

# POSTCOVID-19WAR era, reconsideration of enhanced mortality and morbidity

## Abstract

The COVID-19 pandemic era might be over but the POSTCOVID-19 era is showing an increase in mortality and morbidity rate among different patients with chronic disease, in the last 3 years. Accelerated mortality phenomena (post-) covid-19 contamination is a process that could play a pivotal role in the next decades, as well. Previously described the potential mechanism of interactions between cancer and different microorganisms collaboration, which still their exact mechanism in some cancers is not elucidated completely. However, globally, cancer diagnoses appear to be rising. In this Mini review is tried to highlight more about potential association between the COVID-19 variants and a significant increase in cancer-related mortality, via analysis of available (un-)published data. There are different potential causes, which in the last 3 years might affect significantly morbidity and mortality rates of chronically affected patient i.e. pandemic attacks of the COVID-19 variants, and abuse of certain drugs and their side effects. How? And why? Some of the cancerogenic processes that can push toward an accelerated increase in morbidity and mortality are not completely elucidated.

**Keywords:** postcovid-19, cancer, human, pandemic, accelerated mortality, cause-effect, analysis

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## Introduction

The COVID-19 pandemic era might be over but the POSTCOVID-19 era is showing an increase in mortality and morbidity rate among different patients with chronic disease, in the last 3 years.<sup>1-5</sup> The WHO- mortality rate statistic data is displaying (see WHO.int) an age-related increase in mortality rate when One compares the USA-data of 2000 versus the recent COVID-19 pandemic era 2020-2021. Accelerated mortality phenomena (post-) covid-19 contamination is a process that could play a pivotal role in the next decades, as well. Previously described the potential mechanism of interactions between cancer and different microorganisms collaboration, which still their exact mechanism in some cancers is not elucidated completely (see Badlou BA et al. introduced death triangle model systems 2019-2023). What is known about potential mechanisms? Investigating between patients affected with chronic complex diseases (either communicable or uncommunicable) and any potential contamination with infectious antigens especially microorganisms, which might accelerate mortality and morbidity rate in a phenomenal speed is ongoing and still is not elucidated completely. For example, their disease type, and/or cancerogenic initiating/accelerating Microorganism(CIAM)? Subsequently, (re-)consideration about their treatment strategies.

In the last century, increasing awareness about the role of CIAMs caused Medici to try to prevent potential infectious diseases, paralleled with cancer Medicare and Medicaid in chronically affected patients. On the contrary, according to a recent report by the American Cancer Society, the cancer death rate in the United States has been steadily decreasing over the last 28 years.<sup>3</sup> The report suggests that factors that may play a role in this decrease include a reduction in the number of people who smoke decreased significantly, as smoking is a leading cause of lung cancer. Alongside, the addition of (appropriate) chemotherapy treatment after surgery for breast and colon cancer also decreased mortality and morbidity rates.<sup>2</sup>

However, globally, cancer diagnoses appear to be rising. According to one study published in the JAMA Oncology and based on data from the Global Burden of Diseases, Injuries, and Risk

Factors Study 2019, about 18.7 million people worldwide received a cancer diagnosis in 2010, and the total deaths from cancer numbered 8.29 million (22.6%). Fast forward to 2019, and those numbers had increased significantly, with 23.6 million people receiving a new cancer diagnosis and records documenting 10 million cancer deaths (23%).<sup>2</sup> There are different potential causes, which in the last 3 years might affect significantly morbidity and mortality rates of chronically affected patients i.e. COVID-19 variants, side effects of (un-)known biosimilar(s). According to the Cleveland Clinic, CAR T-cell therapy can cause serious and sometimes life-threatening side effects such as cytokine release syndrome (CRS) and neurological problems.<sup>3,4</sup> CRS is a condition where the immune system releases too many inflammatory molecules, causing fever, low blood pressure, and organ damage. Neurological problems can include speech difficulties, memory loss, tremors, and seizures. Other possible side effects are allergic reactions, abnormal mineral levels, and low blood cell counts.<sup>4</sup> Another reason that might be significant increasing/decreasing effector(s) is (are) an excessive antibiotic usage, which are some examples of preventive means that both to some extent did(not) work, prophylactically.

Subsequently, the death rate in the last 5 years after diagnostics survivals chance decreased on one hand (in some chronic diseases), while on the other hand increased, curiously. Though, in the last 3 years post-covid-19 pandemic periods suddenly were observed that mortality and morbidity rates of cancer patients increased, worldwide.<sup>4</sup> Moreover, because of a lack of consistent data, know-how, and limited knowledge over COVID-19 superbugs mutations (the most important hallmark of the last 3 years of Medicare and Medicaid) in cancer news was an enhanced mortality and morbidity rate, without having a plausible reason presented. Our research team reported repeatedly about death triangle machinery, and how collateral damages and side effects of cancer routine treatments could increase. Subsequently, we did start to report about the expansion of the death triangle into a rectangle and beyond is a potential threat in the next decade.<sup>5</sup>

