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**MINERAL COMPOSITION OF DRINKING WATER AND ITS EFFECT ON
THE URBAN AND RURAL POPULATION HEALTH IN KRYVORIZHYSKYI
RURAL DISTRICT AND KRYVYI RIG CITY**

Hryhorenko Luibov Victorivna

PhD, assistant professor of hygiene and ecology department

Shevchenko Olexandr Anatoliyovych

MD, professor of hygiene and ecology department

SI "Dnepropetrovsk Medical Academy Ministry of Health of Ukraine"

Dnipro city, Ukraine

Abstract. During 2016-2019 years correlations between mineral composition of potable water, such as total hardness, total mineralization, iron and levels of morbidity diseases XI class (K80-K87), XI class (K20-K31), IX class (I10-I15) among population of Kryvyi Rig city and Kryvorizskyi rural district was determined ($r=0.32$, $p<0.001$).

Key words: drinking water, salt composition, children and adults population, correlation analyses, morbidity.

Introduction. According to [1], overnormal content of iron caused unpleasant taste and possible development among population such diseases as pneumoconiosis, myocardiopathy, myocardiodystrophy, irritation upper respiratory tract, asthenovegetative syndrome and vascular dystonia. Iron caused vegetative-vascular dystonia, liver sideroses and kidney failure, osteoporosis, rheumatism, hypertension, bronchial asthma, diseases of blood system and gastro-intestinal tract. Structure of human erythrocyte and functional glycoproteins helps us to understand nature of pathological changes in the human genes, including pathological shifts of sideroses, which is caused by iron [2].

Aims of research is connected with possible impact on the peasants' health, in Kryvorizskyi district, potable water with overnormal concentrations of iron and analyze correlation different combination of salt composition with Fe content – with prevalence of diseases and morbidity.

Material and Methods. It was carried out influence mineral composition of potable water (total mineralization, total hardness, iron) and their combinations on the peasants' health in Kryvorizskyi rural district and Kryvyi Rig city in 2016-2019 years [9]. Variability concentrations of iron in the potable water, taken from experimental territories (Kryvorizskyi rural district and Kryvyi Rig city) had been determined in the measures from (0.2 to 2.5) mg/dm³. A correlation analysis was carried out in some rural tacsons of Dnipropetrovsk region between iron content in water from centralized and decentralized sources and morbidity of population.

Results and Discussion. In the structure of child morbidity in Kryvorizskyi district and Kryvyi Rig city, gastritis and duodenitis occupy first ranking position [2]. Incidence XI class of diseases, nosological form (K20-K31), among child population, inhabitants of Kryvyi Rig city, during 2016-2019 years has tendency to decrease (from 100.8 to 71.8) cases per 100 000 children [3]. An incidence rate of gastritis and duodenitis among child population in the settlements of Kryvorizskyi district at the same period of time was observed from (90.7 cases to 56.3) cases per 100 000 children, which was characterized tendency to reduce incidence this class of diseases in dynamics [4]. The highest level of gastritis and duodenitis was registered at child population in Kryvyi Rig city in 2018 year on the measure (106.9 cases per 100 000 children), which was higher compared with analogical indicator in the Kryvorizskyi rural district in 1.39 times [5].

Second ranking position in the structure of child morbidity takes cholelithiasis [6]. Level of morbidity among child population in the Kryvyi Rig city for XI class of diseases, nosological form (K80-K87), characterized by the tendency to decrease during 2016-2019 years respectively (from 35.8 to 28.9) cases per 100 000 children, which exceeds same level of child morbidity at the settlements of Kryvorizskyi district (up to 2.02-1.23) times [7]. However, analysis level of child morbidity in the

rural district shows increase an incidence of cholelithiasis (from 17.7 to 23.4) cases per 100 000 children population. Pronounced rise incidence nosological form (K80-K87), XI class of diseases, was established in 2016 year among peasants' in Kryvorizskyi district. Level of morbidity on cholelithiasis [8] in the settlements of Kryvorizskyi district was (32.1 cases) in 1.4 times higher, as compared with child population in Kryvyi Rig city (22.7 cases). In the (Figure 1) described, that peasants' population of Kryvorizskyi district, Dnipropetrovsk region, characterized by gastritis and duodenitis incidence growth for period of supervision (2016-2019 years) [9, 10].

