

Prevalence of recurrent herpes labialis in Western Maharashtra

Ashwini Rani S. R¹, Girish Suragimath², Vijaya Rajmane³, Yojari Rajmane¹

Departments of ¹Oral Medicine and Radiology and ²Periodontology, School of Dental Sciences, Krishna Institute of Medical Sciences Deemed University, Satara, ³Department of Microbiology, Prakash Institute of Medical Sciences, Islampur, Maharashtra, India

Abstract

Background: Recurrent herpes labialis (RHL) is a disorder with serious health and social consequences and which affects most of the adults. However, high degree of research paucity pertaining to its prevalence was observed, especially from India.

Objective: The objective of this study was to assess the prevalence of RHL in western Maharashtra.

Materials and Methods: In this prospective study, 1368 patients of either sex, satisfying the inclusion criteria, were included in the study after screening 34,560 patients for RHL lesions. Demographic data such as age, gender and risk factors, namely stress, menstruation and common cold, were recorded. Further, data regarding history of itching, fever, malaise and burning on lips followed by vesicles and frequency of lesions and duration were also recorded. After clinical examination site, size and nature of lesion were noted on a clinical pro forma. Results were compared statistically, and $P < 0.05$ was considered statistically significant.

Results: The majority of the patients were in the age group of 30–39 years, with a female predominance (63.89%) (male:female = 0.33:0.59). Stress (43%) was the most common risk factor in the occurrence of RHL, followed by disturbed menstruation cycle (21%). Most of the patients had two episodes of RHL (42.4%), whereas some had just one episode of recurrence (25.4%) in the past 1 year. The most commonly occurring location for RHL was upper lip (47%), especially the left side (19.1%) and right side (18.2%) of the upper lip. The overall prevalence rate of RHL in our study was 3.9%.

Conclusion: An established prevalence (3.9%) of RHL occurs among patients in western Maharashtra.

Keywords: Herpes labialis, lip, prevalence, recurrence, risk factors

Address for correspondence: Dr. Girish Suragimath, Department of Periodontology, School of Dental Sciences, Krishna Institute of Medical Sciences Deemed University, Karad, Satara - 415 110, Maharashtra, India.

E-mail: drgirishsuragimath@gmail.com

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INTRODUCTION

Recurrent herpes labialis (RHL) is a condition of painful oral lesions with distressing frequent recurrence, which is debilitating to the patient as well as to physicians. The average incidence of RHL is 1.6/1000 patients/year and

its prevalence is 2.5/1000 patients/year.^[1] It may vary significantly between countries and subpopulations and is usually high in females.^[2] Approximately one-third of all infected patients suffer more than one relapses.^[3]

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Among the eight infective herpes stains, RHL is caused by herpes simplex viruses. HSV-1 causes gingivostomatitis, herpes labialis and herpes keratitis, and HSV-2 usually causes genital lesions.^[4] RHL is characterized by a rash of the skin and mucous membranes such as lips along with blisters and erythema. They are further accompanied and preceded by burning pain. It is usually harmless but an annoying ailment, especially in immunocompromised patients. It spontaneously heals within 10 days. It is contagious for those with weakened immune systems (HIV infection or patients undergoing chemotherapy) and for persons who have not been previously infected by the virus.^[5]

The primary infection with (HSV 1) is usually observed in children, teenagers and adults. Consequently, antibodies against the virus are already present in around 80% of adolescents. However, due to changed socioeconomic circumstances, older individuals are nowadays getting infected first in comparison to the case some decades ago. Due to this epidemiologic shift, the more common primary infection is observed in the form of genital herpes due to orogenital contact during oral sex.^[6]

After primary infection, the virus lies latent in the trigeminal ganglion. Risk factors such as menstruation, fever, stress, sunlight and upper respiratory infections reactivate the virus, which attacks the epithelial cells of oral mucosa through the sensory nerve causing relapse of infection. Relapses are identified by burning skin rash around the mouth (vesicles, papules and crusts) and on the lips. About 25% of relapses show healing even before any blister's formation. After the age of 35 years, the number of relapses decreases.^[7]

Investigations on RHL were mainly focused on lifetime occurrences of the disease and are not recent.^[8] Especially in India, the annual prevalence of the RHL was not reported. The study was aimed to assess the prevalence of RHL in western Maharashtra during the period of 1 year.

MATERIALS AND METHODS

Study design

With the institutional ethics committee approval, this prospective study was conducted in the Department of Oral Medicine and Radiology at a private medical college in Karad (Maharashtra) over a period of 1 year (January 2018–December 2018). Written informed consent was obtained from all the patients included in the study.

Selection criteria

One thousand three hundred and sixty-eight patients of either sex aged between 20 and 70 years, with a history of RHL in the previous 12 months, visiting the outpatient department,

were included in the study. RHL was characterized by recurrent appearances of fluid-filled blisters adjacent to or on the vermilion lips border.^[9] Patients with other herpes simplex virus type 1 (HSV-1) infections and other systemic diseases were excluded from the study. Immunocompromised patients, patients with prior history of chemotherapeutic agents and diabetic patients were also excluded from the study.

Data collection

Demographic data such as age, gender and risk factors, namely stress, menstruation and common cold, were recorded. Further, data regarding history of itching, fever, malaise, burning on lips followed by vesicles and frequency of lesions and duration were also recorded. After clinical examination site, size and nature of lesion were noted on a clinical pro forma.

