

Monitoring Data of Psychological Status of Patients Diagnosed with Chronic Generalized Parodontitis of Mild Severity during Therapeutic Measures

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ABSTRACT

Objectives: To increase the effectiveness of treatment of chronic generalized periodontitis of mild severity using photodynamotherapy and to include monitoring of psychological status in the list of studies for dynamic observation of the patient.

Materials and Methods: The object of the study was 59 patients diagnosed with chronic generalized periodontitis of mild severity. Patients were divided into the first group - studies (n = 30) and the second group-control (n = 29).

The determination of psychological status was achieved with the help of a modified questionnaire A. Cushing et al "Social impact of dental disease".

In group 1 (n = 30) in the protocol of treatment measures was included a photodynamotherapy, performed by the Activator Light-emitting diode "LED-active – 03" (the execution mode "red light") (LLC Medtorg Voronezh).

Results: According to clinical and laboratory results, of the monitoring of psychological status data obtained during 12 months of research work revealed a change in psychosomatic well-being towards

improvement and normalization clinical and laboratory data in 59 participants of the study, in the 1 group (n=30) managed to achieve long-term clinical remission.

Conclusion: Positive dynamics in the achievement of long-term clinical remission and normalization of psychological status was observed on the basis of the work conducted at all 59 participants.

Monitoring the psychological status of the 1 and 2 group of patients has increased the motivation of the individual to preserve dental health, making a more flexible, individually oriented plan of treatment activities.

Keywords: chronic periodontitis, monitoring of psychological status

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INTRODUCTION

In the modern world, it is necessary for an individual to maintain their own well-being image, and to form a variety of communication interpersonal relationships (Tsimbalistov et al., 2011; Kazankova et al., 2016)

Inflammatory diseases of the periodontal complex initiate a destructive process that ends with the loss of teeth, which leads to a decrease in the quality of life, the appearance of personal and social problems (Belenova et al., 2014; Gorbacheva et al., 2014; Dmitrieva, 2014; Olenik et al., 2016; Kazankova et al., 2016; Studenikin et al., 2017; Nagornev et al., 2018).

There is a tendency to increase the number of patients with an immunodeficiency condition and a positive allergic status in the history, which stimulates the development of treatment protocols that reduce the chemotherapeutic load on the human body (Kunin, 2012; Ponomarenko, 2013; Belenova et al., 2014; Dmitrieva, 2014; Gorbacheva et al., 2014; Usmanova et al., 2015; Garazha et al., 2019).

It should be noted that the treatment of inflammatory diseases of the periodontal complex is a long process, a "long road" that must be passed together with a dentist. The doctor needs to motivate the patient throughout the treatment activities, to show personal interest in the results obtained. An important issue is the continuity of treatment measures when replacing a specialist or medical institution (Orekhova, 2014; Olenik et al., 2016; Gontarev et al., 2017).

Any treatment process is a stressful factor for a person. The first problem is to choose a list of treatment measures that will be as effective and comfortable as possible, and the second problem is to monitor the psychological state of the individual throughout the observation (Tsimbalistov et al., 2011).

A promising area of modern clinical practice in the treatment of inflammatory diseases of the periodontal complex is the inclusion of photodynamotherapy in the patient management Protocol, and monitoring of the psychological status (Cushing, 1986; Zigmond et al., 2014; Thunshelle et al., 2016).

Photodynamotherapy can reduce the duration of active treatment measures, the use of chemotherapy drugs, and lengthen clinical remission (Abramova et al., 2011; Kunin, 2012; Belenova et al., 2014; Serikova et al., 2016; Machneva, 2016; Vahtel' et al., 2015; Kobzeva et al., 2019).

To achieve successful communication with the study participant and determine their psychological status, a Modified version of the A. Cushing et al questionnaire "the Impact of dental diseases on social functioning" was used in this work (Cushing, 1986). The questionnaire questions and interpretation in the digital series were not difficult for the individual, and the final mathematical calculation of values, followed by the decoding of the results obtained, was easily carried out by a specialist. Patients were surveyed for a year (Tsimbalistov et al., 2011).

