



HAL
open science

COVID-19 mortality: are comorbidities, socio-economic status and ethnicity more important than cancer?

Lauren Seknazi, Mathieu Jamelot, Florence Canouï-Poitrine, Joseph Gligorov, Marc-Antoine Benderra

► To cite this version:

Lauren Seknazi, Mathieu Jamelot, Florence Canouï-Poitrine, Joseph Gligorov, Marc-Antoine Benderra. COVID-19 mortality: are comorbidities, socio-economic status and ethnicity more important than cancer?. *Annals of translational medicine*, 2022, 10 (24), pp.1302-1302. 10.21037/atm-22-5592 . hal-04154031

HAL Id: hal-04154031

<https://hal.u-pec.fr/hal-04154031>

Submitted on 6 Jul 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



COVID-19 mortality: are comorbidities, socio-economic status and ethnicity more important than cancer?

Lauren Seknazi¹, Mathieu Jamelot¹, Florence Canoui-Poitrine^{2,3}, Joseph Gligorov^{1,4},
Marc-Antoine Bendersa^{1,2,3}

¹Department of Medical Oncology, Institut Universitaire de Cancérologie, Sorbonne University, AP-HP, Ténon Hospital, Paris, France; ²Université Paris-Est Créteil, INSERM, IMRB, Créteil, France; ³AP-HP, Henri-Mondor Hospital, Public Health Department & Clinical Research Unit (URC Mondor), Créteil, France; ⁴INSERM U938, CRSA, Institut Universitaire de Cancérologie, AP-HP Sorbonne Université, Paris, France

Correspondence to: Marc-Antoine Bendersa, MD. Ténon hospital, 4 rue de la Chine, Paris, France. Email: marc-antoine.bendersa@aphp.fr.

Comment on: Raez LE, Tarockoff M, Carracedo Uribe CR, *et al.* Mortality and prognostic factors in hospitalized COVID-19 patients with cancer: an analysis from a large healthcare system in the United States. *Ann Transl Med* 2022;10:1090.

Keywords: Coronavirus disease 2019 (COVID-19); comorbidities; ethnicity

Submitted Nov 10, 2022. Accepted for publication Dec 13, 2022.

doi: 10.21037/atm-22-5592

View this article at: <https://dx.doi.org/10.21037/atm-22-5592>

The coronavirus disease 2019 (COVID-19) pandemic led to the rapid sharing of data within the medical community on the populations at risk of severe forms of the disease. Among them, patients with comorbidities such as cardiovascular, respiratory and metabolic diseases, but also elderly patients and those with cancer have been identified as being at increased risk of mortality from severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection (1).

Raez *et al.* (2) highlighted again the increased mortality due to COVID-19 in cancer patients. This retrospective multicenter study covering the first 10 months of the global pandemic assessed the in-hospital mortality in COVID-19 patients with cancer compared to those without cancer. As expected, the mortality rate was higher in cancer patients (23.8%) compared to non-cancer patients (11.4%), with an odds ratio of 2.35 (95% CI: 1.74–3.16, $P < 0.001$). This mortality rate in cancer patients is consistent with other studies, although it has been variable between countries and management situations (inpatient versus outpatient) (3,4). Patients with haematologic malignancies appear to be at even greater risk than patients with solid malignancies, possibly due to their underlying immunosuppression (5). Acute myeloid leukaemia and myelodysplastic syndromes were independent risk factors for COVID-19 mortality (6,7).

Despite the growing number of studies, it may be

difficult to assess the relative share of increased mortality directly related to the cancer itself. Indeed, comorbidities which are quite frequent in this population, advanced age, socio-economic or ethnic risk factors could be important confounding factors.

Many studies have shown that comorbidities are independently associated with excess mortality in COVID-19 cancer patients (4,8,9). The cancer population in the study by Raez *et al.* (2) had comorbidities, with significantly higher rates of hypertension, chronic obstructive pulmonary disease, chronic kidney disease, coronary heart disease, and smoking compared to non-cancer patients. These differences in comorbidities may account for at least part of the large difference in mortality between these two populations, as they were not adjusted for comorbidities.

Other studies (10,11) have also reported that there was no significant difference in mortality between cancer and non-cancer patients when they were matched or adjusted on comorbidities.

Even after considering cancer and comorbidities as risk factors for COVID-19, there are still differences in mortality between patients. During the pandemic, the disparity between ethnicities was clearly visible. Minorities such as African-Americans or Hispanics had an increased risk of being infected and an increased risk of mortality (12)

compared to the white population.

In the United States study presented here (2), 46.6% of the patients with COVID-19 were Hispanic, 31.5% Black and 16.8% non-Hispanic White. Data were collected from six hospitals in South Florida in 2000. During the same period in Florida, the population was 58% non-Hispanic White, 26% Hispanic, and 15% Black (13). The different distribution of ethnicities in the general population and in COVID-19 patients shows that minorities are more affected by COVID-19 in Florida, as elsewhere in the USA. These ethnic disparities have been found for solid and haematologic malignancies (14,15). Indeed, it seems important to adjust the analysis of COVID-19 mortality according to ethnicity, as it was done here by Raez *et al.* (2).

These disparities can be explained by several factors. Some populations tend to have more comorbidities, notably hypertension and obesity, which are risk factors for excess mortality from COVID-19 (16). But in addition to differences in medical conditions, differences in socio-economic status are important to consider. Some put people at higher risk of contamination, such as living in more populated areas and having jobs that are less often accessible to telework. Others increase the risk of severe forms of the disease, such as a delay in treatment due to poorer access to health care because of poorer social security coverage and lower income. These ethnic health disparities are also well documented in cancer care (17,18). The black population tends to have a worse prognosis, with a higher incidence of cancer than the white population, later diagnosis of cancer due to lack of prevention and screening, and poor access to treatment and clinical trials, resulting in a higher cancer mortality (19). We do not know yet the impact of delays in cancer management for this already poorer outcome patient population, which was more affected by COVID-19 and by the socio-economic consequences of the pandemic itself. Although we only have data on ethnicity disparities in a few countries due to different regulations regarding on data collection, we could easily extrapolate them to other countries with a multiracial population.