Statistical analysis

Software R version 3.6.0.(USA). was employed to analyze the data. The categorical variables were presented as frequency and percentages. Qualitative variables were analyzed using Chi-square test of independence. Data were considered statistically significant when $P \leq 0.05$.

RESULTS

Out of total of 34560 screened patients, only 1368 patients were reported with RHL lesions, accounting for 3.9% prevalence rate of RHL in our study. Table 1 presents the age and gender distribution of study participants.

The majority of the patients were in the age group of 30–39 years. Further, the majority of the patients were females indicating female predominance (male:female = 0.33:0.59) [Table 1].

Stress was observed to be the most common risk factor in the occurrence of RHL, followed by disturbed menstruation cycle [Table 2].

Most of the patients had two episodes of RHL, whereas some had just one episode of recurrence in the past 1 year [Table 3].

The most commonly occurring location for RHL was upper lip, especially the left side and right side of upper lip. Further, on the left and right sides of lower lip and right side of commissure lip also, this recurrence was frequent [Table 4].

DISCUSSION

RHL, also known as “cold sores” or “fever blisters,” is a common recurrent infection. It is a manifestation of the herpes simplex virus (Type I) on the perioral area or lips.^[5] Due to its recurrent nature, it becomes essential to perform

Table 1: Demographic profile of patients

Age (in years)	(n=1368), frequency (%)		
	Male	Female	Total
20-29	208 (15.20)	280 (20.46)	488 (35.67)
30-39	148 (10.81)	386 (28.21)	534 (39.03)
40-49	56 (4.09)	95 (6.94)	151 (11.03)
50-59	52 (3.80)	73 (5.33)	125 (9.13)
60-69	30 (2.19)	40 (2.92)	70 (5.11)
Total	494 (36.11)	874 (63.89)	1368 (100)

Table 2: Risk factors for recurrent herpes labialis in patients

Risk factors	n=1368, frequency (%)
Stress	588 (43)
Menstruation cycle	287 (21)
Common cold	123 (9)
Fever	192 (14)
Exposure to outdoor activities in sunlight	178 (13)
Total	1368

Table 3: Number of episodes of recurrent herpes labialis in patients

Number of episodes of RHL (in 1 year)	n=1368, frequency (%)
1	347 (25.4)
2	580 (42.4)
3	124 (9)
4	119 (8.7)
5 and above	198 (14.5)
Total	1368 (100)

RHL: Recurrent herpes labialis

Table 4: Location of occurrence of recurrent herpes labialis lesions

Location on lip	Location (n=1368), frequency (%)		
	Upper lip	Lower lip	Commissure lip
Right side	249 (18.2)	166 (12.1)	167 (12)
Midline	133 (9.7)	57 (4.2)	27 (1)
Left side	261 (19.1)	174 (12.7)	134 (9)
Total	643 (47)	397 (29)	328 (22)

prevalence studies. Hence, the present study was conducted to evaluate the prevalence of RHL in western Maharashtra.

In our study population, RHL was more prevalent in the age group of 30–39 years and was more common in females than in males indicating female predominance (male:female = 0.33:0.59). This is in accordance with the study conducted by Mathew *et al.*^[10] prevalent in the 21–40 years' age group and was more common in females than in males (0.9% and 0.4%).^[10]

Several risk factors are assumed to be related to RHL recurrences, including stress, female gender, outdoor activities in sunlight, older age, white race/ethnicity, fever and frequent upper respiratory infections.^[5] Here, stress was the most common risk factor, followed by disturbed menstruation cycle in the occurrence of RHL. This indicates that the prevalence of RHL is more in females.

Similar results were observed by Katz *et al.*^[11] in their study on RHL.

Most of the patients had two episodes of RHL, whereas some had just one episode of recurrence in the past 1 year in the presented study. This is in line with the study findings from previous literature in which 51.3% and 63% of patients reported at least two recurrences per year.^[8,11] The reactivation of a latent virus is being represented by RHL. It is a conundrum for researchers that why patients with already developed antibodies positive to RHL have recurrences. The pathophysiology of recurrence is still unclear and is usually related to failure in focal immunity.^[12]

RHL is usually marked by recurrent fluid-filled blister appearances adjacent to or on the vermilion border of the lips. In this study, the most commonly occurring location for RHL was upper lip, especially the left side and right side of upper lip. Further, on the left and right sides of lower lip and right side of commissure lip also, this recurrence was frequent. This is in accordance with previous literature.^[13]

The overall prevalence rate of RHL in our study was 3.9%, with prevalence being significantly higher among females. Almost similar prevalence rates were observed by Katz *et al.*,^[11] as they reported a 5.4% prevalence rate which was higher for females, respectively.^[11] However, a study by Mathew *et al.*^[10] showed opposite results as the prevalence of RHL with positive history in their study was 0.58%.^[10] This difference in rate of prevalence could be attributed to the small sample size of the comparative study.

The presented study is, however, subject to some limitations. The association of rate of recurrence with rate of prevalence was not carried out. More extensive prevalence and etiologic studies of RHL are needed to correlate the type of lesion and recurrences. Future studies are obligatory to do additional research for investigating the possibility of common underlying pathologic conditions that might lead to RHL.

CONCLUSION

This study demonstrated an established prevalence (3.9%) of RHL among patients in western Maharashtra. The prevalence of RHL was higher among females as compared to males. RHL was more prevalent in the age group of 30–39 years, and most of the patients had two episodes of RHL in the past 1 year. The most commonly occurring location for RHL was upper lip, especially the left side and right side.

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Conflicts of interest

There are no conflicts of interest.

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