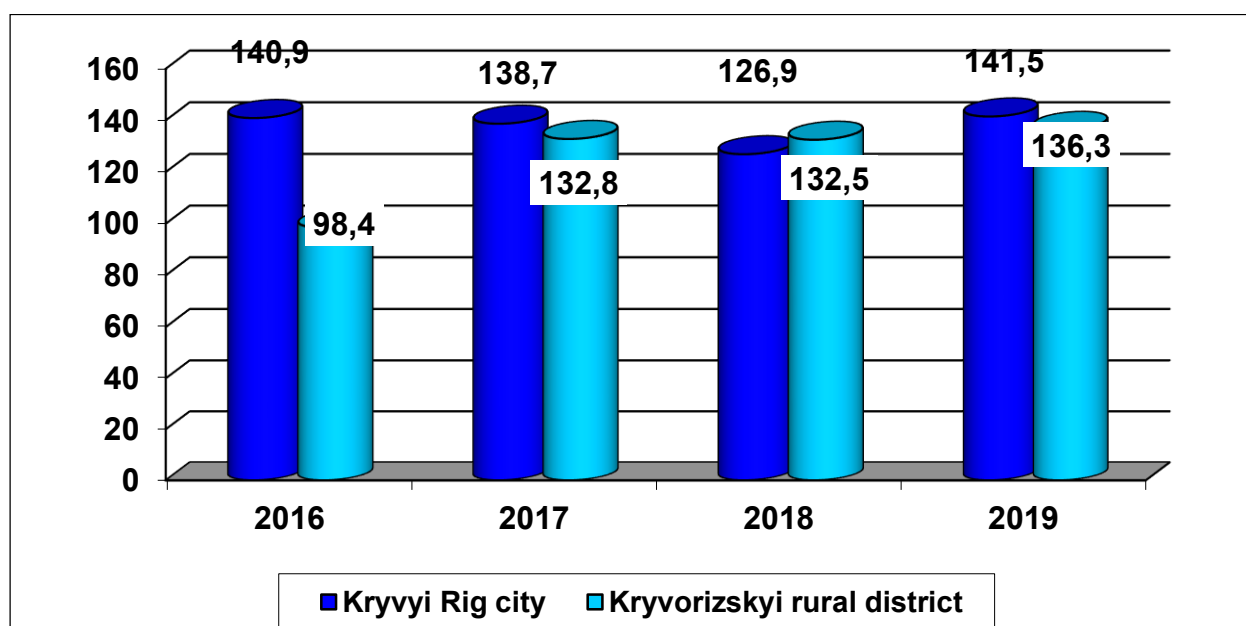


Fig. 1. Incidence of gastritis and duodenitis among urban and rural population during 2016-2019 years.

Thus, incidence XI class of diseases (K80-K87) at the inhabitants of Kryvyi Rig city was registered on the level (from 140.9 to 141.5) cases per 100 000 population, which is higher than similar level of morbidity among the peasants of Kryvorizskyi district in (1.43-1.04) times. Significant growth morbidity XI class (K20-K31) of diseases at the peasants, living in the rural district (from 98.4 to 136.3) cases had been observed. The highest level of gastritis and duodenitis was discovered in 2019 year, among urban and rural population (141.5 - 136.3 cases) per 100 000 inhabitants.

Since 2016-2019 years at the urban and rural population were proved significant growth cases of hypertension: (from 2680.5 to 2934.8) in Kryvyi Rig city; (from 2567 to 2682.8) at the peasants' population (rural district). On the one hand, the

highest incidence IX class (I10-I15) of diseases was observed in 2017 year among inhabitants of Kryvyi Rig city (3041 cases). On the other hand, at the peasants of rural district the highest level for the same class was (2682.8 cases per 100 000 population) in 2019 year. At the same time, tendency to decrease XIV class (N20-N23) of diseases in both cases (among urban and rural population) took place from 2016 till 2019 years. That's why, level of urolithiasis was in (2.04-1.09) times lower among peasants: (18.7-14.9) cases, compare with population in Kryvyi Rig city (38.2-16.3) cases per 100 000 people.

