

Prevention of the Seasonal Spread of Arvi Among Early Children

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Resume,

Acute respiratory viral infections (ARVI) are widespread infectious diseases, cause significant economic damage and therefore are not only a serious medical, but also the most important socio-economic problem for humanity. This group of diseases accounts for up to 90% of all infectious morbidity. Mostly children and people over 60 years of age fall ill - the so-called risk groups for the incidence of ARVI. Every adult suffers from influenza or other acute respiratory viral infections on average 2-4 times a year, a schoolchild - 4-5 times, a preschool child - 6 times, a child of the first year of life has from 2 to 12 episodes of acute respiratory viral infections. The polyetiology of ARVI pathogens and the variability of viruses involved in the epidemic process, complications after an illness, necessitate the search for new diagnostic methods and optimization of treatment and preventive measures.

Modern approaches to the treatment of influenza and acute respiratory viral infections of other etiologies are reduced to the use of complex drugs that combine antiviral, immunomodulatory, symptomatic and pathogenetic effects.

Key words: acute respiratory viral infections, influenza virus, prevention, antiviral drugs, complex drugs.

Introduction

Influenza and other acute respiratory viral infections (ARVI) account for more than 90% of all infectious diseases and remain one of the pressing medical and socio-economic problems of society due to high morbidity, the risk of developing severe complications, exacerbations of chronic diseases and, as a result, mortality, especially in elderly people and children under 1 year of age. According to WHO, during epidemic outbreaks of influenza, up to 15% of the population (from 3 million to 5 million people) falls ill, and 250–500 thousand of them die. In the Russian Federation, approximately 20–40 million people a year fall ill with influenza and other acute respiratory viral infections, of which 40–60% are children. The annual epidemic rise of ARVI causes significant damage to the health of the population, the economy of the regions and the country [1]. Up to 90% of the funds allocated for the treatment of all infectious diseases are spent on the treatment of influenza and other acute respiratory viral infections, as well as their complications [1].

Among acute respiratory viral infections, influenza is of particular epidemiological and social significance, characterized by high morbidity and mortality rates, as well as severe socio-economic consequences. A feature of the epidemic situation in recent years is the simultaneous circulation in the human population of several respiratory viruses: influenza A (H3N2 and H1N1) and B with the periodic predominance of one of them, adenoviruses, parainfluenza viruses and rhinoviruses, respiratory syncytial viruses, coronaviruses, etc. Influenza viruses have unique variability of the genome, allowing it to evade the human immune system, which, combined with aerogenic transmission of the pathogen in conditions of close contact and high population migration, contributes to the rapid spread of infection. Features of the biology of the virus and the epidemiology of influenza lead to its widespread distribution among the population. Over the past 10 years, there has been a varying intensity of the influenza epidemic process - from seasonal epidemic surges to epidemics and pandemics.

Other ARVIs are more often caused by representatives of three families of RNA-containing viruses: paramyxoviruses (respiratory syncytial virus, human metapneumovirus, parainfluenza viruses types 1–4), coronaviruses (229E, OC43, NL63, HKUI) and picornaviruses (rhinoviruses), as well as representatives of two families of DNA viruses: adenoviruses (types B, C, E) and parvoviruses (human bocavirus) [2].

The nature and severity of clinical manifestations of influenza vary from mild to extremely severe and depend on the type of pathogen and the reaction of the patient's immune system (immune response). The frequency of hospitalization of children with influenza depends on age: the younger the child, the higher the risk of severe illness requiring treatment in a hospital setting. A number of authors [5, 6] indicate that the hospitalization rate (per 10 thousand hospitalized) in the group of children from 6 months. up to 2 years old is 10.4, among children from 2 to 4 years old - 5.7. At the same time, in the age category 5–17 years old it decreased to 1.1.

Prevention of ARVI in children under one year of age

The younger the child, the worse his immune system works. A baby in the first year of life is especially vulnerable to any infections, which is why parents need to pay maximum attention to the prevention of ARVI. To minimize the risk of infection for your baby, you must:

- limit contacts with strangers, especially during the seasonal increase in incidence;
 - wash your hands thoroughly before picking up your baby;
 - bathe your child daily in warm water;
 - use separate dishes for the baby's food and drink;
- Properly disinfect pacifiers and bottles.

The general rules regarding indoor microclimate, walks, etc. are also relevant. Breastfeeding is a good protection for the baby, since with mother's milk the baby receives the substances necessary for the functioning of the immune system.

