

Elevated mortality of chronic diseases during COVID-19 pandemic: a cause for concern?

Yang Xia , Qin Li, Wen Li and Huahao Shen

Dear Editor,

Since the COVID-19 outbreak in December 2019, the effect of comorbidities on COVID-19 has been discussed widely. Comorbidities are observed in 20–30% of COVID-19 patients, while the proportion increases to 50–80% in patients with severe COVID-19.^{1–3} Of note, the most prevalent coexisting disorders are chronic diseases such as hypertension and diabetes, cardiovascular diseases, obesity, chronic obstructive pulmonary disease (COPD), and cancer, with which the severe rate and death rate were several-fold higher than that in the overall population.^{2,3} However, the questions of why patients with chronic diseases are more vulnerable to SARS-CoV-2, and what measures should be taken to reduce the risks, are still open.

There are multiple contributing factors to the elevated risk of patients with chronic diseases. First, patients having chronic diseases tend to pay frequent and regular visits to medical organizations for review and pharmacy. Hence, whether the vulnerability is caused by diseases themselves or the medical visit-related exposure should be open to discussion. Thus, studies comparing the severe rate and mortality in COVID-19 patients having chronic diseases with and without periodically medical visits during COVID-19 pandemic will be of great importance. To avoid the potential risk of nosocomial infection, several measures should be taken into consideration. Above all, accurate triage and a strict hierarchical treatment system should be followed in medical institutes. A fever clinic is an ideal option to effectively triage patients who are suspected for COVID-19. Furthermore, suspected patients are sought to be temporarily quarantined until exclusion of COVID-19. In addition, patients with chronic diseases could complete their regular review and medication in

non COVID-19 designated hospitals so as to reduce the risk of contacting the underlying source of infection.

Second, the COVID-19 epidemic occupies a great portion of medical resources, resulting in the delayed medical care of patients with chronic diseases. In response, telemedicine has a role to play. Medical service processes could move online, by phone, or by E-mail. Also, the upper range of the prescription span could be increased, coupled with online consultation for follow up. Adjustment of national or commercial insurance policy is also critical to safeguard the interests of patients. The primary health-care system in China has developed over half a century, and the national medical insurance covers over 1.3 billion people – 95% of the whole population.⁴ Since the COVID-19 outbreak in January 2020, the National Healthcare Security Administration has promulgated policies to decrease the risk of infection for patients with chronic conditions. The adjustment of the insurance policy and regulation helps guarantee the effectiveness of the quarantine, as well as the allocation of limited medical resources during the COVID-19 pandemic. Notably, internet services may not be widely accessible in some areas, and elderly people usually have poor ability in surfing the internet. Thus, alternative plans are needed in different regions with more complicated situations. A recent review article introduced the experience from Mexico. The Mexican government proposes a program named “Youth Building the Future”, which trains young indigenous people to master surveillance and prevention systems for COVID-19. These young guys are in charge of sharing key messages on hygiene, quarantine, and containment in rural areas and for supporting telemedicine in their local communities.⁵

Ther Adv Chronic Dis

2020, Vol. 11: 1–3

DOI: 10.1177/
2040622320961590

© The Author(s), 2020.
Article reuse guidelines:
[sagepub.com/journals-](https://sagepub.com/journals-permissions)
[permissions](https://sagepub.com/journals-permissions)

Correspondence to:
Huahao Shen
Department of Respiratory
and Critical Care Medicine,
Key Laboratory of
Respiratory Disease of
Zhejiang Province, Second
Affiliated Hospital of
Zhejiang University School
of Medicine, Hangzhou,
Zhejiang, 310009, China
huahaoshen@zju.edu.cn

Yang Xia
Qin Li
Wen Li
Key Laboratory of
Respiratory Disease of
Zhejiang Province,
Department of Respiratory
and Critical Care Medicine,
Second Affiliated Hospital
of Zhejiang University
School of Medicine,
Hangzhou, Zhejiang,
310009, China

Third, physicians should prioritize the treatment during a global pandemic. For example, reports with limited sample size showed that cancer patients were more fragile when contracting COVID-19. Half of infected cancer patients developed severe COVID-19 and the mortality was as high as 28.6%. Moreover, recent anti-cancer therapy was shown to be associated with severe events.^{6–8} Hence, physicians ought to carefully weigh the risk of death and morbidity from COVID-19 against the magnitude of benefit of intended therapies.

