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Improving The Principles Of Treatment In Patients With Zoonotic Leishmaniasis With The Immunomodulator Gepon And Methylene Blue Using The Alt Vostok Apparatus

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ABSTRACT

The object of the study was 102 patients with zoonotic leishmaniasis aged 2 to 65 years. The diagnosis of zoonotic leishmaniasis was established by clinical and epidemiological data and confirmed by the results of parasitological studies.

We studied the duration of the clinical periods of zoonotic leishmaniasis against the background of complex therapy with methylene blue using the ALT Vostok apparatus in the control group of 51 patients and complex therapy with methylene blue using the ALT Vostok apparatus and the immunomodulator Gepon in the main group of 51 patients. The results of the study showed that in patients of the main group, on the background of treatment with the ALT Vostok apparatus using the immunomodulator Gepon, the duration of the main periods was significantly reduced than in the control group, who were treated only with methylene blue using the ALT Vostok model-03 apparatus.

KEYWORDS

Leishmaniasis, methylene blue, ALT Vostok model-03 apparatus, immunomodulator Gepon.

INTRODUCTION

Cutaneous leishmaniasis remains relevant to this day. This has become one of the socio-economic problems of a number of countries. According to the World Health Organization

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(WHO), cutaneous leishmaniasis occurs in more than 80 countries around the world. According to the WHO, the number of patients per year is estimated from 600,000 to 1,000,000 [1].

The spread of cutaneous leishmaniasis is largely due to the environmental conditions of a local area located in a specific geographic region, as well as the interaction of the source with the pathogen, the carrier with the transmitted organism. This requires constant improvement of preventive and anti-epidemic measures in these areas [2].

An increased efficiency of the complex treatment of trophic and postoperative wounds with the local application of the immunomodulator Gepon in clinics in Moscow and Ukraine was found [3].

Gepon is a synthetic peptide consisting of 14 amino acid residues. Under the influence of this drug, the number of SD4 +, SD8 + and SD69 + cells increases, the functional activity of neutrophils and macrophages increases. The drug was developed in the United States and is used to prevent and treat AIDS, systemic lupus erythematosus and similar diseases[4]...

In addition, the drug Gepon has an antiviral effect on human cells and is effective in viral encephalomyocarditis, herpes simplex virus, hepatitis C virus, rabies virus, sexually transmitted infections, postoperative acute purulent infections [5]. Currently, the fight against pathogenic infections affecting the body with the help of immunosuppressants enhances the body's immune response[6]...

Gepon acts on human cells and changes the spectrum of cytokine production through them. The resulting new cocktail of cytokines increases the resistance of cells to infection. It has been studied in vitro by transferring encephalomyocarditis, herpes viruses type I and II, and hepatitis C viruses into human cell culture[7]...

OBJECTIVE

Improvement of new treatment methods based on clinical and immunological features of zoonotic leishmaniasis.

Work tasks

1. Patients of group 1 (control group). To determine the effectiveness of the use of topical 0.05% methylene blue in patients with zoonotic leishmaniasis using the ALT Vostok model-03 apparatus in patients at the early nodular, erosive and ulcerative stages.
2. Patients of group 2 (main group). To determine the effectiveness of the method of concomitant use of 0.05% methylene blue ALT Vostok model-03 and the immunomodulator Gepon in order to improve the method of treatment in the main group of patients with early nodular, erosive and ulcerative stages of zoonotic leishmaniasis.
3. Determination of the reliability of the results obtained by statistical processing.

MATERIALS AND METHODS

Examined 102 patients with zoonotic leishmaniasis. We studied 42 patients who presented at the nodal stage, 34 during the erosion period and 26 patients at the ulcer stage. Their average age ranged from 2 to 65 years. Of these, 26 are women and 76 are men.

Patient evaluation began with anamnesis and epidemiological data collection. To confirm the diagnosis, the main attention was paid to the patients' complaints on the onset and course

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of the disease, parasitological examination, as well as the formation of nodules, erosion and ulcers on the exposed parts of the body and the surrounding infiltration.

Changes in nodules, erosions and ulcers in the patient were assessed with daily observation and dynamically. Analysis of urine and blood was checked according to indications.

After the initiation of photodynamic therapy and immunostimulatory therapy, a total of three parasitological examinations were performed once a week to determine the survival time of leishmaniasis in order to study their etiotropic effects.

To assess the results of the study, all patients were divided into two groups according to age, sex and severity of the disease.

51 patients of the control group and 51 patients of the main group were examined, respectively.

