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# Efficacy of topical application of etamsylate in herpes simplex labialis

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## ABSTRACT

Herpes simplex virus type-1 (HSV-1) causes a wide variety of clinical disorders of major public health concern. HSV-1 infections are common in oral and perioral area. We report the short-term efficacy of topical application of etamsylate in herpes simplex labialis lesion. Mucosal lesion resolved after 4 days of treatment leaving behind no apparent signs of cosmetic disturbance.

**Keywords:**

Herpes simplex virus type-1. Etamsylate. Topical application. Fibroblast growth factor

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## Introduction

Herpes simplex labialis, also known as a “cold sores” is a common disease of the lips caused by herpes simplex virus type-1 (HSV-1), an infectious agent widely spread throughout the world. The global seroprevalence of HSV-1 in adults is around 90%, of whom 30% will experience recurrent outbreaks of the disease (1). Infection by HSV-1 causes painful vesicular eruptions, covered of unsightly crusts, which causes cosmetic disfigurement and psychosocial distress. The typical duration of the natural course of untreated herpes simplex labialis is 7 to 10 days and sometimes up to 15 days (2). Topical antiviral agents and other interventions either showed no efficacy or leave behind lasting anti-aesthetic scars and persisting recurrence rates. The development of novel strategies to combat HSV-1 is, thus, of global public-health relevance. In this report we show the efficacy of topical etamsylate application in solving herpes simplex labialis infection and subsequent lesions.

## Case presentation

A 44 years old woman presented with a herpes labialis lesion in her right labial commissure (Figure1). After discussing the various treatment options, the patient opted to try topically administration of etamsylate and signed an informed consent. Patient self-administered etamsylate (OM Pharma Switzerland) in a 12% glycerin solution three times a day along four days. After one day of treatment patient was free of pain. Three days afterwards the herpetic lesion healed, leaving behind minimal/non-appreciable cosmetic alterations (Figure 1). No local irritations or other adverse events were observed. She reported no recurrent episodes of herpetic lesion in her right labial commissure after several months of treatment.

## Discussion

Herpes simplex labialis is characterized by recurrent vesicular eruptions primarily on the lips and perioral skin. This condition is contagious, can cause significant discomfort and pain, and cause long lasting unsightly scars that sometimes favor new infections. Episodes of herpes simplex labialis typically start with a prodromal phase of local pain, tingling, and burning, which is followed by erythematous and papular phases that subsequently evolve towards the development of fluid-filled blisters. Finally, herpes simplex labialis evolves to the incrustation and, finally, the healing phase. Proinflammatory host response in herpes simplex virus infection plays an important role in lesion development and progression.In primary infections, lesion development, progression and resolution are closely correlated with viral replication. In recurrent disease, lesion development and progression depend primarily on the proinflammatory host response (4-6). The central role of inflammation in lesion progression in recurrent disease may explain the limited efficacy of current antiviral monotherapy on herpes simplex labialis and suggests a new approach for more effective treatment. Current clinical anti-herpes virus drugs are based on guanosine analogues, which interrupt the viral replication. The widespread use of this sort of compounds have been associated with the emergence of drug-resistant HSV-1 strains (7). On the other hand, topical administration of these compounds, in the case of herpes simplex labialis, only moderately reduces the average healing time, when compared with controls (8).

The discovery of new drugs based on other mechanisms of action may open new avenues to improve the current status of the available pharmacological arsenal to treat HSV-1 infections. Cell attachment and entry represent the first essential steps of viral infection. It has been proposed that an attractive new strategy may be developed targeting the fibroblast growth factor (FGF) signaling system.

Activation of this system is quite strictly dependent on heparin and heparan sulfates and hindered by inactive chemical analogs of

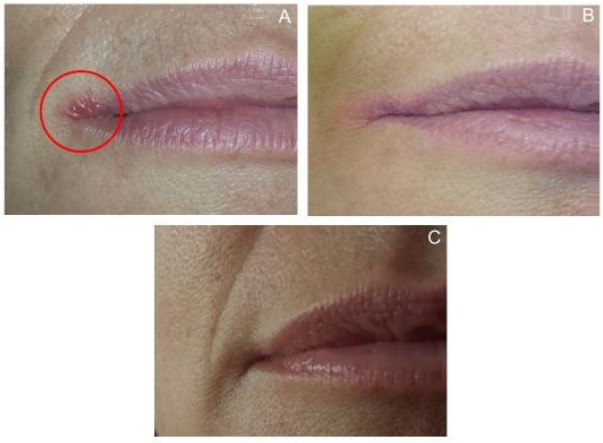


Figure 1

**Figure 1** Appearance of herpes simplex labialis lesion treated by local application of etamsylate at baseline (A), at two days (B) and at four days (C). Red circle indicates right labial commissure.

these glycosamino glycans, like dobesilic acid, the active principle of etamsylate (9). Experimental evidence suggests that HSV-1 uses FGF and its receptor (FGFR) for entrance into cells (10-12). Furthermore, it has been demonstrated that the polysulfonated compound suramin, although a poor inactive analog of heparin and heparan sulfate (13) has antiviral activity by blocking the binding of HSV-1 to cell membrane sulfated glycosamine glycans (14). In this report we show the safety and short-term effectiveness of etamsylate to prevent the development of herpes simplex labialis lesions (progression to vesicles, ulcers and crusts). Additionally, the anti-inflammatory activities of etamsylate (15) may also contribute to its efficacy.

Recently an article has been published emphasizing that herpesviridae seem involved in the onset and progression of Alzheimer's disease (16). The treatment described in our report might afford a certain protection against the development of this devastating neurological disease, by the efficacious shortening the lip viral infection and damping its intensity.

**Conflict of interest:** None

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