



Development and validation of a novel metabolic signature for predicting prognosis in patients with laryngeal cancer

Wenfei Li¹ · Min Fu¹ · Kun Zhao² · Fang Han³ · Ning Bu⁴ · Zhanqiu Wang¹

Received: 3 July 2021 / Accepted: 5 July 2021 / Published online: 9 July 2021
© The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature 2021

First, why not apply the multivariate analysis to further identify prognostic values of the 13 metabolic genes after utilizing univariate Cox and LASSO regression analyses. The paper lacks mention of statistical method involved the multivariate analysis of gene signature, and thus is not rigorous. On the basis of univariate Cox regression analysis, we wanted to further define the similarities and differences in the microcosmic characterization of the metabolic genes.

Then, we applied a least absolute shrinkage and selection operator (LASSO) regression to identify the final elimination of potential predictors with nonzero coefficients [1], which can avoid model overfitting, to select the optimal metabolic signature. Finally, multivariate Cox regression analysis was conducted for the risk signature. Afterwards, multivariate Cox regression was carried out to determine the risk signature was an independent prognostic factor for LC in part of result.

Second, thank you for your positive and constructive comments on our paper. The purpose of this study is to establish a metabolic gene model to evaluate the prognosis of laryngeal cancer. Our study confirmed that the risk score is not only effective for stratification of laryngeal cancer

survival, but also effective for recurrence patients. If we only verify it in the TCGA recurrence cohort without external verification, our study is not convincing. Thank you again for your comments.

Acknowledgements The authors thank the efforts of the National Cancer Institute in the creation of the TCGA and GEO databases.

Author contributions WL and ZW conceived and designed the study; HF and NB collected the data. MF and KZ analyzed the data. WL and MF contributed to the writing of the manuscript.

Funding No financial assistance was required for this study.

Data availability The data used to support the findings of this study are included within the article.

Declarations

Conflict of interest All author(s) indicated no potential conflicts of interest.

Ethics statement Not necessary.

Wenfei Li and Min Fu are co-first author.

This reply refers to the comment available online at <https://doi.org/10.1007/s00405-020-06524-4>.

✉ Zhanqiu Wang
wangzhanqiu2007@sina.com

- ¹ Department of Radiology, The First Hospital of Qinhuangdao, Wenhua Road 258, Qinhuangdao 066000, Hebei, China
- ² Department of Otolaryngology, The First Hospital of Qinhuangdao, Qinhuangdao, Hebei, China
- ³ Department of Radiology, Affiliated Zhongshan Hospital of DaLian University, Dalian, Liaoning, China
- ⁴ Department of Anesthesiology, The First Affiliated Hospital of Xi'an Jiaotong University, Xi'an, Shaanxi, China

Reference

1. Gao J, Kwan PW, Shi D (2010) Sparse kernel learning with LASSO and Bayesian inference algorithm. *Neural Netw* 23:257–264. <https://doi.org/10.1016/j.neunet.2009.07.001>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.