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Severe COVID-19 raises alarm for undiagnosed cancer

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In a recent study published in the journal *Scientific Reports*, researchers investigated whether the severity of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection was indicative of undiagnosed cancer.

Study: Severe SARS-CoV-2 infection as a marker of undiagnosed cancer: a population-based study. Image Credit: Tyler Olson /

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Background

Studies conducted during the coronavirus disease 2019 (COVID-19) pandemic reported that male sex, older age, and comorbidities such as chronic diseases and active cancers increased the risk of hospitalization and mortality due to SARS-CoV-2 infection. Individuals with active cancers were also at a relatively higher risk of COVID-19-associated mortality, even if they were vaccinated.

The six factors that increased the morbidity and mortality risk of cancer patients to SARS-CoV-2 infections were age, increased expression of the angiotensin-converting enzyme 2 (ACE-2) receptor transmembrane serine protease 2 (TMPRSS2), immunosuppression due to cancer treatments, as well as a pro-coagulant state and inflammatory responses induced by cancer. Some of these factors could influence the susceptibility to severe SARS-CoV-2 infections in individuals with undiagnosed cancers.

About the study

In the present study, researchers used data from the French Système National des Données de Santé (SNDS) database. This database has been used for various pharmacological and epidemiological studies, as it comprises healthcare reimbursement data for the entire population of France.

The SNDS database consists of one section with information on ambulatory medical care reimbursements, including laboratory

tests, ambulatory medical care, and prescription drugs, whereas the other section consists of information on hospital admissions, discharges, medical procedures, and diagnoses.

From anonymized data, specific medical algorithms were used to identify pathologies, causes for hospitalization, long-term illness diagnoses, and treatment reimbursements. The study included data on intensive care unit (ICU) admissions between February 15, 2020, and August 31, 2021, which covered the period between the onset of the COVID-19 pandemic and the end of the fourth wave in France. The follow-up was extended to the end of December 2021 to allow for a four-month follow-up for ICU-admitted patients.

The study included data on individuals above the age of 16 who had availed of at least one reimbursement in the two years before the index date and had no cancer diagnoses in the previous five years. Nursing home residents and twins below the age of 22 were excluded from the study.

Study participants were categorized into two groups, the first of which included those admitted into the ICU. The second group included age, sex, and French department-matched controls who were not hospitalized.

Information on sex, age, area of residence, and socio-economic status were determined, and co-variables such as existing comorbidities, COVID-19 vaccination status, treatment with corticosteroids or immunosuppressants, and addictive disorders were analyzed.