



KNOWLEDGE AND ATTITUDE ABOUT RELATIONSHIP BETWEEN ORAL HYGIENE PRACTICES AND RESPIRATORY DISEASES AMONG MEDICAL PROFESSIONALS IN BELGAUM CITY – A QUESTIONNAIRE STUDY

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ABSTRACT

Introduction: Periodontitis is associated with extensive microbial plaque and exuberant local and systemic host response to microbial assault. Growing interest in periodontal medicine has shown that periodontal infections may influence overall health and course of many systemic diseases like cardiovascular disease, diabetes, preterm low birth weight etc. The bacterial plaque on the various surfaces of the teeth may extend to oropharynx. The anatomical continuity between the lungs and the oral cavity makes the latter a potential reservoir of respiratory pathogens. The awareness regarding this association amongst medical professionals should be assessed to render a comprehensive health care to patients.

Aim: To assess knowledge and attitude about relationship between oral hygiene practices and respiratory diseases among medical professionals in Belgaum city.

Methods: A questionnaire survey was conducted among the medical professionals in Belgaum city. A pre-tested self administered questionnaire was distributed personally to 120 randomly selected medical professionals working in institutes and private hospitals. The filled proformas collected next day and data obtained were statistically analyzed using SPSS software.

Results: All the participants knew that oral diseases have an influence on systemic diseases and vice versa. About 80% of the practitioners agreed that periodontal/gum diseases affect the course of the systemic diseases such as diabetes, cardiovascular disorders, respiratory diseases, pre-term low birth weight. Most common respiratory diseases they come across in the practice was pneumonia in particular hospital acquired pneumonia. And 70% of the practitioners consider periodontal disease as risk factor for the respiratory diseases. About 66% medical of the practitioners in Belgaum city routinely examine the oral cavity.

Conclusion: The present questionnaire study among the medical doctors practicing at Belgaum city, showed that knowledge and attitude about relationship between oral hygiene practices and respiratory diseases was high. Majority of the doctors knew about the interrelationship between periodontal disease and respiratory conditions

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INTRODUCTION

Periodontitis is associated with extensive microbial plaque and exuberant local and systemic host response to microbial assault.¹ In 1891 Willoughby Dayton Miller proposed the relationship in which he described the mouth as a “focus of infection” through which “microorganisms or their products obtain entrance to parts of the body adjacent to or remote from the mouth.” He listed several systemic diseases including gangrene, tuberculosis, meningitis, syphilis, septicemia and pneumonia, all thought to originate from an oral focus of infection. In 1900, William Hunter used the term “oral sepsis” and blamed it for causing “diseases such as tonsillitis, glandular swellings, middle ear infections, ulcerative

endocarditis, empyema, meningitis and osteomyelitis”. In addition to pulpal necrosis, caries, and periapical abscess, he also identified gingivitis and periodontitis as foci of infection. He further stated that the degree of systemic effect produced by oral sepsis depended on the virulence of the oral infection and the degree of resistance of the individual. Since the theory explained a wide range of disorders for which there were no explanations, it led to wholesale extraction of teeth.² Offenbacher first introduced the term, “Periodontal medicine,” as a discipline that focuses on validating this disease relationship and its biological plausibility in human population and animal models.³ Periodontal disease has been reported to be a pre-disposing factor for several diseases and systemic conditions, for example cardiovascular diseases, diabetes,

kidney diseases, stress related diseases, pre-maturity and/or low birth weight.⁴ Among such systemic conditions, **respiratory diseases** such as COPD and pneumonia are also being investigated. Respiratory diseases are responsible for significant morbidity & mortality. They are widely prevalent and take an extensive toll on health and cost of health care.

The purpose of our study was to report knowledge and attitude about relationship between oral hygiene practices and respiratory diseases from a survey conducted among medical professionals in Belgaum city in which we asked participants to describe the importance of oral health both overall and relative to selected chronic diseases.

