



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1181462>Available online at: <http://www.iajps.com>

Research Article

**LIQUORICE MOUTH WASHES AS TREATMENT FOR MOUTH
ULCER****Salwa Khalil and Khidir A.M. Hassan**Department of pharmaceutics, Faculty of Pharmacy, University of Science & Technology,
Omdurman-Sudan**Abstract:****Background:**

Mouth ulcer is small painful ulcers which typically have a red border and yellow-gray centres. Mouth ulcers can be treated by topical antihistamines, antacids, and corticosteroids.

The purpose of this study is to formulate the liquorice as mouth wash and to assess if the liquorice is effective in treatment of mouth ulcer or not.

Method:

The liquorice was extracted and formulated as mouth wash.

Clinical trial was done by applied the mouth wash to patients suffering from stomatitis mouth ulcer.

The patients were followed up for three days.

Results: In most cases, patients felt better since the first day of treatment and complete healing was achieved by the end of day three.

Conclusions:

According to the results of the study, liquorice mouthwash is effective in treatment of stomatitis mouth ulcer

Key Words: liquorice, Mouth ulcer, stomatitis

Corresponding author:**Khidir A.M. Hassan,**

Department of pharmaceutics,

Faculty of Pharmacy,

University of Science & Technology,

Omdurman-Sudan

E-mail: khidiragab@yahoo.com

QR code



Please cite this article in press as Salwa Khalil and Khidir A.M. Hassan., *Liquorice Mouth Washes As Treatment for Mouth Ulcer*, *Indo Am. J. P. Sci*, 2018; 05(02).

INTRODUCTION:

Glycyrrhiza glabra: The genus Glycyrrhiza includes about 20 species native to Europe, Asia, North and South America as well as Australia. The English name licorice is derived from "liquiritia,"

Liquorice is a hardy herb or under shrub, erect grows to about 2m height. The roots are long, cylindrical, thick and multibranching. The used part of the plant is the root and rhizomes. A number of components have been isolated from liquorice, including a water-soluble, biologically active complex that accounts for 40-50 percent of total dry material weight. This complex is composed of triterpene saponins, flavonoids, polysaccharides, pectin, simple sugars, amino acids, mineral salts, and various other substances. Glycyrrhizin, a triterpenoid compound, accounts for the sweet taste of liquorice root. Among the natural saponins, glycyrrhizic acid is a molecule composed of a hydrophilic part, two molecules of glucuronic acid, and a hydrophobic fragment, glycyrrhetic acid. The yellow colour of Liquorice is due to the flavonoids content of the plant, which includes liquiritin, isoliquiritin (a chalcone), and other compounds. The isoflavones glabridin and hispaglabridins A and B have significant antioxidant activity, and both glabridin and glabrene possess estrogens-like activity [1-5]. Glycyrrhiza has the following, clinically proved Pharmacological activities such as anti ulcer activity, anti-asthmatic activity, anti-diuretic activity and anti hepato toxic activity

People with canker sores (mouth ulcer) who gargled 4 times per day with DGL (Deglycyrrhizinated Liquorice) dissolved in warm water found pain relief [6-8].

Glycyrrhiza glabra Linn, a commonly used herb in ayurvedic medicine. Studies indicate that Glycyrrhiza glabra Linn possesses antibacterial, antioxidant, antimalarial, antispasmodic, anti-inflammatory and

RESULTS:

Patient No. (1), (5) & (6)	Result
Those patients were suffering from a single ulcer on the lower lip.	Since the 1 st day of treatment improvement of ulcer was noticed, and complete healing was on the 3 rd day.
Patient No. (2)	Result
This patient was suffering from a multiple ulcer inside the oral cavity.	From its 1 st day ulcer was improved and a complete healing was achieved on its 4 th day.
Patient No. (3)	Result
This patient was suffering from a single ulcer in the oral cavity, deep inside the tissue.	Improvement has taken place from its 1 st day, and complete healing was achieved on its 3 rd day.
Patient No. (4)	Result
This patient was suffering from an ulcer on the palate (Roof of it mouth) and it was superficial.	The patient has shown improvement from its 1 st day and complete healing has been achieved on the 3 rd day.

hypo glyceic properties. Various other effects like antiulcer, antiviral, antihapatotoxic, antifungal and herpes simplex have also been studied [9-12].

