Original Article

VITAMIN B12 FOR THE TREATMENT OF RECURRENT APHTHOUS STOMATITIS

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ABSTRACT

Objective: *The purpose of this study was to confirm the beneficial effects of Vitamin 12 in the treatment of Recurrent Aphthous Stomatitis.*

Methods: *This study was conducted at the Department of Oral Medicine of Khyber College of Dentistry, Peshawar on 65 patients suffering from Recurrent Aphthous stomatitis. The patients were randomly divided in to two groups A sublingual dose of Vitamin B12 500 mcg and 1000 mcg was administered to the two groups for 6 months.*

Results: *There were 35 patients in Group-I who were given 1000mcg Vitamin B 12 sublingually while in Group-II, 30 patients were given 500 mcg Vitamin B12 sublingually for 6 months at bed time. The parameter has been recorded in each group on monthly basis for 6 months. The level, duration of pain, the number of outbreak and the size of ulcer was considerably reduced in patients who were treated with Vitamin B12 1000mcg irrespective of blood Vitamin 12 level as compared to patients taking 500 mcg Vitamin B12. There was no Recurrent Aphthous stomatitis in Group-I at the end of 6 months while in Group-II there was 30% relief.*

Conclusion: *Thus Vitamin B12 1000mcg sublingually in the treatment of Recurrent Aphthous ulceration is a safe, effective, inexpensive and low risk treatment regardless of serum Vitamin B 12 level in the blood.*

Key Words: *Recurrent Aphthous Stomatitis, Recurrent Aphthous ulceration, Vitamin B12.*

INTRODUCTION

Recurrent Aphthous Stomatitis (RAS) or Recurrent Aphthous Ulceration (RAU) is the most common disease of the oral mucosa, affecting 25% of general population and having a three months recurrence rate of 50%.[1] There are three clinical variants of Recurrent Aphthous ulceration[2]. The most common is Minor Recurrent Aphthous ulceration which is recurrent and presents with clearly defined small painful ulcers that heal in 10-14 days without scarring. The second type is Major Recurrent Aphthous stomatitis lesions that are greater than 5mm in size which can last for 6 weeks or longer and frequently scar. The third variety of RAU is Herpetiform ulcers which presents as multiple small clusters of pin point lesions that can coalesce to form large irregular ulcers and lasts for 7-10 days.

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RAS is an idiopathic condition in most patients whose exact etiology is unknown[3] but there are many precipitating factors such as Local trauma, Stress, Genetic disorders including Systemic diseases, Food allergies, immune disorders, HIV patients, Nutritional deficiencies particularly lack of Iron, Vitamin B3, Vitamin C, Folic acid or Vitamin B12.

These ulcers are not preventable and the treatment is symptomatic. The diagnosis is based on history and physical examination. There is no test to confirm this condition The main complaint of RAS is typically pain and there are different approaches to treat this condition such as various natural vitamins[4], local ointments[5], disinfectant agents[6], local antibiotic ointments[7], non-steroidal anti-inflammatory ointments (NSAID)[8], local cortisone-steroids[9] and systematic steroids[10-12]. Recently Vitamin B12 is used in the treatment of RAS. The purpose of this study is to confirm the beneficial effects of Vitamin B12 in the treatment of RAS.

METHODOLOGY

The study was conducted in the Department of Oral Medicine, Khyber College of Dentistry, Peshawar from January 2010 to February 2011. The study was approved from College Ethical Review Committee. Sixty five patients aged 17 years and above who had been suffering from RAS for 6 months to one year were included in this study. Patients with systemic diseases such as Hepatitis C, Behcets disease, Patients on steroids or those who had taken Vitamin B12 in any form or known B12 deficiency and lactating / pregnant mothers were excluded from the study.

A detailed medical history was taken for each patient, with a specially designed proforma. A complete blood examination and hepatitis screening was done for each patient. The severity of pain was recorded using Visual Analog Scale (VAS). VAS is a mathematical progression from 0 to 10, 0 being no pain and 10 being the most severe pain imaginable. The maximum time interval between cross over was one month and at the end of one month treatment, each patient was able to indicate subjective pain being recorded.

The patients were divided into two groups randomly. The Group-I patients were given Tablet Vitamin B12 1000 mcg sublingually daily before going to sleep for 6 months irrespective of B12 blood level. The Group-II patients were given Tablet Vitamin B12 500 mcg sublingually. The follow up was done monthly for six months to collect information about the effectiveness of treatment and side effects of drugs, the average episode of stomatitis, the monthly number of ulcers and severity of pain. The clinical evaluation of patients included assessment of ulcer size and pain measurement according to the VAS. The objective was to calculate the effectiveness of treatment in sample of 65 patients who were taking Vitamin B12 1000 mcg as compared to those taking 500 mcg Vitamins B12.

