

Impact of COVID-19 and post-infectious course on the olfactory function: “Restitutio ad integrum” or permanent deficit?

G.C. Passali^{1,2}, M. Santantonio^{1,2}, M.T. Guarino^{1,2}, G. Paludetti^{1,2}, J. Galli^{1,2} On Behalf Of The Gemelli Against COVID-19 Post-acute Care Study Group²

¹Division of Otorhinolaryngology, Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, 00168 Rome, Italy, ²Gemelli Against COVID-19 Post-acute Care Study Group, Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, 00168 Rome, Italy.

Correspondence address: Giulio Cesare Passali, GiulioCesare.Passali@unicatt.it

The experience of our center with patients who, after having overcome the SARS-CoV19 infection, manifested olfactory disorders includes 1952 patients who were evaluated, according to the protocol established in multidisciplinary agreement with internal medicine and infectious disease specialists, through ENT physical examination, questionnaires, olfactometry and gustometry (before and after treatment).

Our goal was to evaluate: the prevalence of smell and taste disorders in patients affected by SARS-CoV19, the resolution of the mentioned disorder based on the treatment protocols and eventually a possible correlation with patients not affected by the SARS-CoV19 infection. Our evaluation method included: Chemosensory Complaint Score, three VAS scales for olfactory and gustatory dysfunction and nasal obstruction symptoms, full ENT evaluation (rhinoscopy, oropharyngoscopy, evaluation of larynx and tympanic membranes). In the context of the DH PostCovid, an olfactory deficit was observed in 24.3% of cases; the questionnaire submitted to the patients during the acute phase of the infection tended to overestimate the incidence of the symptoms, but this data is likely related to the psychological impact of the disease itself during the early stages of the pandemic. In a period ranging from 2 to 9 months (M 5.5 months), we found a subjective and olfactometrically detected recovery of the olfactory function in almost all patients (98.6%); in only one case the recovery was obtained 13 months after the first evaluation. Among these patients, 65% of them regained the olfactory function during the first 3 months of therapy. Our therapy protocol consisted of: either topical use of glyceric acid plus mannitol for topical use in case of inflamed nasal mucosa or cross-linked ialuronic acid for topical use in case of atrophic rhinitis together with citicoline 1000mg per os and olfactory rehabilitation. Once having obtained these data, and keeping in mind that the therapy was personalized and modulated on the basis of the conditions found at the physical evaluation for each patient (presence or absence of significant nasal dryness, allergic rhinitis, etc.), and although the "unpredictability" of this pandemic imposes a certain caution on us, we can affirm that it is not frequent, in our series of cases, the persistence of the olfactory deficit in patients with previous SARS-CoV19 infection and that indeed the *restitutio ad integrum* is the most frequent of the eventualities.

Keywords: SARS-CoV19 infection, olfactory function, restitutio ad integrum