

## Dental Health Status Of Patients With Valvular Heart Disease

### Abstract

Dental health care in patients with valvular heart disease is an important consideration because of the risk of infective endocarditis. Transient bacteremia usually occurs during different dental procedures. This study was undertaken to assess the oral health status of cardiac patients and compare it with case matched control group. It was found that the gingival inflammation as well as dental caries was statistically significantly higher in the cardiac group as compared to the control group. These patients are "at risk" from dental diseases and therefore they require periodic dental check-up and oral hygiene maintenance programmes.

### Key Words

valvular heart disease, infective endocarditis, gingivitis, dental caries, oral hygiene

### Introduction

Dental health care in patients with valvular heart disease is an important consideration because of risk of infective endocarditis<sup>[1],[2],[3]</sup>. Increasing prevalence of cardiac disorders in general population means that a dental health practitioner will frequently come across these patients in his/her practice. This is one of the most common cause for referral to a hospital department of dentistry, which reflects widespread concern over potential problems during treatment.<sup>[4]</sup> Patients with valvular heart disease require special dental care because of the following concerns:-

1. The risk of infective endocarditis.
2. The risk of bleeding in anticoagulated patients.
3. The side effects of drugs like calcium channel blockers and diuretics.<sup>[5]</sup>

Most dental healthcare practitioners know (but probably fewer medical practitioners and their patients), the oral cavity is a predominant site of chronic infection and inflammation, particularly periodontal disease. In recent years, their has been growing concern between the "periodontal-systemic" connection and other dental health parameters.<sup>[6]</sup>

Therefore, this study was undertaken to investigate the dental health status of valvular heart disease patients among cardiac and non-cardiac group.

### Material And Methods

A case control study was conducted on

cardiac and non-cardiac individuals attending the outpatient department at DMC&H from sept2009-april2011. A selective non-random sample of 150 patients, 75 patients with valvular heart disease and 75 patients from the control group were selected. The age of the selected patients ranged from 5-55 years. The two groups were matched for age and gender. Patients in control group included those who came to the dental O.P.D for their routine dental check-up. The medical diseases of cardiac patients is given in [Table 1].

Dental caries was recorded as decayed, missing and filled teeth according to the DMFT index.<sup>[7]</sup> This index was developed by Klein and Palmer in 1983. Gingivitis was recorded simply as mild, moderate and severe as per the gingival index given by Loe and Sillness.<sup>[8]</sup> The examination was performed by a single examiner using a standard protocol for all the patients.

The data was tabulated on excel spreadsheet and was analysed using a commercially available SPSS statistical software. The paired t-test was employed to assess the significance of difference between study and control group for DMFT and for gingivitis.

### Results

A total number of 150 patients, 75 with valvular heart disease(study group) and 75 without cardiac disease(control group) were examined for the study. Of

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Table 1

Medical Diseases	Number	Percentage
RHD	60	80%
MVP & MVR	5	6.67%
AS	5	6.67%
PS	5	6.67%

the 75 in case group, 58 subjects were male and 17 subjects were female. In control group, 55 subjects were male and 19 subjects were females. The mean age for the case group was 32.73 ±13.53 where as for the control group it was 29± 13.80 years.

### Gingivitis

The gingival inflammation as analysed by the above mentioned index i.e Loe and Sillness index was significantly higher in cardiac group as compared to the control

group. The mean gingivitis score in the cardiac patients was  $0.71 \pm 0.23$  and in control was  $0.39 \pm 0.24$ . The p-value calculated was much less than 0.05, so it was highly significant.

### Dental Caries

The mean number of decayed, missing and filled teeth (DMFT) was higher in the case group ( $3.83 \pm 1.8$ ) as compared to the control group ( $2.16 \pm 1.22$ ). The p-value of DMFT index was less than 0.05 and hence it was statistically significant. The cardiac group as compared to the control group generally had a higher decayed component (DT  $1.93 \pm 1.15$  vs  $0.95 \pm 0.87$ ) and a higher missing (MT  $1.31 \pm 0.85$  vs  $0.44 \pm 0.50$ ) and a lower filled component (FT  $0.59 \pm 0.60$  vs  $0.79 \pm 0.70$ ).

	Cardiac (n=75)	Control (n=75)	P-value
DMFT	$3.83 \pm 1.8$	$2.16 \pm 1.22$	0.00
GINGIVITIS	$0.71 \pm 0.23$	$0.39 \pm 0.24$	0.00

### Discussion

In the present study, the patients with valvular heart disease had statistically significant higher values as compared to the control group. There was a significant difference between the dental health status of the patients with cardiac disease and the closely matched control group with respect to the gingival diseases as well as dental caries. Patients in the case group had higher gingival inflammation, probably because of the low priority given to dental care by the patients and their attendants. There is a low level of oral hygiene awareness amongst the cardiac patients. Saunders and Robert<sup>[9]</sup> also found poor oral health awareness in patients with cardiac disease.

As regards dental caries, there was statistically significant difference

between the two groups. Patients with valvular heart disease had a higher DMFT score. It was also found that these patients had a higher incidence of decayed and missing teeth, whereas the filled component of teeth was greater in the control group. This finding reflects the attitude towards dental treatment and oral health practices. Patients with heart disease give less importance to the dental problems and ailments. They are more weighed down by the cardiac disease, which is given more priority. As a result, the equally important oral health care needs are overlooked. The preventive approach to dental health problems is severely lacking. The major barriers for this attitude can be cost, fear or distrust of dentist. Due importance to oral health care needs is not addressed to by the attending physicians. There is a need for an emphasis on dental counseling regarding preventive dental health measures, dental health education, periodic screening, prompt diagnosis and early treatment. Recent guidelines by AHA<sup>[10]</sup> (American Heart Association) emphasize that maintaining optimal oral health and practicing daily oral hygiene is more important in reducing the risk of infective endocarditis than taking the preventive antibiotics before a dental visit.

### Conclusion

We conclude that oral health status of valvular heart disease patients is significantly poor as compared to the control group which further strengthens the idea to create awareness amongst treating physicians about this important issue. The sensitization of clinicians can prevent possible endocarditis and other co-morbidities related with poor oral hygiene.

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