RESULTS

This interventional study was carried out at the Department of Oral Medicine, Khyber College of Dentistry. Sixty five patients (37 females and 28 males) who were suffering from RAS over a period of one year were included in the study. The detail of gender distribution is given in Table 1. The age range of the patients was 17-40 years and the mean age of the patients was 24.5 ± 11.5 years.

The outcome of treatment was noted monthly in each patient for a period of six months. By the 4th month, 15 patients (43%) in Group-I reported no recurrence while in Group-II only 2 patients (7%) reported no recurrence. By the 5th month, 25 patients (71%) in Group-I reported no recurrence while in Group-II only 4 patients (11%) reported no recurrence. By the 6th month, all 35 patients (100%) in Group-I reported no recurrence but only 9 patients (30%) reported no recurrence in Group-II. The details of Aphtus ulcers recurrence in the two groups are given in Table 2. There was 100% relief in patients of group 1 who received Vitamin B12 1000 mcg treatment for 6 months while 30% relief was found in group 2 patients who were taking 500 mcg Vitamin B12.

A positive response started in Group-I patients after 4 months of treatment and within 5-6 months absolute relief was obtained (Table 3). This group showed marked resolution of spontaneous pain in all 35 patients (100%) while in Group-II the pain decreased by the 4th and 5th month of treatment to moderate level and only 9 patients (30%) showed complete relief (Table 4). There was no patient who suffered from severe pain.

Table 1: Gender Distribution

Gender	Group-1		Group-2	
Male	n	%age	n	%age
	14	40	14	46.7
Female	21	60	16	53.3
Total	35	100	30	100

Table 2: Treatment Response by the Time of Examination

Time	Ulcer Status			
	No Ulcer		Recurrence	
4 months	n	%age	n	%age
Group-1	14	43	20	57
Group-2	2	7	28	93
5 months				
Group-1	25	71	10	29
Group-2	4	11	26	89
6 months				
Group-1	35	100	0	0
Group-2	9	30	21	70

Table 3: Month wise pain score on VAS of Group-I participants

n(35)	Month wise pain score						
	0	**1**	**2**	**3**	**4**	**5**	**6**
7	10	8	6	4	3	2	0
10	8	7	5	3	2	2	0
6	7	5	3	2	2	0	0
8	5	6	4	4	2	0	0
4	4	7	5	4	1	2	0

Table 3: Month wise pain score on VAS of Group-II participants

n(35)	Month wise pain score						
	0	**1**	**2**	**3**	**4**	**5**	**6**
6	7	7	6	5	4	2	0
3	8	6	8	4	3	0	0
10	8	6	8	7	5	7	8
8	6	8	7	6	5	6	7
3	10	8	9	7	6	4	8

DISCUSSION

The oral signs and symptoms of megaloblastic anemia due to deficiency of Vitamin B12 are Glossitis, angular chelitis, recurrent Aphthous ulcers, oral Candidiasis, pale oral mucosa, and are diffuse erythematous mucositis.[13,14] However, The precise role of Vitamin B12 in the pathogenesis of RAS in unclear but some relationship does exists.[1,15,16] The results of the study shows that those patients who were using Vitamin B12 1000 mcg had less pain and fewer outbreak of ulcers throughout the study. The recurrence started to reduce by the 4th month and there was 100% relief after 6th months in Group-I. This finding is in accordance to other studies[1,14]. This study showed that a relationship exists between Vitamin B12 and RAS and consuming sufficient amount of Vitamin B12 have positive effect on the outbreak, pain and duration of ulcer formation.[16]

The study conducted by Gulcan et al[17] showed that 96% patients responded well to Vitamin B12 therapy while in another study[14] the healing rate was 74%. In this study, there was 100% relief in patients of Group-I who received Vitamin B12 1000 mcg treatment for 6 months but only 30% relief was reported in Group-II patients who were taking 500 mcg Vitamin B12. This study, therefore confirmed that different doses of Vitamin B 12 sublingually have different effects on the ulcers outbreak duration.

The subjective level of pain declined in this study in Group-I patients correlate with the earlier study by Volkov[18] while it decreased in 5th and 6th month of treatment in Group-II patients. The less amount of relief was due to low dose of Vitamin B12 where the effects were slow. Volkov[18] administered Vitamin B12 by injections and there was complete relief within 1-2 months. Such quick relief was called Master key effect[19]. The study of Volkov[18] showed that the beneficial effects can be achieved more quickly by injection than sublingual route of administration. The different doses have different effects on the pathogenesis of this disease and optimal therapeutic dose is needed to find out in further studies to cure this oral mucosal disease.

CONCLUSION

The study confirm that Vitamin B12 1000 mcg sublingually may be beneficial in the treatment of RAS regardless of Vitamin B 12 serum level. This therapy is simple, cost effective and without any side effects.

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