

**INTERNATIONAL PUBLIC HEALTH CONFERENCE
«PUBLIC HEALTH IN UKRAINE – MODERN CHALLENGES
AND DEVELOPING PROSPECTS»,
22-23 APRIL 2021, SUMY, UKRAINE**

DOI: 10.36740/WLek202105144

SCIENTIFIC-ORGANIZATIONAL CONFERENCE COMMITTEE

HEAD

Vladyslav A. Smiiianov – Doctor of Medical Sciences, Professor, Head of Public Health Department, Medical institute, SSU

DEPUTY HEAD

Lesia A. Rudenko – Scientific editor, moderator of project of ALUNA publisher

SECRETARY

Viktoria O. Yasenok – Associate professor of Public Health Department, Medical institute, SSU

COMMITTEE MEMBERS:

1. Yurochko P. Tetiana – Head of the Department “School of Public Health”, National University of “Kyiv-Mohyla Academy”
2. Ihor V. Hushchuk – Head of Public Health Department, National University of Ostroh Academy
3. Oleksandr Smiyan – Head of the Department of Paediatrics, Medical institute, SSU
4. Lyudmyla Prystupa – Head of Internal Medicine Department of Postgraduation Education, Medical institute, SSU
5. Yuriy Lakhtin – Head of Dentistry Department, Medical institute, SSU
6. Bartosz Guterman – Head of Subscription Department of ALUNA publisher, Coordinator of Association of Polish Health Resorts` Patients project
7. Viktor Orlovski – Head of Family Medicine and Dermatovenerology Department, Medical institute, SSU
8. Oleksandra M. Berhylevych – Professor of Public Health Department, Medical institute, SSU

Conclusions: 1) The presence of a patient with tuberculosis in the family, which is not isolated, is a risk for the development of contact – «family» tuberculosis. 2) «Family» tuberculosis of focal and infiltrative tuberculosis prevails in contact persons. 3) More often (4 times), the process develops in the extrapulmonary organs.

KEY WORDS: family tuberculosis, forms of family tuberculosis, risks of developing family tuberculosis

ANALYSIS OF COVID-19 MORBIDITY LEVEL IN SUMY REGION IN 2020

Liudmyla I. Kiptenko, Andrey V. Horokh

DEPARTMENT OF MORPHOLOGY, SUMY STATE UNIVERSITY, MEDICAL INSTITUTE, SUMY, UKRAINE

Introduction: Currently, one of the main areas of medicine is focused on fight against COVID - 19, caused by coronavirus. Coronavirus infection is an acute viral disease caused by an RNA-containing virus of the genus Betacoronavirus of the Coronaviridae family, transmitted between animals and humans.

Aim: to show statistical analysis of the disease on COVID - 19 in Sumy region.

Materials and methods: analyzing results of PCR tests in Sumy region for period 2020 year. Based on the results of laboratory tests, a statistical analysis of the disease on COVID - 19 by region was carried out.

Results: Human coronaviruses (strain HCoV229E) were first isolated by D. Tyrrell and M. Bynoe in 1965 from patients with acute respiratory viral infections. Currently, they are divided into 4 subfamilies (alpha, beta, delta and gamma) and more than 30 species, the list of which is constantly replenished. The coronavirus genome is represented by single-stranded RNA with a length of about 30 thousand nucleotide units, which is the maximum size among all known RNA-containing viruses. The reason for the emergence of new coronaviruses, that cause severe and rapidly spreading diseases is spontaneous mutations. Therefore, all types of coronaviruses can potentially be dangerous for human. Pathogenesis of coronavirus infection: colonization and destruction by coronaviruses of upper respiratory tract epitheliocytes with further replacement of affected sections of alveoli walls with connective tissue.

We conducted an analysis, based on the statistical processing of disease data on COVID - 19 in the Sumy region for the period of 2020. During this time, 123181 studies using the PCR test method were carried out in the laboratories of the region.

