LONG-TERM RISK OF MENTAL HEALTH OUTCOMES IN PATIENTS WITH SARS-COV-2 INFECTION: A COHORT STUDY ON LOMBARDY FROM RESPOND PROJECT

Caggiu Giulia[1, 2], Monzio Compagnoni Matteo[1,], Franchi Matteo[1,], Corrao Giovanni[1,4], and Lora Antonio[3]

[1] Unit of Biostatistics, Epidemiology and Public Health, Department of Statistics and Quantitative Methods, University of Milano-Bicocca, Milan, Italy
[2] AREUS (Azienda Regionale dell'Emergenza e Urgenza della Sardegna), Nuoro, Italy.
[3] Department of Mental Health and Addiction Services, ASST Lecco, Lecco, Italy
[4] Directorate General for Welfare and Health, Lombardy Region, Milan, Italy

Introduction

A growing body of evidence suggests that not only the patients with mental health disorders (MHD) are at higher risk of Sars-Cov-2 infection, but also that Sars-Cov-2 infection can have relevant long-term consequences on the incidence of mental disorders among survivors of the acute phase of the disease [1–3]. Tackling this issue should be a priority for public health policies.

Aim

To estimate the long-term risk of incident mental health disorders in survivors of Sars-Cov-2 infection, in the framework of H2020 RESPOND project.

Methods

Data were retrieved from Healthcare Utilization databases of Lombardy region. All residents beneficiaries of the RHS, who between March 2020 and March 2022 were: aged 18 or older, without previous use of psychotropic drugs or diagnosis of MHD, tested positive to at least one test for Sars-Cov-2 infection, and survived for 30 days after the infection, were identified and composed the "Covid-19 group". For each patient with Sars-Cov-2 infection, up to five eligible comparators without previous MHD were randomly selected to be matched by sex, age (±1 year), and not having yet experienced a positive test for Covid-19 at the date of the Covid-19 group member ("Referent group"). The onset of a MHD was assessed through different data sources (i.e., diagnostics - Mental Health Information system, hospital admissions - and drug prescriptions).

A PH Cox model was used to estimate HR, and 95% CI, for the association between Sars-Cov-2 infection and incidence of MHD. Adjustments were made for covariates measured at baseline (history of hospital admissions, Covid-19 vaccinations) and time-dependent (Covid-19 vaccinations, hospital and ICU admissions, re-infections). Analyses were stratified by age and sex.

Results

1,720,416 residents in Lombardy Region who tested positive for Sars-Cov-2 infection in 2020-22 and free from any MHD were identified. Compared with references, patients with Sars-Cov-2 had an adjusted risk excess of 23% (22%-25%) for long-term incidence of any MHD. Experiencing a Covid-19 hospitalization during the follow-up significantly increased the risk of MHD (HR 1.67, 1.60-1.74), as far as having a re-

infection (1.03, 1.03-1.04). Experiencing a Sars-Cov-2 infection after being vaccinated increased the risk of developing a MHD (3.50, 3.48-3.53). In Covid-19 group, risk of incident diagnosis of anxiety, personality, bipolar and schizophrenic disorders resulted higher by more than 30%. The risk excess of MHD for patients with Sars-Cov-2 infection with respect to referents was higher among men than women, and was higher in older patients (1.30, 1.28-1.32) than in the younger ones (1.20, 1.17-1.24).

Conclusion

Based on the findings of this large population-based cohort, people who survived acute phase of Covid-19 are at increased risk of experiencing long-term mental health consequences. Noteworthy, the risk of adverse mental outcomes seemed reduced whether patients received Covid-19 vaccination after the first infection.

References

[1] Vai B, Mazza MG, Delli Colli C, et al. Mental disorders and risk of COVID-19-related mortality, hospitalisation, and intensive care unit admission: a systematic review and meta-analysis. Lancet Psychiatry. 2021;8:797–812.

[2] Xie Y, Xu E, Al-Aly Z. Risks of mental health outcomes in people with covid-19: cohort study. BMJ. 2022;376:e068993.

[3] Şimşir Z, Koç H, Seki T, et al. The relationship between fear of COVID-19 and mental health problems: A meta-analysis. Death Stud. 2022;46:515–523.