

The effect of complex antihomotoxic therapy in treatment of patients with parodontitis

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Summary

46 patients with mild or moderately severe parodontitis were treated with traditional therapy and complex therapy including the antihomotoxic preparations Traumeel S, Coenzyme compositum and Lymphomyosot.

Salivary indexes (parameters) may be very informative and are of clinico-diagnostical value in patients with oral tissues inflammation.

The concentrations of calcium, inorganic phosphate, creatinine and the activity of alkaline phosphatase have been determined in saliva of the patients with parodontitis during special complex therapy. The results suggest that complex therapy with antihomotoxic preparations was a more effective therapy than the traditional one in patients with parodontitis.

Keywords: parodontitis, saliva, calcium, phosphate, creatinine.

Introduction

Periodontitis is a disease that rarely goes spontaneously into complete remission, but rather is cyclical in nature, vacillating between periods of quiescence and over active inflammatory stimulation. Health status of individuals, the host immune system, and the defense system of saliva are of significant value. The innate host response system, particularly the inflammatory response, is central to both the healthy and diseased environments. A dynamic equilibrium exists between dental plaque bacteria and the innate host defense system. Inflammation of periodontium is a current problem in dentistry. In parodontitis the inflammatory disorders are the result of complex interactions between periodontopathogens and the host immune response. Two important and inter-related factors are involved in the pathophysiological progression of parodontitis:

the activation of immune system and the production of oxygen radicals and their related metabolites. Increased production of oxygen radicals may contribute to oxidative stress [1]. Inflammation is an activating factor of peroxide oxidation of lipids in periodontal tissues, metabolic disturbances of protein, lipid, carbohydrates and water-mineral metabolism.

Search of the newest and most effective drugs for treatment of parodontitis at the early stage of the disease and preventive therapeutic methods in order to stop progression to chronic forms of the disease has special value in modern dental practice [2,3]. Lately, many antihomotoxic preparations are used for the treatment of different diseases and pathologies with inflammation of oral tissues, stomatitis, gingivitis, parodontitis [4,5]. The antihomotoxic preparations, which can be recommended to solve the problem, are Traumeel S, Coenzyme

compositum and Lymphomyosot. Usage of these antihomotoxic preparations is based on their composition, properties, action mechanism and possibility to use for oral application [4,5].

Traumeel S consists of 14 natural components, including bioflavonoids and ascorbic acid (vitamin C). Bioflavonoids and ascorbic acid act as antioxidants with protective effect in the treatment of parodontitis. Lymphomyosot includes 17 components with antioxidant, antitoxic and antiallergic properties. Coenzyme compositum consists of 26 natural substances, which are the metabolites of Krebs cycle, the central metabolic pathway of the human organism. Their participation in metabolic processes of periodontal tissues may be effectively therapeutically. Antihomotoxic preparations are homeopathic substances and may be used as additional complex therapy together with the traditional one.

Salivary indexes (parameters) are a reflection of the patient's metabolic state and have clinico-diagnostical value in patients with oral tissues inflammation [6,7].

The purpose of this investigation was a comparative examination of calcium, inorganic phosphate, creatinine content and activity of alkaline phosphatase in saliva of the patients with parodontitis treated by traditional therapy and by complex therapy using antihomotoxic preparations, Traumeel S ointment with Coenzyme compositum or Lymphomyosot.

Materials and Methods

Forty-six patients (19-47 years old) with mild or moderately severe periodontitis and twenty healthy subjects (control group) were examined. Patients with parodontitis were divided into the following groups: 1 - patients treated by traditional therapy (n = 10); 2 - patients treated by complex therapy: additionally to basic therapy they received

the antihomotoxic preparation, Traumeel S ointment (n=12); 3 - patients treated by complex therapy, Traumeel S ointment and Coenzyme compositum (n=13); 4 - patients treated by complex therapy, Traumeel S ointment and Lymphomyosot (n=11). Antihomotoxic preparations Traumeel S ointment, Coenzyme compositum and Lymphomyosot were kindly placed at our disposal by the representative of "Homeofarm" company in the Republic of Moldova ("Heel" GmbH, Baden-Baden, Germany). Traumeel S ointment with Coenzyme compositum or Lymphomyosot was applied once a day during 10-15 days before the end of therapeutic course. The following traditional preparations were used: Metrogyl-denta, Laevomecolum, Lincomycin ointment, etc. [8,9,10]. Saliva (mouth liquid) was collected in the morning and centrifuged at 600 g during 10 min. After centrifugation saliva was used for examination using SP "Humalyzer 2000" (Germany). The following parameters were determined in saliva: calcium [11], inorganic phosphate [12], creatinine [13], protein [14], and the activity of alkaline phosphatase [15]. The salivary parameters were examined four times during treatment: before the therapy process, on the 3-rd or 4-th day of the treatment, on the 7-th day and 14-th day of therapeutical course (end of treatment). The results received were calculated with the use of the statistical Student's method and "Microstat": Microsoft Excel 98 program.

