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THE STUDY OF IMMUNITY IN CHILDREN WITH MULTIPLE PAPILLOMAS

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ABSTRACT

This article is devoted to an urgent problem-multiple papillomas in children. A group of children (n=30) aged 9 to 12 years with multiple papillomas was examined. A group of healthy children (n=20) was also examined, compared groups of children are comparable in age. All children (n=30) had positive PCR for HPV, as well as histological study of papillomas. All children were examined for immune status (CD3+, CD4+, CD8+, CD16+, CD22+, IgA, IgG, IgM, IgE) on the base of National Medical centre of Republik Sakha Yakutia. Comparison of mean values was performed by one-factor analysis of variance using student's T-test to assess the equality of Fisher's f-test means. The relationship between the parameters was evaluated using linear and rank correlation coefficients. It was found that in children with papillomas reduced the content of IgA, CD19+and CD16+ lymphocytes. All examined children received therapy drug groprinosin 500 mg age dose for 10 days, then the drug Likopid in the age dose for 10 days. All children with papillomas were found to have immune dysfunction or insufficiency affecting cellular and humoral immunity (IgA reduction, CD19+ lymphocyte reduction). It was revealed that therapy with groprinosin and lycopid drugs leads to the normalization of reduced immune status indicators: an increase in the content of CD19+,IgA, an increase in the concentration of IgA, and the absence of new papillomas in children.

Keywords: papillomas, children, immunity, immunocorrector, immunoglobulins, lymphocytes.

Papillomas are a disease that affects the skin and cells of the mucous membranes. The cause of papillomas is the human papilloma virus, which belongs to the Papoviridae family, the Papillomavirus group. The ability of the virus to integrate its DNA into the genome of human cells is a feature of HPV.

When injected into the blood channel, at the initial stage of HPV affects the basal cells of the epithelium. Microtrauma, scuffs, cracks and other skin damage contribute to the penetration of the papilloma virus into the body. For a long time, the virus may initially multiply without appearing clinically [1].

Papilloma is a neoplasm of the skin or mucous membranes and looks like papillary proliferation that protrudes over the surrounding tissue. Papillomas are localized on the skin, mucous membranes. When traumatizing papillomas, bleeding is possible, since it consists of connective tissue covered with skin and contains vessels. The tumor grows upwards outward in the form of scattered papillae in different directions and resembles cauliflower[2,3,4].

Skin color may not change, but in most cases, papillomas are white to dirty brown. The favorite localization of papillomas is the skin of the hands and hands. In patients with HPV immunodeficiency infection is manifested in the form of multiple papillomas. The concentration of the virus in the affected areas reaches a maximum by the 6th month from the moment of infection, this period is the most contagious.

PCR diagnosis allows to confirm the presence of human papillomavirus in the body and to determine its type and diagnose how many viruses there are in the body at the time of the analysis.

If the method of treatment is papilloma removal, then a biopsy is performed in parallel with the surgery to conduct a cytological study[1,5,6].

The treatment scheme of papillomas in each case is selected individually. If there are symptoms of HPV on the skin and mucous membranes, depending on the localization and symptomatology are resorting to cryotherapy for warts, electrocoagulation or removal of papillomas of the laser. It should be borne in mind that the removal of papillomas does not lead to a complete recovery. Therefore, patients with previously diagnosed papillomas need to undergo periodic examination and conduct courses of antiviral therapy. The most effective treatment regimens include antiviral and immunomodulatory drugs.

The purpose of the study: to study the characteristics of immunity in children with multiple papillomas of the effectiveness of the therapy drugs groprinosin and Likopid.

Materials and methods a group of children (n=30) aged 9 to 12 years with multiple papillomas was examined. A group of healthy children (n=20) was also examined, compared groups of children are comparable in age. Informed consent was obtained from the parents of all children. All children (n=30) showed positive HPV DNA. Types of HPV 1,2,3,4,10 were revealed. All children were examined for immune status (CD3+, CD4+, CD8+, CD16+, CD22+, IgA, IgG, IgM, IgE) on the basis of RB No. 1-NCM RS(I). Comparison of mean values was

performed by one-factor analysis of variance using student's T-test to assess the equality of Fisher's f-test means. The relationship between the parameters was evaluated using linear and rank correlation coefficients.

