

POLYPHARMACY PROBLEM IN TREATMENT OF CHILDREN IN OUTPATIENT PRACTICE

*MD, Cand Med Sc Gayduk O. I.,
MD, Cand Med Sc Bashkirova N. S.,
MD, Cand Med Sc PhD Gayduk T. A.*

Ukraine, Dnipro, State Institution "Dnepropetrovsk Medical Academy"

Abstract. *The drug load that children receive is often superfluous and unreasonable. A typical example is the appointment of antibacterial drugs and immunomodulators in acute respiratory infections (ARI). In this work, there were analyzed 714 appeals to primary care physicians due to ARI in children under five years of age. The morbidity structure and frequency of use of drugs of various groups in this age period are presented. Unjustified use of antibacterial drugs has been noted in 59 % of cases. The average total number of drugs received by a child due to ARIs in his first five years of life was 44, some of which did not have proven effectiveness and safety.*

Keywords: *polypharmacy, children, acute respiratory infections*

Introduction. The most rational approach to the treatment of any disease is etiological or pathogenetic therapy – i.e. the impact on the very cause of the disease or its underlying pathophysiological mechanisms. Despite understanding of these principles, the polypharmacy has becoming more and more widespread phenomenon in medical practice. This is due, on the one hand, to the current trend towards aging of the population and the increase in the number of elderly patients with comorbid pathology, and on the other hand, to increase in the number of pharmaceutical products on the market. It is necessary to pay attention to the fact that there is an increase in the number of prescriptions of medicinal products by persons who do not have this right, for example, by pharmacists or by patients themselves or their parents. In some situations, polypharmacy is caused by the doctor's desire to please the patient ("the doctor is not good because he prescribed no medicine").

Polypharmacy implies the simultaneous, often unreasonable, appointment of many drugs or therapeutic procedures. The negative effect of a large number of drugs has been known since ancient times. The statements of great doctors and philosophers confirm this.

"All things are poison and nothing is without poison; only the dose makes a thing not a poison" (Paracelsus).

"Each medicine not indicated is contraindicated" (E.M. Tareev).

"There are patients who cannot be helped, but there are no such patients who cannot be harmed" (E.C. Lambert) [1].

In turn, according to experts, simultaneous treatment of several diseases requires a detailed analysis of the compatibility of drugs and careful compliance with the rules of rational pharmacotherapy, based on the postulate of the prominent clinical pharmacologist B.E. Votchal: "If the drug has no side effects, you should think about whether it has any effects at all" [2].

It was found that polypharmacy occurs in 56 % of patients younger than 65 years and in 73 % of older persons [3].

Prevention of polypharmacy in the treatment of diseases in children is of particular relevance, since the drug load that children receive is often excessive and unreasonable. A typical example is the prescription of antibacterial drugs and immunomodulators in acute respiratory infections (ARI). The influence of immunomodulators on the immune status of a child is often unknown and unpredictable. Given this, any medical appointment should be carefully weighed and justified.

The most common reason for prescribing different medicines in children is acute respiratory infection. In the treatment of this pathology, polypharmacy occurs, according to different authors, in 15 to 70 % [4, 5]. Unjustified use of antibacterial therapy is recorded in 30-46.2 % [6].

In view of the foregoing, the aim of the study was to analyze the drug therapy administered to children under 5 years of age with acute respiratory infections.

The availability of approved by Ministry of Health of Ukraine "The unified clinical protocol of primary medical care for adults and children "Acute respiratory infections"(Order of the Ministry of Health of Ukraine No. 499 of July 16, 2014) actualizes this analysis. This protocol emphasizes that acute respiratory infections are self-limiting diseases. In addition, it presents clearly developed strategies for antibiotic therapy in ARI (non-designation, delayed appointment, urgent appointment)

and there are no indications for the use of any immunomodulators and antiviral drugs. Management of patients with influenza has treated in a separate section of the Protocol.

Materials and methods. Outpatient cards of 60 children observed in the outpatient clinics of the Centers for Primary Health Care in the city of Dnipro, Ukraine, were studied. There were analyzed 714 disease episodes to evaluate drug therapy prescribed by pediatricians and general practitioners-family physicians in the treatment of children with ARI. In all the children there were analyzed medical history, including perinatal history, comorbidities, previous diseases and drug treatment characteristics up to the age of five.

There were 26 boys (43.3 %) and 34 girls (56.7 %) in the cohort of outpatient cards.

In the surveyed group, the number of children born from the first pregnancy was 22 (36.7 %), the second - 24 (40 %), the third - 4 (6.7 %), the fourth - 4 (6.7 %), the fifth - 4 (6.7 %), the ninth - 2 (5 %). Pregnancy proceeded with complications in 42 cases (70 %), of which 14 (33.3 %) - with the threat of interruption. Children born from a normal pregnancy were 30 %. Children born in time was 58 (96.7 %), four of which (6.89 %) were cesarean sections. Premature babies were two (3.3 %), gestational age was 34 weeks, and the Apgar score was 2/4 points. Most children were born with a satisfactory rating on the Apgar score - 8/9 points. Breastfeeding included 48 (80 %) babies, artificial feeding - 12 (20 %). Allergic history has been burdened in 3 % of children. All children had prophylactic vaccinations.

Results. There were registered 714 appeals to primary care physicians for diseases in children under 5 years old. Of these, 74 % of children referred to acute respiratory infections (J00-J06), 1 % for pneumonia and influenza (J10-J18), 8 % for other acute respiratory infections of the lower respiratory tract (J20-J22); allergic reactions were the cause of treatment in 2 % of children, other reasons were 15 %. In the structure of ARI in children of the first 5 years of life, 89 % of uncomplicated forms of acute infections of the upper respiratory tract (nasopharyngitis, pharyngitis) predominated.

