



Prevalence of Dentinal Hypersensitivity in South Canara Population- An Epidemiological Survey

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Abstract

To establish the prevalence of dentinal hypersensitivity (DH) in a random sample of patients from Rural and Urban populations of south canara over a period of one month to determine their prevalence based on Age, Gender, Initiating factors, Diet and geographical location. A cross sectional study was done over a period of one month in the department of conservative dentistry and Endodontic of a university teaching hospital and their peripheral rural satellite centres in south canara which included both urban and rural populations. Questionnaires were filled and the subjects were examined clinically for dentine Hypersensitivity using air jet and cold water syringes. Statistical analysis was done using chi square test and Binomial test The overall prevalence of dentine Hypersensitivity was found to be 18.2%. The commonest age group affected was 31-40 years ($p < 0.001$), found in Males than Females ($p < 0.001$), Initiated by cold than sweet ($p < 0.001$), More in Urban than rural ($p = .193$).

Key words: Dentinal Hypersensitivity, Prevalence study, South canara, cross sectional study.

Introduction

Dentin Hypersensitivity is characterized by acute short sensation of pain, related to exposed dentin in response to typically thermal, tactile, osmotic, chemical or evaporative stimuli that cannot be attributed to any other pathological condition^{1,3}. Pain symptoms arising from dentine are a common finding in adult dentate population ranging from 4-74%.² It has been suggested that DH is mediated by a hydrodynamic mechanism in which a stimulus results in an increased fluid flow in dentinal tubules resulting in generation of action potentials which are interpreted as pain by the patient.^{4,5,6}

Dentinal Hypersensitivity most commonly occurs on the buccal aspect of permanent teeth near the CEJ, which is also the site that most frequently exhibits dentine exposure^{7,8}. The highly subjective nature of dentine hypersensitivity and the large variability in the individual's pain response makes it difficult to accurately assess dentine hypersensitivity. Thus the objective of the present cross sectional study is to determine the prevalence of dentine hypersensitivity in a random sample of patients in urban and rural population visiting a university teaching hospital in south canara population for a period of one month to determine the age group, gender, initiating factors, diet and location in which dentinal hypersensitivity is more prevalent.

Materials and Methods

The study was conducted for a period of one month in the department of conservative dentistry of a university teaching hospital in south canara. A total of 2000 patients were examined. The investigation was carried out with a questionnaire form followed by a clinical examination. Clinical examination was done using Air jet test and cold test. Neighboring teeth were isolated. A simple positive or negative response to the stimulus was recorded.

