CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.2594251

Available online at: http://www.iajps.com *Research Article*

ANALYSIS OF DIFFERENT RISK FACTORS ASSOCIATED WITH NON-CARIOUS CERVICAL LESIONS

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Article Received: December 2018 **Accepted:** February 2019 **Published:** March 2019

Abstract:

Introduction: *Non-Carious Cervical Lesion (NCCL) is the loss of hard tooth tissue at the cement-enamel junction not caused by caries and it was categorized in V-shape and saucer-shape according to the shape of the lesion on the plat surface.*

Objectives of the study: *The main objective of the study is to analyze the different risk factors associated with non-carious cervical lesions.*

Material and methods: *This cross sectional study was conducted in RHC Sandhilianwali, Toba Tek Singh during February 2018 to November 2018. The data were collected through a questionnaire. The questionnaire included was administered to purposive consecutive sampling of patients that came to the dental OPD. The questionnaire included basic patient demographic information (name, age, gender and locality). The patients were asked if they felt sensitivity after blowing air from triple syringe, any aesthetic issues associated with the lesions.*

Results: *The number of lesions per patient ranged from 1-18, with 77% of them having 1-6 lesions. Almost all NCCLs were found on the buccal surface (99%). In this study, 73.4% of the NCCLs were on posterior teeth and 26.6% on anterior teeth, and 55.6% were on maxillary teeth and 44.4% on mandibular teeth, 55.6% were on right teeth and 44.4% on left teeth. First premolars (32.3%) and second premolars (22%) were affected often, followed by first molars (18.7%) and canines (10.2%).*

Conclusion: *It is concluded that para functional habits were significantly associated with NCCLs and premolars were the most affected teeth.*

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Please cite this article in press Haq Nawaz et al., ***Analysis Of Different Risk Factors Associated With Non-Carious Cervical Lesions.,*** *Indo Am. J. P. Sci, 2019; 06(03).*

INTRODUCTION:

Non-Carious Cervical Lesion (NCCL) is the loss of hard tooth tissue at the cement-enamel junction not caused by caries and it was categorized in V-shape and saucer-shape according to the shape of the lesion on the plat surface. NCCLs often occurred on the buccal or labial surfaces of the teeth, especially the first premolars [1]. The tendency of distribution of NCCLs which maxillary teeth were more easily affected than mandibular teeth with no significant difference between the right and left sides of the mouth [2]. Studies show the prevalence of NCCL range from 5 to 85%, the prevalence and severity of lesions have been found to increase with age.

Non carious tooth loss occurs throughout the life of every individual and is thought to be a normal physiological process, however, if the rate at which it is occurring threatens the life of the tooth or becomes a source of concern to the patient, it is then considered to be pathological[1]. Tooth surface loss rarely occurs in isolation [3]. It arises as a multifactorial problem involving erosion, abrasion, attrition and abfraction. It has been suggested that the term 'tooth surface loss' should be used when it is not possible to identify a single etiological factor. Hardness of the tooth brush and ingredients of the toothpaste are culprits of tooth wear, but this factor particularly depends on the technique of brushing [4]. Enamel erosion is caused by frequent acidification of the oral cavity by excess intake of citrus juices, carbonated beverages, alcohol consumption and vitamin C [5]. Inappropriate oral habits like nail biting, pipe smoking habitually holding something between the teeth causes atypical tooth loss as well as loss of the entire tooth [6].

Objectives of the study

The main objective of the study is to analyze the different risk factors associated with non-carious cervical lesions.

MATERIAL AND METHODS:

This cross sectional study was conducted in RHC Sandhilianwali, Toba Tek Singh during February 2018 to November 2018. The data were collected through a questionnaire. The questionnaire included was administered to purposive consecutive sampling of patients that came to the dental OPD.

Data collection

The questionnaire included basic patient demographic information (name, age, gender and locality). The patients were asked if they felt sensitivity after blowing air from triple syringe, any aesthetic issues associated with the lesions. A complete medical history and subsequent drug history was taken. History of presence and frequency of vomiting, gastric reflux and heartburn was asked. Inquiries were made about any para-functional (bruxism and teeth clenching), and nervous (nail/ tooth biting) habits. Dietary practices of the patient were analyzed, emphasizing on the frequency of intake of carbonated beverages citric juices and sour foods. Lastly, the patient were asked which was the dominant working hand and whether he was a bilateral or a unilateral chewer.

Statistical analysis

The data was analyzed on SPSS version 17. Descriptive statistics and frequencies of the data were determined to know the prevalence of the NCCLs. Chi-square test and cross tabs were applied to determine the relationship between the number of NCCLs in groups and the associated It was also found that patients with right working hand factors.

RESULTS:

The number of lesions per patient ranged from 1-18, with 77% of them having 1-6 lesions. Almost all NCCLs were found on the buccal surface (99%). In this study, 73.4% of the NCCLs were on posterior teeth and 26.6% on anterior teeth, and 55.6% were on maxillary teeth and 44.4% on mandibular teeth, 55.6% were on right teeth and 44.4% on left teeth. First premolars (32.3%) and second premolars (22%) were affected often, followed by first molars (18.7%) and canines (10.2%). NCCL incidence was less likely in second molar (0.3%), followed by lateral incisors (7.6%) and central incisors (8.9%).

Table 01: Frequency distribution of subjects in relation to number of teeth with NCCL

Location		P-valve
Anterior vs. Posterior Location p<0.05		
Anterior Posterier	243(26.6) 670(73.4)	
Maxillary vs. Mandibular Location		p>0.05
Maxillary Mandibular Anterior Teeth Canines Lateral Incisors Central Incisors Posterior Teeth Second Molars First Molars Second Premolars First Premolars	508(55.6) 405(44.4) - 93(10.2) 69(7.6) 81(8.9) - 3(0.3) 171(18.7) 201(22) 295(32.3)	
Right vs. Left Location		p>0.05
Right side Left side	508(55.6) 405(44.4)	

DISCUSSION:

The prevalence are more increasing in the older population and older patients are more likely to have lesions that are deeper, larger or both. In this study, 57% of the subjects were older than 40 years of age, The prevalence rate of NCCLs in group of above 40 years old are more higher (82.8%) than under 40 years old (58.7%). In senior patients, their teeth have been exposed to the various etiologic factors for a long period and so it is not surprising to see more lesions, and of greater severity [6]. Secondly, gingival recession and bone loss are more common in older populations, which because more root surface and cementum exposure, then increase the risk of cervical lesions [7]. It seemed that 40 years old age is the turning point for occurring NCCLs, because of big difference has been seen in age under or beyond 40 year old age. The mechanism under this phenomenon is still remained to discover [8]. NCCLs often cause the teeth sensitive to cold hot foods and results in the patients are afraid of eating many kinds of foods and to harm the patient's physical and mental health. So it's important to think highly of NCCLs for dentist [9]. The etiological factors associated with NCCLs are still unclear amongst practitioners, who differ in identifying these lesions and treat cervical lesions accordingly. The literatures available are inconclusive of establishing any one factor being associated with non-carious cervical lesions. Rather, a variety of factors are involved in the formation of non-carious cervical lesions [10]. NCCLs being multi-factorial in etiology, the treatment protocol for them requires special understanding of the primary cause. Patients need to be educated regarding the etiologic factors of NCCLs, so that they may be able to identify and prevent progression of NCCLs [11].

CONCLUSION:

It is concluded that para functional habits were significantly associated with NCCLs and premolars were the most affected teeth.

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