Varicella zoster: Etiology, Pathogenesis and Basic Principles of Treatment

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ABSTRACT:
Chickenpox (lat. Varicella) - an acute infectious disease caused by a virus filter and is characterized by fever and spotty- rash on the skin and mucous membranes. Varicella zoster virus has tropism for epithelial skin and mucous membranes and, to a lesser extent, to the cells of the nervous system. Chickenpox is much more widespread infection throughout the world. Every year in the world, recorded 80-90 million cases of chickenpox. Most chickenpox sick children from the age of twelve to 15 years, but about 10% of diseases have on people over 15 years.
Thus the analysis of published data revealed that chicken pox is a common disease of varying severity. Analysis showed the treatment of disease, using tools like causal treatment and symptomatic. Symptomatic therapy includes antipyretic and antiseptics for external use - to prevent bacterial complications.
All of the above indicates that the disease requires a special approach to treatment, and in this respect very relevant is the use of extemporaneous drugs that better take into account the individual characteristics of the patient, his age, condition, contraindications and more. Also advantage of these drugs is the lack (or use a small amount) preservatives, stabilizers, dyes, fillers and other excipients synthetic origin, which are widely used in industrial production factors and may be potential side effects of drugs.

KEYWORDS: chickenpox, infectious disease, etiology, pathogenesis, treatment.

INTRODUCTION:

Chickenpox (lat. Varicella) - an acute infectious disease caused by a virus filter and is characterized by fever and spotty-papulzno-verykuloznym rash on the skin and

mucous membranes. Varicella zoster virus has tropism for epithelial skin and mucous membranes and, to a lesser extent, to the cells of the nervous system.

Chickenpox described in the middle of the XVI century Italian physician and anatomist G. Vidiusom. Name varicella, distinguishing disease of smallpox (variola), first introduced the German physician A. Vogel (1772).

After years 1868-1874 epidemic disease began to consider a separate nosology. Pathogen Brazilian physician discovered Arahao E. (1911), who found the contents of vials virus elementary bodies (bodies Arahao). Virus isolated from them in the 40s of XX century.

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In Ukraine every year suffering from chicken pox 120-150 thousand. Children. Most benign disease runs but 1 of the 50 cases observed complications1.

Today, the countries of European Union, USA, Canada, where compulsory vaccination against chickenpox began in 1995, chickenpox has only historical significance. In the years before the introduction of vaccination, it struck all layers of the population. In the year suffered about four million people, an average of 10 630 - 13 500 people and recorded 90 deaths21.

DISCUSSION:
The causative agent of chickenpox and herpes zoster belongs to the genus Varicello virus, Alphaherpesvirinae, family Herpesviridae. This unstable outside the human body rapidly inactivated by disinfectants, and drying temperatures above 60°C, but well kept at low temperature. Outside the body, outdoor kill the virus in about 10 minutes. Capsid is surrounded by a number of weakly associated protein, also known shell. Many of these proteins play an important role in initiating the process of virus replication in the infected cell. Shell, in turn covered with the lipid layer that covered glycoproteins that cause the appearance of the virion15,24.

The source of infection with chickenpox is ill, which is dangerous to others since the end of the incubation period (6-7 hours before the appearance of rash) and until the fifth day of the onset of the rash of recent items. Especially dangerous sources of infection are patients with the presence of vesicles on the mucous membranes of the mouth, because they quickly burst the bubbles out and large doses of virus from saliva. An additional source could be suffering from herpes zoster, but it provides much less viruses. Occasionally people may become infected by the great apes and from them the infection can be transmitted to people and13,18.

The mechanism of transmission - drip. Despite the weak resistance of viruses in the environment, proven (as for measles) possibility of distributing the air outside the room is a patient gives (through the open doors, ventilation system, etc.). Thus the probability of infection can spread to the whole building (hospitals, child care).

The initial infection with the virus manifests clinic varicella, susceptibility to it is almost 100%.

Chickenpox and herpes zoster recognize mainly based on clinical and epidemiological data. If necessary, the diagnosis can be confirmed using virological method (virus isolation from vesicles) and serological reactions3,11.

In humans the virus penetrates the upper airways, fixed on the mucosa cells, where it is the primary accumulation. Further pathogen enters the regional departments of the lymphatic system, and at the end of the incubation period into the blood. Viremia manifested by fever, caused by the accumulation of toxic metabolites in blood reproduction of the virus and the development of allergic reactions. Pathogen disseminiru throughout the body, it further localization determines tropism for epithelial skin and mucous membranes2.

A reproduction of the virus in the epithelium of the skin accompanied vacuolation, balloon degeneration and subsequent cell death. In the cavities formed serous fluid accumulates, resulting in a single chamber formed vesicles. When desiccation vesicles in their place appear brown after falling which recovers damaged epidermis. This process can develop in the mucous membranes of the rapid formation of erosions.

