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Prevalence and treatment for cheilitis - A retrospective study

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ABSTRACT

Cheilitis also known as cracked lips is nothing but the inflammation of the lip causing dryness or peeling away of the skin. Aim of this study is to evaluate the prevalence and treatment for cheilitis among patients visiting Saveetha Dental College. Online database was used for retrieval of data. Case sheets of 86, 000 patients were reviewed among which 50 patients were recruited for the study who had cheilitis. Data such as age, gender and appropriate treatment given for the patient was noted. All the data collected was entered in Microsoft Excel Sheet. Statistical analysis was done. Rate of prevalence of cheilitis according to this study is 0.05%. Prevalence of cheilitis was most common among the age group of 36 - 45 years of age (24%). Females were mostly affected (26%). Clotrimazole mouth point (50%) was the most common treatment given for cheilitis. No statistical significance ($p > 0.05$) for the age and treatment options. Within the limits of this study females of the age group 36 - 45 years of age had the highest prevalence of cheilitis. Clotrimazole topical application was the most common followed by vitamin V12 complex for treatment of cheilitis.

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INTRODUCTION

Cheilitis is the inflammation of lips, which could either have an acute or chronic course, The inflammation primarily arises in the vermilion zone of the lip but may extend to the surrounding skin and less commonly to the oral mucosa.

Cheilitis is a general term and there are different types which are identified by their causes (Litaiem *et al.*, 2020; Lugović-Mihić, 2018). Few of the causes are: Contact irritants, Allergens, Chronic exposure to sunlight, nutritional deficiencies like vitamin B12, cutaneous defects, systemic illness, microbes (fungal mainly).

Types and etiology

Eczematons: Exogenous (allergens, irritants) or endogenous (atopic cheilitis)

Cracked lips: Frequent exposure to dry/hot winds leading to dry scaly lips (Griggs *et al.*, 2019).

Allergic Contact Cheilitis: Due to food dyes, mouthwashes, tooth pastes (Nyman *et al.*, 2019).

Atopic Cheilitis: Also known as angular stomatitis/perleche. Usually present at the angles of the mouth. Due to fungal infection or less commonly the nutritional deficiencies (Garbacz *et al.*, 2019).

Actinic Cheilitis: Due to atypical epidermal keratinocyte proliferation due to chronic sun expo-

sure. It is noted to be a premalignant condition and occasionally progresses to squamous cell carcinoma (Muse and Crane, 2019; Pires *et al.*, 2020).

Evaluation

The diagnosis of most cheilitis is based on clinical signs and a very careful anamnesis. The diagnosis of allergic contact cheilitis is confirmed by the history and a relevant patch test reaction. Patients with negative path testing are diagnosed with atopic cheilitis. However for cheilitis granulomatosa a biopsy is very much essential to confirm the diagnosis. Similarly, actinic cheilitis also requires biopsy. If all of the above is ruled out, one can suspect angular cheilitis. Any kind of nutritional deficiencies to be ruled out.

Cheilitis as a whole is a broad term which includes several entities. The role of the dentist not only lies in the diagnosis of cheilitis but also to educate the patient to take necessary steps to avoid recurrence. Recurrence is fairly common in almost all kinds of cheilitis. Avoidance of the offending agent leads to fewer and less severe recurrences (Müller, 2019).

Salient features of cheilitis include: Peeling away of the skin of the lips; they eventually become painful; at times it starts to bleed too.

Usually a patient reports to the dentist complaining of burning sensation which is reproducible when pressure is applied. It leads to difficulty in mastication, speech and loss of food intake. Therefore prompt diagnosis, treatment is necessary for management. Initially, the patient is started with conservative empirical therapy and once they fail to respond they have to be referred to an pathologist (Oza and Doshi, 2017).