Results and Discussion

Forty-six patients with acute periodontitis and twenty healthy subjects participated in the investigation during 10-15 days of treatment. The duration of treatment depended on the process severity. The treatment schemes are convenient for outpatient treatment; there are no contraindications precluding the drug use. No side effects were

observed. The clinical effect resulted in a significant decrease in symptoms (infiltration, hyperemia, pain, bag depth) in patients treated by complex therapy with antihomotoxic preparations, already in 3-4 days after onset of treatment. The clinical positive effect in patients treated traditionally was 2-3 days later. The therapeutical course of patients with parodontitis treated by complex therapy with antihomotoxic preparations was 3-5 days shorter than the traditional one.

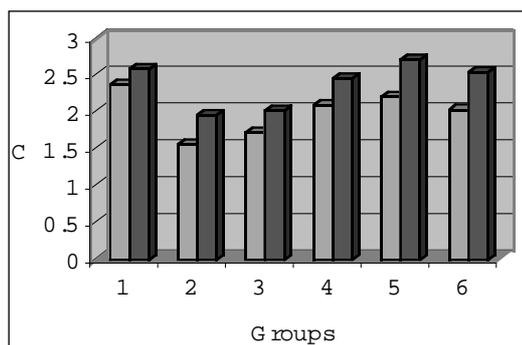
The results of *calcium* concentration determination in the saliva of patients with parodontitis at the first examination, before treatment, showed a decrease to 1.568 mmol/l (65.8%; $P < 0.05$) and 1.964 mmol/g protein (75.7%; $P < 0.05$) in comparison with the control group (2.383 mmol/l; 2.596 mmol/g). (Figure 1). On the 7-th day of the traditional therapy calcium content increased in the saliva of the patients to 1.728 mmol/l (72.5%; $P < 0.05$) and 2.031 mmol/g (78.3%; $P < 0.05$). Complex therapy (traditional therapy + Traumeel S) increased calcium content in the saliva of patients to 2.101 mmol/l (88.2%; $P > 0.05$) and 2.469 mmol/g (95.1%; $P > 0.05$). The therapeutical course with Traumeel S ointment and Coenzyme compositum increased calcium content in the saliva of patients to 2.216 mmol/l (93.0%; $P > 0.05$) and 2.728 mmol/g (105.1%; $P > 0.05$). Similar effect took place in the patients with parodontitis, treated by Traumeel S and Lymphomyosot, 2.040 mmol/l (85.6%; $P > 0.05$) and 2.552 mmol/g (98.3%; $P > 0.05$).

Determination of *phosphate* concentration in the saliva of the patients with parodontitis at the first examination (Figure 2) showed a decrease to 3.495 mmol/l (54.7%; $P < 0.05$) and 4.879 mmol/g (70.1%; $P < 0.05$) in comparison with healthy subjects (6.386 mmol/l; 6.956 mmol/g). In a week the traditional therapy increased phosphate content insignificantly to 4.425 mmol/l (69.3%; $P < 0.05$) and 5.739

Figure 1. Content of calcium in saliva of patients with parodontitis during treatment

C - concentration: mmol/l (first column) and mmol/g of protein (second column).

Groups: 1 - healthy subjects; 2 - patients before treatment (1-st day); 3 - patients, treated traditionally (7-th day); 4 - patients, treated with complex therapy (traditional + Traumeel S) (7-th day); 5 - complex therapy (Traumeel S + Coenzyme compositum); 6 - complex therapy (Traumeel S + Lymphomyosot).

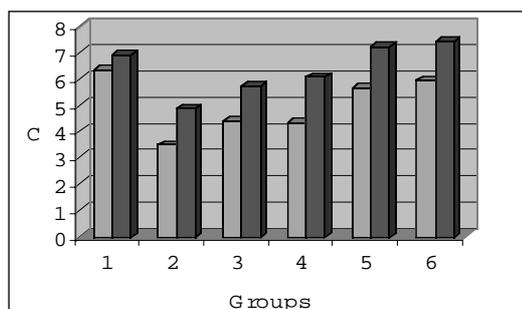


mmol/g (82.5%; $P < 0.05$). Complex therapy with antihomotoxic preparations increased phosphate content in patient's saliva of the second group to 4.349 mmol/l (68.1%; $P < 0.05$) and 6.080 mmol/g (87.4%; $P > 0.05$). In the third group of the patients the phosphate content on the 7-th day of treatment was 5.658 mmol/l (88.6%; $P > 0.05$) and 7.241 mmol/g (104.1%; $P > 0.05$). In patients of the fourth group the treatment increased the phosphate content in the saliva to 5.952 mmol/l (93.2%; $P > 0.05$) and 7.464 mmol/g (107.3%; $P > 0.05$), also.

Figure 2. Phosphate content in saliva of patients with parodontitis during treatment.

C - concentration: mmol/l (first column) and mmol/g of protein (second column).

Groups 1-6: also as in Figure 1



During inflammation and destruction of periodontal tissues, calcium and phosphate content in the saliva of patients decreased; complex therapy course with antihomotoxic preparations restored it on the 7-th day of the treatment.

