Management of olfactory dysfunction

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Olfactory dysfunction is a challenging condition to manage. The prevalence reported in previous surveys was 1-4%.[1] More recent papers have demonstrated that up to 20% of the population suffer from olfactory dysfunction.[2] The etiology could be divided into three categories. First is conductive dysfunction, often occurring in patients with allergic rhinitis and chronic rhinosinusitis. Second is sensorineural dysfunction due to degeneration of olfactory epithelium and nerves caused by viral infection and drugs. The third type is central dysfunction due to disorder of the central nervous system caused by head injury and neurodegenerative diseases.[3] I would like to share with you a paper published by the Japanese Rhinologic Society (JRS) in 2019 on the Clinical practice guideline for the management of olfactory dysfunction.[4] The JRS developed the Subcommittee of the Japanese Clinical Practice Guideline for management of olfactory dysfunction. They performed detailed literature reviews on RCTs and comparative studies, and achieved at consensus on 7 clinical questions or scenarios. 4 levels of recommendation from A- strongly recommended to D- not recommended were adopted for management. The recommendations were clearly analyzed and stated which could be referenced for clinical practice, though they emphasized that treatment should still be individually based. I have summarized the recommendations of the paper below.

Clinical question 1 addressed the use of medical therapy in treating olfactory dysfunction caused by chronic rhinosinusitis. Randomised, double-blinded, placebo-controlled trials have demonstrated the use of mometasone and fluticasone nasal sprays in improving olfactory scores in patients with nasal polyps. In other studies, oral prednisolone has been reported to improve olfaction in patients with CRSwNP. Based on these reports, consensus was that both local and oral steroids are effective with a Grade A recommendation. Combinations of steroids and surgery appear to be more effective than surgery and steroid alone. For macrolides use such as erythromycin, clarithromycin and roxithromycin, evidence on olfaction is insufficient. For Omalizumab, subcutaneous injection for 16 weeks had demonstrated improvement of olfactory awareness score.[4]

Clinical question 2 looked into the effectiveness of endoscopic sinus surgery in treating olfactory dysfunction in chronic rhinosinusitis. The guideline highlighted that among 21 articles reviewed, 20 articles reported that surgery is effective for olfactory dysfunction with a Grade B recommendation. Factors with poor prognosis include male sex, older age of more than 60 and long duration of olfactory dysfunction.[4]

Clinical question 3 looked into the effectiveness of medical therapy in olfactory dysfunction caused by allergic rhinitis. The guideline stated that the nasal steroid spray budesonide had demonstrated improved olfactory detection threshold while mometasone furoate had showed improved odor identification. On the other hand, another study only showed improved olfactory detection threshold but not odor identification. For antihistamines, trials have shown improved VAS scores of olfaction but not anosmia. An overall grade B recommendation was given.[4]

Clinical question 4 looked into the effectiveness of medical therapy in treating post-viral olfactory dysfunction (PVOD). The guideline graded the recommendation as C. Several drugs were reviewed including zinc sulfate which has been used to treat olfactory and taste dysfunction but there is no clear evidence on post-viral dysfunction. Steroid in PVOD did not show consistent results but suggested that it may be effective for acute, reversible stages of olfactory mucosal injury. Traditional Japanese medicine, tokishakuyakusan and Kampo medicine on the other hand had demonstrated improvement. α-lipoic acid, minocycline, vitamin A are not effective. The guideline stated studies on olfactory training with odorants such as rose, eucalyptus, lemon and clove were used for training twice a day for 12 weeks did show greater improvement than control group.[4]

Clinical question 5 addressed for any effective treatments for post-traumatic olfactory dysfunction. Some case studies have reported the efficacy of topical or systemic steroids. Other drugs such as zinc, vitamin and adenosine triphosphate were also not supported by high levels of evidence. Besides, the degree of spontaneous recovery is unknown. The grade of recommendation is C. Again, the guideline pointed out that olfactory training had showed significant higher olfactory function score for post-traumatic dysfunction.[4]

Clinical question 6 discussed whether olfactory dysfunction contributes to the prediction of early diagnosis of neurodegenerative disease. The guideline stated that there is considerable evidence

that olfactory testing is useful for early detection of cognitive loss in neurodegenerative diseases. It is an early symptoms and biomarker of preclinical diagnosis of Parkinson's disease and Alzheimer's disease. Grade of recommendation is A.[4]

Clinical question 7 reviewed the effectiveness of steroid in the treatment of olfactory dysfunction. Topical steroids should be used for olfactory dysfunction due to allergic rhinitis and chronic rhinosinusitis with nasal polyposis. Grade of recommendation is B. Oral steroid is limited to short-term administration and no long-term administration studies on efficacy and safety have yet been conducted. There is limited evidence of steroid use for post-infectious, post-traumatic and idiopathic olfactory dysfunction.[4]

Reference

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