Previously our team had conducted numerous clinical studies (Choudhury, 2015; Muthukrishnan and Kumar, 2017; Muthukrishnan *et al.*, 2016) and systematic reviews (Chaitanya, 2017; Chaitanya *et al.*, 2018; Maheswari *et al.*, 2018) and surveys (Warnakulasuriya and Muthukrishnan, 2018; Subashri and Maheshwari, 2016) and original studies (Patil *et al.*, 2018; Rohini and Kumar, 2017; Steele *et al.*, 2015) over the past 5 years. Now we are focussing on Retrospective study. The idea for this study stemmed from the current interest in our community.

Thus this study aims at assessing the prevalence and treatment of cheilitis among patients visiting the Saveetha Dental College, Chennai.

MATERIALS AND METHODS

Study setting

This study was carried out in an institutional setting with the advantage of data availability of similar ethnicity and the disadvantage of restricting the study only to the South Indian population. This retrospective cross-sectional study included 50 patients who were diagnosed for cheilitis during the time period July 2019 - March 2020. Ethical approval was obtained from the institutional ethical board.

Data Collection

Online database was used for retrieval of data. Case sheets of 86, 000 patients were reviewed among which 55 patients were recruited for the study who had cheilitis. Data such as age, gender and appropriate treatment given for the patient was noted. All the data collected was entered in Microsoft Excel Sheet.

Statistical Analysis

The data was statistically analyzed using the Statistical Package for the Social Sciences (SPSS) software (version 20.0). Both descriptive and inferential statistics were employed in the study. Chi-square test was done for inferential statistics. The level of significance for the results was set at $p < 0.05$. The results obtained were presented as graphs.

RESULTS AND DISCUSSION

The results inferred from the study is as follows:

It is seen that the most common prevalence of cheilitis was among the age group 36 - 45 years. (22%) [Figure 1] prevalence was higher among the males when compared to females. [Figure 2] Clotrimazole mouth paint (50%) was the most common treatment option preferred for cheilitis followed by vitamin B12 complex. [Figure 3] No statistical significance for the association between age and treatment for cheilitis ($p = 0.74$) [Figure 4] No statistical significance for the association between gender and treatment for cheilitis ($p = 0.8$) [Figure 5].

In Figure 1, X-axis shows the age of the patient and Y-axis shows the percentage of cheilitis. It is seen that the highest prevalence of cheilitis is among the age 36- 55 years(22%) and least among the age group 18 -25 years(4%). In Figure 2, X-axis shows the gender of the patient and Y- axis shows the percentage of cheilitis. It is evident that males (52%) are most commonly affected by cheilitis compared to females(48%). In Figure 3, X-axis shows the treatment given to the patient and Y- axis shows the percentage of treatment. Clotrimazole mouth paint(50%) was the most common treatment given for chelitis followed by vitamin B12 complex (28%). The least preferred was corticosteroid(2%). In Figure 4, X-axis indicates the age of the patient and Y-axis indicates the frequency of the preferred treatment.