The statistical analysis showed that from birth to 3 months, 38 children (63 %) have taken some drugs, prescribed at the same time (for the treatment of acute respiratory infections, liquor-dynamic disturbances, and sleep disorders).

Five children (26 %) received a single medicine, 5 children (26 %) - two drugs, 3 children - three drugs (16 %), 3 children (16 %) - four drugs, 2 children (11 %) - five drugs, and 1 child (5 %) - six drugs (Fig. 1) simultaneously.

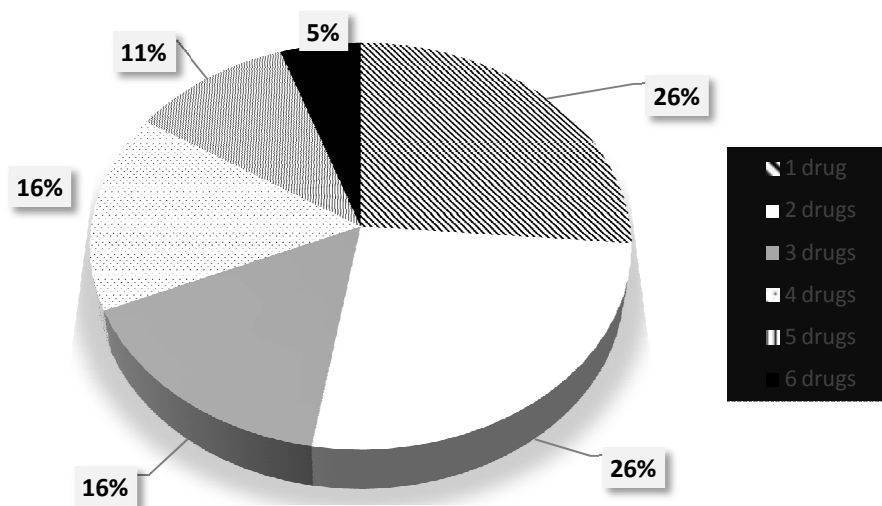


Fig. 1. Frequency and number of drugs, prescribed for children up to 3 months

For the treatment of ARI, physicians most often (in 63 % of cases) were prescribed interferon preparations (viferon, influferon, kipferon, interferon), inducers of interferonogenesis (cytovir, kagocel, ergofero, arbidol, anaferon) were applied in 5.4 % of cases, antiviral (anti-influenza) remedies (remantadine, oseltamivir) - in 3.3 % of cases. Mucolytics were used in 50 % of cases. Antibacterial drugs took the third place in the frequency of appointment (18 %). It was found that 15.2 % of children had cases of simultaneous prescription of drugs of the same group.

The spectrum of drugs, prescribed for acute respiratory infections, is shown in Figure 2.

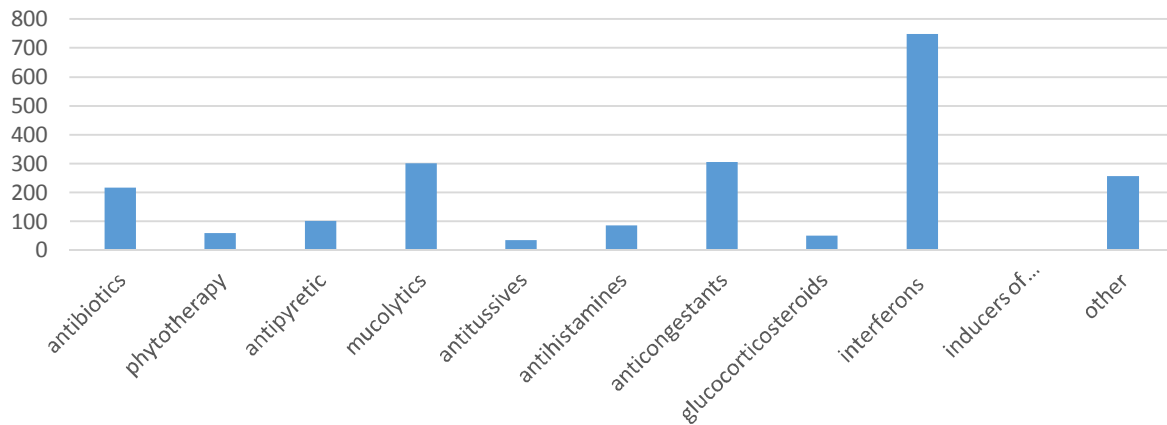


Fig. 2. Spectrum of drugs, prescribed in acute respiratory infections in children under 5 years of age

Analysis of the number of drugs received by children under the age of five due to ARI showed that on average one child received 44 drugs in his first 5 years of life: the minimum number was eight drugs; the maximum number was 81 drugs prescribed for one child.

Conclusions.

1. When addressing to primary care physicians, acute respiratory infections take first place in the morbidity structure of the children under 5 years of age - 74 %.
2. In the structure of acute respiratory infections in children of the first 5 years of life, uncomplicated forms of acute infections of the upper respiratory tract prevail - 89 %.
3. When treating acute respiratory infections in children, there is a high frequency of drug use without proven effectiveness and safety (phytopreparations, inducers of interferonogenesis, interferons) - 49.2 %.
4. Unreasonable use of antibacterial drugs is observed in 59 % of cases.
5. In the treatment, cases of simultaneous prescription of drugs from the same group were detected in 15.2 %.
6. The results obtained require further analysis of the management of children with acute respiratory infections in the outpatient stage in order to prevent polypharmacy in the most vulnerable age.

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