

A Parallel Analogy concerning Respirational Condition and Periodontal Diseases in India: A Prospective Cross-Sectional Evaluation

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ABSTRACT

Aim: The core aim of the article is to evaluate the parallel analogy concerning the respiratory condition and periodontal diseases in India. **Materials and Methods:** A cross-sectional evaluation was piloted amongst 1237 matured subjects in the age group of 25 to 65 years. Each subject was chosen to be a part of the study by confirming the respiratory status and gingival-periodontal condition. The respiratory status was established by confirming whether the patient suffered from COPD or not and the periodontal condition was established by keeping the factors like pocket formation, gingival bleeding, and gingival recession in mind. **Results and Conclusion:** Indubitably, there is a staunch relationship between respiratory conditions and periodontal diseases. The existence of a periodontal condition must prompt the dentist to assess the respiratory condition of the subject. Additional supplementary studies are obligatory to establish a correspondence between periodontal health and development of COPD.

KEYWORDS: Respirational Condition; Periodontal Disease; Parallel Analogy

INTRODUCTION

Respiratory pathological conditions can be designated as a group of maladies that encompasses several organs and tissues in the respiratory system that is involved with the function of gaseous exchanges. The pathology may involve the pleura, the upper and lower respiratory tract, and the accessory muscles. The diseased condition ranges from acute to chronic and may be caused by either environmental condition, genetic conditions or excessive abuse of tobacco products and nicotine. The chronic obstructive pulmonary disease is a progressive lung disorder which is obstructive in nature and is categorized by extreme breathlessness and cough. Along with pollutants in the atmosphere and genetic pre-existing condition, tobacco smoking is the most leading cause of COPD.¹

Tobacco smoking has also been designated as the single most significant risk entity responsible for causing periodontal diseases.² The incidence and prevalence of periodontal diseases are the highest amongst other oral pathologies in adults.³ Any periodontal disease can be designated as an inflammatory pathological condition that causes grave damage to any periodontal structure including gingiva and alveolar bone. Evidence substantiated by a number of studies have cleared demonstrated that the presence of periodontal disease for an extensive period of interval can cause systemic infections, one of which includes respiratory diseases.⁴

It is ironical that inspite of having a strong inter-relationship, the understanding of that relationship is at an extremely preliminary level.⁵ There is a possibility of tremendous outcomes for future treatment plans if such an understanding reaches a deeper level.⁶ Furthermore, both the diseases, besides being chronic in nature, lead to a gradual tissue obliteration. Both of them are strongly associated with tobacco smoking. However, a staunch inter-relationship has not been established.

The core aim of the article is to evaluate the parallel analogy concerning the respiratory condition and periodontal diseases in India.

MATERIALS AND METHODS

A cross-sectional evaluation was piloted amongst 1237 matured subjects in the age group of 25 to 65 years. Each subject was chosen to be a part of the study by confirming the respiratory status and gingival-periodontal condition. The respiratory status was confirmed by ratifying whether the patient suffered from COPD or not and the periodontal condition was established by confirming the pathological condition of the subject by keeping factors like pocket formation, gingival bleeding, and gingival recession in mind. Criteria like age group and smoking have been added to the study.

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RESULTS

Table 1 shows distribution of subjects between age group of 25-65 under COPD and Non-COPD groups.

AGE	COPD	NON-COPD
25-35	11	35
35-45	69	71
45-55	207	245
55-65	310	289

Table 1: COPD Distribution based on age distribution

Table No.2 shows distribution of periodontal pathology based on age. Periodontal diseases were seen more among the 55-65 years age group.

AGE	Periodontal Pathology	Without Periodontal Pathology
25-35	16	30
35-45	81	59
45-55	299	153
55-65	379	220

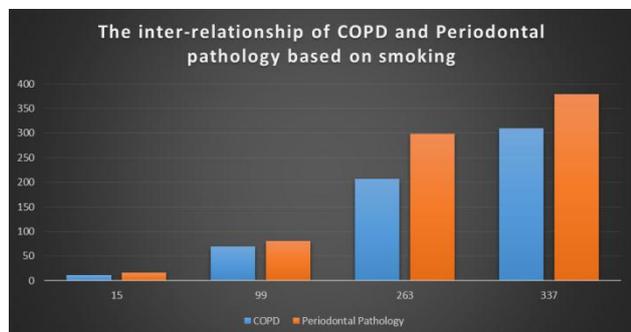
Table 2: Periodontal pathology based on age distribution

Table 3 shows distribution of subjects on the basis of smoking habit.

AGE	Smoking	Non-Smoking
25-35	15	31
35-45	99	41
45-55	263	189
55-65	337	262

Table 3: Subjects smoking based on age distribution

Graph 1 shows relationship of COPD and periodontal pathology on smoking



Graph 1: The inter-relationship of COPD and Periodontal pathology based on smoking

DISCUSSION

Irrefutably, oral health plays a chief role in the comprehensive healthiness of an individual. More specifically, the prevalence of periodontal pathology is often linked to the prevalence of systemic diseases. Even though there is very diminutive reference about the association between periodontitis and respiratory disorders in literature⁷, there has been mention of diseases like diabetes and osteoporosis being associated with periodontal disease. The current study focused on evaluating the parallel analogy concerning the respirational condition and periodontal diseases in India. About 1237 matured subjects in the age group of 25 to 65 years were included in the study. Amongst those subjects,

about 57.72% of the subjects were consuming tobacco in the form of smoking, and the other 42.28% of the subjects were free of tobacco consumption in any form. In the age group of 25-35 years, there are 15 people who smoked and about 11 of them suffered from COPD and about 16 of them suffered from periodontal pathology. All the patients consuming tobacco had periodontal pathology, and 4 of those smokers did not have any form of COPD involvement. In the age group of 35-45 years, there are 99 people who smoked and about 69 of them suffered from COPD and about 81 of them suffered from periodontal pathology. Similarly, In the age group of 45-55 years, there are 263 people who smoked and about 207 of them suffered from COPD and about 299 of them suffered from periodontal pathology. This substantiates that smoking did not cause COPD in all patients, but all patients who smoked and suffered from COPD also suffered from periodontal pathology. In the age group of 55-65 years, there are 337 people who smoked and about 310 of them suffered from COPD and about 379 of them suffered from periodontal pathology. This data again substantiated that smoking did not cause COPD in all patients, but all patients who smoked and suffered from COPD also agonized from periodontal pathology. Numerous microbiological revisions have discovered that similar group of microorganisms is perceived in the oral cavity as in the respiratory infections.⁸ This proves that the prevalence of a periodontal pathological status will potentially prove to be a suitable risk indicator to categorize persons at an enhanced risk for COPD.⁹

CONCLUSION

Indubitably, there is a staunch relationship between respirational conditions and periodontal diseases. The existence of a periodontal condition must prompt the dentist to assess the respiratory condition of the subject. This is particularly significant in aged individuals with a history of smoking. Additional supplementary studies are obligatory to establish a correspondence between periodontal health and development of COPD.

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