MATERIALS AND METHODS

The present survey was a cross sectional study done among medical professionals in Belgaum city. 120 (58- Specialists, 42- post-graduates, 20- MBBS practitioners) medical practitioners were participated in the survey after obtaining the informed consent. General practitioners, specialty practitioners practicing in private corporate clinics and different private and government hospitals in Belgaum city were included in the study. Doctors who did not give consent and practicing in respiratory medicine field were excluded from the study.

A self administered questionnaire was used which consisted 12 close ended questions. Out of which 7 questions were related to their knowledge regarding interrelationship between the oral and respiratory diseases. 5 questions were related to their knowledge and attitude towards oral care and periodontal diseases. A pilot study was done on 4 subjects to assess the comprehensibility of the questionnaire. Reliability analysis of questionnaire was done and we found that Cronbach Alpha value -0.7763 with good internal consistency.

After the validation was done, the questionnaire was distributed personally to 120 randomly selected medical professionals of Belgaum city. The data with respect to their knowledge and attitude about relationship between oral hygiene practices and respiratory diseases was collected after 24 hours and recorded. The compiled data was then subjected to descriptive analysis. The results were expressed in terms of percentage

RESULTS

On evaluating the data it was seen that all the participants knew that oral diseases have an influence on systemic diseases and vice versa (Fig.1).

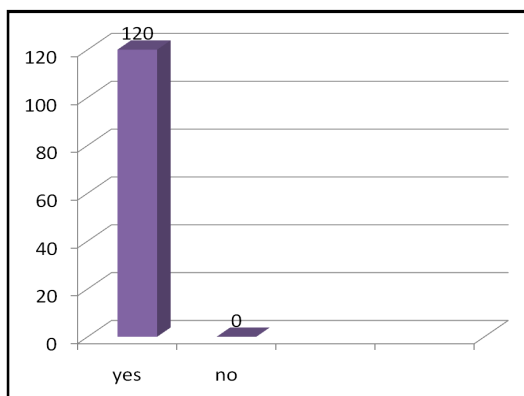


Figure 1 oral diseases can have an influence on systemic diseases

About 80% of the practitioners agreed that periodontal/gum diseases affect the course of the systemic diseases. About 50% of practitioners said that systemic conditions such as diabetes, cardiovascular disorders, respiratory diseases, pre-term low birth weight all are related to oral diseases (Fig.2).

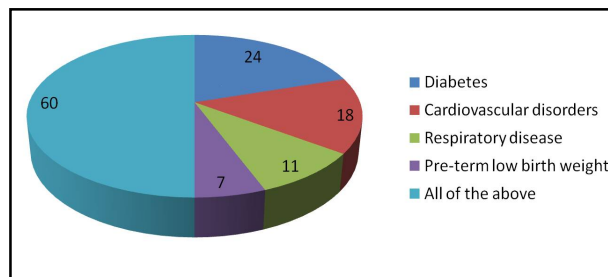


Figure 2 which of the following systemic disease is related to oral diseases?

Upon asking the most common respiratory diseases they come across in their practice, pneumonia was the most common with 37.5% followed by Bronchitis (29.1%), COPD (21.6%) and asthma (11.6%) (Fig.3).

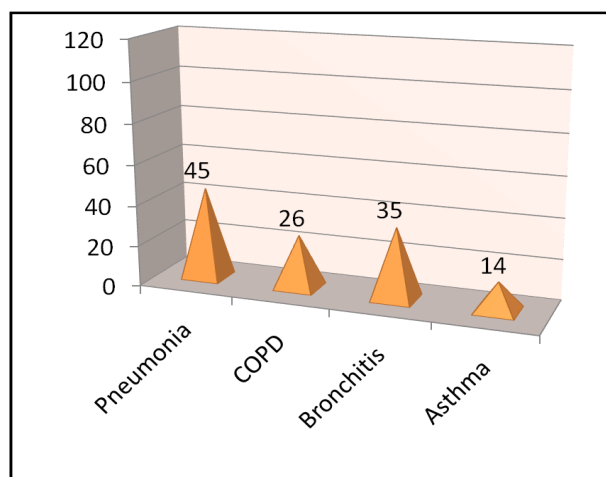


Figure 3 which respiratory disease do you commonly encounter in your hospital/clinic

And among dental diseases, dental caries was the most common with 75%, and only 17.5% cases of gum diseases and few cases of oral cancer. Source of information about periodontal diseases to medical practitioners is from the dentists was more compared to medical literature (Fig.4).

