

# Frequency of Desquamative Gingivitis among Dental Patients: A Cross Sectional Multi-Center Study

Daud Mirza<sup>1</sup>, Saima Mazhar<sup>2</sup>, Momin Marath<sup>3</sup>, Uzma Tariq<sup>4</sup>, Aqib Sohail<sup>3</sup> and Farzeen Tanveer<sup>2</sup>

## ABSTRACT

**Objective:** Desquamative gingivitis (DG) is a descriptive term used for inflamed and peeling off gingival epithelium. The aim of this study was to determine the frequency of desquamative gingivitis (DG) with respect to gender, age and clinical findings among dental patients.

**Study Design:** cross-sectional study

**Place and Duration of Study:** This study was conducted at the Dental Out-Patients Department (OPD) of Bahria University Health Sciences (BUHSC), Gateway Health Services (GHS, private dental practice), Karachi and Lahore Medical & Dental College, Lahore from January, 2021 to June, 2022.

**Materials and Methods:** The present study included 68 clinically diagnosed patients of desquamative gingivitis age ranged between 10 to 90 years. The subjects were diagnosed on the basis of history, examination and clinical findings of DG. The data analysis was performed by using SPSS version 23.

**Results:** Among 68 subjects of desquamative gingivitis, 40(58.8%) were males and 28(41.2%) female patients. The higher predilection of desquamative gingivitis was seen in males than in females. The poor oral hygiene was the most common causative factor noticed in both males 37(92.5%) and females 15(53.5%) patients.

**Conclusion:** In present study, the p-value was found to be highly significant .000 when DG was cross tabulated with etiological factors and gender. No vesiculo-bullous diseases were observed in current study. Elimination of local gingival irritants, for instance dental plaque and calculus can improve the outcomes of DG treatment.

**Key Words:** Mouth wash, mucocutaneous disease, Desquamative Gingivitis, Gingivitis

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## INTRODUCTION

The word "Desquamation" is derived from Latin word 'Desquamare' which means scraping fish flakes. The word desquamation means loss of epithelial elements or exfoliation.<sup>1</sup> Desquamative gingivitis (DG) is also defined as presence of desquamation, ulcers, erosion and vesicle formation that involve both free and attached gingival margins.<sup>2</sup> Desquamative gingivitis commonly occurs in free and keratinized gingiva involving the buccal and labial gingival margins.<sup>3</sup>

Literature shows that the evidence of DG was more depicted in women than men. It is usually seen after puberty particularly in late thirties and is rarely seen in children.<sup>4</sup> clinically the symptoms of desquamative gingivitis depends on the type or extent of lesions. Symptoms may range from mild pain to severe form with keratosis and atrophy of lesion. Patient may or may not complaint of burning sensation, pain, bleeding gums, limitation of oral function and speech difficulties.<sup>9</sup> In some cases the afflicted gingival epithelium becomes very fragile with slight touch or trauma<sup>1,5,6</sup>

The exact etiology of DG is unknown but, the various factors based on etiological conditions play an important role in its pathogenesis, such as, endocrine disturbances, chronic infections, poor oral hygiene, oral lichen planus, pemphigus, mucous membrane pemphigoid, estrogen deficiency following oophorectomy and in postmenopausal stages and aging<sup>7</sup>. The diagnosis of DG may require thorough history and clinical examination. The differential diagnosis of desquamative gingivitis (DG) includes a wide spectrum disease /factors, for instance: Chemical and electrical burns, hormonal disorders, mucocutaneous diseases, allergic reactions, cosmetics products and drugs. Literature has shown the evidence

<sup>1</sup>. Department of Oral Pathology / Periodontology<sup>2</sup>, Bahria University Medical & Dental College, Karachi.

<sup>3</sup>. Department of Oral Pathology. Lahore Medical and Dental College.

<sup>4</sup>. Department of Oral Pathology. Isra Dental College.

Correspondence: Daud Mirza, Professor & Head of Department, Oral Pathology, Bahria University Medical & Dental College, Karachi.

Contact No: 03223934985

Email: dr.daud\_mirza@hotmail.com

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that similar type of clinical pattern in DG has been observed as reactions against use of mouthwashes.<sup>8</sup> The aim of this study was to determine the frequency of desquamative gingivitis with respect to gender and age of patients.

### MATERIALS AND METHODS

The present multicenter and cross-sectional study was carried out in Dental Out-Patients Department (OPD) of Bahria University Health Sciences (BUHSC), Gateway Health Services (GHS, private dental practice), Karachi and Lahore Medical & Dental College, Lahore from January, 2021 to June, 2022. This study was approved by Ethical Review Board of the university. The informed consent was taken prior to oral examination and patients were explained about the objective of the study. The data was collected by using non-probability consecutive sampling technique. Patients of both genders participated in current study having age ranged of 10 to 90 years. Patients with healthy gingiva, gingivitis and lesions associated with desquamative gingivitis were part of the inclusion criteria of the study. Patients who were mentally ill, those who did not agree to sign the consent or incomplete data entry were excluded from the study. Data analysis was done by Statistical Package for Social Sciences (SPSS) version 23 by using descriptive statistics, cross-tabulation and p-value <0.05 was considered to be statistically significant.

### RESULTS

The present study showed the total of 68 diagnosed patients of desquamative gingivitis (DG), out of which 40(58.8%) were males and 28(41.2%) females as shown if Table 1.

