



Letter to the Editor

Prevalence of chemosensitive disorders with Omicron infections and the possible impacts of vaccination



Dear Editor,

We have read with interest the article by Song et al. [1], which analyzed the prevalence of chemosensitive disorders (CDs) in patients admitted to three Chinese hospitals for Omicron variant infection. This is one of the first reports in East Asia on patients with Omicron. The authors focused on the risk factors for the development of CD, but, in our opinion, the most important finding is the prevalence of 42.6%, even higher than that reported in the same regions during the first pandemic waves [2]. In western countries, the prevalence of COVID-19-related CD has dramatically dropped from over 75% in the first waves to 0–24% in the Omicron period [2,3]. This could be related to viral factors, such as the poor affinity of the Omicron variant spike protein for transmembrane serine protease 2 receptors on olfactory epithelial support cells [4]. Although Asians have a lower concentration of angiotensin-converting enzyme 2 receptors on the nasal mucosa than Caucasians [5], the expression of transmembrane serine protease 2 genes is significantly higher [6], and this could compensate for the lower affinity of the Omicron variant in this population.

Another interesting result reported by authors is the protective effect of vaccination, which is directly proportional to the number of doses. This host-related factor certainly plays an important role and has been previously reported in Europe as well [7–10]. A significant reduction in the CD prevalence difference between vaccinated and unvaccinated subjects was found for both the Omicron [7] and previous variants [8,10] during the infection. However, no correlation has ever been found between CD prevalence and blood immunoglobulin G levels [11,12]. On the contrary, nasal secretory immunoglobulins represent a protective factor for the development of the olfactory disorder [13], and their production is induced by messenger RNA vaccines from the first dose [14,15]. Nasal immunoglobulins mediate a rapid and organized response that is more likely to control the infection before the virus manages to damage at least 90% of the olfactory epithelium to determine a clinically evident disorder [4]. In contrast, inactivated virus vaccines, such as those administered to the patients included in this study, induce the production of nasal immunoglobulins only in a few cases and after several boosters [13]. This could be one of the main factors behind the high prevalence of CD detected by the authors and deserves further study in the future.

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Declarations of competing interest

The authors have no competing interests to declare.

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Author contributions

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