

Lung surgery in elderly patients: are we doing enough?

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Provenance: This is an invited Editorial commissioned by the Section Editor Laura Chiara Guglielmetti (University Hospital Zurich, Zurich, Switzerland).

Comment on: Detillon DDEMA, Veen EJ. Postoperative Outcome After Pulmonary Surgery for Non-Small Cell Lung Cancer in Elderly Patients. *Ann Thorac Surg* 2018;105:287-93.

Submitted Jan 04, 2018. Accepted for publication Jan 16, 2018.

doi: 10.21037/jtd.2018.01.132

View this article at: <http://dx.doi.org/10.21037/jtd.2018.01.132>

Our society is gradually growing old worldwide and therefore the surgical demand of elderly patients is rising.

Aging is not a disease per se but the aging-related changes, such as a weaker immune system, the longer duration of environmental carcinogenic exposure associated with an increased susceptibility of cells, a reduced DNA repair ability, may make elderly vulnerable to lung cancer.

Approximately 60% of patients diagnosed with lung cancer are 65 years or older and most cancer-related deaths occur within this age population (1).

There is evidence that these patients are at risk for substandard treatment when compared to the younger counterpart due to a reluctance to suggest surgery because there are concerns about comorbidities, outcomes or limited life expectancy.

Actually the median life expectancy of population among industrialized countries has dramatically expanded in recent years and therefore providing optimal treatment for elderly patients has become a key challenge.

Surgical techniques have become nowadays feasible in the elderly with comparable results to those in young patients thanks to improved know-how, surgical expertise and development of VATS and ERAS programs.

Many studies attempted to address their focus to the mortality after surgery for lung cancer. In their retrospective cohort study, Finlayson and colleagues found a mortality in octogenarians of 6.9% (versus 3.7% $P < 0.0001$ of the patient aged 65 to 69) after lung resection with a 5-year survival of 31% (2). Ogawa and coll included in their retrospective

analysis 727 patients and those aged over 75 years had a 1.9-fold higher risk of mortality ($P < 0.01$) (3). Rivera and coll collected prospectively data using the EPITHOR, the French national thoracic database, reporting a mortality between octogenarians of 6.5% versus 2.7% of patients under 80 years (4). Dominguez-Ventura *et al.* showed that mortality occurs in 6.3%, and postoperative complications occur in 48% of octogenarian lung cancer patients, with the risk factors of male gender, haemoptysis and previous stroke (5).

Shiono *et al.* reported, in a retrospective study, a complication rate of 34.5% without peri or postoperative deaths (6).

We read with great interest the study of Detillon and Veen from Amphia Hospital published in January 2018 in the *Annals of Thoracic Surgery*.

The authors reviewed the postoperative outcomes of 2,133 lung cancer resections in elderly patients during a period of 24 months (from 2013 to 2014) highlighting the factors associated with operative mortality and postoperative complications in three groups: patients aged 80 years or more, patients aged 70 to 79 years, and patients aged 60 to 69 years. In addition, they focused their attention on the outcome comparison between VATS and thoracotomy. The study is well written presenting a large number of patients from the Dutch Lung Surgery Audit database. Very impressive is the VATS resection rate (70.5%) significantly more than reported in other similar analysis (4,7).

The authors reported a complication rate of 29.9% without difference between the age groups. On the contrary,

age was an independent predictor of operative mortality (6% among octogenarians versus 2.1% overall mortality of the three groups).

A multivariable analysis showed that postoperative complications were more likely in men, and in patients with lower values of FEV1, DLCO, history of coronary artery bypass graft surgery and chronic obstructive pulmonary disease.

It's not clear if a radical mediastinal lymphadenectomy or a nodal sampling was performed in all the patients and it could be potentially relevant because the surgery time seems to be correlated with the complications rate (6,8). It would have been also interesting to report the overall survival, the lung cancer-specific mortality and the non-cancer-specific mortality among the three mentioned groups.

Well illustrated in this review is the benefit of VATS and limited resection followed by fewer postoperative complications as already reported in previous studies (9-12).

Besides some limitations due to the design of the study (retrospective analysis with 978 missing values), the study provides a valuable contribution to a controversial topic and suggests, once more, that maybe we should not accept the dogma of no surgery in the elderly patients. The patient selection and the stratification of the patients should be the key points in the decision to offer surgery. Maybe a comprehensive geriatric assessment (CGA) done on these patients before surgery could help to stratify these patients correctly reducing post-operative morbidity and mortality.

Acknowledgements

None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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Cite this article as: Scarci M, Crisci R, Minervini F. Lung surgery in elderly patients: are we doing enough? *J Thorac Dis* 2018;10(2):693-694. doi: 10.21037/jtd.2018.01.132