ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

A Randomized, Open Label, Clinical Study of Synbiotics in Patients with Recurrent Minor Aphthous Ulcers.

Nalini Aswath*, Praveen Kumar ST, Raghavendra Jayesh S, Manigandan T and Sarumathi T.

Department of Oral Medicine & Radiology, Sree Balaji Dental College & Hospital , Bharath University, Chennai, Tamil Nadu, India.

ABSTRACT

Recurrent aphthous stomatitis is a common disorder of the oral cavity, affecting mainly young people. It is characterized by small ulcers which can be very painful and generally heal spontaneously within 7–14 days. There is currently no therapy that can provide rapid healing. This study evaluated the efficacy and rapidity of response to a lozenge containing synbiotic. 50 patients were randomized into two groups. Group A was given Mucopain gel & Cap. Becosules and Group B were given synbiotic lozenges thrice a day for 2 weeks along with Group A drugs. Clinical signs and symptoms were assessed at the beginning of the study and at the end of the study. The study demonstrated the efficacy and the rapidity of response to lozenges in resolving aphthous stomatitis. This is the first study confirming the efficacy of a synbiotic lozenge in this pathology.

Keywords: Recurrent aphthous ulcer, Synbiotic Lozenges, Bifilac.

Correspondence author

ISSN: 0975-8585

INTRODUCTION

Aphthous ulcers or recurrent aphthous stomatitis (RAS), commonly referred to as canker sores, are inflammatory lesions of the mucous lining of the mouth which may involve the cheeks, gums, tongue, lips, and floor of the mouth. Aphthous minor is amongst the most common form of oral ulcerative diseases and affects an estimated 15-20% of the population worldwide[1]. Apthae is derived from the greek term "apthai" which means "burn".Although the exact etiology is unknown , the probable causes that are proposed include immunodeficiency,nutritional deficiency,and psychological factors.About 30%- 40% of patients with RAS also have a positive family history[2]. The clinical features of RAS comprise recurrent bouts of one or several rounded, shallow, painful oral ulcers at intervals of a few months to a few days. RAS has three main presentations: minor (MiRAS), major (MaRAS), or herpetiform (HU) ulcers[3].

The term "probiotics" was first introduced in 1965 by Lilly and Stillwell. In contrast to antibiotics, probiotics were defined as microbially derived factors that stimulate the growth of other useful organisms [4]. In 1989, Roy Fuller emphasized the viability of probiotics ,and its beneficial effect on the host. Prebiotics are dietary substances (mostly consisting of nonstarch polysaccharides and oligosaccharides poorly digested by human enzymes) that nurture a selected group of microorganisms living in the gut. They favor the growth of beneficial bacteria over that of harmful ones. Synbiotics are products that contain both probiotics and prebiotics [5]. A longitudinal interventional clinical study on the usage of synbiotics in the treatment of recurrent apthous minor, was done at the department of OMDR,S.B.D.C.H. Approval from the IEC and informed consent from the patients were obtained. The study drug was approved by DCGI (Drug Controller General of India).

METHODOLOGY

The study was conducted in a randomized, open label fashion on 50 patients. 25 in Group A were treated with anaesthetic antiseptic gel i.e., mucopain gel and cap.becosules once a day. 25 in Group B were treated with anaesthetic antiseptic gel (mucopain gel) ,cap.becosules once a day along with bifilac lozenge 3 times a day .Patients were advised to chew the lozenge and not to swallow it and also advised to avoid taking any food or liquids for 30 minutes after consumption of study medication. Each lozenge contains Streptococcus faecalis T-110 → 30 million, Clostridium butyricum TO-A → 2 million, Bacillus mesentericus TO-A 1million,Lactobacillus sporogenes → 50 million.

The criteria for inclusion in the study included a history of recurrent minor aphthous stomatitis (at least 3 episodes in a year). Pregnant or lactating women, patients with a history of other forms of RAS (major, herpetiform), localized or systemic diseases ,such as ulcerative colitis , crohn's disease, Bechet's syndrome and HIV infection/AIDS, diabetic, smokers, tobacco/ beetle nut chewers, Malignancy or any concomitant end-stage organ disease, history of Probiotic, Synbiotic administration in the past one month, Known hypersensitivity for Synbiotics, chronic or severe respiratory illness, cardiovascular, CNS, endocrine and other gastrointestinal disorders were excluded from the study.
All patients were subjected to evaluation of clinical parameters at the start of therapy, and at the end of treatment.

ISSN: 0975-8585

The Clinical parameters that were assessed include: Number of ulcers present, Size of the ulcer ranging from size1(1mm), size2(2mm), size3(3mm), size4(4mm), size5(5mm), Duration of ulcer in days, Degree of pain experienced . Degree of the pain and their corresponding scores were given as No pain (0), Moderate (5) ,Severe or Unbearable (10).

RESULTS

The various clinical parameters were statistically analysed.