In Kryvorizskyi district attention should be focused on the significantly strong correlation link between tumors in children under 14 years old and iron content ($r=0.87$, $p<0.05$); diseases of blood and organs of hematopoiesis were correlated with total hardness ($r=0.78$, $p<0.05$) and iron ($r=0.74$, $p<0.05$), anemia and iron content ($r=0.79$, $p<0.05$), congenital anomalies – with iron ($r=0.74$, $p<0.05$), congenital anomalies of the blood circulation – with iron ($r = 0.77$, $p<0.05$). Analysis of correlation matrices, conducted among children showed a significantly strong and medium connection between: neoplasm's – with iron content ($r = 0.87$, $p<0.05$), diseases of blood and organs of hematopoiesis – with iron ($r = 0.95$, $p<0.05$), anemia – with total hardness ($r = 0.58$, $p<0.05$), and iron ($r=0.79$, $p<0.05$), diseases of endocrine system – with iron ($r=0.93$, $p<0.05$), diseases of the circulatory system – with iron ($r=0.74$, $p<0.05$). Significantly strong correlation in Kryvorizskyi district was observed between congenital anomalies of the circulatory system – with iron content ($r=0.87$, $p<0.05$). Similar trend was observed between content of iron in water and the following diseases at the children – tumors ($r=0.87$, $p<0.05$), diseases of blood and organs of hematopoiesis ($r=0.74$, $p<0.05$), anemia ($r=0.79$, $p<0.05$), diseases of endocrine and nervous systems ($r=0.80$, $p<0.05$), circulatory system ($r=0.78$, $p<0.05$). Medium strength correlation link was found in water from the centralized sources between all chemical parameters, except iron, with diseases of digestion organs ($r=0.63-0.65$, $p<0.05$), skin and subcutaneous tissue ($r=0.57-0.58$, $p<0.05$), and musculoskeletal system ($r=0.39-0.42$, $p<0.05$). Probably medium strength correlation was observed between iron content and disease of the

genitourinary system ($r=0.48$, $p<0.05$), congenital anomalies, including circulatory system ($r=0.56-0.59$, $p < 0.05$).

Among children who consume water from decentralized water sources were found out a significantly strong correlation between tumors ($r=0.87$, $p<0.001$) in the Kryvorizskyi district, diseases of blood and organs of hematopoiesis ($r=0.74-0.87$, $p<0.001$), anemia ($r=0.74-0.95$, $p<0.001$) and congenital anomalies ($r=0.87$, $p<0.001$), including anomalies of circulatory system ($r=0.95$, $p<0.001$), and diseases of circulatory system ($r=0.90$, $p<0.001$) and ($r=0.95$, $p<0.001$) with high content of Ca, Mg, Fe in some of the rural settlements of Kryvorizskyi district. In water of rural settlements of this district was shown significantly strong correlation between the following diseases and iron content in water: neoplasms ($r=0.87$, $p<0.001$), anemia ($r=0.79$, $p<0.001$), diseases of endocrine system ($r=0.79$, $p<0.001$), nervous ($r=0.80$, $p<0.001$) and cardiovascular system ($r=0.78$, $p<0.001$), urinary system ($r=0.82$, $p<0.001$). Average correlation link was revealed between iron and congenital anomalies ($r=0.89$, $p<0.001$), anomalies of circulatory system ($r=0.95$, $p<0.001$). It was revealed significantly strong correlation link between diseases of blood and organs of hematopoiesis with total hardness ($r=0.78$, $p<0.001$) and iron ($r= 0.74$, $p<0.001$).