Thus, when talking about cancer patients with COVID-19, it is important to consider cancer and its treatment on the one hand, but also comorbidities, socio-economic parameters and ethnicity as risk factors for severe forms.

Today, life expectancy in the United States and worldwide has tended to decline over the past two years (20,21) partly due to COVID-19, and with persistent and increasing ethnic differences. We must continue to work for

equality among our cancer patients, to provide them with the same care regardless of their ethnicity.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Annals of Translational Medicine*. The article did not undergo external peer review.

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <https://atm.amegroups.com/article/view/10.21037/atm-22-5592/coif>). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

1. Zhou F, Yu T, Du R, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet* 2020;395:1054-62.
2. Raez LE, Tarockoff M, Carracedo Uribe CR, et al. Mortality and prognostic factors in hospitalized COVID-19 patients with cancer: an analysis from a large healthcare system in the United States. *Ann Transl Med* 2022;10:1090.
3. Gupta S, Hayek SS, Wang W, et al. Factors Associated With Death in Critically Ill Patients With Coronavirus Disease 2019 in the US. *JAMA Intern Med* 2020;180:1436-47.

4. Sharafeldin N, Bates B, Song Q, et al. Outcomes of COVID-19 in Patients With Cancer: Report From the National COVID Cohort Collaborative (N3C). *J Clin Oncol* 2021;39:2232-46.
5. Passamonti F, Cattaneo C, Arcaini L, et al. Clinical characteristics and risk factors associated with COVID-19 severity in patients with haematological malignancies in Italy: a retrospective, multicentre, cohort study. *Lancet Haematol* 2020;7:e737-45.
6. Pagano L, Salmanton-García J, Marchesi F, et al. COVID-19 infection in adult patients with hematological malignancies: a European Hematology Association Survey (EPICOVIDEHA). *J Hematol Oncol* 2021;14:168.
7. Vijenthira A, Gong IY, Fox TA, et al. Outcomes of patients with hematologic malignancies and COVID-19: a systematic review and meta-analysis of 3377 patients. *Blood* 2020;136:2881-92.
8. Benderra MA, Aparicio A, Leblanc J, et al. Clinical Characteristics, Care Trajectories and Mortality Rate of SARS-CoV-2 Infected Cancer Patients: A Multicenter Cohort Study. *Cancers (Basel)* 2021;13:4749.
9. Lièvre A, Turpin A, Ray-Coquard I, et al. Risk factors for Coronavirus Disease 2019 (COVID-19) severity and mortality among solid cancer patients and impact of the disease on anticancer treatment: A French nationwide cohort study (GCO-002 CACOVID-19). *Eur J Cancer* 2020;141:62-81.
10. Brar G, Pinheiro LC, Shusterman M, et al. COVID-19 Severity and Outcomes in Patients With Cancer: A Matched Cohort Study. *J Clin Oncol* 2020;38:3914-24.
11. Rüttrich MM, Giessen-Jung C, Borgmann S, et al. COVID-19 in cancer patients: clinical characteristics and outcome-an analysis of the LEOSS registry. *Ann Hematol* 2021;100:383-93.
12. Lo CH, Nguyen LH, Drew DA, et al. Race, ethnicity, community-level socioeconomic factors, and risk of COVID-19 in the United States and the United Kingdom. *EClinicalMedicine* 2021;38:101029.
13. FLORIDA : 2020 Census [Internet]. www.census.gov. 2021. Available online: <https://www.census.gov/library/stories/state-by-state/florida-population-change-between-census-decade.html>
14. Wang Q, Berger NA, Xu R. Analyses of Risk, Racial Disparity, and Outcomes Among US Patients With Cancer and COVID-19 Infection. *JAMA Oncol* 2021;7:220-7.
15. Wang Q, Berger NA, Xu R. When hematologic malignancies meet COVID-19 in the United States: Infections, death and disparities. *Blood Rev* 2021;47:100775.
16. Lopez L 3rd, Hart LH 3rd, Katz MH. Racial and Ethnic Health Disparities Related to COVID-19. *JAMA* 2021;325:719-20.
17. The Lancet Oncology. Racial disparities in cancer care: can we close the gap? *Lancet Oncol* 2021;22:1643.
18. Miller KD, Nogueira L, Devasia T, et al. Cancer treatment and survivorship statistics, 2022. *CA Cancer J Clin* 2022;72:409-36.
19. Giaquinto AN, Miller KD, Tossas KY, et al. Cancer statistics for African American/Black People 2022. *CA Cancer J Clin* 2022;72:202-29.
20. Arias E, Tejada-Vera B, Kochanek K.D et al. CDC - Vital Statistics Rapid Release - Provisional Life Expectancy Estimates for 2021 [Internet]. [cited 30 oct 2022]. Available online: <https://www.cdc.gov/nchs/data/vsrr/vsrr023.pdf>
21. Mazzucco S, Campostrini S. Life expectancy drop in 2020. Estimates based on Human Mortality Database. *PLoS One* 2022;17:e0262846.

Cite this article as: Seknazi L, Jamelot M, Canoui-Poitaine F, Gligorov J, Benderra MA. COVID-19 mortality: are comorbidities, socio-economic status and ethnicity more important than cancer? *Ann Transl Med* 2022;10(24):1302. doi: 10.21037/atm-22-5592