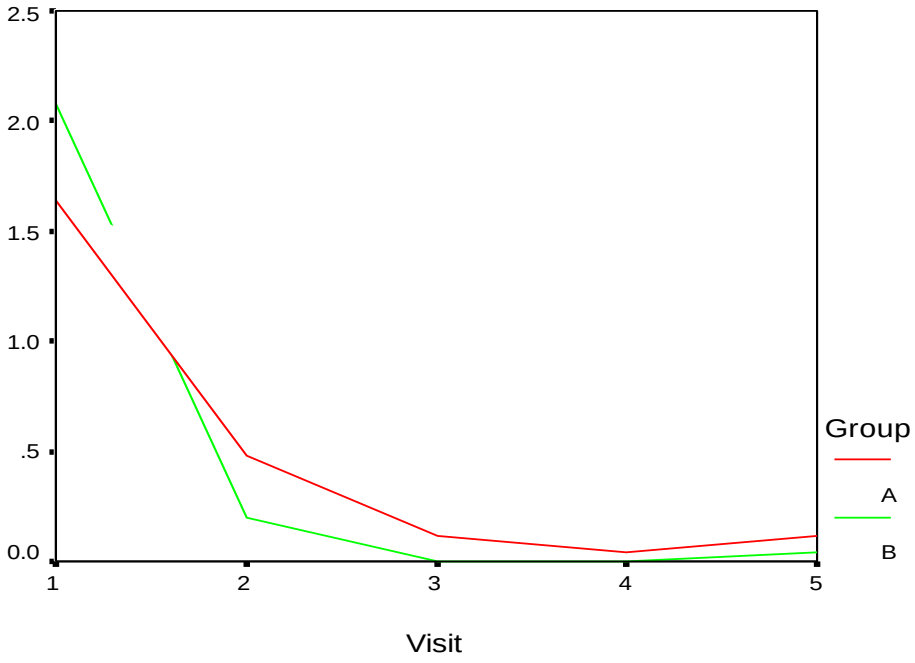

Fig-1

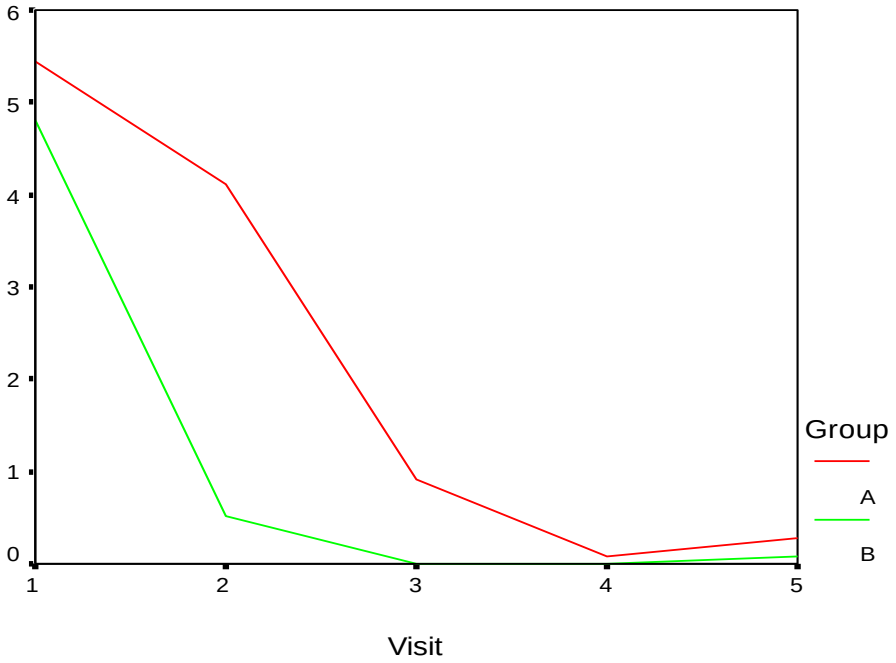

Fig-2

ISSN: 0975-8585

TABLE-1

Visit		Group A Mean	A SD	A Sum	Group B Mean	B SD	B Sum	Independent Samples t-test t	Sig.
1	No. of Ulcers	1.64	1.08	41	2.08	1.89	52	1.011	.317
	Size of the ulcer	5.44	4.34	136	4.80	2.89	120	.614	.542
2	No. of Ulcers	.48	.77	12	.20	.65	5	1.393	.170
	Size of the ulcer	4.12	6.46	103	.52	1.85	13	2.677	.012
3	No. of Ulcers	.12	.44	3	.00	.00	0	1.365	.179
	Size of the ulcer	.92	4.20	23	.00	.00	0	1.095	.285
4	No. of Ulcers	.04	.20	1	.00	.00	0	1.000	.322
	Size of the ulcer	.08	.40	2	.00	.00	0	1.000	1.000
5	No. of Ulcers	.12	.33	3	.04	.20	1	1.033	.308
	Size of the ulcer	.28	.79	7	.08	.40	2	1.127	.267