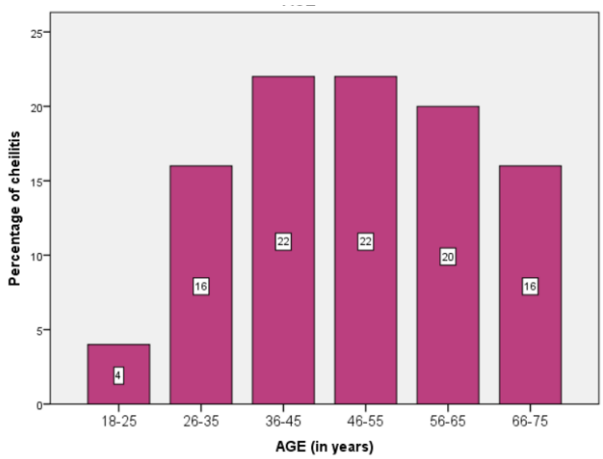

Figure 1: Bar graph depicting the distribution of Cheilitis according to age

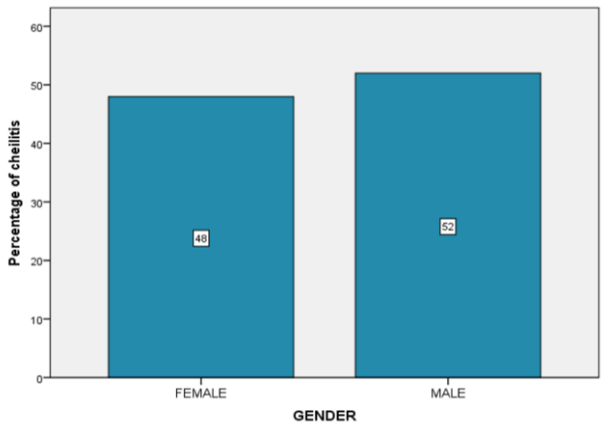

Figure 2: Bar graph depicting the distribution of Cheilitis according to gender

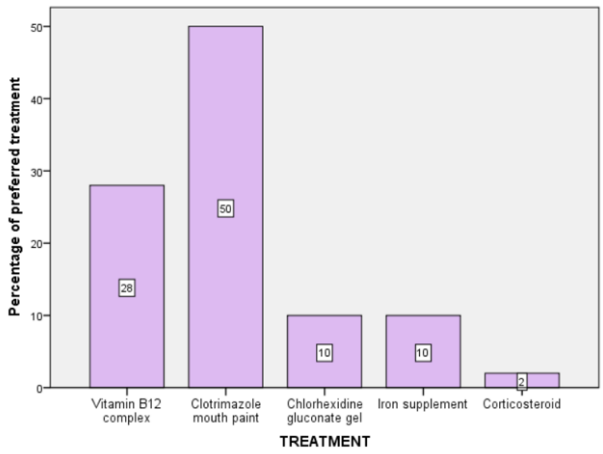

Figure 3: Bar graph depicting the distribution of treatment options for Cheilitis

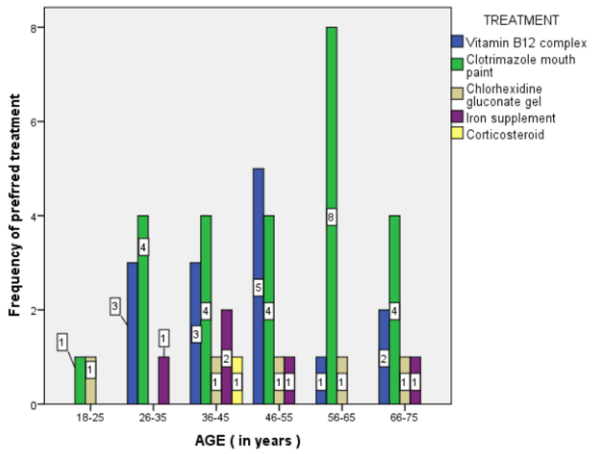

Figure 4: Bar graph depicting the association between age and treatment for cheilitis

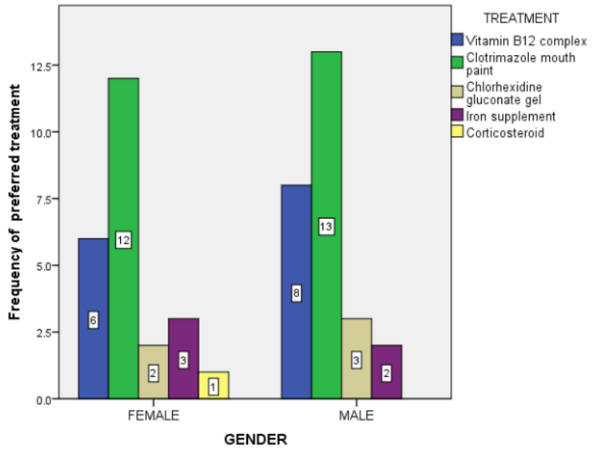

Figure 5: Bar graph depicting the association between gender and treatment for cheilitis

Clotrimazole mouth paint(n=8) is given the maximum for patients among the age group 56-65 years. Whereas it's the least (n=1) for 18-25 years of age. However, it is statistically insignificant.(Chi-square test , p=0.74, p>0.05). In Figure 5, X-axis indicates the gender of the patient and Y-axis indicates the frequency of the preferred treatment. Clotrimazole mouth paint is the most common treatment for both males(n=13) and females(n=12).Corticosteroid was given only to the male patient according to this study. However, it is statistically insignificant.(Chi-square test , p=0.80,p>0.05).