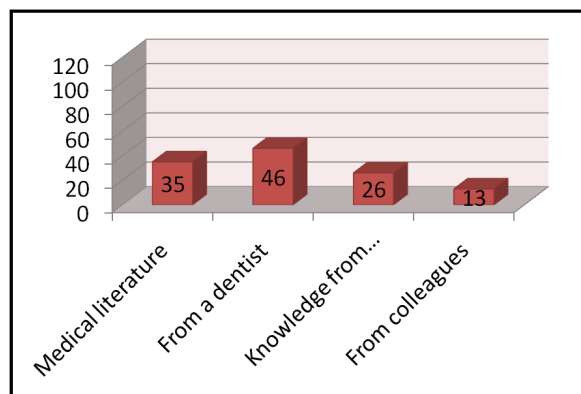


Figure 4 Source of information about periodontal disease

Around 70% of the practitioners consider periodontal disease as risk factor for the respiratory diseases (Fig.5), having hospital acquired pneumonia as the most common problem (Fig.6).

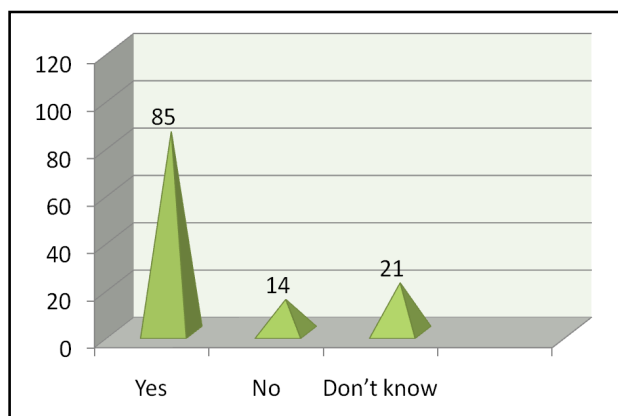


Figure 5 Do you think periodontal disease is a risk factor for respiratory diseases?

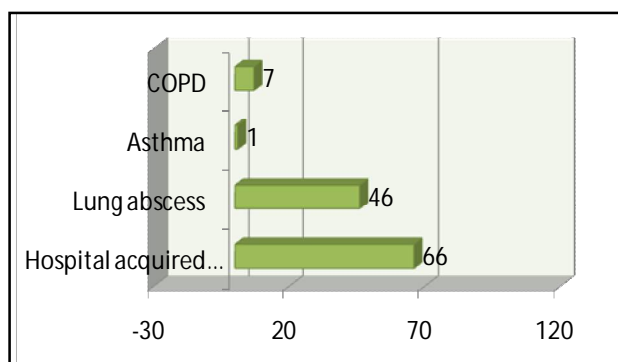


Figure 6 Which of the following respiratory diseases share common bacterial agent with oral diseases?

Around 66% of the practitioners routinely examine the oral cavity and 57.5% of them refer the patients to dentist when they see periodontal diseases in the patient (Fig.7).

