Preface

The promise of emerging developments and concepts in mesothelioma

The most common form of malignant mesothelioma is that affecting the pleura. Mesothelioma, despite being considered a relatively rare tumor, appears to be more common now reversing previous worldwide predictions of a disease plateau and eventual decreased burden. In fact, the future prevalence of this pleural cancer is predicted to be increasing, raising concerns for a serious burgeoning international public health problem (1). Several industrialized nations are still without country-wide, legislative total bans on the production and use of asbestos such as China, India and the United States.

These ominous trends are underscored by the lack of a curative regimen for this aggressive thoracic malignancy. Very little clinical progress has been made in the decade following establishment of the standard of care combination chemotherapy that increased median survival by about three months (2). However, more recently, multiple new strategies have been tested in various clinical scenarios of pleural mesothelioma, but without significant breakthroughs in outcome. The latest incremental development incorporates a molecular-targeted agent to standard chemotherapy that achieves a median survival of about 18 months (3). The role of surgical resection and its extent (extrapleural pneumonectomy versus lung-sparing techniques) as part of multimodality therapy remains a topic of debate (4,5). There is an open clinical trial in the United Kingdom accruing patients to address this surgical matter in a prospective fashion (NCT02040272 at ClinicalTrials.gov).

These current therapeutic limitations largely reflect an incomplete understanding of the biology of this malignancy which is distinct from other solid tumors (6). In response to this challenge, investigators from around the world continue to explore diverse and innovative strategies that hold promise for improved outcomes. This special issue of *Translational Lung Cancer Research* highlights some of these cutting-edge efforts that span novel drug classes being evaluated for their efficacy against mesothelioma, immunotherapy-based approaches, more advanced forms of radiation therapy, and new combinations of pre-existing treatment modalities. Generally, topics were selected that addressed highly unique or less commonly discussed aspects of mesothelioma biology including: a critical re-analysis of oncogenesis models, emerging biomarkers of mesothelioma, intraoperative imaging and adjuvant agents, new genetic information such as BAP1 mutations, and previously undruggable molecular pathways (epigenome or cellular translational machinery, etc.). Hopefully, this focused collection of timely articles will be a valuable and robust resource for readers.

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