According to Webb et al. and Taylor et al. (Taylor *et al.*, 2000; Webb *et al.*, 2005) in their study reported, prevalence of cheilitis at an older age group (> 60 years of age). This is in contradiction to the results of the current study. Prevalence among the older age group might be due to increased tensile forces due to poor muscular incoordination; dentures worn by the patients (Federico *et al.*, 2020). Symptoms are usually often mild and the condition

can go unnoticed for years before they are brought to the attention of a medical provider. Nevertheless, immune and nutritional status is imperative for effective treatment. According to this study, males reported an increased prevalence of cheilitis. Similar results were inferred by Dorey et al.; Ritchie et al.; Makila et al. in their studies (Dorey *et al.*, 1985; Mäkilä, 1969; Ritchie and Fletcher, 1973). This is so because males have reported poor oral hygiene and have noticed increased microorganisms in the cultures. This might lead to angular cheilitis which has a microbial etiology. Moreover, oral conditions of these patients predispose to their multiplication and can cause the disease. However, hormonal variations such as menstruation, pregnancy and anemia (Ohman *et al.*, 1986). Treatment for cheilitis varies with its etiology. For angular cheilitis, topical antifungal agents are prescribed. In case of nutritional deficiencies, vitamin B12 supplements or iron supplements are prescribed. Similar results were reported by Epstein et al. Schwab et al. in their studies (Epstein *et al.*, 2002; Schwab and Brasher, 1977). The entire etiopathogenesis should be evaluated before treating the cheilitis. Because of many causes of cheilitis, the management is best done with an interprofessional team. The key is to make the diagnosis and find the cause. This study was not free from all limitations. It had its own specifications. The criteria of selection was non-standardised. No information regarding the other systemic factors which might be a confounding factor was not included. Also, the sample size was much smaller. Future scope of the study will be extended with a larger sample size and including the efficacy of various treatments and it's recurrence will be included.

Because of the many causes of cheilitis, the management is best done with an interprofessional team. The key is to make the diagnosis and the cause. For patients with chronic actinic cheilitis, referral to a plastic surgeon, dermatologist and oncologist is recommended as the treatment may vary from surgery, topical chemotherapy, laser or photodynamic therapy. Acute cheilitis can be managed by the primary care provider or nurse practitioner by offering the patient topical agents. Patients with allergic cheilitis may require topical steroids and infectious causes may require antibiotics. Recurrence is fairly common in almost all kinds of cheilitis. Avoidance of the offending agent leads to fewer and less severe recurrences.

Cheilitis is a highly manageable condition. AC is mostly curable and poses no inherent risk to life and rarely results in permanent disfigurement. It usually improves within the first several days of successful treatment and typically resolves by two weeks, thus scheduling a follow up then. Chronic cases can provoke atrophy or granulation formation at the angles of the mouth.

CONCLUSION

Within the limits of the study, prevalence of cheilitis was 0.05 %. It is seen that cheilitis mostly affects the males of the age group 36 - 45 years. Clotrimazole is the most common treatment given for cheilitis.

Author's Contribution

First author (Hemashree J) performed the analysis, and interpretation and wrote the manuscript. Second author (Dr. Manjari) contributed to conception, data design, analysis, interpretation and critically revised the manuscript. Both the authors have discussed the results and contributed to the final manuscript.

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Conflict of Interest

The authors declare that there is no conflict of interest for this study.

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