By extension, retrospective analysis has shown that COPD was an independent risk factor linked to higher severity and mortality of COVID-19.⁹ In concert, smoking has been evident to be related to severe complications and high mortality of COVID-19,¹⁰ highlighting the great value of smoking cessation, especially as the COVID-19 pandemic might last a couple more years.¹¹ Additionally, compared with non-obese patients, obese patients were more severely diseased and had worse outcomes in COVID-19.¹² Black, Asian, and minority ethnic groups seemed to be at higher risk of infection, severity, and mortality of COVID-19 than White groups.¹³ All these observations strongly call for individualized chronic disease management strategies in different countries and regions.

Collectively, patients with chronic diseases contribute to a considerable proportion of the whole population, and appropriate management of comorbidities is of great significance in mitigating the COVID-19 epidemic. Efforts should be made by medical institutions, health-care systems, and government together to tide us over difficult times.


Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the emergency research project of Zhejiang University for COVID-19 (491020-X02004).

Conflict of interest statement

The authors declare that there is no conflict of interest.

ORCID iD

Yang Xia  <https://orcid.org/0000-0003-2487-2244>

References

1. Guan WJ, Ni ZY, Hu Y, *et al.* Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med* 2020; 382: 1708–1720.
2. Grasselli G, Zangrillo A, Zanella A, *et al.* Baseline characteristics and outcomes of 1591 patients infected with SARS-CoV-2 admitted to ICUs of the Lombardy region, Italy. *JAMA* 2020; 323: 1574–1581.
3. Richardson S, Hirsch JS, Narasimhan M, *et al.* Presenting characteristics, comorbidities, and outcomes among 5700 patients hospitalized with COVID-19 in the New York City area. *JAMA* 2020; 323: 2052–2059.
4. Li X, Lu J, Hu S, *et al.* The primary health-care system in China. *Lancet* 2017; 390: 2584–2594.
5. de León-Martínez LD, de la Sierra-de la Vega L, Palacios-Ramírez A, *et al.* Critical review of social, environmental and health risk factors in the Mexican indigenous population and their capacity to respond to the COVID-19. *Sci Total Environ* 2020; 733: 139357.
6. Zhang L, Zhu F, Xie L, *et al.* Clinical characteristics of COVID-19-infected cancer patients: a retrospective case study in three hospitals within Wuhan, China. *Ann Oncol* 2020; 31: 894–901.
7. Angelis V, Tippu Z, Joshi K, *et al.* Defining the true impact of coronavirus disease 2019 in the at-risk population of patients with cancer. *Eur J Cancer* 2020; 136: 99–106.
8. Al-Quteimat OM and Amer AM. The impact of the COVID-19 pandemic on cancer patients. *Am J Clin Oncol* 2020; 43: 452–455.
9. Zhao Q, Meng M, Kumar R, *et al.* The impact of COPD and smoking history on the severity of COVID-19: a systemic review and meta-analysis. *J Med Virol*. Epub ahead of print 15 April 2020. DOI: 10.1002/jmv.25889.
10. Alqahtani JS, Oyelade T, Aldhahir AM, *et al.* Prevalence, severity and mortality associated with COPD and smoking in patients with

- COVID-19: a rapid systematic review and meta-analysis. *PLoS One* 2020; 15: e0233147.
11. Kissler SM, Tedijanto C, Goldstein E, *et al.* Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period. *Science* 2020; 368: 860–868.
 12. Yang J, Hu J and Zhu C. Obesity aggravates COVID-19: a systematic review and meta-analysis. *J Med Virol*. Epub ahead of print 30 June 2020. DOI: 10.1002/jmv.26237.
 13. Pan D, Sze S, Minhas JS, *et al.* The impact of ethnicity on clinical outcomes in COVID-19: a systematic review. *Lancet* 2020; 23: 100404.