As exactly documented in a paper from 1970 by Bortin, almost all human allogeneic marrowgrafts failed, 50 years ago.<sup>6</sup> Of the 200

patients reported between 1957 and 1967, 73 73 were transplanted for aplastic anemia, 115 for advanced and refractory hematologic malignancies, and 12 for immunodeficiency diseases.<sup>6</sup> In the end, all 200 patients died (100%), 125 with graft failure, 47 with GVHD, and others with infections or recurrence of their underlying malignancies.<sup>6,7</sup> One is wondering why so many patients died then. Dahi PB et al. 2018 postulated that High-Dose Chemotherapy and Autologous Hematopoietic Cell Transplantation (HDT-AHCT) remains effective treatment in lymphoma.<sup>8</sup> Over the past several decades, HDT with BEAM (carmustine, etoposide, cytarabine, and melphalan) and CBV (cyclophosphamide, carmustine, and etoposide) have been the most regularly used preliminary regimens for AHCT in Hodgkin and non-Hodgkin lymphoma.<sup>8</sup>

The concept of a steep dose–response relationship for anticancer drugs dates back to the 1960s when Skipper and coworkers predicted a log cell kill model for antineoplastic drugs. In this model, the relationship between tumor cell kill and drug dose was exponential, with the number of cells killed by a given dose of drug being proportional to both the dose of the drug and the number of cells exposed to the drug.<sup>9,10</sup> HDT exploits the steepness of the dose–response relationship between chemotherapeutic drugs and fractional cell kill.<sup>10–12</sup> The steepness of the dose–response curve implies that a disproportionately high number of cancer cells are killed when drug doses are increased.<sup>8</sup>

Now, what is unknown about potential mechanisms and interactions between the main death causes i.e. infectious diseases, cardiovascular diseases, cancer type, and CIAMs? Infectious superbugs and COVID-19 variants mutate more than 2-3- or might > more than 10 times each month. Nobody has reliable data here over. At least not available online. Cardiovascular Diseases remain mysterious concerning diagnosis and appropriate Medicare and Medicaid, after recent research and development. One is observing a stable or modest decrease in death rate, in the last decades. Recall, because of limited smoking and smoke areas, besides better diet, and certain checkups, timely One is observing a cause-effect relationship, eventually. But in cancerogenic diseases combined with infectious CIAMs situations are divided into different personalized conditions. A type of cancer patients experienced a decrease while others were suffering from accelerated morbidity and mortality burden, contrariwise. How? And why? Some of the cancerogenic processes that can push toward an accelerated increase in morbidity and mortality are not completely elucidated. One of the remarkable causes could be the COVID-19 superbugs/ variants in the last 3-4 years. Remarkably, after chronic cancer patients were contaminated with COVID-19 variants their morbidity and mortality rate increased significantly, according to different recent publications. More future investigation needed to unravel what was the mechanism of action of COVID-19 variants on cancerogenic processes. And how potential cancer patients, who had a 5- up to 10 years survival chance, did die in less than 1 month, during the COVID-19 pandemic era.

## Conclusion

To study in detail One needs recent 3-4 years' statistics to compare it with the last decades (2000-2010 vs. 2020-2023 morbidity & mortality rate data), which hope they are objectively processed and are without bias available for global usage online.

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## Conflicts of interest

The author declares that there is no conflict of interest.

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## References

1. Alammari F, Al-Sowayan BS, Albdah B, et al. The impact of covid-19 infection on patients with chronic diseases admitted to ICU: a cohort retrospective study. *J Epidemiol Glob Health*. 2023;13(2):313–321.
2. Medcancer news 2023.
3. MedCART-cell news 2023.
4. Cancer.org news 2023.
5. Badlou BA. Postcovid-19 war era, interaction between cancer-hematologic disorders- diabetes significantly increased by covid-19 variants, aggressively. *Arch Pharmacol Ther*. 2023;5(1):8–10.
6. Bortin MM. A compendium of reported human bone marrow transplants. *Transplantation*. 1970;9(6):571–587.
7. Noa Granot, Rainer Storb. History of hematopoietic cell transplantation: challenges and progress. *Centenary Review*. 2020;105(12).
8. Parastoo BD, Hillard ML, Craig SS, et al. Strategies to improve outcomes of autologous hematopoietic cell transplant in lymphoma. *Bone Marrow Transplant*. 2019;54(7):943–960.
9. Skipper HE, Schabel FM, Wilcox WS. Experimental evaluation of potential anticancer agents. XIII. On the criteria and kinetics associated with “curability” of experimental leukemia. *Cancer Chemother Rep*. 1964;35:1–111.
10. Skipper HE. Perspectives in cancer chemotherapy: therapeutic design. *Cancer Res*. 1964;24:1295–1302.
11. Skipper HE, Schabel FM, Mellett LB, et al. Implications of biochemical, cytokinetic, pharmacologic, and toxicologic relationships in the design of optimal therapeutic schedules. *Cancer Chemother Rep*. 1970;54(6):431–450.
12. Skipper HE, Perry S. Kinetics of normal and leukemic leukocyte populations and relevance to chemotherapy. *Cancer Res*. 1970;30:1883–1897.