Волгоградский государственный медицинский университет

Актуальные проблемы экспериментальной и клинической медицины

Материалы 72-й открытой научно-практической конференции молодых ученых и студентов ВолгГМУ с международным участием

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В сборнике изложены материалы докладов молодых ученых (интернов, ординаторов, аспирантов, врачей, преподавателей) и студентов медицинских вузов России, стран ближнего зарубежья, а также школьников.

Представленные материалы будут интересны студентам, научным сотрудникам и преподавателям медицинских и фармацевтических вузов, врачам и экологам.

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mands further study, for the purpose of developing recommendations on improvement of quality of specialized psychiatric medical and social care provided, in order to increase social security of incapacitated and their trustees.

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РАБОТЫ СТУДЕНТОВ

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A. A. Ezhova, A. M. Kuznetsova

APPLIANCE OF PHOTODYNAMIC SYSTEM «FOTOSAN» IN THE TREATMENT OF PATIENTS WITH CHRONIC PERIODONTITIS

Volgograd State Medical University
Department of Therapeutic Dentistry
Coordinator: *Department of Therapeutic Dentistry, Candidate of Medical Sciences – Vasenev E.E., Candidate of Medical Sciences- Alechanova I.F.*

Introduction. The search of effective and safe methods for the selective depression of the microflora responsible for the development of periodontal pathology, remains relevant today. Difficulties associated with the use of conventional antimicrobial agents and methods, as well as a high social importance of the problem of the treatment of chronic periodontitis determine the need to find new ways of solving it. The purpose of subsequent therapeutic measures loses its meaning without the complete destruction of pathogenic microflora. Incomplete elimination crosses out her progress and leads to relapse of disease. There is a large arsenal of tools designed for mechanical and pharmacological decontamination of tissues, however, in spite of the powerful antiseptic and antibacterial agents appliance and next elements of the comprehensive treatment, is not always possible to achieve complete depression of active resistant pathogenic microflora.

Modern method of dealing with periodontal infection is photodynamic therapy (PACT - photodynamic antimicrobial therapy) - a method based on the use of various photochemical effects of light radiation, photosensitizer and disengaged oxygen. Photodynamic therapy - has evolved since the early 80 -ies of XX century as a method to influence the tumor cells, and in recent years is increasingly being used for infectious diseases. Method is equally active for micro organisms , protozoa, fungus and viruses. CMS Dental (Denmark) has developed a system of photodynamic stenlization «Fotosan» for dental practices.

Objectives of the investigation. Investigation of the clinical effects of «Fotosan» antimicrobial therapy in the treatment of patients with chronic periodontitis.

Experimental methods used. Were examined 23 patients (in age from 42 to 66 years) with chronic periodontitis average medium severity), in the exacerbation phase. 17 patients showed marked inflammation of the gums, discomfort and pain in the gums, pyorrhea of periodontal pockets. Selection criterion for the investigation was the non-use of any antimicrobial therapy for systemic and local treatment for some time past. Comparative group was consisted of five people who underwent total antibiotic treatment with macrolides and local lesions were treated with antiseptics. Professional oral hygiene was conducted to all patients by dental hygienists in the early stage of treatment. The perio tips from «Fotosan» were applied for the treatment of periodontal pockets with signs of suppuration. Effective light source for this procedure is the form of an LED lamp. Photosensitizor - toluidine blue, was applied in the periodontal pocket. This substance under the light action releases oxygen ion which provides a high disinfection. Assessment of efficiency was provided by clinical (pain, suppuration , swelling , etc.) and laboratory (investigation of gingival fluid) research.

Essential results including data, and eventual statistics. Appliance of «Fotosan» system allowed to reach the clinical effects quickly - abscesses and suppuration were reversed the next day in all cases (17 patients). Pain disappeared after a few hours, the patients did not have subjective discomfort, side effects did not appear. To secure effect one more procedure was made on the next day. Prior to treatment of periodontal pocket suppuration was determined visually. Microscopy of the swab showed a large number of dead neutrophils, lymphocytes and erythrocytes with bacteria colonies. The next day the quantitative composition of gingival fluid did not significantly change (cell content was the same), the number of colonies of microbes decreased. On the third day, neutrophil (66.54 %), lymphocytes (2.56 %) count decreased and there were epithelial cells (30.9 %), which corresponds to the average severity of inflammation. On the 7th day, correlation of the cellular content of the gingival fluid was changed to decrease the number of neutro-

phils to 56.74 %, up 1.72 % lymphocytes, but the number of epithelial cells increased to 41.54 % significantly. This suggests about the development of local immune reactions by suppressing pathogenic microflora.

