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*The occurrence of allergic illnesses among children
at the pre-school age in the rural and urban area*

Nowadays allergies became one of the most fundamental challenges of the modern medicine. The results of the epidemiological survey show that in highly developed countries 25–30% of population suffer from allergic ailments (3). A special position is taken up by atopic diseases. It is estimated that 10–15% of population have a medical condition of allergic rhinitis, about 10% have atopic dermatitis, about 5% – atopic asthma, and 1–2% – food allergies (3). The stable frequency rise of the occurrence of allergic diseases observed in the last decades is an extremely alarming phenomenon. The explanation boils down to the spreading of the genetic factor (the genes penetration) among the population, as well as the unfavourable effect of the environmental factors such as the contamination of the natural environment, urbanisation, the expansion of communication and chemicalisation of the everyday life. The majority of allergic diseases occur in the infancy and early childhood. This is caused by the immaturity of the immunological system of a child, which makes it vulnerable to all detrimental effects of external factors. At the same time it is in the earliest years of life when the anti-allergic prophylaxis is of a great significance.

The aim of this paper is the evaluation of the occurrence of allergic diseases among children at the pre-school age living in the urban area and in the countryside.

MATERIAL AND METHODS

The research was conducted in the allergic clinic Alergo-Vita situated in Chełm on 100 patients – 63 boys and 37 girls, at the age of 3–5, who came to receive a treatment of allergic illnesses. The method of investigation employed was the analysis of the medical documentation, examination and observation.

RESULTS AND DISCUSSION

The group under investigation consisted of boys – 63%, and girls – 37%. The disproportion of sexes is not random but confirms the preponderance of males among children with allergic diseases in comparison to the population of adults where there are more women with allergies (3, 8). Among the examined, children living in the urban area constitute 48% and those living in the countryside – 52%. According to the epidemiological survey, contracting allergic diseases is considerably more frequent among people living in the cities than among people from rural areas (3, 8), however, our research does not seem to support it.

The analysis of the frequency of occurrence of particular allergic illnesses showed small differences between children from the city and from rural areas. In the group of children living in the city the most common was bronchial asthma, less frequent – atopic dermatitis, hay-fever, food allergy and full-year allergic rhinitis (Table 1). Among children from the country, the most common disease was atopic dermatitis, less frequent – bronchial asthma, hay-fever, food allergy and full-year catarrh (Table 2). The research conducted in European countries showed that allergic dermatitis and food allergy are dominant among infants and small children (3, 6, 10). More frequent occurrence of asthma among children living in the urban area may be connected with a higher exposure to atmospheric contamination such as nitrogen oxides, sulphur oxides, carbon monoxide, dust pollutions and exhaust fumes (8, 11).

Table 1. Allergic diseases of children living in the urban area

Allergic diseases	Sex		Count of children	%
	girls	boys		
Atopic dermatitis	8	10	18	37.5
Bronchial asthma	4	16	20	41.5
Hay fever	3	6	9	18.5
Food allergy	5	4	9	18.5
Full-year allergic rhinitis	2	4	6	12.5

Table 2. Allergic diseases of children living in the rural area

Allergic diseases	Sex		Count of children	%
	girls	boys		
Atopic dermatitis	13	13	26	50
Bronchial asthma	10	14	24	46
Hay fever	3	7	10	19.2
Food allergy	3	4	7	13.4
Full-year allergic rhinitis	1	1	2	3.8

