

# **LUNG DISEASE: DIRECTLY PROPORTIONAL RELATIONSHIP TO ORAL HYGIENE CONDITIONS**

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**Abstract:** Multidisciplinary health has been increasingly discussed and the oral cavity has been highlighted due to the breadth of the index of pathologies that manifest through this. When it comes to lung diseases, some diseases have a direct correlation with the oral cavity, which can exacerbate a pre-existing systemic condition, and increase the incidence rate, such as in mechanical ventilation pneumonia. Furthermore, pulmonary diseases generate possible disturbances in the oral cavity, generating breathing difficulties, dental malocclusion, bone malformations and a downward effect of facial and postural formation anomalies. Therefore, there is an increasing need for health professionals to provide comprehensive patient care, in a constant state of alert for signs and symptoms, in order to treat or refer the individual.

**Keywords:** Chronic obstructive pulmonary disease, pneumonia, lung disease, oral health.

## INTRODUCTION

Studies have indicated that there is a relationship between oral diseases and systemic manifestations arising from the oral microbiota. It is believed that diseases of the oral cavity act as disseminators of pathogenic microorganisms with systemic repercussions. Thus, immunosuppressed patients, such as those admitted to Intensive Care Units (ICU), are more vulnerable to these infections.

Not only patients admitted to ICUs suffer from certain pathologies, but several lung diseases have an exacerbated effect against periodontal pathogens. Periodontal disease (PD) is an imbalance between the mechanisms of aggression and defense of the tissues that support and protect the dental element, whose main determinant is the dental biofilm. Periodontitis is associated with dozens of oral cavity pathogens. Among these, the most discussed and studied are: *Porphyromonas gengivalis*, *Actinobacillus*,

*Actinomycetemcomitans*, *Tannerella forsythia* (Moghadam et al, 2017).

Nowadays, research indicates that PD is a possible risk factor for cardiovascular diseases such as atherosclerosis, myocardial infarction, stroke, diabetes, premature birth and respiratory pathologies such as chronic obstructive pulmonary disease (COPD). This is because microorganisms present in the oral cavity can migrate to the lungs through the bloodstream and cause infections (Öztekin et al., 2014). These respiratory changes result from the aspiration of oropharyngeal microflora into the lower respiratory tract. We also know that dental biofilm is a home for respiratory pathogens. This chronic inflammation can contribute to the development of respiratory inflammation, through mediators, which are released in the saliva and reach the respiratory epithelium (Peter et al., 2013).

## GOAL

The objective of this study was to elucidate the importance of frequent oral hygiene, which can avoid complications of the major and minor respiratory tracts, causing the aggravation of the patient's pathological systemic conditions. Added to this, it is necessary to observe the evolution and/or regression of such pathologies in the face of oral care.

## MATERIALS AND METHODS

The present study was based on research carried out on articles from the Bireme, VHL platforms and electronic sites of honorable names, thus categorizing the research as a literature review.

The classification of reports was structured based on the incidence of cases, relevance to the knowledge of the dentist and current date. We opted for articles with a wealth of information consistent with the purpose of the review.

From the reports, the article was structured in such a way that the ideas, added to each other, could elucidate the importance of oral hygiene, basing the evolution of diseases, from the simplest to the most serious.

## DISCUSSION

Currently, based on data, an association between periodontitis and chronic obstructive pulmonary disease (COPD), pneumonia, asthma and other upper respiratory diseases is suggested, which are closely associated with poor oral hygiene and immune deficit (Mogadhan et al., 2017). COPD is defined as a chronic progressive disease, which causes by obstruction, the decrease in airflow due to a chronic inflammatory response within the airways. The disease is an important cause of mortality and morbidity (Macedo et al., 2010).

The number of dental elements in patients with COPD is lower than in patients who do not have this pathology. The constant loss of attachment is also greater in these patients with COPD, thus proving the relationship between lung disease and periodontitis (Öztekin, 2014). Chronic obstructive pulmonary disease (COPD) becomes an opportunity for fungal infection, as the treatment is tabulated and we can observe steroids for long periods of use. These medications act to decrease salivary glands, favoring an environment for the installation of infections by *Candida albicans*, for example. (Colgate, 2018).

Other authors report several other respiratory pathologies associated with poor oral hygiene, such as Septic Pulmonary Embolism (SPE), a serious disorder where thrombi carrying microorganisms in a fibrin matrix are transported through the venous system. The implantation of these occurs in the pulmonary vascular system, causing embolism, that is, obstruction of the channel. (Endo et al., 2015).

Some diseases of the respiratory tract can cause and exacerbate oral lesions, since the multitude of drugs related to treatment can cause dryness and even some lesions in the oral mucosa. Some pathologies, such as asthma, bring in their prognosis and treatment, some medications related to irritability of the oral mucosa, metallic taste coming from the lingual papillae, in addition to nausea. This last symptom can hinder the patient's daily oral hygiene and cause the onset of gingival pathologies, such as gingivitis and later, periodontitis. In addition, corticosteroids indicated for the treatment of asthma can cause xerostomia and facilitate bacterial colonization. The disorganization of the oral flora can cause opportunistic fungal diseases, which are so recurrent and symptomatic. (Colgate, 2018).

Another respiratory condition is sinusitis, inflammation of the sinuses that can cause a lot of pain and discomfort. This discomfort can generate referred pain, emitting sensations through the face, which can exacerbate pulsating dental pain. Mouth breathing, caused by the difficulty of nasal breathing and the antihistamines used in the treatment can cause dryness of the oral mucosa and predispose the patient to the development of caries disease due to hyposalivation. (Colgate, 2018).

In a study by Manger, et al, the presence of caries was associated with the development of pneumonia in a patient of moderate quality. Evidence to support this was mixed with two prospective cohort studies suggesting that higher plaque scores were associated with a prior history of respiratory tract infection.

## CONCLUSION

Considering the present research on the proposed theme, there is a close relationship between poor oral hygiene and the aggravation of systemic pathologies

of the respiratory tract, thus making both directly proportional. The correct hygiene orientation and the participation of dentists in the hospital environment can contribute to the reduction of systemic aggravations. We know that pathogens found in the oral cavity are often disseminated via the air and blood stream to the lungs, for example, and infection is a two-way street. Attention must be paid to the fact that some drugs used in the treatment of respiratory conditions can cause oral reactions, such as the xerostomia, ulcerations, opportunistic infections and also lesions, which must be treated correctly by the dentist.

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