МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНФЕКЦІЙНИХ ХВОРОБ З ЕПІДЕМІОЛОГІЄЮ
ГО «АСОЦІАЦІЯ ІНФЕКЦІОНІСТІВ СУМЩИНИ»

Інфекційні хвороби в практиці лікаря-інтерніста: сучасні аспекти

Infectious diseases in practice of physician-internist: modern aspects

Матеріали Всеукраїнської науково-практичної конференції, присвяченої 20-річчю кафедри інфекційних хвороб з епідеміологією СумДУ
(Суми, 25–26 травня 2017 року)

Суми
Сумський державний університет
2017

Operchuk Nadia Ivanivna[1], Zadorozhna Victoria Ivanivna[2],
Raksha - Slusareva Olena Anatolivna.[2]

LOW-INTENSITY IONIZING RADIATION EFFECT ON BLOOD PARAMETERS OF CHILDREN OF DIFFERENT AGE

[1]State Institution Kirovograd Oblast Laboratory Center of the Ministry of Health of Ukraine
[2]State Institution Gromashevsky Institute of Epidemiology and Infectious Diseases, Kyiv, Ukraine

Оперчук Надія Іванівна[1], Задорожна Вікторія Іванівна[2], Ракша-Слюсарева Олена Анатоліївна[2]

ВПЛИВ ПОСТІЙНОГО НИЗЬКОІНТЕНСИВНОГО ІОНІЗУЮЧОГО ВИПРОМІНЮВАННЯ НА ПОКАЗНИКИ КРОВІ ДІТЕЙ РІЗНОГО ВІКУ

[1]Державна установа «Кіровоградський обласний лабораторний центр МОЗ України», м. Кропивницький,' Україна
[2]Державна установа «Інститут епідеміології та інфекційних хвороб імені. Л. В. Громашевського НАМН України», м Київ,. Україна
rakshaslusareva@gmail.com

Резюме. Встановлено негативний вплив комбінованого безперервного низкоинтенсивного іонізуючого випромінювання природного і антропогенного походження на лейкоцити периферичної крові дітей усіх вікових груп.

Introduction. Kirovohrad Region is geographically located on a geological platform which is rich with uranium deposits. It causes permanent effects on the body of natural low-intensity ionizing radiation. The largest enterprises of Ukraine for the extraction and processing of uranium ore are located and operate in this region. Radiological features of this and other similar regions undoubtedly affect the body and can affect the course of the infectious diseases. The common factors study of epidemic process of infectious diseases

under constant effect of low-intensity ionizing radiation and methods development for actions against its effects is an urgent problem. This primarily concerns children population which is particularly sensitive to ionizing radiation and simultaneously falls into subject group of viral diseases with the drop mechanism of pathogen transmission, identified as paediatric infections.

Purpose of the investigation was to study effect of permanent low ionizing radiation on blood parameters children of different ages in Kirovohrad Region

Methods. The main study group included children aged from 3 to 15 years (200), who live under constant effect of low-intensity ionizing radiation and in proximity to nuclear fuel cycle enterprises in the city of Kropyvnytsky, Malovyskivsky district. The control group included children (200) of the same age living within relatively clean areas with no effect of technologically reinforced natural sources of ionizing radiation in the city of Oleksandriia, Oleksandriysky district, city of Svitlovodsk, Svitlovodsky district. Children were grouped into 3 age groups from 3 to 6 years, 7 to 10 years, and 11 to 14 years. The study utilized epidemiological, sanitary and statistical, demographic and sanitary haematological study methods.

Results. The studies showed that the leukocytes count in the group of children 3.0 - 6 years was 5.4 ± 0.19 g/L, group of children 7 - 10 years – 5.6 ± 0.2 g/L, group of children 11 - 14 years – 5.2 ± 0.23 g/L. Children in control group residing in the city of Svitlovodsk, Svitlovodsky district, had the peripheral blood leukocytes count significantly higher: in group of children 3.0 - 6 years – 6.5 ± 0.21 g/L, group of children 7 - 10 years – 6.8 ± 0.28 g/L, and group of children 11 - 14 years – 6.4 ± 0.28 g/L. A significantly higher leukocytes count was observed in the group of children of 11 - 14 years residing in the city of Oleksandriia, Oleksandriysky district. The values of leukocytes count for children of three study groups residing in the city of Oleksandriia, Oleksandriysky district and Malovyskivsky district – 6.49 ± 0.62 g/L, 5.87 ± 0.25 g/L, 7.3 ± 0.53 g/L, 6.5 ± 0.27 g/L, 7.1 ± 0.3 g/L,

56.2 ± 0.3 g/L – were almost the same and higher in those children residing in the city of Kropyvnytsky.

Conclusions: the effect of combined continuous low-intensity ionizing radiation of natural and anthropogenic origin has a negative impact on the peripheral blood leukocytes pool in children of all studied age groups.