Numerous alimentary allergies constitute a huge problem for pediatricists and parents. Presently it is assessed that about 8–10% of children suffer from oversensitivity to different nourishments (4, 10). The most common alimentary allergens are cow milk proteins, hen egg proteins and gluten (2, 3, 6, 10). The observations mentioned above are proved by this analysis. In the group of children from rural areas as well as in the other group, the most common sensitising nourishments were hen egg, cow milk, pork, rye flour, potatoes (Table 3). The occurrence of allergic diseases, especially alimentary allergies, is closely connected with the nutrition of children in the earliest stage of their lives. The children which in the first six months of their lives are fed with cow milk or have contact with other alimentary allergens contract allergic diseases of alimentary system or atopic dermatitis more often (2). Moreover, it is considered that alimentary allergies are the cause of other allergic illnesses, specially asthma and allergic bronchitis (2). In the examined group of children, grounding on the information from their parents it was established that 79.2% of children from the city and 69.2% of the children from the country were breast-fed at least till the sixth month of life. The results show that breast-feeding is no guaranty of the avoidance of alimentary allergy. An issue of extreme importance that mothers should be informed about is the appropriate diet in the time of lactation and the restriction on the highly sensitising food (e.g. eggs, fish, nuts, citrus fruit, tomatoes). The introduction of new nourishments to the child diet should also be gradual and deliberate. The nourishments of the sensitising character should be introduced only after the first year of life (3).

Table 3. The most frequent food allergies

Food	Children living in urban area	Children living in rural area
Eggs	71%	59.6%
Cow milk	41.6%	40%
Pork	25%	25%
Rye flour	29%	19.2%
Potatoes	23%	27%

Genetic predisposition is the next important factor of the risk of allergic illnesses with atopic character (1, 3, 4, 9). It was assessed that the probability of the occurrence of atopic diathesis for a child of unsensitised healthy parents is about 5–15%, but increases in the case when one of the parents suffers from atopy. If both of the parents are hypersensitised, the risk of their child having an allergy increases to 60–80% (1, 3, 4). In the examined group, as far as family history of atopic diseases is concerned, positive results were reached among 58.3% of children living in the city and 69.2% of children from the countryside, which proves the significance of this factor.

One of the superior tasks of contemporary medicine is working out the efficient prophylactic methods, according to the rule that it is better to prevent than to heal. In the case of allergic diseases, especially atopic ones, the opportunities of prophylaxis are quite limited. The influence on the genetic factor stays beyond the scope of our capacities. The probable way of prophylaxis is the elimination of the maximal number of factors that may sensitise from the child's surroundings in the earliest stage of its life (3, 9). To do so, the room where a newborn child or an infant lives should be clean (the elimination of acaroids), frequently ventilated and of the appropriate humidity (3, 4). Mothers also should be made aware of the importance of breast-feeding as the optimal nourishment for a baby till the sixth month of life (1, 2, 3, 5). Similarly important is the diet of a mother in the time of lactation which should have restrictions on the highly sensitising food (2, 3). Also it should be realised that the screening examination is necessary, especially for the children with the positive family history regarding atopic diseases (3, 4). The proper precocious diagnosis enables the treatment in the early stages and the limitation of the negative effects on health.

CONCLUSIONS

1. Allergic diseases pertain to a great percentage of population already in the earliest stage of life, which may be the result of the general chemicalisation of the environment as well as its contamination.

2. Breast-feeding is a protective factor, but does not guarantee the avoidance of allergy, which may be caused by the inappropriate anti-allergic prophylaxis adopted by a mother during lactation and influence of other risk factors

3. Genetic predisposition is a very important risk factor for the development of allergy.

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SUMMARY

Allergic diseases have become recently an accretive medical as well as social problem, mainly in highly developed countries. Frequently they occur in the infancy and early childhood. In this analysis an attempt has been made to evaluate the occurrence of the allergic illnesses among 3–5 years old children living in the urban and rural environment. The research carried out has showed no significant differences in the occurrence of allergic diseases among children from cities and from rural areas.

Choroby alergiczne u dzieci 3–5-letnich ze środowiska wiejskiego i miejskiego

Choroby alergiczne stanowią obecnie narastający problem medyczny i społeczny, zwłaszcza w krajach wysoko rozwiniętych. Szczególnie często ujawniają się one w okresie niemowlęctwa i wczesnego dzieciństwa. Celem pracy była ocena występowania chorób alergicznych wśród dzieci 3–5-letnich zamieszkałych w środowisku wiejskim i miejskim. Przeprowadzone badania nie wykazały istotnych różnic w strukturze występujących schorzeń alergicznych wśród dzieci wiejskich i miejskich.