UNIVERSITÀ POLITECNICA DELLE MARCHE

RESEARCH AREA:

VIRUS - IMMUNOLOGY

TITLE: Development and persistence of virus-specific immunity in subjects with previous exposure to SARS-CoV-2

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UNIVPM Research Group: Clinical Immunology

Research activity description: No specific antiviral therapy is currently available against the new Coronavirus SARS-Cov-2, responsible for the COVID-19 pandemic that initially occurred in Wuhan (China) in December 2019. In addition to the development of specific drugs, the availability of a vaccine would be probably the most effective measure to reduce the risk of recurrence of the pandemic in the future. More than one hundred SARS-CoV-2 vaccine protocols are currently under investigation. Knowledge of the correlates of effective and protective immune response developed by subjects exposed to SARS-CoV-2 infection can provide useful information to understand the immune response mechanisms during infection and to define the most effective vaccination strategies. Aim of the present study is to evaluate whether the development of anti-SARS-Cov-2 antibodies is associated with the presence of specific immune response against SARS-CoV-2. Subjects previously exposed to SARS-CoV-2 will undergo functional tests for detection of the presence of specific SARS-Cov-2 T lymphocytes in peripheral blood and for determination of the level of cytokines produced after specific stimulation. Of note, analysis will be performed both in subjects who have had a symptomatic disease and in individuals with asymptomatic course, in order to establish possible differences in the extent and strength of the immune response to the virus. In addition, results will be correlated with an evaluation of the phenotypic profile of stimulated lymphocyte subpopulations, with regards to the expression of activation, senescence and apoptosis markers. Finally, it will be possible to perform longitudinal assessments of SARS-CoV-2 specific immune response, in order to assess its retention (or decline) over time.

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