Licorice root (Glycyrrhiza extract) delivered in a small, oral patch serves to relieve both pain and accelerate healing of canker sores [13].

A mouthwash containing Liquorice provided relief from canker sores (mouth ulcer) in 75% of the people who used it. Participants in the study noted substantial relief within one day, and complete healing by the third day. Licorice is effective in the reduction of pain and of the inflammatory halo and necrotic centre of aphthous ulcers [14].

Aims:

To investigate using liquorice extract in treatment and management of mouth ulcer.

Objectives:

- Extraction of the active constituent from liquorice root.
- Preparation of a mouthwash.
- Clinical trials.

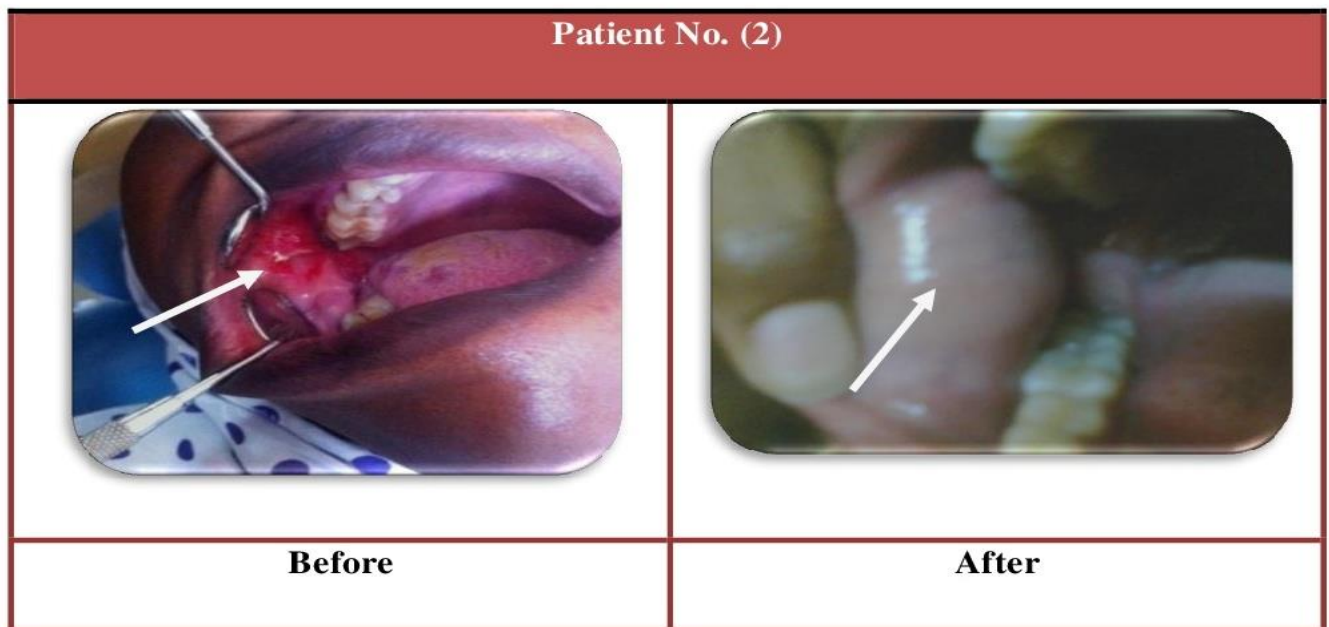
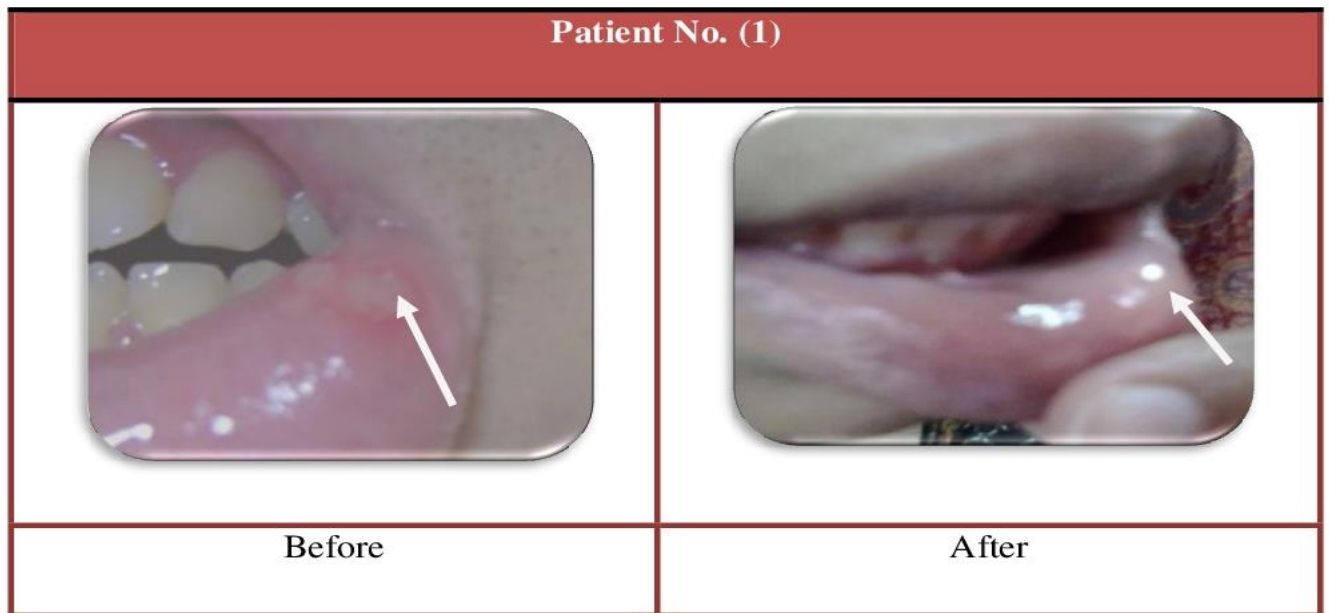
METHODOLOGY:

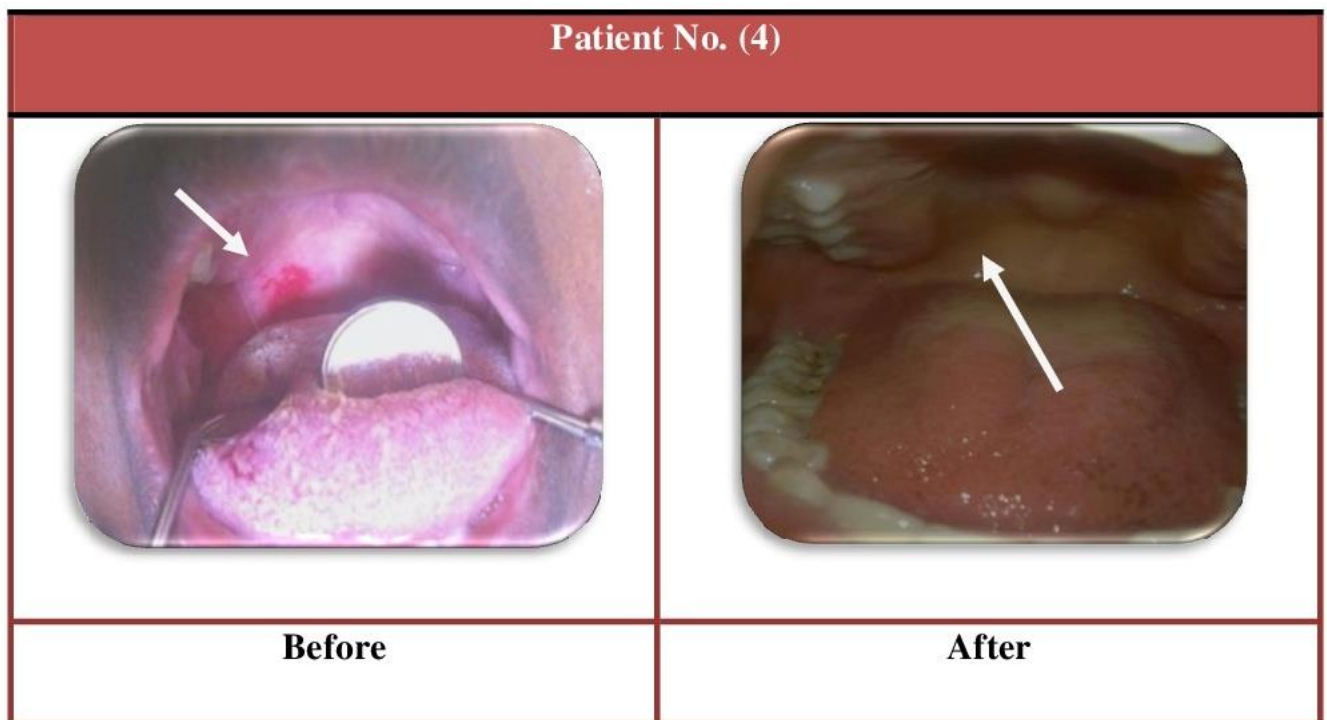
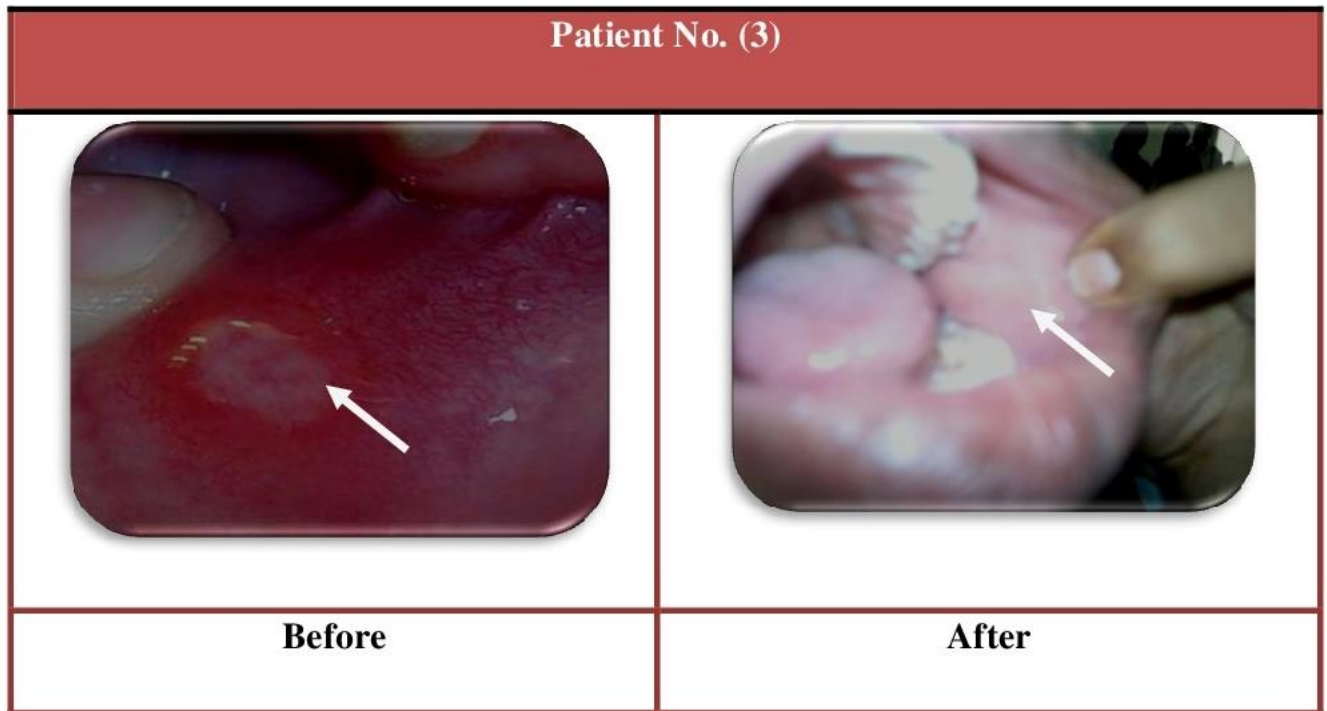
Sliced liquorice roots were boiled for 10 minutes with distilled water. The solution was then strained and approximately 400ml of liquid was obtained.