Direct treatment of chronic generalized periodontitis was performed using photodynamotherapy and traditional treatment measures in group 1, and exclusively traditional treatment measures in group 2.

Mathematical interpretation of the patient's psychological state, accompanied by a transcript by A. Cushing (1986).

All participants in the study demonstrated positive dynamics in achieving stabilization of their psychological status during the entire observation period.

Determining the psychological status allowed to increase the motivation of the individual to maintain their own dental health. It is now possible to adjust the treatment plan based on a specific patient.

MATERIALS AND METHODS

59 people agreed to participate in the clinical study, the gender breakdown is represented by 32 (54%) women and 27 (46%) men, the average age =31.2±0.19 (p<0.05). The study followed the principles of the Helsinki Declaration and received the approval of the Ethics Committee of the leading organization. All study participants signed a written informed consent.

All 59 people were diagnosed with mild chronic periodontitis. A comprehensive survey, including psychological testing, was conducted in the process of dynamic observation during the period from the first visit to the last one after 12 months.

The study participants were divided into two groups depending on the nature of the treatment activities. Of these, 1 group-studies, including 30 patients. Group 2 control group is represented by 29 participants who agreed to conduct traditional therapeutic measures.

Patients of group 1 (n=30) received complex therapy of periodontal tissue inflammation with the inclusion of photodynamotherapy, conducted by the led Activator "LED-activator" (Medtorg+ LLC, Voronezh), with technical characteristics: low-intensity pulsed radiation with a wavelength (625±10 nm), pulse modulation frequency=80 Hz, radiation power density=140 mW/cm².

The questionnaire was used to monitor the psychological status of an individual related to dental health in all study participants. It consists of 7 thematic sections. The first section evaluates the functioning of the individual in society. The second section assesses the degree of concern of the individual due to the presence of dental pathology. The third section evaluates the intensity of toothache. The fourth section assesses the degree of concern of the individual caused by the ongoing treatment activities. The fifth section assesses the individual's satisfaction with the aesthetic appearance of the teeth. The sixth section assesses satisfaction with the aesthetic appearance of the prostheses. The seventh section assesses the individual's satisfaction with the treatment activities. The data obtained is in the range 0-3. Interpretation of numerical values:

- 0-there is no problem;

-1-complete satisfaction of the individual with the treatment activities and the result obtained;

-3-complete non-satisfaction of the individual with the treatment measures and the result obtained. Then the results are summed to get the highest value of 42 and the lowest value of 0. The adaptation of the psychological status at $X \geq 15$ is violated. The possibilities of psychological status are changed at $5 \leq X < 15$. Adaptation of the psychological status is not violated at $X < 5$.

The array of data obtained in the course of research work was statistically processed using the packages of applied statistical programs " Microsoft Excel 2003 (Microsoft Corp., USA) and STATISTICA 6.0 for Windows. To compare the average values of quantitative variables, the student's t criterion was used. The data obtained are presented as the average ± error of the average (M±m); the differences were considered significant when p was 0.05.

RESULTS

Data were obtained for monitoring the psychological status of patients diagnosed with chronic generalized periodontitis of mild severity, during the study period: from the first treatment to the last appearance in the study, after 12 months. The analysis of changes in the psychological status, the effectiveness of treatment, determined by the formula for finding the Ulitovsky efficiency index and remission of the disease.

Let's present the obtained data of the first group.

Dynamics of the Ulitovsky efficiency index in group 1 (n=30): 1 month from the beginning of the study 80.6%; 3 months from the beginning of the study 84.4%; 6 months from the beginning of the study 84.4%; 12 months from the beginning of the study 72.9%.

Relapse cases in group 1 (n=30): 1 month from the beginning of the study is diagnosed in 1 study participant (3.3% (p<0.05)); 6 months from the beginning of the study is diagnosed in 3 study participants (10% (p<0.05)); 12 months from the beginning of the study is diagnosed in 0 participants. Remission achieved by the results of the study =100%.

