Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Short Communication

Clinical immunity in discharged medical patients with COVID-19

Nicola Mumoli*, Josè Vitale, Antonino Mazzone

Department of Internal Medicine, Ospedale di Legnano e Magenta, ASST Ovest Milanese, MI, Italy

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ABSTRACT

Background: Most studies on SARS-CoV-2 infection show that people who have recovered from COVID-19 have antibodies to the virus. No study has evaluated whether the presence of antibodies to SARS-CoV-2 confers immunity to the infection relapse but however, to date, no human reinfections with SARS-CoV-2 have been confirmed.
Material and methods: In our prospective, multicenter, cohort study we investigated within three months all patients, with confirmed COVID-19, discharged from two Hospitals (Legnano and Magenta Hospitals), in an area of Italy severely affected by the infection. Telephone follow-up at 1 and 2 months and clinical contact within 3 months was initiated; demographic, clinical, radiologic and laboratory data were recorded in electronic medical records and updated.
Results: Of 1081 patients involved, 804 (74.3%) were discharged alive. For all these patients we obtained follow-up data. At 1 and 2 months none has died and none has had any signs of recurrence of infectious at both telephone interview and clinical visit.
Conclusion: Our clinical observation have confirmed two basic points: the reinfection is very unlikely and any antibody immunity protects against recurrence, at least in the short term.

Introduction

The World Health Organization (WHO) recently published guidance on adjusting public health and social measures for the next phase of the coronavirus disease 2019 (COVID-19) response, declaring that there is no evidence that people who have recovered and have antibodies are protected from a second infection (World Health Organization, 2020). Most studies on severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection have shown that people who have recovered from COVID-19 have antibodies to the virus. However, some of these patients have had very low levels of neutralizing antibodies in their blood, which could potentially expose them to a second infection (Zhou and Zhao, 2020). No study has determined whether the presence of antibodies to SARS-CoV-2 confers immunity to second infection; however, to date, no human reinfections with SARS-CoV-2 have been confirmed (Kirkcaldy et al., 2020).

Materials and methods

To approach this dilemma from a clinical point of view, we would like to report the results of preliminary monitoring surveillance based on a large cohort of individuals who had recovered from COVID-19.

In this prospective multicentre cohort study, all adult patients with confirmed COVID-19 who were discharged from two hospitals in an area of Italy severely affected by the infection (Ospedale ASST Ovest Milanese of Legnano and Magenta, Milan, Lombardy) were investigated within 3 months. Telephone follow-up was conducted at 1 and 2 months and clinical contact was made within 3 months, initiated by the health professionals at the hospitals involved. Demographic, clinical, radiological, and laboratory data were recorded in the electronic medical records and updated. The local institutional review board approved this study and waived the need for informed consent.

Results

Of 1081 patients included in this study, 804 (74.3%) were discharged alive and with at least two consecutive negative swabs. Follow-up data were obtained for all of these patients (Figure 1). In particular, we reviewed the signs and symptoms of acute SARS-CoV-2 infection, extending our attention not only to a general survey and the respiratory system, but also to the skin, cardiovascular system,

* Corresponding author at: Department of Internal Medicine, Ospedale Fornaroli, via Donatori Sangue, 50, 20013 Magenta, MI, Italy.
E-mail address: nicola.mumoli@asst-ovestmi.it (N. Mumoli).

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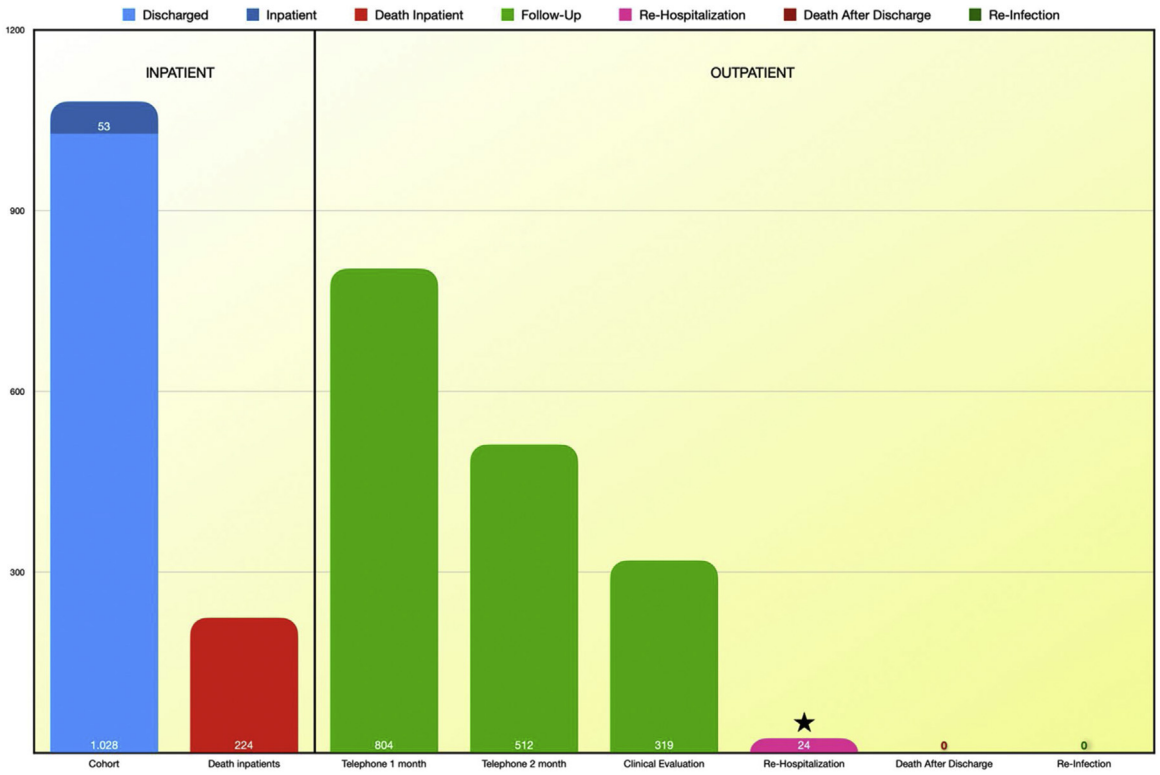

Figure 1. Cohort and follow-up. ★ Major gastrointestinal bleeding during anticoagulant therapy ($n = 3$), acute ischemic stroke ($n = 2$), NSTEMI ($n = 2$), urinary sepsis ($n = 4$), chronic obstructive pulmonary disease exacerbation ($n = 5$), heart failure ($n = 4$), diabetic ketoacidosis ($n = 1$), delirium psychosis ($n = 3$).

gastrointestinal system, and central nervous system. At 1 and 2 months, none of the patients had died, and none reported any signs of recurrence of the infection during either telephone interview or at the clinical visit. Twenty-four patients were hospitalized again for acute diseases not closely related to SARS-CoV-2 (Figure 1). Oropharyngeal swabs obtained from these patients were all negative.

Discussion

Although the follow-up of the patients was short and incomplete, and immunological data are lacking, which will be investigated over the next months, this clinical observation study appears to confirm two basic points: that reinfection is very unlikely and that any antibody immunity protects against recurrence, at least in the short term.

Funding

None declared.

Ethical approval

The local institutional review board approved this study and waived the need for informed consent.

Authors' contribution

NM: participated in the study design and coordination, collated and analysed the data, and drafted the manuscript; JV: participated in the study design and data collection, and helped draft the manuscript; AM: participated in the study design and data collection, and helped draft the manuscript.

Conflict of interest

The authors state that they have no conflicts of interest.

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