Letter to Editor
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Does the COVID-19 Vaccination Still Protect Patients from Pulmonary Embolism? Letter to Editor

Simona Tantillo, Martina Guarnera*, Francesco Talarico, Nicola Cilloni and Federica Mazzanti

Department of Anaesthesia, Intensive Care and EMS, Ospedale Maggiore Carlo Alberto Pizzardi Hospital, Bologna, Italy

Letter to Editor

Dear Editor,

The introduction of the vaccine against COVID-19 has played a fundamental role in the health emergency of the pandemic, reducing in hospitalization, severity of clinical presentation, admission in Intensive Care Unit (ICU) and mortality of COVID patients [1,2].

In one of our previous retrospective study we had noticed differences between vaccinated and non-vaccinated COVID-positive patients hospitalized in Intensive Care: Vaccinated patients were older and with greater comorbidities; non-vaccinated patients accessed hospital care later, with more severe lung damage to CT images [3]. We observed a strong association between vaccination and Pulmonary Embolism (PE) in hospitalized COVID-19 patients: Odds ratio for PE was significantly higher in not vaccinated patients, despite the same prophylactic therapy for deep vein thrombosis and despite the exclusion of cases with concomitant main risk factors for venous thromboembolism (trauma/surgery, thrombophilia, active cancer, bacterial sepsis) to minimize possible confounders.

What is reported dates back to the population of patients hospitalized in 2021, with a vaccination cycle completed at least 4 weeks before admission. However, what we considered cannot be generalized to the current population of patients hospitalized in intensive care for pneumonia and COVID-19 related respiratory failure.

Paggi, et al. in a recent study reported no differences in LoH, frequency of Intensive Care Unit (ICU) and sub-ICU admission, and in-hospital mortality were evidenced between the two populations, vaccinated and unvaccinated patients: decreased vaccine effectiveness and waning immunity in the older population.

Studies have emerged in the literature relating to the duration of the effectiveness of the COVID vaccine, Lee, et al. evaluate vaccine efficacy by the prevalence of severe disease examined against time since last vaccination, waning vaccine efficacy is documented, with 240 days (approximately 8 months), identifying an increase in risk of severe illness after a gradual reduction in protection [4-6].

In the last few months, patients with COVID-19 pneumonia have been hospitalized in our Intensive Care Unit (ICU) and we have observed that they presented, regardless of sex and known risk comorbidities (such as obesity, diabetes and hypertension), the same clinical severity as patients admitted to hospital at the beginning of the pandemic, with an equally high mortality rate [7]. They had a typical COVID pulmonary damage with ground glass, complicated with bacterial over infections, deep vein thrombosis and pulmonary embolism. These patients were vaccinated with a complete vaccination cycle of up to 4 doses, the last dose of which could date back to 12 months earlier. It's difficult to explain why these patients had a severe COVID-19 pneumonia, not responsive to administered therapies (antivirals, protective mechanical ventilation, pronation and nitric oxide), this is probably due to the ineffectiveness of the vaccine since the administration of the last dose or to the lack of response to it or to unknown genetic reasons. We therefore suggest, given the undisputed benefits brought by the introduction of the COVID vaccine into our clinical practice, to maintain high attention on vaccination practice, on booster doses against variants of the virus, especially among fragile patients at greater risk of severity illness and mortality.

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***Address for Correspondence:** Martina Guarnera, Department of Anaesthesia, Intensive Care and EMS, Ospedale Maggiore Carlo Alberto Pizzardi Hospital, Bologna, Italy; E-mail: martina.guarnera@ausl.bologna.it*

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