

Paratunskoye Resort (Kamchatka Krai) Therapeutic Muds and Drugs on their Basis as a Means of Etiotropic and Pathogenetic Therapy of Periodontal Disease

Muradov S.V., Sel'minskaya O.V., Rogatykh S.V.

ABSTRACT

Among the many natural remedies that common in our region, is a special group of thermo-mineral waters, medicine mud and natural seawater. We concentrated our attention on medicine mud from Utinoye Lake, which was used as a medication AEM (aqueous extract of mud). Therapeutic methods of treatment are aimed to inflammation removing and relapse prevention and effect, especially on etiotropic and pathogenetic sections in the occurrence of periodontal disease. The range of drugs used for this purpose is very broad, but it is necessary to call attention to the health natural remedies. It is necessary to study the possibilities of using these natural remedies, particularly in the treatment of periodontal disease. Unlike conventional drugs, natural remedies do not have a toxic effect on the organism, is well tolerated, do not cause allergic reactions. The effectiveness of electrophoretic application of AEM medication during paradontium conditions was studied. The efficiency of electrophoretic applying of AEM in periodontal diseases of 45 patients was studied by us in the sanatorium. During the study were formed three groups of observation: I group - 7 persons, patients periodontal disease; II group - 26 persons periodontitis patients I-III degree of severity; III group - 12 persons, periodontal disease patients (2 people) and periodontitis I-II degree of severity (10 people) - a control. After treatment the final dental examination was conducted for observing of periodontal condition. Dental hyperesthesia of hard teeth tissues reduced at the end of course of treatment among all patients with amphotosis. Gingival hemorrhage, exudate discharge from dental pockets disappeared after the treatment completely among the patients with periodontitis. Thus, mud drug AEM applying in combination with mouthwash by thermal water leads to positive results in the treatment of inflammatory and degenerative diseases of the periodontium and is an example of effective using of natural remedies and treatment.

Keywords: paradontium, peloids, Kamchatka, electrophoresis.

INTRODUCTION

It is difficult to overestimate the importance of environmental factors in medical and health practice, due to their diversity, accessibility, complex effect on the body and efficiency in maintain of the adaptive properties of the organism. Academician V.P. Kaznacheev [1] marks the local natural remedies as key factors which are support and restore the adaptive mechanisms

of organisms in extreme regions, which include Kamchatka.

Among the many natural remedies that common in our region, is a special group of thermo-mineral waters, medicine mud and natural seawater. We concentrated our attention on medicine mud from Utinoye Lake, which was used as a medication AEM (aqueous extract of mud).

It is necessary to study the possibilities of using these natural remedies, particularly in the treatment of periodontal disease. Diseases of the tooth surrounding tissues are known from old times very well. With the progress of civilization, the prevalence of periodontal diseases, has risen sharply. According to WHO (1978), periodontal diseases are found in 46-80% of children (gingivitis) and almost the entire adult population of most countries of the world (periodontitis and mixed forms). [3] The problem of periodontal diseases is very crucial for the Kamchatka region as for all northern territories. A lot of factors are influence to origin and development of periodontal diseases. The complex of peculiar conditions, which can be attributed to the common factors of occurrence of periodontal disease, affects to the human organism in our region. It is a state of hypoxia, significant fluctuations of atmospheric pressure, geomagnetic field, solar radiation, the quality of nutrition, including vitamin deficiency, especially vitamin C. Diseases of the internal organs and body systems are common predisposing factors of periodontal diseases: pathology of the endocrine system, gastro-intestinal tract, atherosclerosis, cardiovascular diseases, collagen, etc. [4]. One of the key factors is the disorder of the immune system. For local causes of periodontal diseases, manifested in the mouth in the first place should include microbial factor of plaque and tartar, which, in combine with an altered immune reactivity is the leading element in the development of periodontal diseases - an inflammatory destruction of periodontal tissues [6]. Periodontal diseases clinically manifested by denudation of the necks and the roots of the teeth, inflammation and edema of the gingival papilla and gingival margin, frequent observe of bleeding gums when brushing your teeth and taking solid food. Under long-term chronic inflammation occurs dissolve of bone tissue around the teeth forming the abnormal tooth-gum pockets, often with serous or purulent discharge. In the cases of a emphasized destructive changes appears tooth mobility, they advance, change their position in the dental arch.

In present time the treatment of periodontal diseases is one of the most difficult problem in dentistry. It can be explained firstly by large prevalence of this disease in the population, and secondly by great number of common and local predisposing factors and their various combinations in each patient, which requires individual and integrated approach to the treatment of the patient. The complexity intends a combination of therapeutic, surgical and orthopedic treatments.

Therapeutic methods of treatment are aimed to inflammation removing and relapse prevention and effect, especially on etiologic and pathogenetic sections in the occurrence of periodontal disease. The range of drugs used for this purpose is very broad, but it is necessary to call attention to the health natural remedies. Unlike conventional drugs, natural remedies do not have a toxic effect on the organism, is well tolerated, do not cause allergic reactions. [3]

Applying of therapeutic mud and mud preparations for the treatment of inflammatory periodontal diseases should be interesting and promising direction in the medicine. During many years the mud of Utinoe Lake applied in our region with great success.

