

# Letter to the Editor

## **SARS-CoV-2 infection and H1N1 vaccination: does a relationship between the two factors really exist? A retrospective analysis of a territorial cohort in Ferrara, Italy**

*Dear Editor,*

We read with interest the paper from Greco S. and coauthors on the effect of influenza vaccination on SARS-CoV-2 infection<sup>1</sup>. The authors performed a retrospective multicentric study and analyzed the factor independently associated with the severity and mortality of COVID-19, in Ferrara, Italy. Our research group performed a recent similar study, also in Italy, but in the city of Rome<sup>2</sup>.

Surprisingly, the two studies reached completely different results. Greco's study<sup>1</sup> reported an association between the risk of hospitalization and the previous flu vaccine, on the contrary, we found a protective effect of the flu shot on both mortality and severity of the disease. One of the most important, globally accepted factors associated with mortality and severity of the disease is the presence of comorbidities. We may hypothesize that the main reason by which Greco et al<sup>1</sup> reached different results is that they did not adjust the multivariate analysis for comorbidities. The rate of influenza vaccination increases in Italy with age and with the presence of chronic conditions such as diabetes, cardiovascular disease, and chronic obstructive pulmonary diseases. These comorbidities have been associated with the severity and mortality of COVID-19<sup>2,3</sup>. It is, therefore, likely that the association found by the authors between the flu vaccine and covid19 is not independent but is because vaccinated patients have on average more serious conditions than unvaccinated patients. We believe that interpretation of those results should be extremely cautious, since "vaccine hesitancy" has been included by WHO in 2019 among the 10 most important global threats<sup>4</sup>.

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### **Conflict of Interest**

The Authors declare that they have no conflict of interests.

### **References**

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