

Short Communication

Smoking and Behçet's Disease

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Abstract: It has recently been claimed that some of the symptoms in patients with Behçet's disease (BD) can be activated after the patient has stopped smoking. In this study we investigated the effect of smoking on the symptoms of Behçet's disease. Fifty asymptomatic current smokers (CS) who promised to stop smoking (group 1) and 60 current non-smokers (NS) (group 2) (21 of them ex-smokers) with BD were examined at the beginning and a week later for the presence of symptoms of BD. Forty-seven of the 50 CS completed the study. Oral aphthous ulcers were observed in 31 (65.9%) of them at the end of the study period. Besides oral aphthous lesions, genital ulcers were detected in two and erythema nodosum in two other patients. Only 15 (25%) group 2 patients developed oral aphthous ulcers during the study period. The difference between the frequencies of oral aphthous lesions in these groups was significant ($p=0.0002$). We concluded that cessation of cigarette smoking can activate the mucocutaneous symptoms, especially oral aphthous lesions, in patients with BD.

Keywords: Behçet's disease; Smoking

Introduction

Smoking is the most widespread addiction of mankind. In contrast to many of its harmful effects, it has also been found to have beneficial effects on the course of certain diseases, such as ulcerative colitis (UC) and simple aphthous ulcers [1–4]. Behçet's disease (BD) is a multisystem disease that may affect mucocutaneous, articular, vascular, ocular, pulmonary and neurological

systems [5]. It was previously reported that smoking may have beneficial effects on symptoms of BD [6]. In this study we aimed to investigate the relationship between cessation of smoking and the symptoms of BD.

Patients and Methods

A total of 208 patients with BD, who satisfied the criteria of the International Study Group [7] and were being followed in our outpatient clinic were interviewed about their smoking habits. A hundred and twenty of them declared that they were CS and 88 declared they were not smokers (NS) (28 of them were ex-smokers); 65 CS were persuaded to stop smoking for a week. A systematic physical examination was carried out in all of patients by the same physician. Fifty of the 65 CS patients were asymptomatic (i.e. free of any symptom of BD, such as oral aphthous lesions (OAL), genital ulcers (GU), erythema nodosum (EN), active arthritis, uveitis, thrombosis and neurological symptoms). Forty-seven of these asymptomatic patients who reported to have successfully stopped smoking were re-examined 1 week after cessation of smoking (group 1). At least one minor or major OAL, GU, EN or other symptoms of BD observed by the physician was regarded as positive for symptoms. Of all of the patients who were not smoking at the time of the study, 66 were found to be asymptomatic and 60 of them (21 ex-smoker) were re-examined 1 week later (group 2). Treatment regimens were not changed during the study period.

Statistical Analysis

Student's *t*-test was employed to compare parametric data between CS and NS patients and χ^2 or Fisher's exact test were used when data were non-parametric.

Table 1. Demographic and clinical characteristics of patients

		Group 1 (n = 47)	Group 2 (n = 60)	Statistics
Gender				
	<i>Male</i>	74% (n: 35)	40% (n: 25)	ns ¹
	<i>Female</i>	26% (12)	60% (n: 35)	
Mean age (years)		34±8	38±11	ns ²
Mean age of disease onset (years)		29±7	32±9	ns ³
Mean duration of disease (years)		4.7±4	5.8±3	ns ⁴
Mean duration of smoking (years)		11±8	–	
Cigarettes per day		13±8 (range: 6–30)	–	
Symptoms at the second visit				
	<i>Oral ulcer</i>	65.9% (n: 31)	25% (n: 15)	$p = 0.0002^5$
	<i>Genital ulcer</i>	n: 2	–	ns ⁶
	<i>Erythema nodosum</i>	n: 2	n: 1	ns ⁷
	<i>Arthritis</i>	–	–	

ns: not significant. 1: χ^2 :3,033, p :0,082, 2: t :1.3, p :0.198, 3: t :0.7, p =0.48, 4: t :1.37, p =0.176, 5: χ^2 : 18,039, 6: p :0.191, 7: p :0.581

Results

The demographic characteristics of groups 1 and 2 and their symptoms at the end of the study period are shown in Table 1. One week after the cessation of smoking at least one OAL was observed in 31 (65.9%) of group 1. Besides OAL, GU and EN were detected in two males and two females, respectively. Sixteen group 1 patients (34%) reported no symptoms in this period. OAL was observed in only 15 (25%) group 2 patients and EN in only one. The difference between OAL frequencies in groups 1 and 2 was significant ($p = 0.0002$).

Discussion

Many years ago, Bookman reported that smoking may have a therapeutic effect on aphthous ulcers and Chellemi et al. reported that the frequency of OAL was higher in non-smokers than smokers in healthy subjects [3,4]. Recently, Silveira et al. reported that smoking may have a beneficial effect on symptoms of BD [6]. In this study we found an aggravation of OAL in patients with BD after cessation of smoking. In addition to OAL, the development of GU and EN in four patients who stopped smoking for a short time suggests that even brief cessation of smoking aggravates the mucocutaneous lesions of BD.

Silveira et al. suggest that this effect of smoking may be due to alteration of nitric oxide (NO) synthesis [6]. In addition, we postulate that decreasing nicotine levels after the cessation of smoking might increase intestinal mucosal permeability via its effects on mucosal eicosanoid synthesis, as suggested for UC [1,3,8,9], and may cause activation of BD. The abstinence of

nicotine acting as a stress factor may be an another determinant that aggravates OAL. Thus, transdermal nicotine therapy may have beneficial effects for active disease. However, the hazardous effects of smoking, especially on the cardiovascular system, should be borne in mind.

It would be more valuable to measure blood nicotine levels [10] to check patient compliance, but for technical reasons this was not possible.

In conclusion, the symptoms of BD were aggravated by cessation of smoking. The beneficial effects of smoking may be due to the effects of nicotine on the production of eicosanoids or NO.

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