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# Psychological Status and Recurrent Aphthous Ulceration

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## ABSTRACT

*Recurrent aphthous ulceration (RAU) are a disease of an unknown etiology and mediated through T-cell lymphocytes. Evidence suggests that RAU is connected with chronic bowel disease, haematinic deficiencies, AIDS, food hypersensitivity and severe stress. The aim of this study was to determine whether differences in anxiety and depression could be seen in patients with RAU during acute phase and remission period and in comparison to the healthy controls. There were 30 patients with RAU (age range 36.27±15.308) and 30 controls aged 29.83±9.082. Every participant with RAU fulfilled STAI and Beck Depression Inventory II test during acute phase and during remission period as well as controls. Statistical analysis was performed by use of descriptive statistics and t-test. There are no differences in the level of depression and stress between the two phases of the RAU (acute versus remission period) as well as in comparison to the controls. Patients with acute RAU are more anxious than patients with RAU during remission period. We might conclude that psychological disturbances do not precede the development of RAU and that the patients with acute RAU are more anxious when compared to the condition when they do not have RAU due to the discomfort they experience.*

**Key words:** recurrent aphthous ulceration, anxiety, depression

## Introduction

Recurrent aphthous ulceration (RAU) is a common oral disease appearing usually on nonkeratinized oral mucosa, especially on the tongue, vestibulum, palate and buccal mucosa<sup>1</sup>. The etiology of the disease is still not completely understood. Many local and systemic factors have been associated with these conditions as well as evidence of a genetic and immunopathogenic basis for RAU<sup>1</sup>. RAU disease is characterized by two phases of the disease, acute RAU when patients have ulcerations in the mouth and remission period of RAU when patients are free of any ulcerations. Through our clinical practice, patients with RAU frequently report that the ulcerations are in correlation with stressful events. McCartan et al.<sup>2</sup> concluded that stress may play an important role in the pathogenesis of RAU, especially in persons who are prone

to be anxious, cause serum cortisol levels were increased in patients with RAU together with increased anxiety scores. Cekić-Arambašin et al.<sup>3</sup> reported that during the war in Croatia in nineties prevalence of RAU increased in patients who were known as RAU sufferers when compared to the time before war. Neville et al.<sup>4</sup> concluded that RAU are more prevalent in students during the exam period in comparison to the period when there are no exams at the university. Gallo et al.<sup>5</sup> concluded that there was a higher level of psychological stress among patients with RAU when compared to the control group. Furthermore, the same authors concluded that psychological stress may play a role in the manifestation of RAU, either being a trigger or a modifying factor, but not a cause of the disease. Furthermore, Tang et al.<sup>6</sup> sug-

gested that psychosocial disorder caused by stresses of social life events on the people with special personality could impact the occurrence of RAU.

However, there are no data in anxiety, depression and stress between patients with RAU during both phases of the disease.

The aim of this study was to assess level of anxiety and depression in patients with RAU during acute phase and during remission period as well as in comparison to the healthy controls.

### Materials and Methods

Prior to this investigation, participants signed an informed consent according to the Helsinki II obtained from the Ethical Committee, School of Dentistry, University of Zagreb, Croatia.

There were 30 patients with RAU (age range 36.27±15.308 yrs). Thirty controls were selected on the basis that they were free of oral diseases and were age and sex matched to the patients with RAU (age range 29.83±9.082 yrs).

Patients with RAU fulfilled both psychological tests twice, ie during acute phase and during remission period. Controls fulfilled both test only once. First test was STAI (State-Trait Anxiety Inventory for Adults) by which level of anxiety is measured as a current state and as a usual

feeling of an individual. Second test measures the level of depression (BDI-II – Beck Depression Inventory II).

Statistical analysis was performed by use of descriptive statistics and t-test.

### Results

There were no significant differences in anxiety trait and state scores as well as depression scores between control group and patients with RAU during acute phase (Table 1).

There were significant differences in anxiety state scores between patients with acute RAU and patients with RAU during remission period (Table 2).

