

AB022. Analytic morphomics can predict pathological complete response to neoadjuvant chemoradiotherapy in esophageal squamous cell carcinoma

Chien-Hung Chiu¹, Peng Zhang², Jules Lin³, Yin-Kai Chao¹, Stewart C. Wang²

¹Division of Thoracic Surgery, Chang Gung Memorial Hospital, Taoyuan, Taiwan; ²Departments of Surgery, ³Section of Thoracic Surgery, University of Michigan, Ann Arbor, Michigan, USA

Background: Neoadjuvant chemoradiotherapy (nCRT) followed by surgery have survival benefit for patients with locally advanced esophageal squamous cell carcinoma (ESCC). Those patients with good response to nCRT, known as pathological complete response (pCR), have more benefit from the treatment strategy. Analytic morphomics, body composition information through imaging analysis on computed-tomography scans, have the ability to describe the granular heterogeneity among cancer patients. In this study, we used analytic morphomics to develop individualized risk models to predict pCR after nCRT for ESCC.

Methods: We retrospective analyzed patients with ESCC treated with nCRT and scheduled esophagectomy between 2006 and 2016. Pre-nCRT factors, including clinical factors and morphomic factors, were analyzed to identify predictors for pCR. Variables were further analyzed with univariate and multivariate analyses.

Results: There were 183 patients with ESCC included in this study and 45 patients (24.6%) achieved pCR. In univariate analysis, there were four clinical factors (age, smoking, drinking, radiation dose) and one morphomic factor (dorsal muscle group area) as significant predictors for pCR. A multivariate logistic regression showed that age [odds ratio (OR): 1.0786, P=0.0016], radiation dose (OR: 2.3045, P=0.0331) and dorsal muscle group area (OR: 1.6678, P=0.0160) were predictors pCR.

Conclusions: Age, radiation dose and dorsal muscle group area were significantly associated with pCR. These factors may be used as development of individualized therapy in patients with ESCC received nCRT.

Keywords: Esophageal cancer; pathological complete response (pCR); analytic morphomics; body composition

doi: 10.21037/jtd.2017.s022

Cite this abstract as: Chiu CH, Zhang P, Lin J, Chao YK, Wang SC. Analytic morphomics can predict pathological complete response to neoadjuvant chemoradiotherapy in esophageal squamous cell carcinoma. *J Thorac Dis* 2017;9(Suppl 14):AB022. doi: 10.21037/jtd.2017.s022