Comparazione della risposta anticorpale e sviluppo memoria immunitaria in pazienti COVID in età pediatrica e adulti (IFT-RM)

1)

Prevalence of Antibodies to SARS-CoV-2 in Italian Adults and Associated Risk Factors

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Abstract We aimed to assess the prevalence of and factors associated with anti- severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) positivity in a large population of adult volunteers from five administrative departments of the Liguria and Lombardia regions. A total of 3609 individuals were included in this analysis. Participants were tested for anti-SARS-CoV-2 antibodies [Immunoglobulin G (IgG) and M (IgM) class antibodies] at three private laboratories (Istituto Diganostico Varelli, Medical Center, and Casa della Salute di Genova). Demographic data, occupational or private exposure to SARS-CoV-2-infected patients, and prior medical history consistent with SARS-CoV-2 infection were collected according to a preplanned analysis. The overall seroprevalence of anti-SARS-CoV-2 antibodies (IgG and/or IgM) was 11.0% [398/3609; confidence interval (CI) 10.0%-12.1%]. Seroprevalence was higher in female inmates than in male inmates (12.5% vs. 9.2%, respectively, p = 0.002), with the highest rate observed among adults aged >55 years (13.2%). A generalized estimating equations model showed that the main risk factors associated with SARS-CoV-2 seroprevalence were the following: an occupational exposure to the virus [Odd ratio (OR) = 2.36; 95% CI 1.59-3.50, p = 0.001], being a long-term care facility resident (OR = 4.53; 95% CI 3.19-6.45, p = 0.001), and reporting previous symptoms of influenza-like illness (OR = 4.86; 95% CI 3.75-6.30, p = 0.001) or loss of sense of smell or taste (OR = 41.00; 95% CI 18.94-88.71, p = 0.001). In conclusion, we found a high prevalence (11.0%) of SARS-CoV-2 infection that is significantly associated with residing in long-term care facilities or occupational exposure to the virus. These findings warrant further investigation into SARS-CoV-2 antibody prevalence among the Italian population.

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A paper in collaboration with Prof Daniela Surico, Dipartimento di Medicina Clinica e Sperimentale, Università del Piemonte Orientale "Amedeo Avogadro", has been recently submitted (see next page):

Covid-19 seroprevalence in a group of pregnant women compared to a group of non-pregnant women

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Objective: pregnant women are an interesting population to study in the context of the current coronavirus disease 2019 (COVID-19); studies are still controversial in concluding if pregnancy is a protective condition or a risk factor for a more severe form of the illness. Given the impossibility to accurately estimate the real incidence of the pathology, serological tests for the measurement of immune response could represent an effective tool for estimating the proportion of previous infections in a territory.

Study design: in this study we estimated rate of positive serology for SARS-CoV-2 in a population of healthy pregnant women, compared to a population of non-pregnant women of the same age and geographic area.

We also made a comparison between the two groups in terms of previous symptoms and lifestyle.

Results: a total of 344 pregnant women and 588 non pregnant women were recruited.

The rate of positive serology for SARS-CoV-2 was significantly lower in the pregnant group: 9/344 (2.6%) versus 75/588 (12.8%) in the non-pregnant group (p<0.0001). The two groups were similar in terms of occupation and in the self-reported habit to leave the house during the lockdown.

If we consider only the IgG positive in the two groups, they reported a similar amount and variability of symptoms.

Conclusions: our hypothesis to explain this result, is that pregnant women might have adopted a more prudential lifestyle, due to their special condition, which may have lead them to behave with more caution, concerning the responsibility of wearing all the disposable personal protective equipment, and keeping the recommended 6 feet distance from other people. Due to the lack of conclusive studies on this topic, more research is necessary to confirm these findings.