



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



## Treating COVID-19 with NRICM101 and NRICM102 – Author's reply 3

### ARTICLE INFO

#### Keywords

COVID-19  
Traditional Chinese Medicine  
NRICM101  
NRICM102

We thank Shi, Yong and Wei for their comments in response to our paper [1]. They suggest possible effects of different oxygen therapy techniques, and subgroup analysis on patients' demographic characteristics. However, the comments represent a misunderstanding about the paper's purpose, and the concept of propensity score analysis.

First of all, our intention was not to investigate if oxygen therapy strategies, sex, age, comorbidity or other risk factors play a role in the clinical outcome. We are fully aware that they do. Rather, the study aimed to assess if use of TCM could reduce the progression and mortality of COVID-19. Employing a quasi-experimental method allows us to clearly estimate the impact of the intervention. To this end, it is essential to ensure that the groups are comparable, i.e. various baseline characteristics are evenly distributed between the groups. Propensity score analysis is a statistical strategy to effectively adjust for confounders in a retrospective study, making it possible to make an unbiased comparison [2]. Subsequently, we performed a marginal Cox regression analysis to replicate the counterfactual conditional of a randomized comparison. We also evaluated the impact of potentially unmeasured confounders by calculating an e-value. Consistent results indicate that the treatment effect of TCM is believed to be robust.

Evaluating the treatment effect of TCM in specific groups is beyond the scope of this research but worth further examination. We hope our response provides sufficient clarification on the purpose and methodology.

#### Declarations of interest

None.

#### Data availability

No data was used for the research described in the article.

#### References

- [1] Y.H. Tseng, S.J. Lin, S.M. Hou, C.H. Wang, S.P. Cheng, K.Y. Tseng, M.Y. Lee, S. M. Lee, Y.C. Huang, C.J. Lin, C.K. Lin, T.L. Tsai, C.S. Lin, M.H. Cheng, T.S. Fong, C. I. Tsai, Y.W. Lu, J.C. Lin, Y.W. Huang, W.C. Hsu, H.H. Kuo, L.H. Wang, C.C. Liaw, W. C. Wei, K.C. Tsai, Y.C. Shen, W.F. Chiou, J.G. Lin, Y.C. Su, Curbing COVID-19 progression and mortality with traditional Chinese medicine among hospitalized patients with COVID-19: a propensity score-matched analysis, *Pharmacol. Res.* 184 (2022), 106412.
- [2] S. Baek, S.H. Park, E. Won, Y.R. Park, H.J. Kim, Propensity score matching: a conceptual review for radiology researchers, *Korean J. Radiol.* 16 (2) (2015) 286–296.

Yu-Hwei Tseng<sup>a</sup>, Sunny Jui-Shan Lin<sup>b</sup>, Ming-Yung Lee<sup>c</sup>, Yi-Chang Su<sup>a,\*</sup>

<sup>a</sup> National Research Institute of Chinese Medicine, Ministry of Health and Welfare, Taipei, Taiwan

<sup>b</sup> Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan

<sup>c</sup> Department of Data Science and Big Data Analytics, Providence University, Taichung, Taiwan

\* Correspondence to: National Research Institute of Chinese Medicine, No. 155–1, Sec. 2, Linong Street, Beitou District, Taipei 112026, Taiwan.

E-mail addresses: [sychang@nricm.edu.tw](mailto:sychang@nricm.edu.tw), [taco423@ms26.hinet.net](mailto:taco423@ms26.hinet.net) (Y.-C. Su).