Thoracic cancers – cautious optimism replaces abject nihilism

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Thoracic malignancies have long been associated with a degree of therapeutic nihilism seldom seen in modern medicine. Cancers of the lung and esophagus, which form the bulk of the thoracic oncologist's workload, have had a dismal prognosis overall. Eight to nine out of every 10 patients diagnosed with either of these cancers die of the disease. This has however, not deterred the thoracic oncologist from attempting new, sometimes innovative approaches in an effort to improve the prognosis of patients with these cancers. Progress has been slow and at times painful, but considerable inroads have been made in treating thoracic malignancies.

Most patients with lung cancer present to an oncology centre in advanced stages of the disease, and the most optimistic guesstimates on potentially curative treatment range from 10 to 20%, even in developed countries. This number has been gradually on the increase, mainly due to increased awareness amongst primary care and chest physicians. In spite of this, a large majority of patients in India are empirically treated with antituberculous treatment for varying periods of time prior to referral to a tertiary centre. There is a pressing need to further increase awareness amongst primary care physicians regarding the possibility of malignancy in patients with chest symptoms and an abnormal radiograph. With none of the screening trials in lung cancer showing reductions in mortality, this seems to be the only strategy which could improve early diagnosis of the disease.

There have been important advances in lung cancer surgery in the last two decades. A single randomised trial [1] favoured lobectomy over sublobar resections in stage IA non-small cell lung cancer (NSCLC). Promising recent results with sublobar resections in very early (<1 cm) cancers have raised a call for a similar randomised trial in this subset. A recent trial [2] has established the possible superiority of systematic mediastinal lymph node dissection (SMLND) in NSCLC. The ACOSOG Z0030 trial [3] which compared SMLND with lymph node sampling has proved that SMLND can be performed with no increase in morbidity or mortality and the trial's long-term survival results are eagerly awaited. Other advances in lung surgery have primarily been technology-driven, with video assisted thoracoscopic surgery (VATS) and robotic surgery being performed in increasing numbers in the west. A similar shift has been much slower in India, primarily because of the spectrum of disease, with even operable cases being more advanced than in the west. Lack of infrastructure and expertise for minimally invasive lung surgery has also been important reasons.

Several randomised trials and a meta-analysis [4] established adjuvant chemotherapy as standard of care in all, except the very early lung cancers. Adjuvant radiotherapy, which fell into disrepute after the PORT meta-analysis [5] has evoked renewed interest after a large SEER database-based study [6] showed a potential role in patients with N2 disease.

Palliative platinum-based chemotherapy has become standard of care in patients with advanced and metastatic lung cancer [7]. Recent trials including non-platinum chemotherapeutic drugs have shown equivalent efficacy - newer third-generation agents including paclitaxel, docetaxel, vinorelbine, gemcitabine, all of which have shown promising activity with NSCLC. More recently, the introduction of the antimetabolite pemetrexed has

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shown promising efficacy in non-squamous NSCLC with lower treatment related toxicity. There have been exciting approaches towards customizing chemotherapy regimens based on gene markers. A large trial is underway with expression of Excision Repair Cross Complementing gene (ERCC1) and Ribonuclease Reductase M1 polypeptide (RRM1) being used to guide chemotherapy regimes in advanced NSCLC.

Targeted agents have revolutionised treatment of advanced and metastatic NSCLC with several agents proving their efficacy in randomised trials [8]. Gefitinib, erlotinib and bevacizumab have all proven efficacy and have been approved by the Food and Drug Administration (FDA), USA in various lines of chemotherapy. Differing response rates and survival with these agents based on genetic mutations have reinforced the need for individualised treatment strategies for patients with advanced NSCLC.

There has been a major epidemiological shift in the spectrum of oesophageal cancer in the western world, and there is a trend towards a similar shift, albeit of much smaller magnitude in developing countries like India. The ratio of squamous cancers to adenocarcinoma (which was 90:10) has almost reversed in the west, and has shifted to about 75:25 in India. Neoadjuvant treatment has become standard prior to resection in localised oesophageal cancer, based on several randomised trials and meta-analyses [9]. The optimum neoadjuvant strategy however, still eludes us with both neoadjuvant chemotherapy and chemoradiotherapy having their own advocates. While the survival benefit with neoadjuvant chemoradiotherapy is more evident, the treatment associated morbidity and mortality have also been considerable. There is an urgent need for a large multicentre randomised trial evaluating these two strategies. VATS oesophageal resections have become popular in several centres both in the west and in India and have the potential to reduce morbidity of oesophageal surgery.

The overall outlook for patients with lung and

oesophageal cancers has improved considerably though there is still a lot of work to be done. The time has come for the thoracic cancer surgeon to take up the gauntlet and spearhead clinical and translational research in these cancers to further improve outcomes.

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