

ELECTROMAGNETIC RADIATION IN THE DECIMETER RANGE IN THE TREATMENT OF ECZEMA

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Abstract: The purpose of the article is to study the effectiveness of the use of the diagnostic and treatment complex “ElectroMAG” as a new physiotherapeutic method in the complex therapy of true eczema. Material and methods. The results of the use of low-intensity electromagnetic radiation in complex treatment of 42 patients diagnosed with true eczema are presented. The course of treatment consisted of 12 procedures. The comparison group (30 people) received traditional therapy using standard doses and drug regimens, without the use of physiotherapeutic methods of therapy.

Keywords: Eczema, method, treatment, low-intensity electromagnetic radiation.

INTRODUCTION

The development of new methods for diagnosing and treating eczema is an urgent medical and social problem, the importance of which is determined by the high prevalence of the disease among the population and the chronic recurrent course of dermatosis. The number of patients with eczema reaches 19 per 1000 population, and this figure continues to increase [1, 2].

Early changes in the eczematous process, as a rule, occur in the vascular apparatus of the dermis and are accompanied by a sharp swelling of the papillae, from which the edematous fluid penetrates into the epidermis through the dermoepidermal membrane. Next, intracellular edema develops in the form of vacuolization of cells, followed by rupture of their membranes and cell death with the formation of spongiotic vesicles [3].

MATERIALS AND METHODS

The study involved 42 people diagnosed with “True eczema, acute stage”; the average age of the patients was 41.5 ± 2.5 years. Inclusion criteria: presence of true eczema in the acute stage; age 18–60 years; informed consent to participate in the study. Exclusion criteria: immunosuppressive therapy within the last 6 months; history of epilepsy; the presence of significant hematological and biochemical abnormalities in blood tests; age under 18 years and over 60 years; immunodeficiency states; endocrinopathies; oncological diseases; pregnancy and lactation; psychoneurotic disorders; alcoholism.

RESULTS AND DISCUSSION

The duration of the course of therapy was 12 days. The treatment module of the complex was installed directly in the projection of the lesion. The duration of one procedure is 15 minutes. During the procedure, the patient was in a supine position and did not experience any subjective sensations.

Statistical processing of the results obtained was carried out using commonly used methods of parametric and nonparametric statistics. Student's t-test was used to assess intergroup differences. To compare paired (matched) samples (dynamics of observation of patients), the paired Student's test was used.

Statistical processing of the material was performed using standard software packages for applied statistical analysis (Statistica for Windows v. 5.0).

During the course of treatment, patients who received complex therapy including low-intensity electromagnetic exposure were observed to have an earlier clear decrease in clinical symptoms of the eczematous process than in the comparison group in the form of a

decrease in the intensity of itching, regression of erythema, flattening and resolution of papules, which was confirmed statistically significant decrease in the absolute values of the EASI index.

Assessment of the functional state of the water component of the internal environment of the body was carried out from the lesion and along its periphery from visually unchanged skin at a distance of up to 5 cm upon admission, on the 7th day from the start of therapy and after completion of treatment. The level of radio response is measured in conventional radiophysical units (r.u.).

It was revealed that patients with eczema before treatment had a clearly high resonant radio response both from the lesion (677.0 ± 12.3 a.u.) and from visually unchanged skin at a distance of up to 2 cm from the lesion (477.6 ± 15.2 a.r.u.), compared with the radio response at control points (228.5 ± 10.3 a.r.u.) and from healthy skin (236.5 ± 10.7 a.r.u. e.), indicating inflammatory and regenerative processes in the examined area.

When assessing the pathological process on the 7th day from the start of treatment, a decrease in the level of the resonant radio response was noted (384.8 ± 12.4 a.u.), and after completion of the course of therapy, the values of the radio response from the lesions practically approached control points (248.9 ± 16.4 c.u.).

Thanks to the software of the diagnostic and treatment complex, it is possible to objectively compare the prevalence and severity of the pathological process before the start of therapy and after its completion.

In addition, in the group of patients receiving physiotherapeutic treatment with EMR, in 24 people (57.1%) the next exacerbation of eczema occurred at a significantly later date than in the comparison group. In 13 patients (30.9%) during dynamic observation, stable remission of the eczematous process was noted.

The mechanism of influence of electromagnetic radiation on biological objects is complex; has a strong non-specific therapeutic effect, normalizing the morphofunctional state of the body as a whole [4].

The data obtained during the study indicate the ability of low-intensity electromagnetic radiation to improve the course of dermatosis, increasing the duration of the remission period. This circumstance seems extremely important, since traditional drug therapy in most cases allows achieving a short-term therapeutic effect.

There were no side effects observed during treatment with this physiotherapeutic method.

CONCLUSION

Low-intensity electromagnetic exposure is a highly effective and safe method of treating eczema. A course of application of this method of physiotherapy helps not only to achieve a clear clinical effect in the form of regression of skin rashes and a significant improvement in the quality of life of patients, but also to reduce the drug load on the body.

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