



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.



## Outcome prediction based on initial CT scan in COVID-19



Dear Editor,

We appreciate the comments of Kalemci et al.<sup>1</sup> on our paper entitled "Predictive value of initial CT scan for various adverse outcomes in patients with COVID-19 pneumonia".<sup>2</sup> We believe there is a need for some elaboration regarding the presented issues. Of our 121 patients, 36 had diabetes, 48 had hypertension, and 29 had a history of ischemic heart disease. We analyzed the effect of these past medical conditions in their outcomes, which is presented in Table 1. We found no significant association between any of these conditions and patients' outcomes, although this might be attributed to our sample size. The authors also have suggested that patients with heart failure or kidney injury show more ground glass opacities in CT scan and have cited an article regarding the abundance of Kerley-B lines in these patients. Although heart failure or any fluid overload condition can be a differential diagnosis to ground glass opacities seen in COVID-19, however this is usually associated with interstitial septal thickening and/or pleural effusion. Nevertheless, accompanying volume overload may accentuate ground glass opacities in COVID-19 pneumonia as a limitation.<sup>3</sup> However, we did not find any significant difference

in CSS between patients with chronic kidney disease and ischemic heart disease.

Finally, all scans were reviewed, and only one patient had signs of underlying interstitial lung disease (ILD). Also, regarding the controversial effect of smoking and outcome in patients with COVID-19, only 12.4% of our patients had reported current or past smoking which was found to have no significant association with their outcome. Although this might be due to the underreporting of smoking habits, other studies have also found the role of smoking controversial.<sup>4,5</sup> Further studies with more data regarding the participants' smoking history are needed. We believe that we have addressed all the raised issues and welcome any follow-up regarding this paper.

### Declaration of Competing Interest

None

### Acknowledgement

This project is not supported by national or private funding, and all authors contribute solely as volunteers.

**Table 1**  
Univariable analysis of past medical conditions

Past Medical Condition	ICU Admission(n = 47)			Intubation(n = 38)			Mortality(n = 36)		
	N	OR(95% CI)	p-value	N	OR(95% CI)	p-value	N	OR(95% CI)	p-value
Diabetes	15	1.18 (0.53–2.61)	0.678	14	1.61 (0.71–3.67)	0.250	12	1.27 (0.54–2.93)	0.575
Hypertension	16	0.67 (0.31–1.44)	0.314	13	0.71 (0.32–1.58)	0.407	13	0.80 (0.36–1.80)	0.603
Ischemic Heart Disease	12	1.14 (0.49–2.69)	0.748	9	0.97 (0.39–2.40)	0.961	9	1.08 (0.43–2.67)	0.862

## References

1. Kalemci S, Sarihan A, Zeybek A. Initial CT scan and its relationship with Covid-19. *Hear Lung*. 2021 Mar;50(2):177. [Internet]. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S014795632030443X>.
2. Khosravi B, Aghaghazvini L, Sorouri M, Naybandi Atashi S, Abdollahi M, Mojtavavi H, et al. Predictive value of initial CT scan for various adverse outcomes in patients with COVID-19 pneumonia. *Hear Lung*. 2020 Oct. Internet. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0147956320303988>.
3. Parekh M, Donuru A, Balasubramanya R, Kapur S. Review of the chest CT differential diagnosis of ground-glass opacities in the COVID era. *Radiology*. 2020 Dec;297(3):E289–E302. Internet. Available from: <http://pubs.rsna.org/doi/10.1148/radiol.2020202504>.
4. Simons D, Shahab L, Brown J, Perski O. The association of smoking status with SARS-CoV-2 infection, hospitalization and mortality from COVID-19: a living rapid evidence review with Bayesian meta-analyses (version 7). *Addiction*. 2020 Oct 2. Internet. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/33007104>.
5. Salah HM, Sharma T, Mehta J. Smoking doubles the mortality risk in COVID-19: a meta-analysis of recent reports and potential mechanisms. *Cureus*. 2020 Oct 7;12(10):e10837. [Internet]. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/33173643>.

Bardia Khosravi, MD  
Majid Sorouri, MD

Mohammad Abdollahi, MD  
Amir Kasaeian, PhD  
Amir Reza Radmard, MD\*

*Department of Radiology, Shariati Hospital, Tehran University of Medical Sciences, Tehran, Iran*  
*Digestive Diseases Research Center, Digestive Diseases Research Institute, Tehran University of Medical Sciences, Tehran, Iran*  
*Hematology, Oncology and Stem Cell Transplantation Research Center, Tehran University of Medical Sciences, Tehran, Iran*

\*Corresponding author.

E-mail address: [radmard@tums.ac.ir](mailto:radmard@tums.ac.ir) (A.R. Radmard).

Received 17 January 2021

Accepted 21 January 2021

Available online 23 January 2021