Prevention of ARVI in kindergarten and school

As soon as a child begins to actively contact a large number of peers, the risk of ARVI increases significantly. As a rule, in the first year of visiting a kindergarten, the baby gets sick a lot, since his body encounters a large number of pathogens. It is impossible to completely get rid of colds during this period. General preventive measures will help reduce the likelihood of infection. In addition, it is very important to leave the child at home at the first signs of ARVI. This will not only help avoid the spread of infection in the community, but will also help the child's body cope with the disease faster.

Flu vaccination

Vaccination is an effective way to protect both children (over 2 years old) and adults from influenza. It is this disease that is most severe, accompanied by severe intoxication and can cause life-threatening complications. Vaccines change each year to reflect the most common strains that season. Ideally, the vaccine should be given 1-2 months before the start of the annual outbreak, as the immune system needs time to produce antibodies. Before vaccination, you must contact your pediatrician so that he can examine the child and make sure there are no contraindications.

Preventing influenza and ARVI, especially during an epidemic, is not an easy task. However, if you accustom yourself and your children to a daily routine, proper microclimate in the premises, good and healthy nutrition, if you get vaccinations on time and do not forget about hygiene, the likelihood of illness will be much lower.

Drug therapy for influenza and ARVI

In accordance with the WHO methodological recommendations for the treatment and prevention of influenza [7] and similar Russian documents [8, 9], the use of antiviral drugs against influenza viruses or other acute respiratory viral infections should begin as early as possible, immediately after the appearance of influenza-like symptoms; one should not wait for laboratory results confirmation of the etiology of the disease [9, 10]. Influenza illness can present with a range of symptoms, ranging from a mild upper respiratory tract infection to an acute, life-threatening illness. Knowledge of the main symptoms of diseases caused by various respiratory viruses is essential for a doctor. This is due to the fact that modern principles of treatment of ARVI, in addition to symptomatic drugs, include a wide range of etiotropic drugs, many of which have a selective effect against specific viruses, which must be taken into account when prescribing them [11].

Modern approaches to the treatment of ARVI, including influenza, include the use of both medicinal and non-medicinal methods (regime, hygiene, diet, sanitation of the upper respiratory tract, physiotherapy). The

main goals of therapy for these infections are suppression of viral replication in the early stages of the disease, relief of clinical manifestations of viral infection, prevention and treatment of complications.

In recent years, in the treatment of ARVI and influenza, preference is given to drugs that have several points of application and have a combined effect, which combine direct antiviral, immunomodulatory and symptomatic effects. In situations with an unspecified pathogen and the absence of a laboratory-confirmed mixed viral infection, therapy with broad-spectrum antiviral drugs should be started.

The use of complex drugs that affect not only the proteins and key structures of the virus, but also the cellular and humoral immune mechanisms of antiviral defense, allows for effective therapy for a wide range of respiratory viral infections, including influenza [12].

Of great importance in the treatment of ARVI and influenza are drugs that can have an effect both on the infectious agent (specified or unspecified) and on the manifestations of the intoxication-inflammatory syndrome (fever, chills, pain, swelling, catarrhal phenomena) [13]. One of the broad-spectrum agents for nonspecific protection against influenza and other acute respiratory viral infections is enisamium iodide. Its action is based on direct inhibition of the process of viral penetration through the cell membrane. The drug has interferonogenic properties, helps increase the concentration of endogenous interferon (alpha and gamma interferons) in the blood plasma by 3–4 times, increases the level of lysozyme, enhances the body's resistance to viral infections, reduces the clinical manifestations of viral intoxication, helps reduce the duration of the disease, provides anti-inflammatory, antipyretic and analgesic effect. The viralostatic effect of the main active ingredient enisamium iodide is associated with its influence on the structure and receptor-binding functions of the hemagglutinin of the influenza type A pathogen, which provide the virion with the ability to attach to the target cell with subsequent replication [11, 12].

Conclusions

Influenza and other acute respiratory viral infections still remain one of the pressing medical and socio-economic problems, the solution of which is possible only at the state level.

Vaccination against influenza for groups at increased risk of infection has been introduced into the National Calendar of Preventive Vaccinations; work is underway to prepare for the widespread use of a new generation influenza vaccine that can mitigate the problem of variability of the influenza virus; A quadrivalent vaccine has been created.

New etiotropic drugs are constantly being developed and introduced into clinical practice that can quickly cure a patient from influenza and prevent the development of complications, which are the main cause of mortality in the unvaccinated population.

Among antiviral drugs that have a specific effect on specific proteins and key structures of the virus, preference is given to drugs that additionally affect the cellular and humoral immune mechanisms of antiviral defense.

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