Introduction

Cardiovascular diseases, a rapidly growing problem around the world; share 31% burden of 47% deaths due to non-communicable diseases in the Eastern Mediterranean region.\(^1\) Pakistan is among the countries with high mortality rates(6,4),(995,990), and cardiac disease data reported in Pakistan shows a rise from 7 patients during 1944-48 to 100,000 in the year 2002.\(^2\)

Important risk factors as an unhealthy diet (Low fruit and vegetable intake) and lifestyle are contributing to 31% of cardiac diseases globally.\(^3\) Psychosocial factors (Anger, social isolation, depression) are reported to be associated with increased morbidity and mortality from coronary heart diseases.\(^4\) Sedentary lifestyle (72%) is reported to be an important contributing factor for coronary heart disease in Pakistani people.\(^5\)

A healthy mouth is a premise for overall health. When oral health is compromised, overall health can be affected.\(^6\) Having less than 20 natural teeth is taken as indicator of poor oral health.\(^7\) Cross-sectional studies,\(^8,9\) showed a significant association between missing teeth and cardiovascular diseases. Overwhelming amount of information is available in current literature on the association of poor oral health and tooth loss to cardiac diseases.\(^10\) Relative risk of 1.23 is reported for MI in edentulous persons as compared to dentate people and incidence of CHD in relation to less number of teeth with RR of 1.32 as compared to persons with more teeth.\(^11\)

Tooth loss has been marked as physical impairment and disability.\(^12\) Poor oral health affects mortality, general health, nutrition, digestion, social activities, quality of life and well-being;\(^13\) and impact of poor oral health (Pain, xerostomia, halitosis, and unattractive dentition) on oral functions (chewing, smile, attraction) leads to poor self-esteem, social isolation, and depression.\(^14\) Effects of loss of teeth on physical, psychological, and social life and impacts of chewing ability, talking to people, daily activities, self-esteem, and oral health related quality of life (OHRQoL) have been reported in the literature.\(^15,16\) These studies may guide us to develop a concept that tooth loss itself and later on its non-replacement (uncompensation) could contribute to factors (psycho-social, stress) which are otherwise associated with development of cardiovascular diseases.

This study attempted to observe the replacement of missing teeth with artificial teeth in subjects with and without cardiac diseases and find its possible association with coronary heart diseases (CHD).

Patients and Methods

Consecutive cardiac patients aged 20 and above diagnosed with coronary heart disease (CHD) admitted at Punjab Institute of Cardiology during the month of April...
2004 were included in the study. Presence of artificial teeth (oral prosthesis) was noted at bedside with the help of a mouth mirror and tweezers. Healthy individuals, who accompanied the cardiac patients as attendants and agreed to be included in the study, were also examined for comparison purpose. Verbal consent of the subjects was obtained. Age and gender of subjects was noted as demographic variables.

Presence of prosthesis was analyzed in the total study population using SPSS version 11.5. Analysis was done by grouping study subjects into cardiac and non-cardiac groups and males and females. Summary statistics was calculated through descriptive analysis; Chi-Sq was applied for comparison of groups for oral prosthesis. T-test was applied for calculation of mean of age.

**Results**

A total of 935 cardiac patients (20-88 years) with mean age of 51.96±11.94 years and 759 healthy individuals (20-85 years) with mean age of 49.79±11.98 years were among the total 1694 study subjects. There were 1068 (63.14%) males and 626 (36.95%) females. Of the cardiac patients, 665 (71.12%) were males and 270 (28.87%) were females, while 403 (53.09%) males and 356 (46.90%) females were among healthy subjects (Table 1).

Table 2 presents data of oral prosthesis in study subjects. Of the study population 1473 (86.95%) had no artificial replacement for their missing teeth. Whereas 118 (12.65%) cardiac patients and 103 (13.57%) healthy subjects had artificial teeth. Statistical association for prosthesis among cardiac patients and healthy subjects was insignificant.

Among CHD genders, prosthesis was found in 86 (8.05%) males and 32 (5.11%) females and 46 (4.30%) healthy males and 57 (9.10%) healthy females had artificial teeth. Statistical association for oral prosthesis among CHD and healthy genders was also insignificant.

**Discussion**

Tooth loss is associated with poor diet intake, malnutrition, loss of self-sufficiency, and deterioration in quality of life. Tooth loss can substantially affect chewing ability, health-related quality of life and nutrition. Subjects without oral rehabilitation may suffer from "effects & impacts" of tooth loss in terms of oral infection, physical, psychological, social life, daily activities, self-esteem that may contribute to stress and hypertension leading to CVD. These associations of cardiac diseases and tooth loss (working through physical, psychological, social and dietary/nutritional factors) may have an indirect association with prevalence of oral prosthesis. This postulated association between uncompensated tooth loss and cardiac diseases was investigated in this study.

The study found a high number of subjects with uncompensated tooth loss in both cardiac and healthy populations, however, no statistically significant difference was observed between subjects with and without artificial teeth in both the cardiac and non-cardiac individuals. These findings are in coherence with the national findings where the prosthetic need in the community is 93% for the 35-44 year old age group and 81% in the elderly.

Although studies report an association of poor oral health, tooth loss and higher levels of periodontal disease with increased risk of CHD, no association between incidence of oral prosthesis and cardiac diseases has been reported. This study reports a similar result.

**Conclusion**

In this study no association of uncompensated tooth loss with cardiac diseases was observed. Large majority of the study subjects were found without oral prosthesis, cardiac subjects showed a slightly higher percentage in lack of prosthesis; but this difference was statistically insignificant.
References


Original Article

Evidence based medicine — where do articles published in local indexed journals stand?

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Abstract

Objective: The recent emphasis on using "evidence based medicine" for decision-making in patient care issues has prompted many publishers to mention the level of evidence of articles in their journals. The "quality" of a journal may thus be reflected by the proportion of articles with high levels of evidence, apart from other criteria. We aimed to determine the level of evidence of articles in indexed Pakistani medical journals.

Methods: Two journals were selected: Journal of Pakistan Medical Association (JPMA) and Journal of College of Physician and Surgeons, Pakistan (JCPSP). Based on the information in the abstracts, all articles from 2003 and 2006 were categorized according to guidelines of Center for Evidence Based Medicine, Oxford, UK.

Results: 882 items/articles were reviewed. Of these, 270 (31%) were scientific articles within which 51% belonged to the "Therapeutic" and 25% to the "Prognostic" type. Only 27% had a high level of evidence (1 and 2) while a majority of 55% had level 4 evidence. Although there was a higher proportion of scientific research articles in JCPSP than JPMA (36% vs. 25%), no major difference in the levels of evidence was noted between the two journals, nor between 2003 and 2006. Moreover, the results were quite comparable to similar international studies.

Conclusion: The level of evidence in articles in our leading local journals compares favourably with international literature. We recommend that levels of evidence be stated with abstracts in local journals not only to help the clinicians in making decisions on the best available evidence, but also to elevate the "quality" of these journals (JPMA 59:5; 2009).