Trend with average and strong correlation link was demonstrated with all chemical parameters, which influence on salt composition of drinking water, except the hardness and iron, and prevalence of such disease among rural children: infectious and parasitic ($r=0.50$, $p<0.001$); diseases of endocrine system ($r=0.53$, $p<0.001$); blood and organs of hematopoiesis ($r=0.87$, $p<0.001$), skin and subcutaneous tissue ($r=0.41$, $p<0.001$), digestive system ($r=0.30$, $p<0.001$). It is worth noting, that all indicators of salt composition water from centralized sources were correlated with prevalence diseases of endocrine system at the rural children ($r=0.34-0.56$, $p<0.001$), skin and subcutaneous tissues ($r=0.31-0.44$, $p<0.001$); all indicators of salt composition, except hardness – with prevalence of infectious and parasitic diseases ($r=0.50$, $p<0.001$), diseases of digestion system ($r=0.30$, $p<0.001$).

Significantly strong correlation was observed between prevalence of anemia among children with content of Mg, Fe ($r=0.76$, $p<0.001$). Only in some settlements of Kryvorizskiy district prevalence of diseases blood and hematopoiesis organs ($r=0.87$, $p<0.001$) and anemia ($r=0.95$, $p<0.001$) were significantly strongly correlated with salt content of Ca, Mg, Fe.

In Kryvyi Rig city of Dnipropetrovsk region, prevalence of endocrine diseases at the 14 years old children was correlated with all indices of salt composition in water, except Ca, Mg, Fe ($r=0.87-0.95$, $p<0.001$), total hardness and Fe ($r=0.71$, $p<0.001$), Fe ($r=0.87-0.95$, $p<0.001$). In Kryvyi Rig city was detected significantly strong correlation between prevalence diseases of blood and blood-forming organs ($r=0.87$, $p<0.001$) and anemia ($r=0.95$, $p<0.001$) among children with high iron content in drinking water. Prevalence of congenital anomalies of circulatory system among children was also correlated with iron content in water of this city ($r=0.74$, $p<0.001$).

In water of centralized sources of Kryvyi Rig city was identified a strong correlation between content of Ca, Mg, Fe with incidence of tumors at the adult population ($r=0.87$, $p<0.001$), diseases of blood and organs of hematopoiesis ($r=0.95$, $p<0.001$), anemia ($r=0.95$, $p<0.001$). Tumors ($r=0.87$, $p<0.001$) and diseases of blood and organs of hematopoiesis ($r=0.74-0.95$; $p<0.001$) and anemia ($r=0.63-0.95$, $p<0.001$) were correlated with Fe content in water.

It shows a reliable trend, focused on the morbidity of tumors in Kryvorizskiy district at adult population ($r=0.87$, $p<0.001$), system of digestive organs ($r=0.87$, $p<0.001$), skin and subcutaneous tissues ($r=0.74-0.95$; $p<0.001$), congenital anomalies ($r=0.87$, $p<0.001$), including anomalies of circulatory system ($r=0.95$, $p<0.001$), diseases of blood and organs of hematopoiesis ($r=0.95$, $p<0.001$), anemia ($r=0.95$, $p<0.001$), which correlated with high content of Ca, Mg, Fe in water. At the same time, diseases of blood and organs of hematopoiesis ($r=0.95$, $p<0.001$) and anemia ($r=0.95$, $p<0.001$) were correlated with Mg, Fe in drinking water. General trend was shown in water of this district, where tumors ($r=0.87$, $p<0.001$), diseases of blood and organs of hematopoiesis ($r=0.78-0.95$, $p<0.001$), anemia ($r=0.71-0.95$, $p<0.001$) were correlated with high Fe content.