Results: in the study of the disease history in children with papillomas, the appearance of new papillomas was noted weekly. Removal of papillomas did not bring any therapeutic effect, after 2-3 days there were new papillomas. Therefore, it is advisable to use antiviral therapy. In the analysis of the immune status, it was revealed that in the group of all the examined children there was a reduced level of IDA (table 1) .

There was also a decrease in the content of CD19+ and CD16+ lymphocytes, that is, normal killers, providing antiviral protection.

Since the causative agent of the infection is detected in the form of proviruses in the epithelial cells of the skin and mucous membranes at the sites of localization of previous recurrences with electron microscopy of histological biopsies, the inclusion of isoprinosine in the treatment complex of antiviral agents is justified and necessary [3]. Likopid is no less important, because along with systemic immune deficiency in HPV infection, there is a decrease in local resistance of the skin and mucous membranes and a weakening of local immune reactions that counteract the development of infection [1].

In the treatment of children with papillomas, a course of combination of 2 drugs was used: the antiviral drug groprinosin at a dose of 250mg ½ tablet 3 times a day for 10 days and then the immunomodulator Likopid at a dose of 1mg (1tablet) 2 times a day for 10 days, 2 courses of therapy were conducted with an interval of 1 month. At the end of the course of therapy, clinical manifestations of papillomas were not observed in any of the children. At the end of the second course, after 3 months, immunological studies were carried out for all treated children (table 2).

Therapy drugs groprinosin and Likopid led to the normalization of some parameters of cellular and humoral immunity: the increase in the content of CD19+ , CD16+, the increase in the concentration of IgA and the appearance of new papillomas on the skin.

Discussion: thus, the use of combined treatment of groprinosin and lycopid in multiple papillomas in children is both a timely and necessary component of treatment. Together with immunomodulatory effects towards activation of natural immunity (activation of natural killer cells and cytotoxic T-lymphocytes), groprinosin and Likopid exert an indirect antiviral effect by suppressing intracellular reproduction of pathogens.

Table 1

Indicators of immune status in children of Republik Sakha(Yakutia) in children with multiple papillomas and healthy children

Indicators	Children with multiple papillomas (n = 30)	Health children (n = 20)
CD3+	27,4 ± 1,0	27,2±1,04
CD4+	20,1 ± 0,2	21,3±0,6
CD8+	10,9 ± 0,5	12,1±2.5
CD16+	6,4 ± 1,4	11,0±1,01*
ИРИ	0,8 ± 0,5	1,08±0,02
IgA	0,6 ± 0,1	2,9±0,6*
IgG	18,1 ± 0,2	17,1±0,09
IgM	2,6 ± 0,02	2,9±0,09
CD19+	11,2 ± 1,6*	24,6±0,7*
ЦИК	75,1 ± 1,5	70±0,07

*p < 0.05 between the standards and the obtained indicators in each group.

Table 2

Indicators of immune status in children multiple papillomas before and after therapy with groprinosin and lycopid

Indicators	Children with papillomas before therapy (n = 30) M ± m	Children with papillomas after therapy (n = 30) M ± m
CD3+	27,4 ± 1,0	27,8±0,76
CD4+	20,1 ± 0,2	22,1±0,7
CD8+	10,9 ± 0,5	11,1±0,5
CD16+	6,4 ± 1,4	12,2±0,81*
ИРИ	0,8 ± 0,5	1,32±0,2
IgA	0,6 ± 0,1	2,8±0,4*
IgG	18,1 ± 0,2	19,2±0,1
IgM	2,6 ± 0,02	2,8±0,12
CD19+	11,2 ± 1,6*	22,3±0,8*
CIK	75,1 ± 1,5	67±0,09

Conclusion

1. All the children with papillomas were found to have immune dysfunction or insufficiency affecting cellular and humoral immunity (decrease in IgA, decrease in CD16+ lymphocytes, decrease in CD19+).

2. Therapy with Lycopodium in patients with papillomas leads to the normalization of reduced immune status:increased content of CD19+ and CD16+ , increased concentration of IgA.

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