

Correction of Immunodeficiency with Cyclopheron in Infertile Men with Chronic Inflammatory Conditions of Genitourinary System

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ABSTRACT

The results confirm high therapeutic effectiveness of Cyclopheron used for the treatment of chronic inflammatory conditions of genital organs. The medication used in complex therapy of infertile men with inflammatory conditions of genitourinary tract enhances the effectiveness of undertaken treatment through regulation of autoimmune processes. Absence of side effects, allergic responses and complications on the background of antibiotic therapy proves the ability of Cyclopheron to prevent immunosuppressive action of antibiotics. Cyclopheron helps to recover T-system of immunity and autoimmune processes; this is demonstrated by normalization of an absolute number and percentage of T-lymphocytes, T-helpers, T-suppressors, phagocytic activity of neutrophils, phagocytic number and index. On the basis of our investigations use of Cyclopheron could be recommended for the treatment of mentioned category of patients.

KEYWORDS: *infertility, immunity, cyclopheron*

Many infectious agents are able to directly infect immunocompetent cells with further in the interruption of their proliferation and the differentiation of their functions. In other cases immunodeficiency's develop as a result of damaging action of an infectious agent on the immune system, mediated by disturbed immunoregulation during specific immune response [1,2,3]. On the other hand, the commonest clinical presentations of immunodeficiency's are recurrent, continuous, severe infections of bacterial, viral and fungal origin.

Immunodeficiency's related to the disturbances of immunoregulation and resulting in the loss of control mechanisms of the immune response, may cause the development of autoimmune diseases on the background of the lost immunological tolerance to own antigens.

The analysis of non-specific body defense factors during chronic inflammatory conditions of genitourinary tract makes evident the suppression of all segments of the immune response [2,5,7]. This causes persistent clinical course of various infections, their dissemination in human body, continuation of the process, tendency to develop of various complications [1,3].

All above-mentioned require complex approach to the treatment of genitourinary diseases; this means the use of medications directed at correction of the immune response in combination with antibiotics.

The aim of our investigation was to study the effectiveness of Cyclopheron in patients with chronic inflammatory diseases of genitourinary organs on the background of the secondary immunodeficiency's.

MATERIALS AND METHODS

We have investigated 145 infertile men at the age of 19-46 with chronic infectious-inflammatory conditions of genital organs; the duration of disease varied between 2 to 8 years. 137 (94.5%) patients presented with scarce purulent mucous urethral discharge, disturbed urination, urethral discomfort, redness of urethral labia, specific smell.

For the evaluation of immune system in peripheral blood non-specific factors of immunity and specific body responsiveness were studied. Qualitative and functional

indicators of lymphocytes were studied. Activity of T-lymphocytes was evaluated by means of their ability to transform into blasts under the influence of No209 staphylococcus antigen - blast-transformation response of lymphocytes. For the investigation of the absolute number and percentage of T-common lymphocytes and the proportion of T-lymphocyte sub-population was used the method of M. Jondal and co-authors [6], Lebedev's modification (1987, micro method) [4]. Immune-regulating coefficient has been calculated. For the evaluation of non-specific factors of immunity phagocytic activity of neutrophils was identified by means of phagocytic number and index.

During the investigation of cellular segment of immunity prior to the treatment, the patients were diagnosed with lowered total number of T-lymphocytes (CD3) in peripheral blood, with the disturbance of their functional activity and tendency to more sluggish clinical course of the inflammatory process. Decreased number of T-suppressors (CD8) in peripheral blood was also detected, which have suppressive effect in case of inflammatory processes. As for another sub-population - T-helpers (CD4) - the increase of their total number was revealed. The decreased phagocytic activity of neutrophils was also diagnosed; this was demonstrated by reduced phagocytic number and index. Our investigations demonstrated that the patients had increased DC4/CD8 ratio caused by increased CD4- and reduced CD8 levels.

Diagnostics of various pathological conditions of genitourinary tract was performed by means of bacteriological, bacterioscopic, immunofluorescent, immunoenzymatic, ultrasound and other methods of investigation.

The patients were divided into two groups. First group - 105 (72.4%) patients underwent the complex anti-inflammatory therapy with antibiotics and Cyclopheron; second group of 40 (27.6%) patients - with antibiotics only.

In the first group Cyclopheron was used as an adjunctive therapy - an immunomodulator on the background of treatment with antibiotic, antifungal medications and vitamins. Cyclopheron was used in the form of intramuscular injection - 10-15 injections in accordance with the basic scheme; 2 ml of 12.5% solution at 1,2,4,6,8

days and further - two days later, in combination with the course of antibacterial therapy - Vilprafen 1000 mg per 24 hours - 1 tab. in the morning, 1 tab. in the evening during 10 days; 10 grams per course; or Bactifloc - 0.5 grams twice daily, 7-10 grams per course; or Vibramycin 0.1 mg 3 times a day during 10 days; or Abactal - 400 mg in the morning, 400 mg - in the evening, 8 grams per course; or Chynodis - 0.2 grams in the morning, 0.2 grams in the evening, course - 7-14 days. Antibiotic therapy was provided in accordance with the results of bacterioscopy - antibioticogram.