Combined action of salt composition in drinking water: Ca, Mg, Fe impact on the incidence of diseases blood and organs of hematopoiesis ($r=0.87$, $p<0.05$), anemia ($r=0.95$, $p<0.05$) at the adult population in Kryvorizskyi district. In drinking water of some settlements was shows a tendency of influence Fe – on a prevalence of diseases blood and organs of hematopoiesis ($r=0.87$, $p<0.05$), anemia ($r=0.74-0.95$, $p<0.05$) at the adult population. Prevalence of anemia was caused by combined effect of the next compounds: Mg, Fe ($r=0.76$, $p<0.001$). In water of Kryvyi Rig city Ca, Mg, Fe have a strong correlation with prevalence diseases of blood and organs of hematopoiesis ($r=0.87$, $p<0.001$) and anemia ($r=0.95$, $p<0.001$) at the adult population.

In particular, in the vast majority of rural settlements in Kryvorizskyi district, was observed a strong correlation link between prevalence diseases of blood and organs of hematopoiesis ($r=0.87$, $p<0.001$) and anemia ($r=0.78-0.95$, $p<0.001$) with iron content in the decentralized drinking water sources. Whereas, prevalence of congenital anomalies of circulatory system correlated with Fe content in these water sources ($r=0.74$, $p<0.001$). It is shown, that incidence of salt arthropathy at the adult population have a medium strength correlation with contents of Ca, Mg, Fe in drinking water from the centralized sources: only in the Kryvorizskyi district ($r=0.47$, $p<0.05$)

Gallstone disease among adult residents in the Kryvyi Rig city had no correlation links with indices of salt composition of water from centralized sources, or having an average link in water – with Fe ($r=0.54$, $p<0.05$). Among adult residents was observed medium strength correlation link between incidence of salt arthropathy and combined effect of Ca, Mg, Fe in water samples, taken from decentralized sources ($r=0.47$, $p<0.001$). It should be noted, that stones of kidney and ureter diseases was correlated with high Fe content in water, taken from decentralized sources ($r=0.35$, $p<0.001$), whereas incidence of salt arthropathy was correlated with Fe in the Kryvorizskyi district ($r=0.33-0.47$, $p<0.001$).

In water from decentralized sources in the Kryvorizskyi district was shown a similar trend: prevalence of salt arthropathy was correlated an average strength with Ca, Mg, Fe ($r=0.47-0.54$, $p<0.001$). Attention should be focused on the fact, which in some

rural settlements Fe was correlated with prevalence various diseases of the different classes. It was shown an average correlation of Fe – with prevalence of kidney stones and ureter diseases ($r=0.33-0.35$, $p<0.001$). Whereas in Kryvyi Rig city, Fe was significantly correlated with prevalence of gallstone disease ($r=0.45$, $p<0.001$) and salt arthropathies ($r=0.60$, $p<0.001$) at the adult population.

Conclusions:

1. In Ukraine, influence overnormal mineral composition of potable water to the population health was not research enough, despite it's deterioration from hygienic standards in the majority rural districts. Hygienic investigations influence mineral composition of potable water, which is formed in rural regions, having different combination of mineral salts, would provide real consequences of potable water to the peasants health. Influence mineral composition of potable water (total mineralization, total hardness, iron) and their combinations to the urban and rural population health was carried out during 2016 – 2019 years.

2. Significant tendency to increase XI class (K80-K87) of diseases (140.9-141.5) ‰ and IX class (I10-I15) (2680.5-2934.8) ‰ had been revealed in most cases at the urban population (Kryvyi Rig city), compared with peasants' population (rural district): (98.4-136.3) ‰ and (2567-2682.8) ‰ in 2010-2013 years. It was observed decrease cases XIV class (N20-N23) of diseases both at the population of Kryvyi Rig city (38.2- 16.3) ‰, and peasants of the rural district (18.7–14.9) ‰ for period of observation. Morbidity rate for this class of diseases among population of Kryvorizskyi district was in (2.04–1.09) times lower, in comparison with the inhabitants of Kryvyi Rig city in 2016-2019 years.

