

The Ph Salivary Biomarker – is There a Difference Between Cleft and Non-Cleft Orthodontic Patients?

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Abstract

Cleft lip and/or palate (CL/P) is one of the most common congenital malformations. In view of the important role of salivary pH and the scarcity of studies on this topic in patients with CL/P, the aim of this study was to analyze salivary pH in patients with and without CL/P undergoing orthodontic treatment with fixed appliances.

The sample consisted of 45 patients wearing orthodontic appliances (20 boys and 25 girls; mean [SD] age, 15 [2.70] years), who were divided into 3 groups: control group (patients without CL/P, n = 15); CL/P group (patients with CL/P without oronasal communication, n = 15); and CL/P-O group (patients with CL/P with oronasal communication, n = 15). Saliva samples were collected and evaluated for pH by using indicator strips, with a reading scale ranging from 2.0 to 9.0. Data were tested for normality using the Shapiro-Wilk test, and results were compared by the Kruskal-Wallis test ($p \leq 0.05$).

The median pH was 7.5 in the control group, 7.0 in the CL/P group, and 6.5 in the CL/P-O group. Although there was no statistically significant difference among the 3 groups ($p \leq 0.05$), the CL/P and CL/P-O groups tended to have lower and more scattered pH values than the control group.

Salivary pH did not differ statistically between patients with and without CL/P wearing fixed orthodontic appliances. However, those with CL/P tended to have more acidic and scattered pH values. Further studies and trials involving a larger number of patients are important to clarify this issue.

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Introduction

Cleft lip and/or palate (CL/P) is one of the most common congenital malformations. Its global prevalence is estimated at 14.29 per 10 000 live births, with considerable ethnic and geographic variation¹. The incidence

of CL/P varies with race, being higher in Asians than Caucasians but lower in individuals of African descent². Boys are more commonly affected by CL/P than girls (2:1), with an inverse ratio for isolated cleft palate (male:female, 0.5:1)³. Using the best available evidence, a systematic review showed that in low- and middle-income countries, including Brazil, 1 in every 730 children is born with CL/P⁴. In Brazil, the prevalence of this malformation was estimated at 0.19 per 1000 live births between 1975 and 1994⁵.

It has already been reported that the mutation of C677T and 1298C genes can cause fusion failure during oral and maxillofacial

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