



## Prevalence of Periapical Abscess, Peri-Implantitis, Edentulism and Nursing Bottle Caries in a Known Population.

Dr. Ashok Hk<sup>1</sup>, Dr. Yamika Rathore<sup>2</sup>, Dr. Guljot Singh<sup>3</sup>, Dr. Meenakshi Choudhary<sup>4</sup>, Dr. Shubhangi Jamnare<sup>5</sup>, Dr. Malik Ajaz Ahmad<sup>6</sup>

<sup>1</sup>Reader, Department of Conservative Dentistry and Endodontics, Dayananda Sagar College of Dental Sciences, Bangalore

<sup>2</sup>senior Lecturer, Swami Devi Dyal Dental College And Hospital

<sup>3</sup>Professor, HOD and Principal, Department of Periodontology, Daswani Dental College and Research Center, Kota

<sup>4</sup>Reader, Seema dental college and hospital rishikesh

<sup>5</sup>Lecturer, vyws dental college and hospital Amravati

<sup>6</sup>Assistant Professor, Oral pathology and Microbiology, Career Post Graduate Institute of Dental Sciences and Hospital, Lucknow, uttarpradesh.

**Corresponding author:** Dr. ASHOK HK , Reader, Department of Conservative Dentistry and Endodontics, Dayananda Sagar College of Dental Sciences, Bangalore

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### KEYWORDS

Periapical abscess, peri-implantitis, edentulism, nursing bottle caries.

### ABSTRACT:

**Background:** This study was conducted to assess the prevalence of periapical abscess, peri-implantitis, edentulism and nursing bottle caries in a known population.

**Material and methods:** This study was conducted to assess the prevalence of apical abscess, peri-implantitis, edentulism and nursing bottle caries in a known population. The study comprised of 100 subjects who underwent oral clinical examination. The subjects had been explained about the procedure and were asked to give consent. The prevalence of apical abscess, periimplantitis, edentulism and nursing bottle caries had been assessed and tabulated. Statistical analysis had been carried out using SPSS software.

**Results:** In this study, there were 56 male and 44 female. Periapical abscess was evident in 16 subjects, peri-implantitis was seen in 25 subjects, edentulism was seen in 49 subjects and nursing bottle caries was evident in 10 subjects.

**Conclusion:** The prevalence of periapical abscess, peri-implantitis, edentulism and nursing bottle caries in this study was 16%, 25%, 49% and 10%, respectively.

### Introduction

Periapical abscesses are, by far, the most frequent infectious lesions of the alveolar bones.<sup>1,2</sup> Periapical abscess occurs in and around the apex of a root, the periodontal membrane of a tooth, and the adjacent alveolar bone.<sup>3,4</sup> The spread of infection via the apical foramen and inflammation sets in a cascade of reactions attracting inflammatory chemical mediators to initiate the periapical pathology that eventually results in a

periapical abscess, a radicular cyst, or a periapical granuloma.<sup>5</sup>

There are several classifications of periapical lesions.<sup>6,7</sup> World Health Organization (WHO) provides a classification of the periapical lesions including periapical abscess, radicular cyst, and periapical granuloma, according to the clinical signs, other than symptoms or the histopathological differences of the periapical lesions. Another classification was proposed by Nair<sup>7</sup> and depending on the histopathological findings



of the periapical abscess, radicular cyst, and periapical granuloma.

This study was conducted to assess the prevalence of apical abscess, peri-implantitis, edentulism and nursing bottle caries in a known population.

### Material and methods

This study was conducted to assess the prevalence of apical abscess, peri-implantitis, edentulism and nursing bottle caries in a known population. The study comprised of 100 subjects who underwent oral clinical examination. The subjects belonged to the age group varying from 1 year to 30 years. The subjects had been explained about the procedure and were asked to give consent. The parents of the children included in this study had been asked to give consent on behalf of their children. The prevalence of apical abscess, periimplantitis, edentulism and nursing bottle caries had been assessed and tabulated. Statistical analysis had been carried out using SPSS software.

### Results

**Table 1: Gender-wise distribution of subjects**

Gender	Number of subjects	Percentage
Male	56	56
Female	44	44
Total	100	100

In this study, there were 56 male and 44 female.

**Table 2: Prevalence of periapical abscess, peri-implantitis, edentulism and nursing bottle caries.**

Oral condition	Number of cases	Percentage
Periapical abscess	16	16
Peri-implantitis	25	25
Edentulism	49	49
Nursing bottle caries	10	10

Periapical abscess was evident in 16 subjects, peri-implantitis was seen in 25 subjects, edentulism was seen in 49 subjects and nursing bottle caries was evident in 10 subjects.