3. Thus, a detailed analysis of morbidity among children aged from 0 to 14 years in the vast majority of rural settlements in Kryvorizskyi district of Dnipropetrovsk region showed a strong and average correlation links between: diseases of circulatory system and contents of Ca, Mg, Fe ($r=0.87$, $p<0.05$). Whereas, Ca, Mg, Fe in drinking water of centralized sources caused a strong correlation link with incidence of congenital anomalies ($r=0.74$, $p<0.05$) and congenital anomalies of circulatory system ($r=0.77$, $p<0.05$). In some rural settlements shows a significantly strong

correlation between malignancy – with Fe ($r=0.87$, $p<0.05$); diseases of blood and organs of hematopoiesis – with Fe ($r=0.74$, $p<0.05$); anemia with Fe ($r=0.79$, $p<0.05$); congenital anomalies – with Fe ($r=0.74$, $p<0.05$), congenital anomalies of blood circulation – with Fe ($r=0.77$, $p<0.05$).

4. In water from decentralized sources in the settlements of Kryvorizskyi rural district was revealed a strong correlation links between content of Fe and tumors ($r=0.87$, $p<0.001$); anemia ($r=0.79$, $p<0.001$); endocrine disease ($r=0.79$, $p<0.001$), and diseases of the nervous ($r=0.80$, $p<0.001$) cardiovascular system ($r=0.78$, $p<0.001$); urinary system ($r=0.82$, $p<0.001$); congenital anomalies, including anomalies of circulatory system ($r=0.89-0.95$, $p<0.001$).

5. Among adult residents of Kryvyi Rig city sensitive to the effects of salt composition of water from centralized and decentralized sources were diseases of salt arthropathy, which were correlated with Ca, Mg, Fe ($r=0.47$, $p<0.001$). To the prevalence of salt arthropathy among adults inhabitants in Kryvyi Rig city of Dnipropetrovsk region was influenced: Ca, Mg, Fe ($r=0.47-0.54$, $p<0.001$).

REFERENCES:

1. Pauline M Rudd, Mark Hilliard, Weston Struwe, Giorgio Carta, John O'Rourke, Henning Stockman, Jonathan Bones. From Genome to Glycome. *Analyt Technol Biomed Life Sci*, 2010; 878: 403-408.
2. M Butler, A Critchley, HF Hebestreit, RA Dwek, J Jaeken, PM Rudd et al *Glycobiology*, 2003; 13: 601-622.
3. Hryhorenko, L.V., Doroshenko, R.N. Influence of Potable Water Quality to the Peasants' Health in Hulaipolskyi Region. *European Applied Sciences*, 2013; 9: 20 – 22.
4. Hryhorenko, L.V. Analysis state of health population of children in the rural district of the industrial region of Ukraine. *European Applied Sciences*, 2013; 8: 31-32.
5. Dziak, N. V., Shevchenko, A. A., Hryhorenko, L. V. Influence of rainfall domestic wastewater on the microorganisms from anthropogenic disturbed soils in the career

southern mining and processing plant. Vestnik of hygiene and epidemiology, Donetsk, 2011; 15 (1): 22-26.

6. Hryhorenko, L.V., Shevchenko, A. A., Dziak, N. V. Content of geochemical elements in the potable water, taken from underground water sources and consequences for health of water users. Diseases aquatic etiology as hygienic problem. Hygiene of settlements, Kyiv, 2012; 59: 74-81.

7. Hryhorenko, L.V., Dziak, N. V., Shevchenko, A. A. Ecological-hygienic assessment disposal sludge municipal wastewater in the technogenic landscapes of iron ore, Hygiene of settlements, Kyiv, 2012; 60: 137-143.

8. Hryhorenko, L. V. Analyses of the cases outbreaks associated with drinking water in the different countries of the world, Ukrainian Scientific Medical Youth Journal, Kyiv, 2013; 1: 100-103.

9. Shevchenko, A., Hryhorenko, L. Hygienic assessment of non - carcinogenic risk caused by using potable water, SES. Preventive medicine, Kyiv, 2012; 6 (4): 46-50.

10. Hryhorenko L.V., Baibakov V.M. Analysis of indicators of public health in the Kamensko-Dneprovskyi rural region. Medical perspectives, 2019; 4 (24): 160 – 176.

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