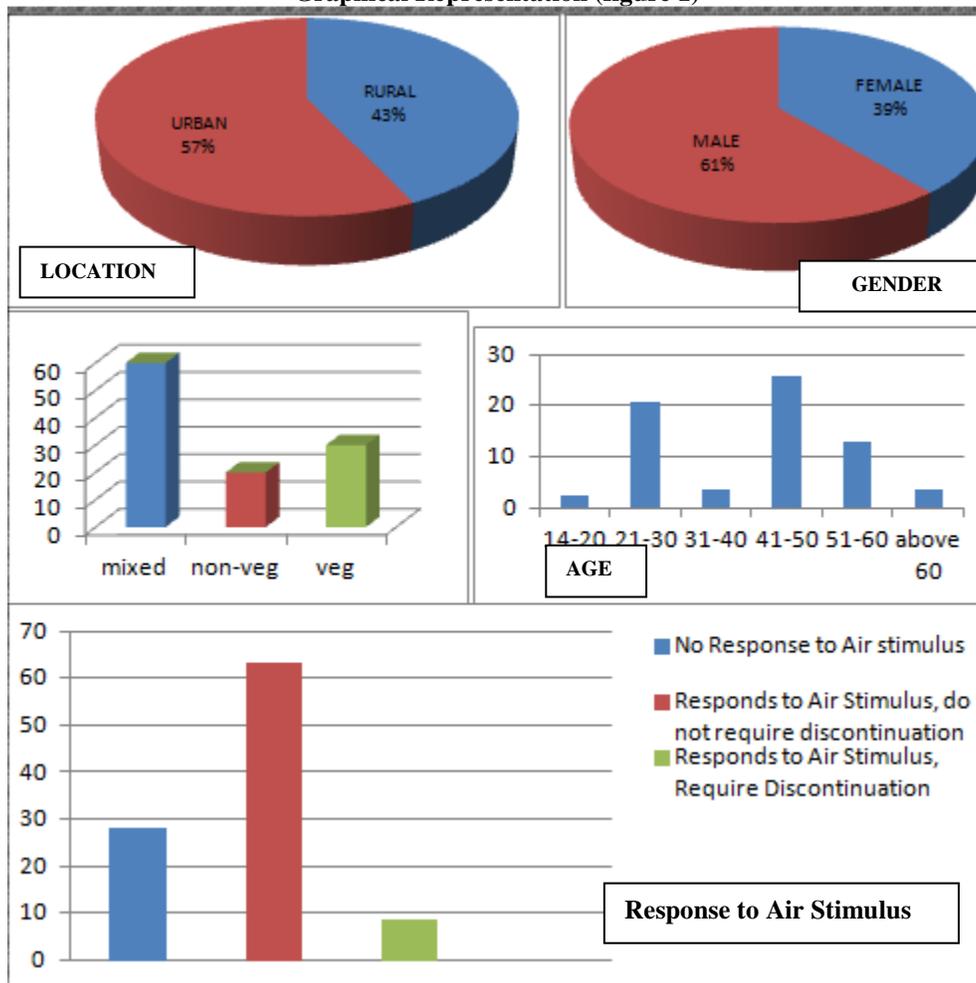
Statistical Analysis

Statistical Analysis Was Done Using Chi Square Test and Binomial Test

Results and Discussion

A total of 2000 patients were examined during the study and 364 were found to have dentinal sensitivity with an overall prevalence of 18.2%. Greatest prevalence was seen in age group of 31-40 years (34.6%), seen more in males than females (61.3%), cold was the initiating factor than sweet (99.5%) and was seen slightly more in rural than urban (57.4%). 28% of the patients did not respond to air stimulus, 63.5% responded to air stimulus but did not require discontinuation, and 8.55% required discontinuation of the air stimulus.

Graphical Representation (figure 1)



Discussion

Dentinal hypersensitivity is one of the most commonly encountered clinical problems. It is clinically described as an exaggerated response to application of a stimulus to exposed dentine, regardless of its location.^{9,10} The present study was conducted to evaluate the prevalence of dentine hypersensitivity in south canara population. The prevalence of dentine hypersensitivity was found to be 18.2%. This value was similar to that carried out in Sweden and Brazil (22-25%).^{11,12} This was also similar to that of a cross-sectional study conducted in southern India population with the prevalence of dentine hypersensitivity being 26%.¹³ In our study, peak prevalence of dentinal hypersensitivity was found to be between 31-40 (34.6%, $p < 0.001$). This was similar to that of the studies conducted by Fischer et al¹² and Chabanski et al.^{14,15} This study showed that dentine hypersensitivity peaked between 35-50 years and a decline was seen with further increase in age. The probable reason for this drop was found to be related to changes that occur in dentin pulp complex with increasing age, particularly dentinal sclerosis and the laying down of secondary or tertiary dentine. Prevalence of Dentinal hypersensitivity was found to be more in males than in females (61.3% in males and 38.7% in females ($p < 0.001$)) which was highly significant. Also in our study, it was found to be slightly more in urban population than rural population ($p = 0.193$) which was not significant. Cold food stuffs were found to initiate the dentinal hypersensitivity than sweet ($p < 0.001$). Most of the patients responded to air stimulus but did not require discontinuation (63.5%), ($p < 0.001$) which was also highly significant.

Conclusion

The prevalence of dentine hypersensitivity in patients attending university teaching hospital in southern India was 18.2%, Greatest prevalence was found in patients between 31-40 (34.6%), seen more in mixed diet population(52.2%), seen more in males than females(61.3%), most of their sensitive to air stimulus which did not require discontinuation(63.5%), cold produced more dentinal sensitivity than sweet(99.5%). Though not highly significant, dentinal hypersensitivity was found slightly more in urban population than in rural population(57.4%)

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