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## Low molecular weight bioregulator of bacterial origin in condylomatosis therapy optimization

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**Annotation.** Condylomatosis is a disease characterized by the formation on the surface epithelium of the skin and mucous outgrowths, which can reach significant sizes. The cause of the disease is DNA-containing human papillomavirus (HPV), which have a high affinity for epithelial tissues of the genital organs, esophagus, anal canal and respiratory tract. Clinicians have described various patterns of use of the drug Licopid in the treatment of condylomatosis. Of interest is the development and further implementation of condylomatosis therapy using a drug based on glucosaminyl muramyl dipeptide in order to correct immunodeficiency states and treat papillomavirus infection. Clinical condylomatosis of the external genitalia is presented. In the study of PCR on HPV, 33 types with a high viral load were detected. Diagnosis: Papillomavirus infection. Condylomas of the external genitalia. The goals of therapy and the treatment regimen: prescribing the drug Licopid (AO Peptek, Moscow) to activate innate immunity, which allows to get an adequately high immune response at the level of both cellular and humoral local immunity. After the therapy, condylomas of the external genital organs were not found at the examination. The patient notes an improvement, the disappearance of itching. Thus, condylomatosis therapy according to the standard 10 mg Licopid regimen for 10 days was effective, it contributed to the disappearance of genital warts, the clinical effect persisted for the entire observation period – 3 months. The clinical effectiveness of the drug can be explained by its systemic effect on the correction of immunity through NOD2 receptors.

**Keywords:** condylomatosis, glucosaminylmuramyl dipeptide, GMDP, Licopid, cervical cancer, HPV 33, NOD2 receptors

**Contribution of the authors.** N.V. Kolesnikova, O. Yu. Borisova, S.V. Guryanova – collecting and processing materials, analysis of the data obtained, writing the text. Yu.G. Abramashvili – obstetrician-gynecologist, doctor of the first category, dynamic observation of the patient.

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## Оптимизация низкомолекулярным биорегулятором бактериального происхождения терапии кондиломатоза

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**Аннотация.** Кондиломатоз – заболевание, характеризующееся образованием на поверхностном эпителии кожи и слизистых выростов, которые могут достигать значительных размеров. Причиной заболевания являются ДНК-содержащие вирусы папилломы человека (ВПЧ), обладающие высоким сродством к эпителиальным тканям половых органов, пищевода, анального канала и дыхательных путей. Клиницистами описаны различные схемы применения препарата Ликопид при терапии кондиломатозе. Представляет интерес развитие и дальнейшее внедрение терапии кондиломатоза с применением лекарственного средства на основе глюкозаминилмурамилдипептида с целью коррекции иммунодефицитных состояний и терапии папилломавирусной инфекции. Представлен клинический кондиломатоза наружных половых органов. При исследовании ПЦР на ВПЧ обнаружен 33 тип с высокой вирусной нагрузкой. Диагноз: папилломавирусная инфекция, кондиломы наружных половых органов. Цели терапии и схема лечения: назначение лекарственного препарата Ликопид (АО Пептек, Москва) для активации врожденного иммунитета, который позволяет получать адекватно высокий иммунный ответ на уровне как клеточного, так и гуморального местного иммунитета. После проведенной терапии на осмотре не были обнаружены кондиломы наружных половых органов. Пациентка отмечает улучшение состояния, исчезновение зуда. Таким образом, терапия кондиломатоза по стандартной схеме 10 мг препарата Ликопид в течение 10 дней оказалась эффективной, она способствовала исчезновению кондилом, клинический эффект сохранялся в течение всего срока наблюдения – 3 месяца. Клиническая эффективность препарата может быть объяснена его системным действием на коррекцию местного иммунитета через NOD2 рецепторы.

**Ключевые слова:** кондиломатоз, глюкозаминилмурамилдипептид, ГМДП, Ликопид, рак шейки матки, ВПЧ 33, NOD2 рецепторы

**Вклад авторов.** Н.В. Колесникова, О.Ю. Борисова, С.В. Гурьянова – сбор и обработка материалов, анализ полученных данных, написание текста. Ю.Г. Абрамашвили – акушер-гинеколог, врач первой категории, динамическое наблюдение пациента.

