

## Abstract

The aim of this study was to reveal the presence of *Helicobacter pylori* (HP) in the Waldeyer's lymphatic tissue in the group of children and adults, along with its possible role in the etiology of tonsillar carcinoma and benign diseases (chronic tonsillitis, OSAS, adenoids).

In our study we have confirmed the hypothesis that HP is presented in the Waldeyer's lymphatic tissue, as well as in the stomach and that the oropharynx and epipharynx are the an extragastric reservoir of HP. Mucosa associated lymphatic tissue in the stomach is similar to lymphatic tissue of Waldeyer ring. These conditions can be very favourable for the survival of HP and thus can promote inflammation changes and immune changes as well as in the stomach.

In our study, using the real-time PCR method we have detected high incidence of HP DNA in adenoids and tonsillar tissue. In the group of benign diseases, the most frequent genotypes were CagA-VacAs1bm1 and CagA-VacAs1bm2. In the group of patients with tonsillar carcinoma, the most frequent genotype was CagA-VacAs1bm1. Genotyping identified strains of HP showed differences in comparison with the predominant strains which are most frequently found in the stomach. Genotypic analysis of HP strains showed that the less prevalent virulent strains of HP, known as cagA negative and vacA positive. It is supposed, that the long colonization of less virulent strains in the oropharyngeal and epipharyngeal area leads to an influence of immune mechanisms and can start the process of cancerogenesis. The correlation between the particular types of HP genotypes and chronic tonsillitis/tonsillar carcinoma was not proven.

The question of the eradication in the group of patients with PCR positivity and serology positivity was not confirmed in our study and will be the subject of the future studies. The serology does not have a high sensitivity for the detection of acute infection, and it is therefore not possible to detect in which location the infection was/is taking place. The HP antibodies can persist in the organism for a long time.

Our results contribute to the HP knowledge in children and adults.

**Key words:** *Helicobacter pylori*, tonsils, adenoids, PCR, genotyp