Sodium lauryl sulphate and its effects on patients with Aphthous stomatitis

Rinieshah Nair R.Baskran,
Bachelor of Dental Surgery (year 1)
Saveetha Dental College,
Chennai-600077

Dr. Nithiya (CO AUTHOR)
Professor
Department of Dental Anatomy
Saveetha Dental College and Hospitals
No.162, PH road,
Chennai-600077.

Aim: To investigate the effects of sodium lauryl sulphate on patients with Aphthous stomatitis.
Objective: To understand if sodium lauryl sulphate is a chemical composition that can assist in curing Aphthous stomatitis.

Introduction

Sodium Lauryl Sulphate (SLS) is a detergent and surfactant which essentially means that it breaks surface tension and separates molecules in order to allow better interaction between the product and a surface. (1) This in turn creates a lather which makes products such as shampoo and toothpaste more effective cleaners. So effective and so inexpensive is Sodium Lauryl Sulfate that it's found in a number of industrial cleaning agents such as engine degreaser and industrial strength detergents.(2) It's also widely used as a skin irritant when testing products used to heal skin conditions. Aphthous stomatitis is widely known as oral ulcers and is popular for the pain it causes. This condition is a recurring condition and now bears the name Recurrent Aphthous Stomatitis (RAS). (3,4)The RAS causes many difficulties like difficulty in sleeping, eating and talking. There are many causes for this condition. It includes genetical inheritance, menstrual cycle, disruption in the diet, and stress (5,6). Cigarette smoking, trauma of oral tissues and allergic reactions can also cause ulceration. In other studies, there have been events where the effect of SLS-free dentifrice is not as good as it should have been. However, SLS is really bad for the whole body.(7) This study will relate the amount of SLS on patients in Saveetha Dental College with Aphthous Stomatitis.

Materials and methods

A visit was made to the Saveetha Dental College clinic and patients with ulcers in the oral cavity were chosen. This study was done by using two types of dentifrices that are commercially available. The first type is an SLS free dentifrice, the second is a dentifrice with 1.5% of SLS content. Both the dentifrices were put in white tubes each to avoid being found out by the dentists and the patients. During this study, the patients were given a consent form to fill up and were told to not use any other dentifrice except the ones that the assigned dentist from Saveetha Dental College provide.

The patients were divided into two groups of 30. Group 1 used the SLS free dentifrice while group 2 used the dentifrice that contained 1.5% of SLS. The duration of this survey was 6 weeks. The patients were asked to keep a record of the condition of the ulcers. For that, they were given a form that required them to fill up every day, regarding the scale of pain and presence of ulcers in the oral cavity.

Evaluation of the effect of SLS on oral ulcer.

Name: Group: 1 / 2

Parameters	Weeks
Number of ulcers	
Duration of ulcers	
Scale of pain	
Number of ulcers	
Duration of ulcers	
Scale of pain	
Number of ulcers	
Duration of ulcers	
Scale of pain	
Number of ulcers	
Duration of ulcers	
Scale of pain	

Parameters	Weeks
Number of ulcers	
Duration of ulcers	
Scale of pain	
Number of ulcers	
Duration of ulcers	
Scale of pain	
Number of ulcers	
Duration of ulcers	
Scale of pain	

Parameters	Weeks
Number of ulcers	
Duration of ulcers	
Scale of pain	
Number of ulcers	
Duration of ulcers	
Scale of pain	
Number of ulcers	
Duration of ulcers	
Scale of pain	

Results

60 people completed the evaluation form
Group 1 involved patients with ulcers who used SLS free dentifrice. The results are tabulated in the table below.

Group 2 involved patients with ulcers who used 1.5% SLS containing dentifrice. The results have been tabulated in the table below.

The results concluded that the SLS free dentifrice and the dentifrice containing 1.5% SLS had no significant effect on ulcers. The pain scale however, was lower for the patients belonging to group 1 compared to group 2. This deduces that SLS does not really do anything to treat ulceration, but prolongs the pain of ulceration. During the period of this research, the patients did not complain of any discomfort experienced when using the dentifrices provided.

Through the connective tissue, the prevention of foreign substances can be prevented from entering the oral epithelium. Therefore, the strength of the epithelium is very vital in maintaining the oral health. Sodium lauryl sulphate however damages the oral epithelium, gradually denature get the glycoproteins present. This may increase the pathogens is of ulceration.

GROUP 1
The duration of ulcers was short

GROUP 2
The duration of ulcers was longer than the duration experienced by group 1.

The results obtained were a little bizarre, in contrary to expectations. SLS is an anti-bacterial, anti- plaque agent. Therefore, it should reduce the ulceration drastically. However, there are no records of systemic predisposing and precipitating factors of SLS and the adverse effects of SLS will cause the disease to fluctuate.
In other studies, the patients using SLS containing dentifrice had no ulcers while the patients who used SLS-free dentifrice still had ulcers. This was seen in Healey's study in the year 1999. (8,9,10)
From this study, the conclusion that can be drawn is that the usage of SLS-free dentifrice will reduce the sufferings of the ulcers compared to SLS containing dentifrice.

Conclusion
To sum it all up, SLS does not help in the reduction of oral ulceration but increases the pain level by causing irritation. Therefore, we should all use dentifrice that does not contain SLS to shorten the ulceration period and improve the quality life and make the better a better place to live in.

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