For etiotropic treatment, 51 patients (control group) at the stage of nodular, erosive and ulceration were treated with 0.05% methylene blue using the ALT VOSTOK model-03 apparatus.

To determine the effectiveness of the concomitant use method In 51 patients, 0.05% methylene blue ALT Vostok model-03 and immunomodulator Gepon were used to improve the method of treatment in the main group of patients at the early nodular, erosive and ulcerative stages (main group).

STATISTICAL METHODS

To determine the reliability of the results and data obtained in the course of the study, the average values of the indicators –M, the average error –m, the difference in reliability – R, the criteria methods proposed by A.A. Vorobiev, I.P. Ashmarin were used. (1962). The R-reliability difference was obtained from the Steward table.

In the surveyed region, in the questionnaires sent out in 2017-2020, the total number of patients who sought help from doctors is 102, of which 42 are in the stage of nodules (the first 3 weeks after a mosquito bite); 34 in erosion stage; 26 ulcerated (4-10 weeks after mosquito bite).

The patients undergoing treatment were between the ages of 2 and 65 years. In patients in the stages of nodular, erosive and ulceration, the diagnosis was confirmed by the parasitological examination method.

50% of the examined patients (51 patients of the control group) in the nodular, erosive and ulceration period of the disease applied 0.05% methylene blue using the ALT Vostok model-03 apparatus 1 time a day for 15-20 minutes for 12 days.

In 50% of patients (51 main groups) at the nodal, erosive and stages of ulceration, 0.05% methylene blue using the ALT Vostok model-03 apparatus, 1 time a day for 15-20 minutes for 12 days with local application of the immunomodulator Gepon.

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Table 1

The results of using methylene blue solution in patients with zoonotic leishmaniasis through the ALT Vostok apparatus and the effectiveness of the immunomodulator Gepon

No.	Clinical stages of leishmaniasis	Length of periods (calculated in days)		
		Duration of clinical periods of patients (control group) who beat 0.05% methylene blue using the ALT Vostok apparatus, model-03. n = 51, M ± m	Duration of clinical periods of patients (main group) who beat 0.05% methylene blue ALT Vostok, model-03 and immunomodulator Gepon n = 51, M ± m	R
1	Nodular period	14.6 + 1.06	16.4+ 0.41	<0.001
2	Erosive period	11.2 + 0.56	10.6 + 2.5	> 0.05
3	Ulceration period	21.6 + 0.9	14.1+ 1.20	<0.001
4	Scarring period	17.6 + 0.97	12.6 + 0.51	<0.001
five	Average duration of illness	65.0 + 2.9	53.7 + 1.88	<0.001

Note. In all patients of the study and control groups, the number of nodes, erosion and ulcers ranged from 1 to 6.

In 51 patients in the control group, methylene blue solution was injected once a day for 7 to 15 days using the Vostok apparatus. 51 patients in the main group were injected with methylene blue solution once a day for 7 to 15 days using the Vostok apparatus with local application of the immunomodulator Gepon. It should be

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noted that no side effects were observed in the treatment of the main and control groups of patients who were treated locally with the ALT Vostok apparatus, model-03 and the immunomodulator Gepon.

The duration of the baseline clinical symptoms was significantly correlated with the patients of the main and control groups to assess the therapeutic efficacy of the local administration method using the ALT Vostok apparatus, model-03 and the Gepon immunomodulator.

In particular, the duration of the nodular stage was 14.6 + 1.06 days in the main group of patients and 16.4 + 0.41 days in the control group (p <0.001)

The duration of the erosion stage was 10.6 + 2.5 days in the main group of patients, while in the control group it was 11.2 + 0.56 days (p> 0.005).

The duration of the ulceration period was 14.1 + 1.20 days in the main group of patients, while in the control group it was 21.6 + 0.9 days (p <0.001).

It was found that the duration of the scarring phase was 12.6 + 0.51 in the main group of patients and 17.6 + 0.97 days in the control group (p <0.001).

The average duration of the disease was approximately 65.0 + 2.9 days in the main group of patients, 53.7 + 1.88 days in the control group (P <0.001).

The results show that the duration of all diseases in the main group of patients achieved reliable results.

R is the difference in statistical significance between the values of the main and control group of patients.

CONCLUSION

According to the results, a positive effect with the local application of methylene blue with the ALT Vostok apparatus and the immunomodulator Gepon lengthened the nodal and erosive stages of zoonotic leishmaniasis, shortened the duration of the ulceration period and the general period of morbidity.

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