treatment of IGD which currently does not have any official treatment recommendations.
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Resolution of COVID-19 Chemosensory Loss Upon COVID-19 Reinfection

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Introduction. The pandemic of coronavirus disease 2019 (COVID-19) has been associated with widespread myriad chemosensory dysfunction with smell loss as high as 99% and taste loss in 89% of those studied (Kim 2021, Paderno 2020, Renaud 2020). Other chemosensory problems, occur often in combination, including dysgeusia and hyposmia (3.2%), dysgeusia and anosmia (3.4%), ageusia and hyposmia (3.4%) and, ageusia and anosmia (8.5%) (Giacomelli, 2020). Hyperosmia has also been reported to be precipitated by COVID-19 infection (Di Stadio 2022, Kamali 2021). COVID-19 induced persistent hyposmia with resolution of smell and taste dysfunction with COVID-19 reinfection has not heretofore been described. Such a case is presented.
Methods. Two years prior to the presentation, a 26-year-old right-handed single male developed COVID-19 at which time his sense of smell and taste were totally eliminated. His smell gradually returned to 40-50% of normal whereby he was able to smell everything, but less intensively than he normally did. Furthermore, some odors he experienced in a hyperosmic fashion, such as smoke which was 200% more intense than normal. Prior to COVID-19 exposure, he experienced frequent flavorful eructations which were eliminated after COVID-19 exposure. His taste was initially absent after the COVID-19 exposure, but gradually returned to 60-70% of normal whereby he would taste everything but less intensively. Two years and one month after the initial COVID-19 infection despite being fully vaccinated, he contracted a recurrent COVID-19 infection. Prior to the infection, his smell and taste were 60% of normal. Acutely with the reinfection, his smell and taste ability abruptly dropped to 0% for 16 hours, after which his smell returned to 90% of normal and his taste returned to 100% of normal. During this time period, his other chemosensory problems including dysosmia, dysgeusia, cacogeusia, hyperosmia, and phantosmia all resolved, and his flavorful eructations returned. His sense of smell has remained normal for five months, but his sense of taste has gradually dropped down to 50% of normal.
Results. Abnormalities in Physical Examination: General: Scalloped tongue. Neurological Examination: Cranial Nerve (CN) Examination: CN II: Visual acuity 20/25 OU. CN III, IV, VI: left ptosis. CN V: decreased light touch left V_1 and V_2. CN IX and X: Uvula deviates to the right. Reflexes: Absent bilateral triceps. Neuropsychiatric Testing: Clock Drawing Test: 10/10 (normal). Animal Fluency Test: 26 (normal). Go-No-Go Test: 6/6 (normal). Center for Neurologic Study Lability Scale: 8/10 (normal). Chemosensory Testing: Olfaction: After the first infection prior to the second infection: Alcohol Sniff Test: 3 (Anosmia). Chemosensory Testing: 1 month after the recurrent COVID-19: Alcohol Sniff Test: 9 (hyposmia). Brief Smell Identification Test: 9 (normosmia). Retronasal Olfaction Test: Retronasal Index: 8 (normosmia). Gustation: Phenylthiocarbamide Taste Test: 9 (normogeusia). Waterless Empirical Taste Test: sweet: 6 (normogeusia) sour: 8 (normogeusia) salty: 6 (normogeusia) bitter: 4 (hypogeusia) brothy: 0 (ageusia) total: 37 (normogeusia).
Conclusions. COVID-19 induced smell loss has been observed to worsen after reinfection, improvement has not been described (Jain, *Ear, Nose & Throat Journal*, 2021, Lechien, *Journal of Internal Medicine*, 2021). Possibly the recurrent infection induced hyperosmia which superimposed upon the underlying COVID-19 induced anosmia caused an additive effect, combining together to induce normosmia as opposed to COVID-19 induced hyposmia. This may be due to persistent inflammation of the olfactory bulbs and frontal lobes, inducing excessive neuronal sprouting and associated hyperosmia (Di Stadio, *European Review for Medical and Pharmacological Sciences*, 2022). Alternatively, COVID-19 may have acted on not only the olfactory nerves but rather on a central basis, enhancing neuronal firings in the anterior insula and hippocampus, areas involved with the olfactory integration and which have enhanced gray matter volume in states of hyperosmia (Wabnegger, 2019). Even though COVID-19 vaccination has been noted to worsen the chemosensory function (Konstantinidis, *International Forum of Allergy & Rhinology*, 2021), COVID-19 immunization induced improvement in smell has also been reported (Plaza, *Annals of Neurology*, 2021). It is possible that such an improvement is through infection induced activation of inflammatory immune responses which then acts on the infected olfactory bulbs to reduce pathology. The current case of COVID-19 infection enhancing smell and taste strengthens such an autoimmune explanation. In those with recurrent COVID-19 infection, query and investigation as to presence of improvement of chemosensory dysfunction is warranted.
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Power-Up: Dissecting Neurobiological Mechanisms Underlying Internet Gaming Disorder

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Background. The DSM V-TR places video game addiction, also known as Internet Gaming Disorder (IGD) within the section that suggests the need for additional research. Simultaneously, there has been a remarkable surge in the consumption of video games,

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