The final product was transferred to a glass bottle with a tight-fitting lid using a clean plastic funnel, and each bottle was filled with 100ml of liquid.

The clinical trial was approved by the institutional ethical committee at the University of Science and technology, and an informed consent was signed by each volunteer

The final product (mouth wash) was used by the volunteers suffering from stomatitis mouth ulcer three times per day after each meal as a mouth wash, the patients were instructed to shake the bottle before use. Patients were followed up for three days.





Patient No. (5)



Before



After

Patient No. (6)



Before



After

DISCUSSION:

Mouth ulcer is widely spreaded around the world. This study was designed to treat this condition in Sudanese patient. Six patients were chosen randomly from Khartoum dentistry teaching hospitals. Patients with superficial ulcer (such as patient No.4) improved faster than patients with deep ulcers. The improvement has begun from the first day in the patient with single ulcer rather than patient with multiple ulcers and completes healing by the third day. Patient with multiple ulcers (such as patient No.2) take longer time than patient with single ulcer .

CONCLUSION:

- According to the results of this study, licorice is effective in the reduction of pain and inflammation of stomatitis mouth ulcers.
- The results of this study confirmed that applying of licorice root extract to stomatitis mouth ulcers can reduce ulcer size and speed healing.

RECOMMENDATION:

It is recommended to increase the use of liquorice in oral hygiene, for example in toothpaste, mouth wash, gargle...etc

REFERENCES:

- 1.M.Akram, Shahab-uddin, Afzal Ahmed, Khan Usmanghani, Abdul Hannan, E. Mohiuddin, M. Asif and S. M. Ali Shah . Glycyrrhiza glabra L. Medicinal uses, *Medicinal Plants Research* Vol. 2011;5(25): 5658-5661.
- 2.Lakshmi T, Geetha R.V. Glycyrrhiza glabra Linn commonly known as licorice: a therapeutic review, *Pharmacy and Pharmaceutical Science*, 2011;Vol 3(4): 1-6.
- 3.Roland barach (2005). Licorice root, *Age Old Medicine Unites with New Technology to Treat Canker Sores*, pp. 1-2.
- 4.Moghadamnia AA, Motallebnejad M, Khanian M. The efficacy of the bioadhesive patches containing licorice extract in the management of recurrent aphthous stomatitis, *Phytother Research*, 2009;vol 23(2): 246-50.
- 5.Baltin LA, Serdyuk NG, Flekhter OB, Krasnova LV, Davydova VA, Ismagilova AF, Zarudii FS and G. A. Tolstikov GA. Isomerization of glycyrrhizic acid. Antiulcer activity, *J Pharmaceutical Chemistry*, 1996;30(10):613-616.
- 6.Cheng TO. Herbal interactions with cardiac drugs. *Arch. Intern. Med.*,2000;160(6): 870-871.
- 7.Blumenthal M, Busse WR, Goldberg A, *etal*, (1998). The Complete Commission E Monographs: Therapeutic Guide to Herbal Medicines, *Medicine Communication*, pp.161–62.
- 8.Fujioka T, Kondou T, Fukuhara A . Efficacy of a glycyrrhizin suppository for the treatment of chronic hepatitis C: A pilot study. *Hepatol. Res.*,2003; 26(1): 10-14.
- 9.Gao X, Wang W, Wei S, Li W. (2009). Review of pharmacological effects of Glycyrrhiza radix and its bioactive compounds, *Zhongguo Zhong Yao Za Zhi.*, 2009; 34(21): 2695-700.
- 10.Burgess JA, van der Ven PF, Martin M, Sherman J, Haley J. Review of over-the-counter treatments for aphthous ulceration and results from use of a dissolving oral patch containing Glycyrrhiza complex herbal extract, *J Contemp Dent Pract*, 2008;vol 9(3):88-98.
- 11.Elizabeth A. Davis and David J. Morris. Medicinal uses of licorice through the millennia: the good and plenty of it, *Molecular and Cellular Endocrinology*,1991;78:1-6.
- 12.Poswillo D, Partridge M (1984). Management of recurrent aphthous ulcers, *Br Dent J*, 1984;157: 55-57.
- 13.Das SK, Das V, Gulati AD, Singh VP (1989). Deglycyrrhizinated licorice in aphthous ulcers, *J Assoc Physicians India*, pp.637-647.
- 14.Corina Wilson (2006). Home Remedies using Licorice. Retrieved from: <http://www.homeremedycentral.com/en/herbal-remedies/herb/licorice.html>
- 15.Messier C, Epifano F, Genovese S, Grenier D. Licorice and its potential beneficial effects in common oro-dental diseases, *Oral Dentist*,2012; 18(1): 32-39.