

Optimizing the management of lung cancer: Role of the pulmonologist in India

Lung cancer is a leading cause of cancer-related mortality world-wide. The number of deaths due to lung cancer are nearly equal to that of colon, breast, prostate and pancreatic cancer combined together.^[1] In India, there were 51,000 deaths due to lung cancer in 2008 (Globocan Report, 2008), this was nearly half (26,000) 5 years ago.^[2] Though the Indian national cancer registry started in 1981, we do not have reliable estimates of cancer deaths yet. The quoted cancer data is based on few selected urban and rural registry centers.^[3] The true magnitude of lung cancer is seemingly larger than what the figures suggest.

Tiwana *et al.*^[4] have discussed the outcome of patients with advanced stages of cancer from sub-Himalayan Northern India. In the Indian scenario of sparse literature on lung cancer, this study aimed to document the lung cancer data of a typical medical college hospital, especially the management strategy and outcome of advanced lung cancer. They showed a survival benefit in unresectable non-small cell lung cancer (NSCLC) patients who received chemotherapy. Despite a paucity of evidence in literature, hypofractionated chest radiation has emerged as favored option in their study. There was no impact on the overall survival and the outcome appears inferior in comparison to western data or ideal chemotherapy.

The problems in the management of lung cancer are numerous. Most cases are in advanced stages; many are misdiagnosed as tuberculosis and erroneously managed for varying periods prior to diagnosis. The burden of misdiagnosis and delayed diagnosis on the health-care system is profound, it creates a larger population with advanced or incurable disease. Stage of cancer at diagnosis being a key prognostic factor, this deprives us of the advantage of an early diagnosis and the consequent treatment benefit.

A late diagnosis in most cases leaves palliative chemotherapy as the only treatment option in our practice. Radiotherapy can be used as adjuvant therapy or in a

localized form for palliation of symptoms. Stereotactic body radiotherapy (SBRT) has been an alternative in those who are medically inoperable because of age, ill-health or comorbidities. SBRT uses radiotherapy beams with increased precision; these are strictly conform to the target and avoid irradiation of the adjacent radiosensitive critical organs.^[5] Radiotherapy is not available in some of the medical college hospitals in India and SBRT is still a distant dream for most of us.

Indeed, chemotherapy along with quality supportive care is deemed better than the later alone. Then, should we offer chemotherapy to all? Probably not! Drug toxicity, lack of available expertise for administration of chemotherapy and inhibitory costs are major stumbling blocks. Fortunately, newer drugs and targeted treatment are now being made available at affordable prices; in fact, many are marketed by Indian pharmaceuticals at comparatively lower costs than in other countries. The primary aim of management is to ensure good quality-of-life within the individual's socio-economic constraints, even if it is for months.

As most of our lung cancer patients need chemotherapy because of advanced stages of the disease, are we equipped with enough medical oncologists in India? Many of the medical colleges do not have qualified medical oncologists; in places where they exist, the busy oncologist's priority is usually not the lung cancer with its associated poor prognosis. Appropriate care is the key to cancer management and constitutes an early diagnosis and accurate staging; this may be delivered by the onco-surgeon, oncologist, radiotherapist or a combination of these professionals. In this context, let us examine the role of a pulmonologist to whom the patient presents. A diagnosis is clinched with an array of investigations including bronchoscopy and biopsy. The pulmonologist is the primary physician who is professionally bonded to patients by revealing and sharing the diagnosis. After staging the disease, the pulmonologist chalks out a plan and refers the case to an oncology center. It is common that the case is re-evaluated and re-investigated – such referral and repeat investigative procedures allow for further disease progression, often pushing the management strategy from operable to inoperable or palliative approach. Thus, a second opportunity for early treatment and better survival is lost; thereafter, the case is often referred back to the pulmonologist for the management of terminal complication such as hemoptysis, respiratory failure, pleural effusion and pleurodesis. It is obvious that the

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pulmonologist should be able to stage the malignancy and deliver the indicated therapy in the first instance. He should be proficient in handling chemotherapy in its entirety – management of toxicity, newer management strategies such as molecular and targeted therapy and personalized treatment. The “multidisciplinary tumor board” comprising of pulmonologist, medical oncologist, radiotherapist, surgical oncologist, oncopathologist and radiologists is an ideal strategy – most of the cases can be managed by the pulmonologist with the direction of tumor board, provided he is trained for the same.

The last few years have witnessed evolution of invasive staging such as endobronchial ultrasound and endoscopic ultrasound guided lymph node aspiration. Such techniques have catapulted the pulmonologist to the forefront of diagnosing and staging lung cancer and underscore the necessity of him being conversant with varied minimal invasive methods. These include diagnostic bronchoscopy, interventional bronchoscopies for staging the disease and various guided interventional procedures with the help of the radiologist for expediting the management.

Adequate tissue must be obtained in a safe manner to facilitate a conclusive histological diagnosis. The scientific advances in the last decade have made it possible to characterize lung cancer (mostly NSCLC) subtypes based on their genetic profiles. The majorities of lung cancer are termed NSCLC and include adenocarcinoma, squamous cell carcinoma, large-cell carcinoma and poorly differentiated carcinoma. Recent molecular advancement has personalized the treatment of NSCLC depending on the tumor biology and improved the outcome of NSCLC. A recent study from Tata Memorial Centre, (TMC) Mumbai has revealed that “Indian patients with epidermal growth factor receptor (EGFR) activating mutations have a significantly better response rate, progression free survival and overall survival when treated with EGFR targeted therapies.”^[6] In Asians, the prevalence of EGFR mutations in lung tumors is much higher than in whites.^[7] The EGFR tyrosine kinase inhibitors such as Erlotinib and Gefitinib are now established as first-line treatments for patients with advanced NSCLC with activating EGFR mutation. Such oral medications can be easily administered by trained pulmonologists. Assessment of tumor progression is also made easy by Response Evaluation Criteria in Solid Tumors (RECIST). Pulmonary function test interpreted routinely by chest physicians could be an additional tool of assessing lung performance status, which is ordinarily not done by oncologists while using RECIST.

National cancer control program and non-governmental organization are active in providing financial assistance to the needy patients. Our efforts at preventing cancer by propagation of anti-smoking measures must be

increased manifold. The Indian Society for Study of Lung Cancer (ISSLC) has hosted many missions. ISSLC-PGIMER-TMC training course is being planned in India. Certified training in medical oncology (6 months) is being offered by TMC, Mumbai in which a chest physician may concentrate on thoracic oncology. (<https://tmc.gov.in>)^[8] ISSLC conducts biennial meeting (the last one was held at SKIMS Srinagar, April 2013) that aim at spreading awareness and knowledge on diagnosis, management and prevention of lung cancer. ISSLC already has started regional Continuing Medical Education at different part of the country. European Respiratory Society is starting a multidisciplinary HERMES program for training and certification in Thoracic Oncology for quality management of lung cancer. The Promotion of Oncology Training and Education in India is an initiative of Indian Cancer Society to impart knowledge on cancer care and make physicians in management of cancer patients.

I am sure coordinated efforts of the pulmonologist and ancillary colleagues can alter the landscape of management of lung cancer in India. Indeed, let no stone should be left unturned!

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