more accurately assess the predisposition to postmenopausal osteoporosis for the timely prevention of this disease.

Keywords: postmenopausal osteoporosis, predisposition to osteoporosis, VDR, COL1A1, COL1A2.

Postmenopausal osteoporosis (PO, osteoporosis type I) is a common, multifactorial disease with a pronounced genetic predisposition. It is characterized by an increased tendency to low traumatic fractures that can lead to disability and death. The age period of manifestation is from 50 to 70 years. The basis of this disease is the progressive loss of bone mass in women within 15–20 years after the cessation of menstruation. The situation is aggravated by an increased risk of subsequent fractures in patients who are injured [1–3].

The main manifestations of osteoporosis are reduced mineral density and impaired microarchitectonics of bone tissue. It is difficult to identify osteoporosis because it has a long latent period without phenotypic manifestation of disorders, most often diagnosed after low-impact fractures. The purpose of this work was to identify allelic combinations and haplotypes of variants of bone exchange genes, to assess their connection with the predisposition to osteoporosis in postmenopausal women of the Belarusian population.

In this study participated sixty six Belarusian postmenopausal women, as well as 92 age-matched control subjects, were genotyped for VDR ApaI (rs7975232), BsmI (rs1544410), TaqI (rs731236), COL1A1 Sp1 (rs1800012), COL1A2 A18162G (rs42517) gene polymorphisms. Significance was assessed using χ^2 test and multivariate logistic regression (R-package). The differences were considered significant at $P<0.05$.

When analyzing the data was shown that rs7975232, rs1544410 and rs731236 markers are in a strong direct linkage disequilibrium ($P<0.001$), suggesting that risk alleles of these markers are preferably inherited jointly. For the bearers of unfavorable haplotype A-B-t (consisting of rs7975232 rs1544410 and rs731236 risk alleles), the risk of PO is significantly higher (OR=4.3, 95% CI 1.4-5.3, $P<0.01$). This haplotype was overrepresented in PO patients group compared to all other haplotypes. For the careers of unfavorable A-B-t-T-G allelic combination, constructed from rs7975232, rs1544410, rs731236, rs1800012 and rs42517, the risk of PO was significantly increased (OR=19.5, 95% CI 4.6-140.1, $P=0.02$) compared to the bearers of wild-type a-b-T-G-A combination. This data, obtained for all allelic combination, can be used for genetic risk score calculation.

The obtained results emphasize the importance of the identified allelic combinations and reveal the mechanisms of their complex interaction for assessing the risk of PO. Comprehensive screening of polymorphic variants of the VDR, COL1A1 and COL1A2 genes can be used to implement individual programs of prevention, treatment and rehabilitation.

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QUANTITATIVE ANALYSIS OF CHILD MORBIDITY OF THE CITY OF MOZYR

M. Kovalchuk, R. Dudinskaya, D. Chobanyan

Belarusian State University, ISEI BSU,
Minsk, Republic of Belarus
masha_kovalchuk11@mail.ru

This study presents the quantitative analysis of child morbidity of the city of Mozyr by the classes of diseases which occupy the first rank place in the structure of morbidity. It is revealed that over the study period, the ratio between the general and primary morbidity for all the classes of diseases was close to 1, except for the eye and its adnexa diseases.

Keywords: morbidity, child population, time series analysis, quantitative analysis.

Child health indicators determine the state of not only medical but also educational, social and economic problems of society.

The object of the research is the information about the number of child morbidity cases of the city of Mozyr for the period from 2012 to 2016, which was acquired at Healthcare Facility "Mozyr City Children's Hospital." In the study the following methods are used: the calculation of the average annual indicator trends (A1), the calculation of the average annual morbidity indicators (A0), identification of reliable differences in two sets, time series analysis by the method of number alignment by a parabola of the first order, the calculation of the ratio coefficient between the indicators of general and primary morbidity.

In the structure of child morbidity of the city of Mozyr the first rank place over the study period hold the following classes of diseases: respiratory diseases, the eye and its adnexa diseases, infectious and parasitic diseases, injuries and poisoning. The conducted comparative analysis of general morbidity indicators at the end of the study period, as compared to the start, shows a significant increase in the following classes: respiratory diseases ($t = 11,2$), some infectious and parasitic diseases ($t = 3,5$), the eye and its adnexa diseases ($t = 4,4$), in the class of "injuries, poisoning and some other consequences of external causes" no reliable differences are found ($t = 1,8$, $p > 0,05$). Reliable differences in the direction of increase in the primary morbidity indicators are found in the following classes of diseases: respiratory diseases ($t = 9,6$), the eye and its adnexa diseases ($t = 7,1$). In the direction of decrease reliable differences are found in “some infectious and parasitic diseases” ($t = 2,6$). In the class of disease "injuries, poisoning and some other consequences of external causes" no statistically significant reduction is found ($t = 1,79$, $p > 0,05$). The ratio coefficient between the general and primary morbidity within the study period for all the diseases under the study was close to 1, except for the eye and its adnexa diseases (2.5-3.4). The growth of this ratio coefficient over the years may indicate an increase in chronization of this pathology among the children population of the city of Mozyr.

ATMOSPHERIC POLLUTION AS A CAUSE OF CHRONIC BRONCHITIS

D. Kozlovskaya

Belarusian State University, ISEI BSU,
Minsk, Republic of Belarus
k.daryan18@gmail.com

The article deals with air pollution as a cause of chronic bronchitis, its types, symptoms, diagnosis and treatment.

Keywords: atmosphere, morbidity, bronchitis, smog, industry, pollution.

The disease occurs when under the influence of reason in specific conditions violated the "trim" of the human body with the environment, i.e., when the adaptability of the organism to changing environmental factors becomes insufficient.

The reasons for the appearance of chronic bronchitis are extremely many. The main ones are the following: air pollution, tobacco Smoking, infectious respiratory diseases of adults (especially influenza) and children (measles, whooping cough), diseases caused by colds, diseases of the paranasal sinuses and oral organs [1].

Many have undoubtedly heard and read about the ominous smogs that often hang over London, Los Angeles, Hamburg, New York, Tehran, Mexico city, Tokyo, Chicago, Paris and the Japanese "smog capital" Nagoya, as well as many other industrial centers of Western Europe, Asia and America, turning them into "choking cities." Residents of these cities have to breathe not air in the usual sense of the word, but a concentrate of carbon monoxide, nitrogen oxides, chemical compounds of sulfur, lead, mercury, vapors of complex organic solvents, rubber dust, soot, ash, fog droplets, gasoline vapors and many other chemicals that are extremely "generously" emit into the atmosphere dozens of plants, factories and thousands of cars.

A number of studies have shown the impact of emissions from some industries on human health. It is shown that the etiology of respiratory diseases is associated with increased air pollution. Studying the changes in the health status of the population of the Republic of Belarus under the influence of environmental factors, the following immunomodulatory effects were observed and described: transient inhibition and stimulation of the immune response, shift of the peak of antibodies, decrease in the avidity of antibodies, change in the expression of surface cell receptors, proliferative activity or differentiation of immunocompetent cells. Based on the above, an attempt is made to assess the impact of environmental factors in the territory of the Republic of Belarus on the health of the population.

In our cities in some cases released into the atmosphere a large amount of dust, gases that are harmful to the respiratory system, especially people who have suffered acute respiratory or any pulmonary disease. Therefore, in cities and industrial areas, the incidence of chronic bronchitis is much higher than among villagers and villages.