RESULTS

As a rule, for the treatment of these patients previously were used almost all groups of antibacterial drugs effective for the given condition (tetracyclins, fluorinolons, macrolides, etc.). In most patients short therapeutic effect was observed demonstrated by the absence of clinical signs in 50-60% of cases. 1-2 months after the antibiotic treatment actually all patients developed increasing clinical signs of various diseases of genitourinary tract (urethritis, prostatitis, vesiculitis, etc.).

The results confirm high therapeutic effectiveness of Cyclopheron in case of chronic inflammatory processes of genital organs with clearly damaged T-system of immunity. Cyclopheron improved general condition of the patients, normalized hematological and biochemical indices and had positive effect on the dynamics of cell immunity parameters. At the end of 4-5 day after the injection of Cyclopheron acceleration of positive dynamics was observed in the first group of patients - reduction of clinical symptoms demonstrated by stopping of urethral discharge, alleviation of pain, reduction or disappearance of inflammation, normalization of urination, etc. On 10-15 days of the course was observed significant improvement of laboratory indices and even their normalization in some patients. After the full course of treatment positive therapeutic effect was achieved in 97 (92.4%) men of this group. Full improvement of symptoms was not achieved only in 8 (7.7%) cases.

In the second group of patients positive therapeutic effect was achieved in 11 (27.5%) cases only. In other 29 patients clinical signs were alleviated completely during 3-4 weeks while laboratory data still pointed out the existence of inflammation.

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The recovery of T-system of immunity was achieved in 94 cases (96.9%) out of the 97 cured patients of the first group. This was demonstrated by normalized concentration of the absolute number and percentage of T-lymphocytes, T-helpers, phagocytic activity of neutrophils, phagocytic number and index. Out of the cured patients of the second group recovery of the T-system of immunity was observed only in 3 (27.3%) cases.

Patients treated with Cyclopheron did not present with any allergic or any other side effects.

Cyclopheron has a specific feature to affect selectively normal (stimulation of proliferation and differentiation) and transformed (induction of apoptosis - genetically programmed cellular death) cells. Main immunological and psychological features of Cyclopheron are: a) its high tropism to cells of central immunity organs and lymphoid system tissue; b) intensification of medullar haemopoiesis: processes of erythropoiesis, lymphopoiesis, granulocytopenesis and monocytopenesis; c) activation of the phagocytic system, including conditions of immunodeficiency, recovery of levels of neutrophils, monocytes and lymphocytes in peripheral blood, as well as functional ability of tissue macrophags.

Absence of side effects and high therapeutic effectiveness of Cyclopheron makes it possible to use it for the treatment of patients with chronic inflammatory processes of genitourinary organs in combination with other medications.

CONCLUSION

1. Use of Cyclopheron in the complex therapy of infertile men with chronic inflammatory conditions of genital organs ensures improved effectiveness of the treatment through regulation of autoimmune processes.
2. Absence of side effects and complications on the background of antibiotic therapy verifies the ability of Cyclopheron to prevent immunosuppressive activity of antibiotics.
3. Cyclopheron helps to recover T-system of immunity and autoimmune processes; this is demonstrated by normalization of absolute number and percentage of T common lymphocytes, T-helpers, T-suppressors, phagocytic activity of neutrophils, phagocytic number and index.

Коррекция циклоферонам иммунодефицитного состояния у инфертильных мужчин с хроническими воспалительными процессами урогенитального тракта

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РЕЗЮМЕ

Цель исследования – изучение лечебной эффективности циклоферона при хронических воспалительных процессах генитальных органов. Результаты показали, что применение препарата в комплексной терапии бесплодных мужчин с воспалительными процессами мочеполовых органов обеспечивает повышение эффективности проводимого лечения за счет регуляции аутоиммунных процессов. Отсутствие побочных эффектов, аллергических реакций и осложнений на фоне антибиотикотерапии свидетельствует о способности циклоферона предупреждать иммуносупрессивное действие антибиотиков. С помощью циклоферона происходит восстановление Т- системы иммунитета и аутоиммунных процессов, которое выражается с нормализацией абсолютного и процентного показателя количества Т- лимфоцитов, Т-хелперов, Т- суппресоров, фагоцитарной активности нейтрофилов, фагоцитарного числа и индекса. На основании результатов проведенных исследований можно рекомендовать применение указанного препарата с целью коррекции иммунодефицитного состояния у мужчин с хроническими воспалительными заболеваниями урогенитального тракта.

Ключевые слова: бесплодие, иммунитет, циклоферон