In the comparison group clinical improvement occurred after a few days, at different times. Adverse reactions of the body were observed: a bad taste in the mouth, dyspepsia. Gingival fluid content prior to the study and on the third day in comparison group did not change significantly, but on the 7th day symptoms of suppuration disappeared and correlation of neutrophils, lymphocytes and epithelial cells was 47.61 % , 1.12 % and 51.27 %, respectively. It also shows the reduction of inflammation because of the antibiotic treatment.

Measures to eliminate periodontal pockets were taken after the relief of acute reactions.

Conclusion. Thus, the use of a new «FOTOSAN» system of dynamic sterilization showed positive results in patients with chronic periodontitis. The obtained results allow us to recommend this system to a wider clinical application in Periodontology.

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A. I. Lyakhov, A. I. Arapova, M. A. Ivanova, M. A. Zolotikh, K. S. Khusainova

CHANGES IN LEUCOGRAM IN MICE WITH WHITE WINE INTOXICATION

State budget educational establishment Volgograd State Medical University, Russsia
research adviser Bukhatin M.V.

Introduction. Available literature describes the studies on special aspects of alcohol beverage toxicity [1]. Yet some aspects such as influence of alcohol on blood in particular on white blood cell count are not dwelt upon sufficiently. Most scientists study only the influence of red wine on the body though according to Public Opinion Foundation data white wine consumption amounts 12.4% among other alcohol beverages [3]. Thus our work shows higher levels of toxicity of white wine compared with red wine when both are given in the equivalent dose. According to some authors higher levels of toxicity are due to presence of polyphenol compounds showing antioxidant activity, in particular, resveratrol [4].

We studied the influence of white wine on leucogram. Shifts in leucogram can indicate the changes in immune system, presence of viral and bacterial infections, parasitic invasion and allergic reactions as well as point to presence, character and extent of different intoxications [2].

Goals: to study the changes in leucogram in intoxication with different doses of white wine.

Objectives: 1) to induce intoxication of test laboratory animals with different doses of white wine; 2) to withdraw blood sample for analysis; 3) to make a general blood test to determine a total WBC count; 4) to make differential leucocyte count; 5) to compare the results in test laboratory animals and placebo control group animals

During our study we performed the investigation on animals aged from 2 to 2.5 months. The following doses (g/kg) of white wine were used: 2.8; 3.2; 3.6; 4.0; 4.4; 4.8; 5.2; 5.6; 6.0; 6.4; 6.8; 7.2; 7.6; 8.0; 8.8; 9.2.

Results. Our calculations yield: 1) stab neutrophils showed the greatest deviation (10.5 times) for the control values (dose = 9.2 g/kg), eosinophils showed an increase 6 times (dose = 4.4 g/kg). 2) Certain groups of cells showed both increase and decrease depending upon the doses of white wine. We noted a decrease in segmentonuclear neutrophils and eosinophils when the dose was increased. The number of eosinophils decreased when the dose was 7.2 g/kg and more. 3) We also noted an increase in lymphocytes (1.57 times) in the peripheral blood in intoxication with white wine in test laboratory animals compared with placebo control group animals which were given Sodium chloride solution. 4) When the doses were from 4.8 g/kg to 7.2 g/kg the total WBC count increased 2.18 times. When the doses were more than 7.2 g/kg the count of leucocytes decreased 1.95 times.

Conclusions: In alcohol intoxication we observe death of neurons and liver cells, development of pancreatitis. Pancreatitis and inflammations due to cell death can cause leukocytosis. Upon consumption of high doses of alcohol the decrease in WBC count points to more extensive inflammatory processes in the liver and pancreas and to leucocyte extravasation, i.e. the movement of a great number of leucocytes out of circulatory system towards the site of inflammation (to the tissues of the organs mentioned above). The decrease in segmentonuclear neutrophils that is observed upon consumption of high doses of wine can point to an inflammatory process caused by death of cells. We also revealed a decrease in monocytes 4.5 times when the dose was 5.2 g/kg. The decrease in both monocytes eosinophils can be the result of an inflammatory process as well.

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