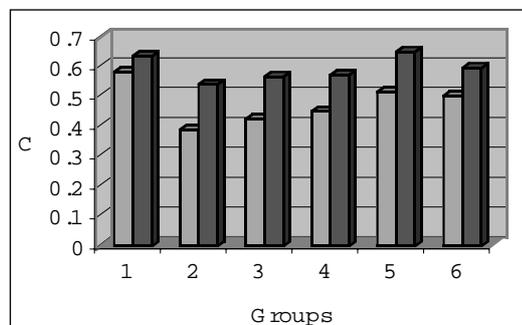
Earlier, the investigation of the creatinine content in the saliva of the patients with parodontitis showed decrease [16]. Complex therapy (traditional therapy + Traumeel S) was a more effective therapy than the traditional one in patients with parodontitis.

The results of our investigation of *creatinine* content in saliva of the patients with parodontitis during treatment are presented in *Figure 3*. Determination of creatinine content in the saliva of the patients at the first examination showed a decrease to 66.5% ($P < 0.05$) per liter and according to g of protein – 85.2% ($P < 0.05$) in comparison with the control group. In one week after starting the traditional therapy course, the salivary creatinine content was 0.426 mmol/l (72.8%; $P < 0.05$) and 0.569 mmol/g (89.3%; $P > 0.05$) in comparison with healthy group (0.585 mmol/l; 0.637 mmol/g). The course of traditional therapy with Traumeel S increased the creatinine content in the saliva of the patients to 0.452 mmol/l (77.2%; $P < 0.05$) and 0.574 mmol/g (90.1%; $P > 0.05$). Complex therapy with Coenzyme compositum increased the content of creatinine to 0.517 mmol/l (88.3%; $P > 0.05$) and 0.652 mmol/g (102.4%; $P > 0.05$). In the saliva of the patients treated with complex therapy including Lymphomyosot, the creatinine content increased to 0.502 mmol/l (85.8%; $P < 0.05$) and 0.597 mmol/g (93.7%; $P > 0.05$). Thus we can see that complex therapy with antihomotoxic preparations recovered the creatinine content in the saliva of the patients with parodontitis to the level of healthy subjects more effectively than the traditional therapy only.

Figure 3. Creatinine content in saliva of patients with parodontitis during treatment

C - concentration: mmol/l (first column) and mmol/g (second column).

Groups 1-6: also as in Figure 1



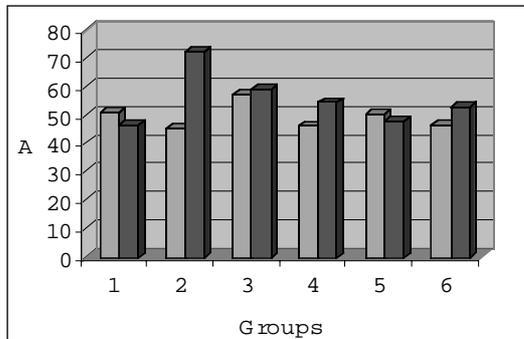
Examination of *alkaline phosphatase* activity in the saliva of the patients with parodontitis before treatment showed a level of activity per liter of 45.2 IU/l (88.3%; $P > 0.05$), and based to g of protein, 72.7 IU/g (156.3%; $P < 0.05$) in comparison with healthy subjects (51.2 IU/l; 46.5 IU/g) (*Figure 4*). On the 7-th day of treatment the traditional therapy changed the activity of alkaline phosphatase in the saliva of the patients to 57.3 IU/l (118.1%; $P < 0.05$) and 59.3 IU/g (127.5%; $P < 0.05$). Complex therapy with Traumeel S decreased alkaline phosphatase activity to norm, 46.3 IU/l (90.5%; $P > 0.05$) and 54.5 IU/g (117.1%; $P < 0.05$). Complex therapy with Traumeel S and Coenzyme compositum decreased alkaline phosphatase activity to norm, also, 50.4 IU/l (98.3%; $P > 0.05$) and 48.0 IU/g (103.2%; $P > 0.05$). Similar situation took place in the patients treated with Traumeel S and Lymphomyosot, 46.7 IU/l (91.3%; $P > 0.05$) and 52.8 IU/g (113.5%; $P > 0.05$).

Conclusion

Inflammation - destructive process, accompanying periodontitis, led to the metabolic imbalance of salivary parameters. Our results of calcium, phosphate, creatinine content examination in the saliva of the patients before the starting of treatment showed a decrease of these salivary indexes.

Figure 4. Activity of alkaline phosphatase in saliva of patients with parodontitis during treatment

A - activity of enzyme: IU/l of saliva (first column) and IU/g of protein (second column);
Groups 1-6: also as in Figure 1



The first examination of patients showed the elevation of alkaline phosphatase specific activity in the saliva. The course of the traditional therapy partially restored the imbalance of the salivary parameters in a week. The results suggest that complex therapy with antihomotoxic preparations (Traumeel S, Coenzyme compositum, Lymphomyosot) was more effective than the traditional therapy alone in the patients with parodontitis. This fact was confirmed by the dynamics of salivary biochemical parameters, the more effective improvement of patients' health status, the reduction of periodontal inflammation period and treatment course duration.

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