In the pathogenesis of the disease are important violations cellular immune responses. Amid suppression system T cells in individuals with impaired immune status of developing severe chickenpox.

In modern medical practice to distinguish between several forms of varicella: typical and atypical. Diseases typical character also divided into mild, moderate and severe forms4, 23.

Easy form chickenpox provides a more or less satisfactory condition, small areas of rash, relatively light of the disease with a duration of a maximum of 4 days.

Moderate and severe forms respectively indicate a large number of lesions, the temperature above 38 degrees, fatigue, itching and intoxication.

Atypical forms of chickenpox: rudimentary three types ahhravirovanyh - generalized, gangrenous and haemorrhagic such forms are rare and affect organisms with weak immunity and altered8,19.

Rudimentary chickenpox occurs virtually asymptomatic. Sometimes the person who suffered such chickenpox, do not even know about it.

Pustular - characterized by a prolonged period of existence of bubbles on the skin, the contents of which becomes turbid or purulent.

Bullous - expressed especially large size bubbles strong intoxication, long restoration of the skin.

Haemorrhagic form - linked to blood clotting. The patient suffers from multiple hemorrhages in all tissues, rash with blisters filled with blood.

Gangrenous form - often the next step haemorrhagic chickenpox. The skin ulcerate formed multiple foci of necrosis. The patient may die from intoxication.
Visceral - characterized by a rash all internal organs. Sick children almost always to a year, with very weak immune system. The disease ends in death.

In adults and adolescents infection is difficult and is often accompanied by complications (pneumonia, encephalitis, hepatitis, etc.), Whose probability of occurrence increases with age. In individuals with impaired immunity (leukemia, cancer, immuno-deficiencies of different origin) infection caused by Varicella zoster, occurs particularly hard.

Complications can be specific (caused by a virus) and as a result of additional bacterial infections:

- Inflammation of the upper respiratory tract larynohotraheobron hit, pneumonia;
- - Nervous system - encephalitis, meningoencephalitis, myelitis, facial palsy.
- -Bacterials Complications - bullous streptoderma, cellulitis, abscesses, impetigo, glandular, stomatitis, conjunctivitis, keratitis, sepsis25.

During pregnancy, infection and disease runs hard and chickenpox in the first trimester can cause central nervous system of the fetus, defects of the limbs, cataracts and other eye diseases, even to blindness5.

Pharmacotherapy varicella largely divided into causal and symptomatic. Symptomatic therapy is the most common. However, in infants and in adults, chickenpox occurs more complicated. Such patients are usually in addition to all the measures prescribed etiotromnu therapy, such as interferon drugs, acyclic nucleosides.

Causal therapy is the use of specific drugs antiherpetic. However, according to the literature, infections caused by herpes virus is despite intensive research in the development of promising antiherpetic drugs. This is due to the difficulty of direct influence on the viruses found in the cells of the body. Therefore, the range of effective drugs against varicella relatively small.

The most widely adopted such specific antiherpetic drugs like acyclovir, famciclovir (Famvir), valaciclovir (Valtrex) and ganciclovir (Tsymeven) that, as nucleoside analogues block viral replication. For external use creams appointed 5% acyclovir (Zovirax)22, 25.

It is important that antiviral treatment exhibits the highest activity if appointed within 72 hours start herpetic lesions.

Given the published data proved high efficiency of acyclovir in reducing the severity, duration of herpes zoster, particularly in his early appointment2. Evaluation of famciclovir also showed a decrease in time to permit the rash, but these were not statistically significant15. In another clinical trial established therapeutic equivalence famciclovir and valaciclovir for uncomplicated herpes20.

Also described in the literature extensively use derivatives interferon drugs in the treatment of chickenpox.

So given the experimental data using a new generation of drug interferon - leykinferon that in early period reduces fever. Leykinferon - complex preparation contains 10,000 IU of natural alpha interferon and cytokine complex first phase of the immune response (interleukins 1,6 and 12, tumor necrosis factor, factors inhibit the migration of macrophages and leukocytes). In addition to antiviral activity drug has a wide range of immunomodulating actions, in particular able to activate phagocytic almost all stages of the process. In its application less likely to have complications, most rashes stop6.

Cyclopheron, the active substance - metilhlyukamina akridonatsetat - stimulates the production of interferon alpha, beta and gamma - protective molecules secreted by cells of the organism in response to invading viruses. Cyclopheron change processes zhiznedeyatelnosti cells so that it becomes immune to the virus and is not involved in its reproduction and activate immune cells - macrophages and limfotsity. Cyclopheron - the only interferon inducers, which is available in three forms: tsikloferon a solution for injection, tablets and cykloferon liniment, each application has its own characteristics. According to published data cikloferona use in the treatment of chicken pox is quite effective9,10.