Results of monitoring the psychological status of group 1 participants (n=30):

1) 1 visit, the average total values obtained are 5 ± 0.5 (p<0.05).

Interpretation: the ability to adapt the psychological status of the individual is not violated, there is a slight negative impact on the daily life of the individual, on its functioning in society.

2) 1 month from the beginning of the study, the average total values are 0 (p<0.05);

3) 3 months from the beginning of the study, the average total values are 0 (p<0.05);

4) 6 months from the beginning of the study, the average total values are 0 (p<0.05);

5) 12 months from the beginning of the study, the average total values are 0 (p<0.05).

When monitoring the psychological status in group 1 (n=30), changes were detected in all 30 patients – within 1 month from the first visit to the last visit, there was no negative impact on the daily life of the individual, on its functioning in society.

Let's present the obtained data of the second group (n=29).

Dynamics of the Ulitovsky efficiency index in group 2 (n=29): 1 month from the beginning of the study 70,9 %; 3 months from the beginning of the study 67 %; 6 months from the beginning of the study 63,7 %; 12 months from the beginning of the study 59,8 %.

Relapse cases in group 2 (n=29): 1 month from the beginning of the study is diagnosed in 5 study participants (17.3% (p<0.05)); 6 months from the beginning of the study is diagnosed in 7 study participants (24.1 % (p<0.05)); 12 months from the beginning of the study is diagnosed in 6 participants (20.7 (p<0.05)). Remission achieved by the results of the study =79.3%

Results of monitoring the psychological status of group 2 (n=29):

1) 1 visit, the average total values obtained are 5 ± 0.4 ($p < 0.05$);

Interpretation: the ability to adapt the psychological status of the individual is not violated, there is a slight negative impact on the daily life of the individual, on its functioning in society.

2) 1 month from the beginning of the study, the average total values are 0 ($p < 0.05$);

3) 3 months from the beginning of the study, the average total values are 0 ($p < 0.05$);

4) 6 months from the beginning of the study, the average total values of 1 ± 1.2 ($p < 0.05$);

5) 12 months from the beginning of the study, the average total values of 3 ± 1.3 ($p < 0.05$).

When monitoring the psychological status in group 1 ($n=30$), changes were detected in all 30 patients – within 1 month from the first visit to the period of 12 months, from the beginning of observation, there was no negative impact on the daily life of the individual, on its functioning in society.

When monitoring the psychological status of participants in group 2 ($n=29$), changes were detected in all 29 people after one month from the first visit to the period of 6 months, during the period of 6-12 months from the beginning of observation, there was an increase in the value of the average total values to 3 ± 1.3 ($p < 0.05$), but the result

It should be noted that in the period of 1 month, the growth of number of relapses 1 ($n=30$) and 2 groups ($n=29$), the maximum number of recurrences detected in a period of 6 months from the start of the study with a downward trend to the period of 12 months from the start of the study.

DISCUSSION

All 59 participants in the study experienced positive dynamics in achieving long-term clinical remission and normalization of psychological status.

Photodynamic therapy as part of complex treatment measures gives clinical remission in 100% of cases (disappears swelling, hyperemia, bleeding) in the initial forms of periodontitis. It is also necessary to note the minimum list of contraindications to the use of photodynamic therapy.

Representatives of the group 1 ($n=30$) noted that photodynamic therapy is an accessible procedure for self-monitoring, due to the presence of an audio signal and visible red light

It should be noted that photodynamic therapy in all 30 patients did not cause aggravation of the inflammatory process of periodontal tissue

The use of photodynamic therapy in the group 1 ($n=30$) has led to better results based on psychological status monitoring and clinical data.

Monitoring of psychological status in all 59 patients allowed us to trace the dynamics of changes in subjective sensations in each patient, to determine the degree of satisfaction with the quality of treatment, to find out the wishes of the individual during the treatment.

The results of the study show that monitoring the psychological status of a particular patient makes the treatment plan more flexible and individually oriented, as

well as helping to establish a constructive dialogue between the doctor and the patient.

The questionnaires and convenient, easy-to-perform procedures increase the person's motivation to maintain dental health.

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