



AB001. Open three-stage transthoracic oesophagectomy versus minimally invasive thoraco-laparoscopic oesophagectomy for oesophageal cancer: a multicentre, open-label, randomised controlled trial

Huansong Yang¹, Shugeng Gao¹, Yousheng Mao¹, Qi Xue¹, Dali Wang¹, Jun Zhao¹, Yushun Gao¹, Ning Li¹, Fengwei Tan¹, Fang Li¹, Kai Su¹, Fang Lv¹, Bin Qiu¹, Deruo Liu³, Keneng Chen⁴, Hui Li⁵, Tiansheng Yan⁶, Quan Xu⁷, Juwei Mu^{1,2}

¹Department of Thoracic Surgery, Nation Cancer Center/National Clinical Research Center for Cancer/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Medical College, Beijing 100021, China; ²Nation Cancer Center/National Clinical Research Center for Cancer/Cancer Hospital & Shenzhen Hospital, Chinese Academy of Medical Sciences and Peking Medical College, Shenzhen 518116, China; ³Department of Thoracic Surgery, China-Japan Friendship Hospital, Beijing 100000, China; ⁴Department of Thoracic Surgery, Peking University Cancer Hospital, Beijing 100000, China; ⁵Department of Thoracic Surgery, Beijing Chao-Yang Hospital, Beijing 100000, China; ⁶Department of Thoracic Surgery, Peking University Third Hospital, Beijing 100000, China; ⁷Department of Thoracic Surgery, Jiangxi Province People's Hospital, Jiangxi 100000, China

Correspondence to: Juwei Mu. Department of Thoracic Surgery, Nation Cancer Center/National Clinical Research Center for Cancer/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Medical College, Beijing 100021, China. Email: qi_lin45@aliyun.com.

Background: Oesophageal cancer is the eighth most common cause of cancer worldwide. In recent years, the frequency to use minimally invasive surgical methods for esophagectomy has been increased, but its real advantages over conventional surgery is still remains. The aim of

this study is to compare patients who underwent open three-stage transthoracic oesophagectomy with those who underwent minimally invasive thoraco-laparoscopic oesophagectomy (MIO) to ascertain the feasibility, safety, and clinical advantages of the MIO.

Methods: We did a multicentre prospective, open and parallel, randomised controlled trial in six study centres between April 1st, 2014, and April 30th, 2018. Patients aged 18–75 years with resectable middle and upper esophageal cancer were randomly assigned via a computer-generated randomisation sequence to receive either open three-stage transthoracic oesophagectomy (Group A) or MIO (Group B). The perioperative outcomes were to compare operative time, intraoperative blood loss, total expenses in hospital, hospital stay, the number and location of lymph nodes harvested and respiratory complications within 30 days. This trial is registered with ClinicalTrials.gov Identifier: NCT02355249.

Results: We randomly assigned 339 patients to the Group A and 156 to the Group B. No differences emerged in terms of age (year) [(61.52±8.52) *vs.* (60.25±6.28), *P*=0.67], the median lengths of hospital stay (day) [(16.28±8.02) *vs.* (17.15±11.74), *P*=0.08]. Group A has less intraoperative blood loss (mL) [(241.1±165.8) *vs.* (274.0±169.8), *P*<0.05] and total expenses in hospital (¥) [(92,076±27,889) *vs.* (107,669±32,655), *P*<0.05], shorter operative time (min) [(267±92.2) *vs.* (364.3±99.43), *P*<0.05]. While Group B has palpable advantage in the number [(18.30±11.44) *vs.* (23.08±12.45), *P*<0.05] and location [(4.30±2.16) *vs.* (5.44±2.37), *P*<0.05] of lymph nodes harvested. The proportion of respiratory complications within 30 days was no statistical difference in the Group B [21/156 (13.5%)] compared to the Group A [45/339 (13.3%)] (Chi-square sig =0.934, *P*>0.05). Meanwhile, the study makes clear that tumour size has no correlation to operative time (Spearman *r* =−0.014, *P*>0.05) and intraoperative blood loss (Spearman *r* =0.078, *P*>0.05).

Conclusions: Compared to open three-stage transthoracic oesophagectomy, MIO has prominent representation in lymph nodes harvested which is fatal to estimate prognosis and plan sequential treatment plan, although, MIO has some disadvantage such as longer operative time, more intraoperative blood loss and total expenses in hospital which is conflicting to previous observational studies

conclusion. There is no statistical difference in respiratory complications within 30 days between the two surgical approaches. Next step, survival rate after 2 years will be analyzed and published after the follow-up work is finished.

Keywords: Minimally invasive thoraco-laparoscopic oesophagectomy (MIO); esophageal cancer; open three-stage transthoracic oesophagectomy; perioperative outcomes

doi: 10.21037/jtd.2019.AB001

Cite this abstract as: Yang H, Gao S, Mao Y, Xue Q, Wang D, Zhao J, Gao Y, Li N, Tan F, Li F, Su K, Lv F, Qiu B, Liu D, Chen K, Li H, Yan T, Xu Q, Mu J. Open three-stage transthoracic oesophagectomy versus minimally invasive thoraco-laparoscopic oesophagectomy for oesophageal cancer: a multicentre, open-label, randomised controlled trial. *J Thorac Dis* 2019;11(Suppl 13):AB001. doi: 10.21037/jtd.2019.AB001