Another drug that is used to treat viferon. He comprised of interferon alfa-2b, and the antioxidants vitamin E and ascorbic acid. Viferon issued in the form of rectal

suppositories in four dosage: 150,000 IU, 500,000 IU, 1000000. 3,000,000 and IU. IU candle and in the form of ointment contains 1 g of 200,000 IU of interferon activity. It viferon recommended for use in patients with impaired imunite and immunomodulating impaired body functions.

Noviryn (Inosine pranobex) has direct antiviral and immunomodulatory effects. Direct antiviral action due ribosomes of cells affected by the virus, which slows down the synthesis of viral RNA, and (violation of transcription and translation) and leads to inhibition of RNA replication and genomic DNA viruses; mediated induction of strong performance due. Immunomodulating effect is due to the influence of T lymphocytes (activation of cytokine synthesis) and increased phagocytic activity of macrophages14,17.

To include symptomatic treatment - antipyretics antiseptics for external use - to prevent bacterial complications.

Local treatment in places of treatment provides skin rash disinfectant solution for the prevention of bacterial infections. It is recommended to handle skin 1% aqueous methylene blue or brilliant green of 5-10% solution of potassium permanganate solution miramistin 0.01%, 0.1% aqueous ethacridine lactate or liquid Castellani. Aphthous formation treated with 3% hydrogen peroxide or 0.1% sodium lactate ethacridine.

In the presence of rash on the mucous mouth rinse hold 2% sodium bicarbonate solution or aqueous furatcylin a concentration of 2: 5000 (0.02%).

In the treatment of chickenpox widely used zinc ointment and paste exhibiting absorbent, astringent and antiseptic effect, reduce the phenomenon of exudation, inflammation and irritation of tissue7,16.

Also in the treatment of chickenpox widely used herbs.
The patient is recommended to eat fresh blueberries or drink as juice. It is known that the chemical composition of berries weaken the virus - the causative agent of chickenpox.

Can also be treated with infusion of raspberry fruit, anise fruit, linden flower and willow bark. Components grind and mix. A tablespoon of raw materials to brew in 300 ml of boiling water, 10 minutes tire on fire. Let stand for about an hour. Drink a sip throughout the day.

Tincture of Sophora Japanese fresh fruit (10 g per 100 ml of 50% ethyl alcohol) to wipe the skin after pulling bubbles. Before using digested mixed with water at a ratio of 1: 1.

Widely in the treatment of chickenpox used fitobath baths with antiseptic, anti-inflammatory effect. Warm baths recommended to take after the formation of crusts when eruptions are stopped and fresh bubbles no more. S.°However, it should be noted that the water temperature in the bath should not exceed 20-23.

Table 1 shows the recipe fees. According to the data presented in the table of the Assembly are chamomile, lemon balm herb chicory and who, through their chemical compositions are sedative the skin and reduce itching.

Table 1. Composition of the species used in the treatment of chickenpox

Composition of the species	**Method of preparation**
Chamomile flowers – 60,0 Grass cattle trifid– 60,0 Oak bark – 20,0	Raw pour of 1 liter of water and bring to a boil. Strained infusion pour into the tub and bathe the patient in the morning and evening for 10 minutes.
Chamomile flowers Grass mother and stepmother Herb chicory Flowers of calendula Burdock root Helichrysum Flowers for 20,0	Raw pour of 1 liter of water and bring to a boil. Strained infusionpour into the tub and bathe the patient.
Herbs nettle Marigold flowers for 40,0	Raw pour of 0.5 liters of water and bring to a boil. Strained infusionpour into the tub and bathe the patient.
Grass Melissa Chamomile flowers Herb basil Flowers of calendula for 20,0	Raw pour and 1 liter of water and bring to a boil. Strained infusionpour into the tub and bathe the patient.
Walnut leaves Grass cattle trifid Chamomile flowers Grass true bedstraw for 20,0	100g pour a mixture of 5 liters of water, boil for 10 minutes on low heat, strain and add to the bath.
Herb Salvia officinalis Eucalyptus leaves Herb thyme for 40,0	Three tablespoons of the mixturepour 500 ml of water, leave for 15 minutes in a water bath, strain and add to the hot tub

Thus the analysis of published data revealed that chicken pox is a common disease of varying severity.

CONCLUSION:

Analysis showed the treatment of disease, using tools like causal treatment and symptomatic. Symptomatic therapy includes antipyretic and antiseptics for external use - to prevent bacterial complications.

All of the above indicates that the disease requires a special approach to treatment, and in this respect very relevant is the use of extemporaneous drugs that better take into account the individual characteristics of the patient, his age, condition, contraindications and more. Also advantage of these drugs is the lack (or use a small amount) preservatives, stabilizers, dyes, fillers and other excipients synthetic origin, which are widely used in industrial production factors and may be potential side effects of drugs.

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