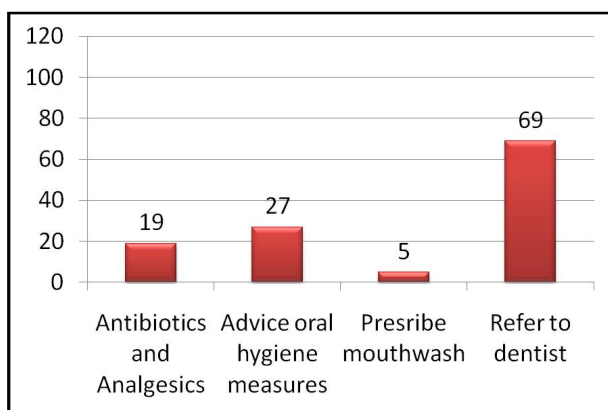


Figure 7 How do you treat the patient with gum/periodontal disease?

DISCUSSION

Our understanding of the pathogenesis of periodontitis has changed remarkably over the last 30 years.⁵ Research in the area of periodontal medicine suggests that periodontal infection may significantly enhance the risk for certain systemic diseases or alter the natural course of systemic conditions.⁶ So a two way relationship exists between periodontal disease and systemic conditions. Conditions in which the influences of periodontal infection are documented include coronary heart disease (CHD) and CHD-related events such as angina, infarction, atherosclerosis, and stroke and also with diabetes mellitus, preterm labor, low-birth-weight infants; and respiratory conditions such as chronic obstructive pulmonary disease and acute respiratory infections.⁷

Respiratory diseases are responsible for significant morbidity & mortality. They are widely prevalent and take an extensive toll on health and cost of health care. Pneumonia is defined as an inflammation of the lungs caused by fungal, viral, parasitic or bacterial infection.⁸ It is the second most common infection in institutional settings, accounting for 10 to 15% of hospital-acquired infections, and has a 20%-50% mortality rate.⁹ Hospital acquired pneumonia is usually caused by colonization of oropharynx¹⁰ by opportunistic pathogens such as *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Acinetobacter* species, gram-negative enteric bacteria such as *Klebsiella pneumoniae*, *Escherichia coli*, and *Enterobacter* species.¹¹ The lack of oral hygiene, the decline in activity of daily living, and the presence of polypharmacy-related xerostomia in institutionalized elders disturb the delicate equilibrium between tooth structure and oral fluids, thus providing favourable conditions for the proliferation of potential respiratory pathogens. These respiratory pathogens are shed into saliva, aspirated into the lung and cause pneumonia.

In the present survey conducted in Belgaum city, it was noticed that all the practitioners knew that oral diseases affects the systemic conditions. 80% practitioners agreed that periodontal diseases are a risk factor for systemic conditions which was high compared to the studies done by Radha Vellayappan and Sheeja S Varghese *et al.*¹² and J.P. Majra *et al.* in 2009.¹³ This could be attributed to the fact that increased interest in interdisciplinary approaches in the treatment. Pneumonia is being the most common respiratory diseases the practitioners come across in this region. This could be because of the climatic condition of the region. And around 70% of the practitioners consider the oral diseases as risk factor for respiratory diseases hospital acquired pneumonia being the most common. And good trend shift can be observed as around 66% of the practitioners check the oral cavity as regular check up and around 57.5% refer the patient to dentist when they see periodontal diseases in the patient. The referral percentage should increases as the all the practitioners agree to the fact about interrelationship between oral diseases and systemic conditions. And it was observed that knowledge about interrelationship for them is from a dentist rather than medical literature. So Steps should be taken to increase educational collaboration between dentistry and the other health professions, featuring more curricular emphasis on the interaction of dental and medical problems.¹⁴

CONCLUSION

The present questionnaire study among the medical doctors practicing at Belgaum city, showed that knowledge and attitude about relationship between oral hygiene practices and respiratory diseases was high. Majority of the doctors knew about the interrelationship between periodontal disease and respiratory conditions. Regular oral cavity examination and referral to the dentist is not adequate. More interdisciplinary approaches between the medical practitioners and dental practitioners can benefit the hospital acquired pneumonia patients as this group has high mortality rate. A larger sample size is required to know the actual opinion of the medical practitioners. The collaborative works to be made to render a comprehensive health care to reduce the prevalence of hospital acquired pneumonia.

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