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Relapse of generalized parodontitis as result of emotional stress in patients with complicated duodenal peptic ulcer disease

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Abstract

The article presents the results of evaluation of the impact of stress on periodontal tissue of 48 patients with complicated duodenal peptic ulcer disease (CDPUD) and 25 patients with duodenal peptic ulcer disease (DPUD) without complications. A significantly higher rate of personal and situational anxiety in patients with CDPUD compared to DPUD ($p<0, 05$) was revealed. Poor hygienic oral health was typical for patients with CDPUD - 88, 6%. A statistically significantly greater severity of inflammatory-destructive process of periodontal tissues by periodontal index (PI) of A.L. Russel in 45 patients (94, 2%) ($p<0, 05$) with CDPUD, compared with DPUD - 16 patients (65, 1%) - was revealed. The study allows to suggest (assert) that the development of complications of DPUD causes emotional stress in patients and is a significant cause of exacerbation of generalized parodontitis.

Keywords: generalized parodontitis, complicated duodenal peptic ulcer disease, emotional stress.

1. Introduction

Today, generalized periodontitis, as well as DPUD, are global problems of modern medicine. Generalized periodontitis is an inflammatory and dystrophic disease with relapsing course, being the most common cause of tooth loss, thus significantly affecting the quality of life of adults. The prevalence of periodontal disease reaches 95% of all dental diseases after caries [14]. Clinical studies had revealed the combination of generalized periodontitis with disorders of the gastrointestinal tract, especially DPUD [3, 4]. Scientific research shows that emotional stress is an important factor of exacerbation of generalized periodontitis and the complications of DPUD [1, 5, 6, 7, 11]. The presence of periodontal emotional-stress syndrome is confirmed by observations of clinicians [2, 12]. The harmful effect of emotional stress on the body is realized by activation of oxidation processes, destruction of cell membranes, decomposition of connective tissue, microcirculation disorders. Research of the severity of emotional stress in patients with generalized periodontitis and periodontal status in patients with DPUD was conducted by a number of clinicians [3, 5, 13]. The sudden development of complications of DPUD - bleeding or ulcer perforation - significantly increases the emotional stress of the patient. Effect of potentiated emotional stress due to the complicated CDPUD on condition of soft periodontal tissues remains poorly understood.

The objective of the research is to investigate the effect of emotional stress on the condition of soft tissues of periodont in patients with DPUD complicated by haemorrhage and perforation.

2. Material and methods

A clinical examination of 37 patients with DPUD, complicated by bleeding, and 11 - by perforation, who were admitted urgently to Lviv city emergency hospital, was performed. Due to the severe condition, 34 patients (70,8%) were treated in the ICU for 1-3 days. Comparison group consisted of 25 patients with uncomplicated course of DPUD. The age of patients ranged from 21 to 58 years (average - $31,1\pm8,5$). The presence of duodenal ulcer and the fact of bleeding was verified by fibrogastroduodenoscopy, perforation of ulcer - by clinical, radiological and operational data. Oral inspection was performed in a satisfactory condition of the patient, with the consent of the attending physician, those hospitalized with bleeding - mostly after 3 days following its stopping.

The survey started with the collection of complaints, history taking. Condition of oral cavity was evaluated using clinical indicators: the hygienic index of Fedorov-Volodkina and PI of A.L. Russel (1956).

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Hygienic index of Fedorov-Volodkina was determined by colouring on the vestibular surfaces of the 6 lower frontal teeth with solution of Schiller-Pisarev. Calculation of PI of A.L. Russel was performed inspecting the whole dentition. Each tooth received conditional points (0-8), which reflected the degree of inflammatory-destructive process of periodontal tissues.

Definition of personal and situational anxiety was carried out by self-survey scale of Spielberger C.D. [9]. Each patient filled an electronic form of personal and situational anxiety. Interpretation of results was performed by calculating of points, according to which the low level of anxiety corresponded to amount of 0-30, medium and high, respectively, 31-45 and 46 or more points.

Statistical calculations were carried out using Statistica 10 (Statsoft, USA).

3. Results of the investigation and their discussion

Typical complaints of patients were bleeding of gums during brushing teeth, bad breath and abnormal tooth mobility. Duration of symptoms of periodontitis ranged from 1 to 7 years (average - 3,1±1,2). History of conservative treatment of

generalized periodontitis was marked in 7 patients of both groups of study in total (11, 3%).

The inspection of oral hygiene status showed the inefficiency of hygienic condition in both study groups. Hygienic index of Fedorov-Volodkina had showed statistically significantly bad oral hygiene status in 63, 7% of patients with DPUD in comparison to patients with CDPUD - 88,6% ($p<0,05$). Unsatisfactory oral health status differed not significantly in the groups of patients - 12, 1% of DPUD and 4, 8% of CDPUD ($p>0, 05$). Satisfactory oral care (1, 1-1, 5 points) was maintained only by 18, 3% of patients with DPUD versus 4, 1% with CDPUD ($p<0, 05$). Good oral care was stated in 5, 9% of patients with DPUD and 2, 5% with CDPUD ($p>0, 05$). Using the PI of A.L. Russel, signs of generalized periodontitis were found in 16 (65, 1%) patients with DPUD, whereas in patients with CDPUD - 45 (94, 2%) ($p <0, 05$).

One of the signs of stress is personal and reactive anxiety [8, 9]. Situational anxiety is caused by a specific situation that objectively gives rise to unease. Personal anxiety is seen as a trait that manifests as a constant propensity to anxiety in different life situations, including those that are not threatening at all [1, 10].

Table 1: Condition of trait anxiety in patients with DPUD and CDPUD

Level of trait anxiety	DPUD n=25		CDPUD n=48		p
	n	%	n	%	
Low	5	20%	4	8,33%	>0,05
Medium	13	52%	5	10,41%	>0,05
High	7	28%	39	81,25%	<0,05

As seen in the table, low and medium trait anxiety did not have significant differences between the research groups. At the same time, high levels of trait anxiety were statistically

significantly more frequent in the group with CDPUD - 81, 25% ($p<0, 05$).

Table 2: Condition of situational anxiety in patients with DPUD and CDPUD

Level of situational anxiety	DPUD n=25		CDPUD n=48		p
	n	%	n	%	
Low	11	44%	34	70,83%	>0,05
Medium	6	24%	7	14,58%	<0,05
High	8	32%	7	14,58%	<0,05

No significant differences in the low situational anxiety among research groups were identified. Unlike personal anxiety, situational anxiety turned out to be more significant higher not only at high, but also at the medium level ($p<0, 05$). Most frequently, patients with CDPUD noted a reduced mood, oppression, sadness, yearning, depression, anxiety, constant inner tension, fear of death, unwillingness to communicate, difficulties in adapting to hospital, poor tolerance to noise and bright light, paraesthesia, impaired cycle sleep and activity, confusion, inability to relax.

4. Conclusions

- Generalized periodontitis is present in 94, 2% of patients with CDPUD.

- Poor oral hygiene, according to index of Fedorov-Volodkina was stated in 88, 6% of patients with CDPUD.
- High level of personal and situational anxiety was statistically significantly more frequent in patients with CDPUD in comparison to those with DPUD.
- The role of emotional stress in the development of periodontal disease requires further research.

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