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Condylomatosis is a disease characterized by the formation on the surface epithelium of the skin and mucous outgrowths, which can reach significant sizes. The cause of the disease is DNA-containing human papillomavirus (HPV), which have a high affinity for epithelial tissues of the genital organs, esophagus, anal canal and respiratory tract [1]. More than 200 highly and low oncogenic types of human papillomavirus have been characterized, 13 of which are highly oncogenic, causing intraepithelial lesions of the cervix uteri or cancer, as well as squamous skin cancer in men and women [2].

Most human papillomavirus infections are asymptomatic. The incubation period of cervical cancer is diagnosed on average 20 years after infection, but more recent malignancy is often noted. Infection with one type of HPV does not prevent infection with other types of virus. In 5–30% of women, several types of HPV are detected simultaneously. The leading role of human papillomavirus (HPV) in the pathogenesis of cervical cancer determines the relevance of timely diagnosis and effective treatment of papillomavirus infection of the anogenital area.

The most common treatment method is laser destruction, but its effectiveness is insufficient, since formations reappear after 6–12 months. One of the reasons for the failure of all methods of destruction is the lack of local immunity, secondary immunodeficiency states. In this regard, for the successful treatment of condylomatosis, it is necessary to include immunomodulators in the complex therapy. The immunomodulator of the first choice in this pathology is the drug Licopid (AO Peptek, Moscow) [3], which has been successfully used for more than 25 years in the treatment of diseases associated with secondary immunodeficiency states [4], psoriasis [5], allergic [6–8] and infectious diseases of bacterial [9–11] and viral etiology [12–13], involved in the regulation of hematopoiesis [14–15].

Clinicians have described various drug Licopid regimen in the treatment of condylomatosis [16–19].

In a placebo-controlled study of the complex treatment of 100 patients with local and common condylomatosis, along with the traditional 10 mg per day regimen for 10 days after laser destruction, therapy

with a dosage of 20 mg per day for 10 days after laser destruction is discussed [17].

In other studies, the traditional course of treatment with a dosage of 10 mg per day during for 10 days also showed high efficacy [18]. In this regard, the development and justification of various regimen and options for the use of the drug Licopid in the treatment of condylomatosis is of interest.

As an example illustrating the effectiveness of the use of the drug Licopid with condylomatosis according to the standard regimen, we present the following clinical case.

Patient A., 32 years old. One sexual partner for 1 year. Condom used protection. Anamnesis: The first lesions appeared about 6 months ago, the patient was cut with a razor during depilation. Formations reappeared after 2 weeks.

### Complaints

Lesions on the small and large labia, with periodic itching of the external genital organs, is disturbing.

### Objectively

On examination, single formations up to 2 mm in the region of the posterior commissure; on the right labia majora in the lower third – up to 3 mm.

### Examinations

In the study of PCR on HPV, 33 types with high viral load were detected.

### Diagnosis

Papillomavirus infection. Condylomas of the external genitalia. Purpose of the therapy and treatment regimen. Taking into account the patient's complaints and the reappearance of growths, it was decided to prescribe an immunomodulating drug to activate innate immunity, which allows you to get an adequately high immune response at the level of both cellular and humoral local immunity. This is a semi-synthetic glucosaminylmuramyl dipeptide (GMDP, Licopid).

Lycopid is prescribed at a dose of 10 mg orally, 1 tab once a day for 10 days; the dose was chosen by the research doctor in accordance with the instructions for the drug. Locally was recommended Epigen spray, which

has a complex effect, including immunostimulating, antiviral, anti-inflammatory, antipruritic and regenerative effects. Spray treatment was carried out 2–3 times a day externally to the area of formations. Turnout after 2 weeks was recommended to address the issue of possible coagulation of formations.

## Results

After the treatment, condylomas of the external genital organs were not found at the examination. The patient notes an improvement, the disappearance of itching. Thus, condylomatosis therapy according to the standard 10 mg Licopid regimen for 10 days was effective, it contributed to the disappearance of genital warts, the clinical effect persisted for the entire observation period – 3 months. The clinical effectiveness of the drug can be explained by its systemic effect on the correction of immunity through NOD2 receptors. It is well known, the substance of the drug Licopid is glucosaminyl muramyl dipeptide (GMDP), which is a ligand of innate immunity NOD2 receptors, involved in a huge amount of intercellular interactions [20]. The mechanism of action of the drug is well understood, there are no side effects, high efficiency and good tolerance that serve as the basis for its appointment.

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