

Preface

For oncologists managing patients with lung cancer last few years have been historic. First there was an approval of anaplastic lymphoma kinase (ALK) inhibitor crizotinib in 2013, followed by recognition of benefit from lung cancer screening with a low dose CT. Recently, there was a discovery and development of 2nd generation ALK inhibitors, and finally an approval of nivolumab for patients with squamous cell lung cancer (1-4). On a radiation therapy side stereotactic body radiation therapy (SBRT) has emerged as an effective modality with high local control and excellent safety profile for patients with early stage lung cancer.

Despite an apparent progress we still have a high hurdle to overcome. Lung cancer remains one of the deadliest solid tumors. In 2015 in the USA estimated 158,040 patients will lose their life to lung cancer, and, sadly, this number has not improved significantly in many decades (5). New developments are still needed in understanding mechanisms of drug resistance, improvement in biomarker discovery, radiation therapy delivery and development of “smarter” chemotherapy agents.

In this special edition of the *Translational Cancer Research* journal, recent advances in the radiation therapy, immunotherapy, chemotherapy, and targeted therapies are reviewed.

Dr. Gillespie *et al.* from UCSD reviews the methodology of SBRT with comprehensive institutional experience of utilizing SBRT for lung tumors. Dr. Singh and his colleagues report their experience at the University Of Rochester School Of Medicine using 5 fractions regimen of SBRT for primary lung cancer. Dr. Kanakamedala *et al.* from University of Mississippi also present detailed review SBRT for lung cancer.

Radiotherapy in combination with chemotherapy and/or surgery remains the standard definitive therapy for locally advanced non-small cell lung cancer (LANSCLC). Dr. Bernard and his co-authors at the University of Pittsburgh Cancer Institute, in their review article, present recent advances and radiation techniques in the management of LANSCLC. Dr. Nguyen and Dr. Sur from McMaster University-Juravinski Cancer Center in Hamilton provide a systematic review of role of high dose rate brachytherapy in lung cancer including indications, fractionation and outcomes. Finally, radiotherapy is extensively used for palliation of symptoms associated with lung cancer with high success rates. Dr. Kapoor and Dr. Simha describe recent concepts and new paradigms in palliation of lung cancer.

On the systemic therapy side, Dr. Nieva describes the development of nanoparticle chemotherapy agents, which hope to improve upon toxicity and efficacy. Dr. Leukam reviews the advances in molecular derived therapies in squamous lung cancer, Dr. Patel describes novel to lung cancer concept of immunotherapy and finally Dr. Weiss showcases developments in non-squamous non-small cell lung cancer therapy.

We wish to thank all the contributors to this special issue and hoping that it inspires more discoveries from bench researchers and clinical investigators which will lead to improvement in stubborn lung cancer survival statistic.

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