

# Recurrent Herpes Labialis in a Sample of Students in the College of Dentistry of Baghdad University

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**Abstract:** Herpetic infections are very common viral infections in humans. This study has been carried out to determine the prevalence and to recognize the risk factors associated with recurrent herpetic infections of the lips and oral cavity. It is a cross sectional analysis, which was performed on the students of Baghdad College of Dentistry in 2014. In this study, 110 students participated in the research and those with a positive history of herpes labialis were asked to fill an additional questionnaire, which included more specific questions regarding the features of the infection and the risk factors. The study sample was composed of 52% female and 48% male individuals with a mean age of 22.5 years. About 1% percent of the study subjects had a herpetic infection during the time of the study, while 22.7% had at least one infection within their lifetime. The lips were the main site of the lesion with a percentage of 92% while intraoral lesions accounted for the remaining 8%. Most patients had a family history of herpes and associated the recurrence with stress as the main trigger followed by fever, while irritating food had the least effect. The main conclusion of this study is that Baghdad shows a moderate prevalence of herpes labialis compared to other regions, and that a positive family history of herpes was the main risk factor with stress being the main trigger for recurrence.

**Keywords:** Herpes, cold sores, prevalence, risk factors, recurrence

## 1. Introduction

Herpes labialis or cold sores are caused predominantly by herpes simplex virus type-1 (HSV-1) and rarely by type 2 (HSV-2), which can result in significant irritation, pain, discomfort and worry<sup>[1]</sup>. Primary HSV-1 infection most commonly occurs in children and young adults as gingivostomatitis, pharyngitis, or tonsillitis and is readily transmitted through oral secretion<sup>[2]</sup>.

During primary infection, the virus is transported via sensory ganglia to establish a chronic latent infection, most commonly in the trigeminal, cervical, or lumbosacral ganglia<sup>[3]</sup>. Retrograde transport of HSV along nerves and the establishment of latency are not dependent on viral replication in the skin or neurons and it therefore follows that neurons can be infected in the absence of symptoms<sup>[4]</sup>.

Periodically, HSV may reactivate from its latent state and virus particles then travel along sensory neurons to the skin and other mucosal sites to cause recurrent disease episodes that can be associated with lesions or asymptomatic shedding of the virus and in either scenario is allied with a period when virus can be transmitted to a new host<sup>[5]</sup>.

In an immunocompetent host, herpesvirus infections can often cause debilitating diseases, which may have psychological and physical sequelae in persons with frequent recurrences<sup>[6]</sup>. Herpetic infection is considered to be the most common form of infections in human since it is estimated that 60%–95% of the population is infected by one or more viruses of the herpes viridae family<sup>[7]</sup>. The recurrent infections by the simplex herpes type-1 occur monthly for some people while others may have an episode of recurrence every 5-10 years, and in most cases the infections with this virus are either without or with lowest clinical signs<sup>[8]</sup>.

Numerous well-documented trigger factors are associated with HSV recurrence and they include sunlight, trauma, menstruation, fever, immunosuppression, decompression of the trigeminal nerve, and irritation by dental instruments<sup>[9,10,11]</sup>.

Resolution of the infection usually occurs uneventfully within two weeks in the immunocompetent patient and rarely, a recurrent infection affecting the immunocompetent patient may mimic a primary infection<sup>[12]</sup>.

This study was performed in order to evaluate the prevalence, features and aggravating factors associated with the infection among the students of Baghdad's college of dentistry.

## 2. Materials and Methods

In this analytical descriptive study the total study sample was composed of 110 students from the College of Dentistry in the University of Baghdad. After obtaining their consent to participate in the study, they were asked to fill a questionnaire that included a section for biographic data and another section regarding the general medical history of the patient, family history and specific questions about the history of the first herpetic infection, the time since the last recurrence, the usual site and number of lesions, Annual frequency of recurrence, associated risk factors including stress, irritating food, fever, trauma, sunburn and cold weather, and a question regarding the usual management of the lesion.

The forms were then collected and the data analyzed statistically to obtain the results.

## 3. Results

The number of participants in this study was 110 students, 52% of them were females and the remaining subjects were

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males. The mean age of the sample was 22.5 years with a standard deviation of 1.166.

Twenty five students (22.72%) reported having at least 1 infection throughout their lives, 56% of the affected individuals were females and 44% were males.

Two persons (1.18%) had a recurrence during the time of the study while 7.27% had a herpetic infection during the last 12 months.

Among the patients with a history of recurrent herpes labialis, 64% had a positive family history of herpes.

Most common risk factors associated with recurrence were stress (48%), fever (44%), and irritating food (8%).

The lesions were mostly on the lips (92%) while only 8% were intra oral lesions.

Seventy six percent (76%) of subjects had only a single lesion in each episode of recurrence while 12% described having 2 lesions at the same time and 12% had multiple ones.

#### 4. Discussion

The percentage of people who experienced a herpetic infection is 22.72% according to this study. A study on students from Carolina university showed that 28% had a history of infection<sup>[13]</sup>, which is close to the result of this study.

A study among soldiers in Canada was carried out and 15% of subjects had a positive history of the infection<sup>[14]</sup>, while in study from Tehran among students, 65.8% had a history of the infection<sup>[15]</sup>.

The results of these different studies may be the result of a difference between societies regarding exposure to the virus, the degree of its spread within the society and age at which first contact with the virus happens<sup>[16]</sup>.

At the time of this study, only 1.81% were having a recurrent lesion. In a study from Tehran in 2002, that percentage was 1%<sup>[17]</sup>. While another study from the United States on army personnel indicated that 4% had the infection during the time of the study. Both of these results are compatible with ours and show that only a small percentage of people have a lesion at any particular time despite its wide spread, this may be due to the fact that the lesion only lasts a few days and then completely resolves.

A study from the USA showed that there is a correlation between the infection and the family history<sup>[18]</sup>, which is compatible with our study in which 64% of the affected students had a positive family history

The other variables that we studied such as number of lesions, the presence or absence of intraoral lesions, type of management, and risk factors such as sun exposure and weather did not seem to give a meaningful correlation.

#### 5. Conclusion

The results of this study lead to the conclusion that the prevalence of recurrent herpes labialis in Baghdad is comparative to what is found in the literature. There is a wide difference in prevalence among different societies and cultures but the main risk factors are the same. A positive family history of recurrent herpes labialis is often reported by affected individuals, with episodes of recurrence being usually triggered by stress, fever, and to a lesser degree, by irritating food, trauma and dental treatment.

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