### Discussion

Most of the published data upon psychological status and RAU do report correlation between the two. However, data upon psychological parameters during two phases of the disease are lacking. Patients with RAU are more anxious when compared to the healthy controls<sup>7</sup>. Victoria et al.<sup>8</sup> found out that 69 patients with RAU have more polymorphism of the promoter region 5-HTT (5-HTTLPR) which is responsible for the serotonin expression in comparison to the control group. Therefore the same authors concluded that patients with RAU tend to be more anxious than the controls. Pedersen<sup>9</sup> evaluated psychological stress by means of social readjustment rating scale and visual analogue scale in the patients with RAU during acute phase and during remission period. However, she could not find any differences in aforementioned scores between two phases of the disease, concluding that there is no association between psychologic life stress and recurrences of RAU. The results of Pedersen<sup>9</sup> are in contrast to our results as we found significant differences in anxiety state scores in patients with acute RAU when compared to the patients with RAU during remission period. Albanidou-Farmaki et al.<sup>10</sup> found that anxiety as a trait and as a state could play a role in patients with RAU as they reported significant differences between patients with RAU and controls. Therefore, they suggested that stress might be involved in the pathogenesis of RAU. The results of Albanidou-Farmaki et al.<sup>10</sup> are in not in concordance with our results as we found that anxiety as a trait does not impact RAU disease. Soto-Araya et al.<sup>11</sup> reported that anxiety and stress were significantly connected with RAU, unlike depression. Richter et al.<sup>12</sup> reported that RAU were significantly in correlation with anxiety but of-course authors speculate that RAU are not caused by anxiety but rather that RAU are in correlation with anxiety which is in concordance with our results.

We could not find any significant differences in depression scores between patients with RAU during acute phase and remission period and controls. Therefore, we might conclude that depression does not play a significant role in patients with RAU.

TABLE 1

TESTED DIFFERENCES IN MEDIAN VALUES OF THE RESULTS ON THE ANXIETY STATE INVENTORY (STAI-S), ON THE ANXIETY TRAIT INVENTORY (STAI-T) AND ON THE BECK DEPRESSION INVENTORY (BDI-II) BETWEEN PATIENTS WITH ACUTE RAU AND CONTROL GROUP

	Levens variance test		t-test		
	F	p	t	df	p
STAI-S	0.849	0.361	-0.656	58	0.514
STAI-T	0.029	0.865	-0.701	58	0.486
BDI II	0.106	0.746	-1.351	54	0.182

TABLE 2

DESCRIPTIVE STATISTICS OF THE RESULTS ON THE ANXIETY STATE INVENTORY (STAI-S), ON THE ANXIETY TRAIT INVENTORY (STAI-T) AND ON THE BECK DEPRESSION INVENTORY (BDI-II) BETWEEN PATIENTS WITH ACUTE RAU AND THE SAME PATIENTS WITH RAU DURING REMISSION PERIOD

		N	X	SD
STAI-S	Acute phase RAU	30	38.47	8.978
	Remission	30	35.50	7.999
STAI-T	Acute phase RAU	30	38.43	9.391
	Remission	30	38.53	9.965
BDI-II	Acute phase RAU	27	8.63	6.840
	Remission	27	7.63	6.968

Patients with acute RAU are more anxious than patients with RAU during remission period and controls, suggesting that anxiety is not their trait but a consequence of a RAU disease which has impact on their ability to eat and speak.

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## PSIHOLOŠKI STATUS I REKURENTNE AFTOZNE ULCERACIJE

### SAŽETAK

Rekurentne aftozne ulceracije (RAU) su bolesti nepoznate etiologije posredovane T-limfocitima. Dokazi upućuju na to da su povezane s kroničnim bolestima crijeva, hematološkim deficitima, AIDS-om, preosjetljivošću na određenu vrstu hrane te jakim stresom. Cilj je ovog istraživanja bio ustanoviti je li postoje razlike u anksioznosti i depresiji između bolesnika s akutnim RAU u odnosu na fazu remisije RAU i u usporedbi sa kontrolnom skupinom. U istraživanju je sudjelovalo 30 bolesnika a RAU (raspon dobi 36,27±15,308) i 30 kontrolnih ispitanika (raspon dobi 29,83±9,082). Svaki ispitanik je ispunio STAI i Beck Depression Inventory II test za vrijeme akutne faze i za vrijeme remisije kao i ispitanici kontrolne skupine. Statistička analiza je napravljena uz upotrebu deskriptivne statistike i t-testa. Nije bilo razlika u stupnju depresije i stresa u bolesnika s RAU između dvije faze bolesti (akutna faza u odnosu na remisiju) kao i u usporedbi s kontrolnim ispitanicima. Bolesnici s akutnim RAU su bili znakovito više anksiozni u odnosu na osobe s RAU u fazi remisije. Možemo zaključiti kako psihološki poremećaji ne prethode nastanku RAU, već da su uslijed akutne faze RAU i nelagode koja tu fazu bolesti prati oboljeli više anksiozni u odnosu na stanje kada nemaju RAU.