### Discussion

Peri-implant mucositis is a reversible condition, but it is seen as a risk for developing peri-implantitis.<sup>8</sup> In the very recently published EFP S3 level guideline “Prevention and Treatment of Peri-Implant Diseases”, on a patient basis, the prevalence of peri-implant mucositis was 43–47%, and for peri-implantitis it was 20–22%.<sup>9</sup> In a study, at the patient level, a higher prevalence for peri-implant mucositis (66.3%) and a lower prevalence for peri-implantitis (9.6%) was diagnosed. This may be a result of the low number of smokers and low numbers of non-compliant patients included. All patients visited the same surgeon/periodontist over many years; thus, BOP on an implant/tooth would, of course, be treated according to the state of the art. Moreover, the specialized practice had a clear opinion about smoking; the population from this practice may thus be influenced by or selected according to this approach.<sup>9</sup>

Katz J et al<sup>10</sup> assessed the prevalence of periapical abscesses in patients with different types of hypertension conditions and to evaluate the effect of commonly used antihypertensive medications on the prevalence of periapical abscesses. The integrated data of hospital patients were used. Data from the corresponding diagnosis codes for hypertensive conditions and periapical abscess were retrieved by searching the appropriate query in the database. The odds ratio (OR) of periapical abscesses, its association with hypertensive conditions, and the intake of 4 antihypertensive medications were calculated and analyzed statistically. The prevalence of periapical abscesses in patients with hypertensive conditions was 1.2% compared with 0.558% in the general patient population of the hospital. The OR for the prevalence of periapical lesions in patients with hypertension was 2.32. For primary hypertension, the OR was 2.02; for hypertensive heart disease, the OR was 2.68; for hypertensive chronic kidney disease, the OR was 2.1; for hypertensive heart and chronic kidney diseases, the OR was 4.16; for secondary hypertension, the OR was 4.16; and for hypertension crisis, the OR was 5.64. For patients treated with beta blockers, the OR was 2.58; for patients treated with angiotensin-converting enzyme inhibitors, the OR was 2.73; for patients treated with angiotensin II receptor blockers, the OR was 1.93; and for patients treated with calcium channel blockers, the OR was 2.79. The differences were statistically significant ( $P < .0001$ ). The



OR for the prevalence of periapical abscesses in patients treated with angiotensin II receptor blockers was significantly lower than that of patients treated with either beta blockers or calcium channel blockers ( $P < .00001$ ). Under the conditions of this study, it appears that the prevalence of periapical abscesses is significantly higher in hypertensive patients. The prevalence of periapical abscesses is higher in patients with secondary hypertension than in those with primary hypertension. Angiotensin II receptor blockers may significantly lower the prevalence of periapical abscesses in hypertensive patients.

Robke FJ et al<sup>11</sup> provided basic, representative data on the oral health of preschool children in northwestern Germany. Clinically examined were the prevalence of caries, proportion of early childhood caries (ECC) due to nursing bottles--referred to as nursing bottle caries (NBC)--and the frequencies and extent of malocclusions in the primary dentition of 434 preschool children (50.5% male, 49.5% female) aged 2 to 6 years. To assess the children's dental status, the d(1-4)mf-s/t index was determined, and orthodontic findings were clinically assessed as sagittal, transversal, vertical single-arch, and occlusal. The examinations took place in kindergartens and child-care facilities. Sixty-one percent of the examined preschool children had caries-free dentition, 25% had no tooth misalignments or malocclusions. The caries prevalence (dmf-t-value) amounted to 2.0. The high percentage of NBC in the 3-to 6-year-old children (20.3% manifest NBC, 9.0% initial NBC) indicated considerable deficits in terms of nutritional behavior and the frequent "misuse" of nursing bottles in infants. The NBC almost always correlated with extensive tooth damage, the dmf-t-value in this subpopulation amounted to 7.2. Initial carious lesions in infants were observed almost exclusively on the maxillary incisors. Primary crowding was the dominant malocclusion in 36.9%, followed by increased overjet in 30.6%. I observed a loss of maxillary incisors due to carious lesions in 7.6% of the children and a loss of the supporting zone in 9.9%. 16.1% of the children showed a deep bite, and 14.7% an open bite. Vertical discrepancies were apparent in 63.6% of the children with massive carious damage to the maxillary incisors (NBC). The importance of starting caries prophylaxis early cannot be stressed highly enough in light of the high prevalence of ECC, in particular NBC. The implementation of interceptive, early treatment

measures should be intensified due to the high number of malocclusions in primary dentition. An improved combined approach of preventive caries therapy and preventive orthodontic therapy would be a most welcome overall development.

This study was conducted to assess the prevalence of apical abscess, peri-implantitis, edentulism and nursing bottle caries in a known population.

## Conclusion

The prevalence of periapical abscess, peri-implantitis, edentulism and nursing bottle caries in this study was 16%, 25%, 49% and 10%, respectively.

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