**Table No.1: Distribution of Gender**

Gender	n	%
Male	40	58.8
Female	28	41.2
Total	68	100%

**Table No.1: Distribution of Desquamative Gingivitis (DG)**

Etiological Factors	Gender		P-value
	Male(n)	Female (n)	
Poor oral hygiene	37(92.5%)	15(53.5%)	<b>.000**</b>
Hormonal disturbances	-	13(46.4%)	
Allergic reaction/mouth wash	1(2.5%)	-	
Allergic reaction	1(2.5%)	-	

Chemical irritation due to acidic foods	1(2.5%)	-	
Total	40	28	

In total of 68 subjects, majority of desquamative gingivitis was seen in males as compared to females. The etiological factors of DG were also investigated which revealed poor oral hygiene as the most common factor observed in both males 37(92.5%) and females 15(53.5%) followed by hormonal disturbances in females 13(46.4%), allergic reactions against the use of mouth wash in males 1(2.5%) and chemical irritation due to acidic foods 1(2.5%) as mentioned in table 2, the association of etiological factors with gender was found to be highly significant with p-value .000.



**Figure No.1: Showing Generalized desquamative gingivitis in a middle aged women**

### DISCUSSION

Desquamative Gingivitis is clinically presented in oral cavity as erythema, desquamation, erosion and blistering of attached and marginal gingiva. It is usually seen in broad age range which is 4<sup>th</sup> to 5<sup>th</sup> decade of life.<sup>9</sup> A large cohort study was conducted by JC Leao among Caucasian United Kingdom residents showed desquamative gingivitis with underlying pathologies was observed in 187 patients in the age ranged between 23 -93 years.<sup>3</sup> A descriptive study conducted in Chennai; India showed desquamative gingivitis to be more prevalent among 50 to 60 years of age group (Shamaa Anjum, 2020).<sup>10</sup> In support of previous studies a similar study was conducted in Palermo University, Italy from 2004-2007 which reported DG to be found in the age range of 13-85 years. (Lucio Lo, Russo, 2009).<sup>11</sup> Al-Abeedi in his review literature mentioned that the incidence of desquamative gingivitis was higher in 4<sup>th</sup> and 6<sup>th</sup> decade of life.<sup>12</sup> Research has shown that the desquamative gingivitis is seen after puberty, especially in individuals over 30 years of age. Study conducted in Poland showed that it was more prevalent in women than in men.<sup>13</sup>

In a study conducted at University of Minnesota observed that majority of DG patients were females (72.9%).<sup>13</sup> several other literatures have revealed female predilection. Increased prevalence of Desquamative gingivitis among females may be associated to the hormonal changes particularly due estrogen and progesterone which changes in its levels during puberty, pregnancy, menstruation and menopause in women. In this context similar study was also conducted at Khyber College of Dentistry, Pakistan reported female dominance.<sup>14</sup> A retrospective study conducted in Akdeniz University, Antalya, Turkey reported that desquamative gingivitis was clinically manifested with mucocutaneous diseases. This was more common in females (63%) than males (37%).<sup>15</sup> In the support of female dominance a retrospective clinicopathological study was carried out in Spain, in 550 patients, out of which 17.5% of the females presented desquamative gingivitis, vs. 4.7% of the males.<sup>16</sup>

Desquamative gingivitis is a clinical finding with several etiologies. The most common etiological factor includes oral lichen planus, cicatrice pemphigoid, although various other differential diagnoses may also exist.

Desquamative gingivitis was also reported in a study by Kousain Sehar which stated that DG was also observed in many other autoimmune and mucocutaneous diseases for instance: dermatitis herpetiformis, lupus erythematosus, pemphigus vulgaris, chronic ulcerative stomatitis and immunoglobulin A (IgA).<sup>17</sup> Other causative factors of desquamative gingivitis have been reported in dental patients. It may due to hypersensitive reaction of dental materials, mouth washes, drugs, chewing gums, cosmetics, cinnamon, sodium lauryl (an ingredient of toothpaste). Other possible causes of DG that present in erythematous and ulcerative lesions include systemic lupus erythematosus plasma cell gingivitis (PCG), granulomatous disorders for instance, oro-facial granulomatosis, Crohn's disease and sarcoidosis.<sup>18,19,20</sup>

Treatment of desquamative gingivitis depends on the definitive diagnosis of the lesion. The treatment options of DG include; thorough removal of dental plaque and calculus. Furthermore, control of local irritants such as poor oral hygiene, rough restorations, ill-fitting dentures must be carried out. Use of systemic or topical steroids is also recommended depending upon the severity of the condition.<sup>21</sup>

## CONCLUSION

For desquamative gingivitis proper history and detailed examination is mandatory. Desquamative gingivitis can be the clinical symptom/presentation of some dermatitis and mucocutaneous diseases and the underlying primary cause should be evaluated meticulously. Definitive diagnosis of DG should be made on

histopathological examination. Gingival lesions are controlled by maintaining oral hygiene and use of topical corticosteroids if necessary. In case of any underlying systemic disease, the case should be consulted with the physician.

### Author's Contribution:

Concept & Design of Study: Daud Mirza  
 Drafting: Saima Mazhar, Momin Marath  
 Data Analysis: Uzma Tariq, Aqib Sohail, Farzeen Tanveer  
 Revisiting Critically: Daud Mirza, Saima Mazhar  
 Final Approval of version: Daud Mirza

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