DISCUSSION

Minor recurrent aphthous stomatitis (MiRAS), the most common variety, affects about 80% of RAS adult and child patients, and is characterized by round or oval shallow ulcers usually less than 5 mm in diameter with a gray-white pseudomembrane enveloped by a thin erythematous halo. Usually, MiRAS occurs on the nonkeratinized mobile surfaces such as the labial and buccal mucosa and floor of the mouth and is uncommon on the gingiva, palate, or dorsum of the tongue. These lesions heal within 1 to 2 weeks without scarring [6]. Major ulcers are less common and affect 10-15% of patients with RAS. Major ulcers tend to be larger and typically greater than 10mm in diameter. They can occur singly or 2-3 can appear at a time anywhere in the mouth. If the soft palate is involved, swallowing can be difficult. The ulcers may last up to 3 months and some of the larger ulcers leave a scar when healed. Herpetiform ulcers are the least common type affecting 5-10% of cases. The ulcers are small (1-2mm in diameter) and can occur in clusters of more than 20 at a time which can merge to give larger ulcers. They tend to occur in the front of the mouth particularly under the tongue and on the edges of the tongue. These tend to heal within two weeks without scarring. Despite their name, they are not caused by a herpes virus [7]. Probiotics are live microorganisms which, when administered in adequate amounts, confer a health benefit on the host. Prebiotics are nondigestible substances that provide a beneficial physiological effect for the host by selectively stimulating the favorable growth or activity of a limited number of indigenous bacteria. Synbiotics are products that contain both probiotics and prebiotics. Unlike probiotics, most prebiotics are used as food ingredients—in biscuits, cereals, chocolate, spreads, and dairy products, for example. Commonly known prebiotics are Oligofructose, Inulin, Galacto-oligosaccharides, Lactulose, Breast milk oligosaccharides [8].

Probiotics are indicated in Infective diarrhoea (viral, bacterial, protozoal), antibiotic associated diarrhoea, Lactose intolerance, Recurrent aphthous ulcers and stomatitis,

ISSN: 0975-8585

Inflammatory bowel disease (ulcerative colitis, Crohn's disease), Irritable bowel syndrome, Traveller's diarrhoea, Diverticular disease of colon, Post operative state [9]. Although various studies on treatment options for apthous ulcer have been done this is the first study performed using synbiotic lozenges. Comparing Group A & Group B, the mean number of ulcers in first visit in group A patients was 1.64 and reduced to 0.48,0.12,0.04 and 0.12 in the subsequent visits. In group B patients the mean number of ulcers were 2.08 and reduced to 0.20,0.00,0.00 and 0.04 in subsequent visits.[Table -1] The mean size of the ulcer in millimeter in first visit among group A patients was 5.44mm and reduced subsequently to 4.12,0.92,0.08 and 0.28mm. In group B patients the mean size of the ulcer was 4.80 and reduced subsequently to 0.52, 0.00, 0.00 and 0.08mm in subsequent visits.[Table-1]

Fig – 3

Fig – 4

As in fig -1, fig-2, fig-3 and fig-4 the patients were completely cured of the ulcers in the third visit in group B .The recurrence rate was also less in group B.

To summarise as shown in Table -2 there was a significant result in size of the ulcer among group B patients.

TABLE-2

	GROUP						Independent samples t-test	
	A			B				
No.of ulcers	Mean	SD	Sum	Mean	SD	Sum	t	sig
	.48	.88	60	.46	1.20	58	.120	.904
Size of the ulcer (mm)	2.17	4.49	271	1.08	2.42	135	2.387	.018

CONCLUSION

Although numerous therapeutic options have been studied in treating recurrent apthous ulcers, this study done on synbiotic lozenges has proved to be a better alternative in patients suffering from chronic recurrent bouts of aphthous stomatitis. Moreover Synbiotics have no significant adverse effects & provide a lot of other beneficial effects to the host.

ACKNOWLEDGEMENT

The authors thank Jhaver Research Foundation, No.72, Marshalls Road, IVth Floor, Jhaver Centre, Egmore, Chennai -600 008 for sponsoring the study.

REFERENCES

[1] Scully C. J Am Dent Assoc 2003; 134:200-207.
[2] G. Riera Matute, E. Riera Alonso. Reumatol Clin 2011;7(5):323–328.
[3] Asad qayyum, Syed nusrat raza, Atif najam, Shujaat abbas. Pakistan Oral Dental J 2010; 30(1):14-18.
[4] Serap Koybasi, Ali Haydar Parlak, Erdinc Serin, Fahrettin Yilmaz, Didem Serin. American J Otolaryngol Head Neck Med Surg 2006;27:229-232.
[5] Sunil Kumar Mishra, Pratibha Mishra, Mohit Saxena. Res J Pharm Biol Chem Sci 2012;3(2):1042-1062.
[6] Francisco Guarner Aamir G. Khan, James Garisch, Rami Eliakim, Alfred Gangl, Alan Thomson. World Gastroenterology Organisation Practice Guideline.2008;1: 1-28.
[7] Stephen. Porter, Anne hegarty, Fotini kaliakatsou, Tim. Hodgson. Clin Dermatol 2000;18:569–578.
[8] Probiotics and Prebiotics. University of Dakota. American Dietetic Assoc 2010;1:1-3.
[9] Jon a. Vanderhoof. Practical Gastroenterol 2005;4:51-58.