment, with the goal that the host-immune response will remove microscopic residual disease, maybe with the help of systemic adjuvant medicines. The majority of patients, on the other hand, are not surgical candidates and have been treated for decades with standard chemotherapy and/or radiation (cisplatin-based regimens). In certain subgroups, targeted treatments (such as Tyrosine Kinase Inhibitors, or TKIs) and immunotherapies may yield outstanding benefits. The treatment paradigm has shifted to target the interface host-tumor, i.e., the tumour microenvironment (TME), as well as host-related variables, which have a major impact on tumour formation and response to therapies.

As a result, the most effective approaches available today are likely to be highly effective tumor-targeted approaches (ablation by surgery or RT, or precision systemic treatments, especially against driver mutations) combined with preserving or improving patient fitness to allow the immune response to be maintained or even improved. Obviously, treatment should be multidisciplinary, with the goals of optimising tumour phenotyping, measuring treatment resistance, evaluating and increasing patient fitness, optimising the timing of several approaches, particularly in patients with locally advanced cancer, and avoiding toxicities.

With surgery, particularly pneumonectomy, toxicity is still an issue. The aetiology of ARDS, which is often unexplained and unrelated to infection, is frequently linked to mortality after pneumonectomy. Pulmonary hypertension could potentially play a role. This parameter was assessed on a CT scan at the bifurcation level and standardised to body surface area on the basis of the idea that pulmonary artery diameter was an indication of subclinical pulmonary hypertension. In patients with locally resectable III A, i.e., non-bulky, discrete, or single-level N2 involvement that can be treated with multimodality, major lung resection is advised. In contrast, IIIA-N2 NSCLC has a wide range of clinical and pathological heterogeneity, as well as a lack of precise pretreatment staging. In this case, deciding on the best therapeutic option could be difficult. As observed in the assessment by Brascia et al., retrospective analysis did not take into account the rapid rise of numerous treatment options, and only offered findings of standard chemo and radiation treatments (based on TNM extent) (more and more based on the biological nature of the tumor, i.e., targeted therapies and immunotherapies). This review is really helpful in making difficult treatment decisions in this diverse group of stage IIIA patients.