

## Smell disorder and aging

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**Objectives:** To investigate the prevalence of smell alterations and their associations in patients over 40 years of age at the Hospital das Clínicas of the Medical School of Marília.

**Methods:** These are preliminary data from some variables of a cross-sectional study, where patients were divided into two groups: one group with patients aged 60 years or older and another with individuals aged 40–59 years. They were submitted to a general questionnaire and upsit olfactory test.

**Results:** There was a predominance of females. In group I, 18 patients (90%) reported normal smell and in group II 32 (88%) did not report changes in smell. However, the test showed a change of 85% in group I and 66.6% in group II. The prevalence risk ratio (RRP) was 2.83 (95% CI 0.6–18), the prevalence rate was 1.29 and the prevalence in this sample was 73.21%. It was observed that 72.22% of group 2 was not diagnosed at some point since the beginning of the COVID-19 pandemic. Anxiety and/or depression and systemic arterial hypertension were the most prevalent comorbidities in groups 1 and 2, respectively. BMI was elevated in 79.16% in group 1 and 77.77% in group 2.

**Discussion:** Despite the predominance of females, the literature shows a higher prevalence of males. The prevalence of olfactory deficiency based on self-assessment is lower than based on olfactory assessment through objective tests. Although the prevalence found in available publications is lower than that found so far in this study – 73.21% – it is important to highlight, however, that the prevalence of olfactory deficiency based on olfactory tests varies between studies, possibly due to differences in the population examined and the type of olfactory test. Recent studies have shown that diabetes, hypertension and obesity have a significantly high prevalence in individuals with olfactory dysfunction.

**Conclusion:** It is necessary to wait for the end of data collection of this research for further information. However, the results found so far are in line with what is evidenced in the international literature. Despite the limitations of the design of this study, but, given the scarcity of knowledge in the national literature and the importance of understanding the prevalence of olfactory deficit and its correlations, this study can bring relevant contributions.

**Keywords:** Olfaction; Smell disorder; Aging; Smell.

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## Otopathogens in the middle ear and nasopharynx of children with otitis acute media recurrent

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**Objective:** The study aimed to describe the microbiology of the middle ear and nasopharynx and to determine the prevalence of *Streptococcus pneumoniae*, *Haemophilus influenzae* and *Moraxella catarrhalis* in a group of children vaccinated with pneumococcal conjugate vaccine (PCV) who

were submitted to insertion of ventilator tubes by recurrent acute otitis media.

**Methods:** We analyzed 278 middle ear effusions and 139 nasopharynx samples obtained from 139 children submitted to myringotomy and ventilation tube insertion by recurrent acute otitis media, from June 2017 to June 2021. The age of the children ranged from 6 months to 9 years and 10 months, with a median of 21 months. Patients had no signs of acute otitis media or respiratory tract infection and were not under antibiotic therapy at the time of the procedure. Middle ear effusion aspiration (OMS) was performed by tympanocentesis, using an Alden-Senturia collector and the nasopharynx (NF) sample was collected with swab. Bacteriological studies and multiplex PCR were performed for simultaneous detection of the three pathogens. The direct molecular determination of pneumococcal serotypes was effected by real-time PCR. Statistical analysis performed with chi-square test to verify associations between categorical variables and measures of association force based on prevalence ratios with 95% confidence interval.  $p \leq 0.05$  values were considered statistically significant.

**Results:** Vaccination coverage was 77.7% with basic regimen plus booster dose and 22.3% with basic regimen. In OMS, by culture, *H. influenzae* was identified in 27 children (19.4%), *S. pneumoniae* in 7 (5.0%) and *M. catarrhalis* also in 7 (5.0%). PCR detection found *H. influenzae* in 95 (68.3%), *S. pneumoniae* in 52 children (37.4%) and *M. catarrhalis* in 25 (16.5%), an increase of three to seven times in comparison with culture. In NF, culture isolated *H. influenzae* in 28 children (20.1%), *S. pneumoniae* in 29 (20.9%) and *M. catarrhalis* in 12 (8.6%). PCR identified *H. influenzae* in 84 children (60.4%), *S. pneumoniae* in 58 (41.7%) and *M. catarrhalis* in 30 (21.5%), a two to three-fold increase in the detection rate. Pneumococcal serotype 19A was the most common, both in the ears and in the nasopharynx. In the ears, of the 52 children who had pneumococcus, 24 (46.2%) of them had serotype 19A. In the nasopharynx, of the 58 patients who presented pneumococcus, 37 (63.8%) had serotype 19A. Of the 139 children, 53 (38.1%) presented polymicrobial NF samples. Of these, 47 (88.7%) had some of the three otopathogens in the middle ear and 40 of them (75.5%) had *H. influenzae* in the ears, especially when in NF, this was in conjunction with *S. pneumoniae*.

**Conclusion:** The prevalence of bacteria in a group of Brazilian children immunized with pneumococcal conjugate vaccine and who required insertion of ventilation tubes due to recurrent acute otitis media is similar to that reported in other parts of the world after the advent of PCV. *H. influenzae* was the most commonly found germ, both in the nasopharynx and middle ear, and serotype 19A *S. pneumoniae* was the most detected pneumococcus in the nasopharynx and middle ear. Polymicrobial colonization of the nasopharynx was strongly associated with the detection of *H. influenzae* in the middle ear.

**Keywords:** *Haemophilus influenzae*; *M. catarrhalis*; Otitis media; Pneumococcal vaccination; *Streptococcus pneumoniae*.

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