The structure of mud includes specific microbial community from bottom silt deposits and biologically active substances that produced during its life and have varied physiological effect. With using mud from Utinoe Lake we made a drug – AEM. AEM is a liquid with acidic reaction, low mineralized; the composition is match for a mud solution. The most important biomedical properties of this drug are its antibacterial action against pus-producing cocci and bacteria of enteric typhoid group, as well as in wound healing effect of thermal and mechanical damage [5]. Biologically active substances contained in the preparation have an immunostimulating effect in the local inflammatory processes.

The efficiency of electrophoretic applying of AEM in periodontal diseases of 45 patients was studied by us in the sanatorium of Defense Ministry "Paratunka". During the study were formed three groups of observation: I group - 7 persons, patients periodontal disease; II group - 26 persons periodontitis patients I-III degree of severity; III group - 12 persons, periodontal disease patients (2 people) and periodontitis I-II degree of severity (10 people) - a control.

All patients (45 people) got professional oral hygiene including removal of hard and soft dental plaque before performing medical procedures. Oral sanitation if necessary was conducted. Patient learned for careful and correct oral hygiene as well as mouthwash by thermal water 6-8 times per day. In the event of gums abscess antibacterial drugs used as in II, and in the control groups of observation. Patients of I and II groups got electrophoresis with the AEM drug.

The methodology of the procedures used device "Potok-1". The drug and physiological solution alternately applied to the electrode cushions which put on the area of gums and the middle third of the medial surface of the right forearm. Total number of procedures was 15. The duration of each daily procedure was 15 minutes.

RESULTS AND DISCUSSION

After treatment the final dental examination was conducted for observing of periodontal condition. The results of treatment are shown in Table 1.

All patients were well tolerated the treatment. Exacerbations of gum disease, deteriorations

of general condition and intolerance of AEM was not observed. Hypersensitivity of hard tissues of the teeth disappeared or significantly reduced under the influence of treatment at the end of it. However, the objective symptom of a degenerative process (pallor of the mucous membrane of the gums) has not changed. Bleeding gums and emission of exudate from periodontal pockets of periodontitis patients I-III degree of severity disappeared completely after treatment. Teeth mobility was observed in 72% of patients, but in significantly reduced form.

Thus, mud drug AEM applying in combination with mouthwash by thermal water leads to positive results in the treatment of inflammatory and degenerative diseases of the periodontium and is an example of effective using of natural remedies and treatment.

Table 1 – Changing the periodontal status under the influence of drug treatment AEM

	Symptoms of periodontal tissue pathology	I group – 7 pers.		II group – 26 pers.		III group (control) – pers.	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
.	Hypersensitivity of hard tissues of the teeth	6	1	7	3	2	2
.	Pallor of the mucous membrane of the gums	7	7	–	–	2	2
.	Pain in the gums	3	1	9	–	1	–
.	Bleeding gums	2	–	25	–	10	4
.	The presence of exudate in the PZDK	–	–	14	–	5	3
.	Abscess of gum	–	–	7	–	1	–
.	Tooth mobility	–	–	15	10	4	3

REFERENCES

1. Kaznacheev V.P. Sovremennye aspekty adaptacii [Modern aspects of adaptation]. Novosibirsk: Nauka, 1980, 192 p.
2. Kankanjan A.P., Leont'ev V.K. Bolezni parodonta [Periodontal disease]. Erevan: Tigran Mec, 1998, 360 p.
3. Malinina I.A. Vlijanie kurortnyh faktorov na sostojanie protivomikrobnj zashhity u bol'nyh hronicheskim generalizovannym parodontitom [Influence of the resort factors on antimicrobial protection in patients with chronic generalized periodontitis] // Stomatologija XXI veka: novejschie tehnologii i materialy [XXI century Dentistry: the latest technology and materials]. Perm': PGU, 2000, pp. 84-85.
4. Modina T.N. Rol' faktorov riska v diagnostike i prognozirovanii bystroprogressirujushhih parodontitov [The role of risk factors in the diagnosis and prognosis of rapidly progressing periodontitis] Majestro stomatologii. 2001. № 5, pp. 25-40.
5. Muradov S.V. Jekologicheskoe reshenie problem sovremennogo grjazelechenija [Environmental solving of modern mud treatment problem]. Petropavlovsk-Kamchatskij: Izd-vo KamGU im. V.Beringa, 2007. 266 p.

6. Jarova S.P. Rol' giporeaktivnosti organizma v techenii jeksperimental'nogo parodontita [Role of organism hyporeactivity during experimental periodontitis] J Vestnik stomatologii. 1999. № 3, pp. 51-70.

Authors

Muradov Sergey Vasilievich, Research Geotechnological Centre, Far Eastern Branch, Russian Academy of Sciences, Severo-vostochnoe s., 683002, Petropavlovsk-Kamchatsky, Russia, e-mail: biolab@kscnet.ru;

Selminskaya Olga Vladimirovna, Regional dental polyclinic of Kamchatka, Koryakskay st., 683010, Petropavlovsk-Kamchatsky, Russia;

Rogatykh Stanislav Valentinovich, Research Geotechnological Centre, Far Eastern Branch, Russian Academy of Sciences, Severo-vostochnoe s., 683002, Petropavlovsk-Kamchatsky, Russia.