Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

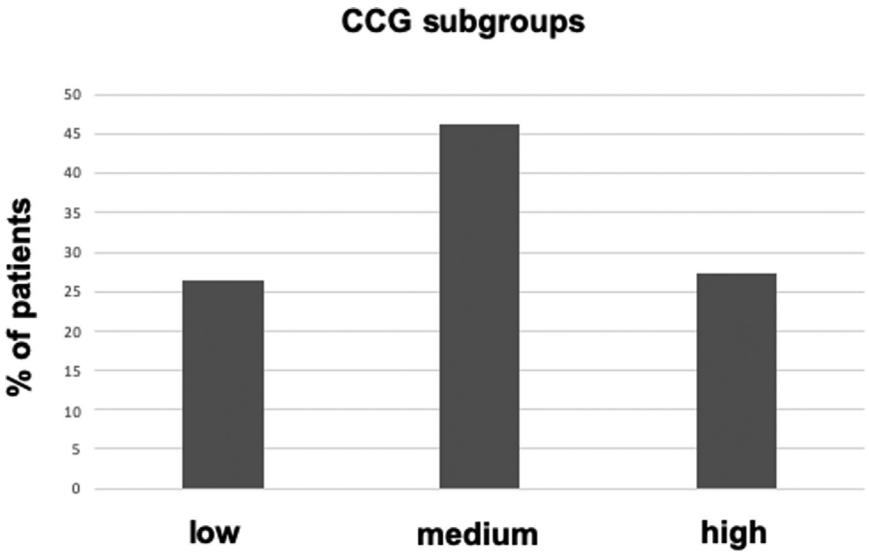

FIG 1. Distribution of the frequency concerning 791 patients with CRSwNP stratified according to CCG.

and approximately 30% of these patients also have asthma.[2] On the basis of these epidemiological considerations, a large group of Italian outpatients with CRSwNP (791; 424 males, mean age, 48.8 years) was recruited in a real-world study to define the distribution of the CCG grades. The preliminary results showed that 210 (26.5%) outpatients had low-grade CCG, 366 (46.3%) medium, and 215 (27.2%) high (Fig 1). High-grade CCG was frequently characterized by mixed cytological phenotype and severe progress. Patients with CRSwNP deserve adequate management and optimal identification of the best-tailored therapy; in this regard, CCG could be a fruitful tool. In particular, considering the estimated prevalence of CRSwNP and the current findings, it could be reasonably expected that at least 5 million Europeans have CRSwNP with high-grade CCG. Therefore, intercepting the most severe patients and launching an early and tailored treatment, including the new biologics, could positively modify the natural history and improve the quality of life.

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Reply

To the Editor:

In response to the correspondence reported by Gelardi et al,[1] we would like to say that the sense of smell has recently become relevant because a number of studies have shown that olfactory dysfunction may be considered a relevant clinical marker of severity not only in chronic rhinosinusitis with nasal polyps (CRSwNP) but also in other type 2 inflammatory diseases such as allergic rhinitis, asthma, and nonsteroidal anti-inflammatory drug–exacerbated respiratory disease.[2] In consequence, the loss of smell and its recovery have been adapted by Education, Innovation and Research in Allergy and Airway Diseases and European Position Paper on Rhinosinusitis and Nasal Polyps international consensus as 1 of the 5 main criteria to define both the indication for and the response to biological treatment in severe CRSwNP.[3] Among these criteria various methods have been accepted for both the diagnosis of loss of smell and the presence of type 2 inflammation.

It is well known that loss of smell is frequently associated with viral (common cold) and postviral acute rhinosinusitis, the postviral origin being one of the main causes for permanent olfactory loss in the adult population.[2] Although the loss of smell and/or taste has been recently linked to coronavirus disease 2019, associated or not with local or systemic symptoms of the disease,[1] more epidemiological and pathophysiological research is still needed to identify the potential role of the loss of smell and/or taste as a clinical marker of coronavirus disease 2019 (COVID-19) and its severity.

The clinical cytological grading score, reported by Gelardi et al,[1] which is based on clinical outcomes and nasal cytology, looks a reliable method to assess nasal inflammation and even

its association with loss of smell in patients with CRSwNP. However, other methods such as the Japanese Epidemiological Survey of Refractory Eosinophilic Chronic Rhinosinusitis score[4] have also been reported as markers of eosinophilic CRS and predictors of refractoriness to endoscopic sinonasal surgery. The term eosinophilic CRS has been defined by different authors on the basis of different tissue eosinophil cutoff values going from 5 to 15 cells/hpf, whereas prediction of recurrence after endoscopic sinonasal surgery has been set at more than 55 cells/hpf for Chinese and greater than or equal to 70 cells/hpf for Japanese populations.[4] However, the role of eosinophils as primary biomarkers for the success of treatment in CRSwNP is still, like in asthma, into debate. For instance, dupilumab, a biological drug that has recently proved a fast and maintained potent effect on improving smell, symptoms, quality of life, and asthma control in patients with severe CRSwNP did not show an effect on depleting blood eosinophils.[5] However, dexpramipexole, a drug with potent effect inducing eosinophil apoptosis, has not been proven to have a clinical effect on patients with CRSwNP.[6]

Taken together, all these studies show the complexity of the biological inflammatory networks involved in type 2 diseases, including CRSwNP and its multimorbidities, where not only eosinophils but also mast cells, innate lymphoid cells, epithelial cells, or platelets, assessed by different methods including clinical cytological grading, Japanese Epidemiological Survey of Refractory Eosinophilic Chronic Rhinosinusitis, or others, may play an important role in the diagnosis and prognosis of the disease. However, a multidisciplinary approach and international consensus remain unmet needs to define proper biomarkers, both clinical and biological, for the diagnosis of type 2 upper airway inflammation as well as the prediction of the therapeutic success.[7]

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