Based on the results of PCR tests in the Sumy region in 2020, 40989 cases of coronavirus cases were confirmed. Among these patients, 34,513 people recovered, 529 - died. The largest number of patients was registered in Sumy - 19947 cases, which equals 48.7% of all cases in region. In second place of the morbidity was in the town of Romny, where 1914 cases of the disease or 4.7% were registered, and town of Konotop is last of the top three - 1882 cases registered, which equals 4.6%. Among 18 districts of the region, the Sumy district is leading by index of morbidity, where 2,498 cases were documented. The smallest number of patients with COVID - 19 was registered in the Shostka district. The largest number of deaths was recorded in Sumy - 209, which equals 39.5% of all deaths in the Sumy region by COVID - 19.

Considering the age aspect, the largest number of cases is noted in the age group of 18 to 65 years - 34127 people and the smallest number of cases in the age group from 0 to 17 years - 1512 people. In 2020, 25,000 women came down with COVID-19 in the Sumy region. Men that came down with virus were 9 thousand less in number - 15989 cases. Among all cases on COVID - 19, the disease of healthcare workers reached the index of 2,153 or 5.3% of all cases.

Conclusions: Overcrowded places cause faster spread of the infection. The consequences of the coronaviruses' mutation show that the transformations can lead to emergencies.

KEY WORDS: coronaviruses, statistical analysis, COVID – 19.

ASSESSMENT OF BONE TISSUE MINERAL DENSITY IN WOMEN OF ALL AGES IN THE PRACTICE OF A FAMILY DOCTOR

Yevheniia Y. Lukianets, Olga M. Barna, Yaroslava V. Korost

O.O. BOHOMOLETS NATIONAL MEDICAL UNIVERSITY, KIYV, UKRAINE

Introduction: Osteoporosis is the fourth most common after cardiovascular, cancer and endocrine diseases. According to WHO experts, due to the aging population and the impact of negative environmental factors, the incidence of osteoporosis will increase further. Osteoporosis is known as the silent epidemic because it does not manifest until a fracture occurs. Despite advances in risk assessment and treatment, osteoporosis still often either not recognized or untreated.

Aim: Assess bone mineral density in women of different ages, analyze fracture risk factors among women with low-energy fractures.

Materials and methods: The study was based on a survey of women in major cities of Ukraine. 177 women aged 20 to 79 years were included. The average age of the subjects was 53 ± 13.45 years, the average body weight was 73 ± 13.1 kg, height 163.5 ± 5.7 cm, the average BMI was 27.38 ± 5.10 . Normal body mass index (BMI) 20-24.9 had 63 women (35.6%), rates of preobesity and clinical obesity were in 114 surveyed women (64.4%). All patients were divided into age groups: young women (n=22) – 20-29 years (n=14), 30-39 years (n=8) and women over 40 years old (in pre and postmenopause) (n=155) - 40 - 49 years (n=42), 50 - 59 years (n=54), 60-69 years (n=38), 70-79 years (n=21). Also, women after the age of 40 were distributed according to the history of low-energy fractures. Ultrasound densitometry of the heel bone was used to assess the

structural and functional state of the bone tissue. The risk of fractures was determined using the Ukrainian model of the online calculator FRAX.

Results: As a result, among all examined women in terms of bone mineral density (BMD), regardless of age, 72 women (40.7%) had normal BMD, osteopenia was found in 98 (55.4%) and osteoporosis - 7 (3.9%). Among young women, normal values have 14 women (mean age 28 ± 3.89 years, Z-index -1.31 ± 0.22), osteopenia was found in 8 subjects (27 ± 6.08 , Z-index 0.02 ± 0.55), $p < 0.01$. Among women after 40 years, statistically significantly lower BMD was in the age group 70-79 years – T index -1.936 ± 0.45 ($p < 0.01$). The risk of fractures and BMD by all algorithms was higher in women with fractures: FRAX Total -14.17 ± 5.27 ($p < 0.01$), FRAX Hip -4.26 ± 3.09 ($p < 0.01$), FRAX Total with BMD -10.91 ± 4.74 ($p < 0.01$), FRAX Hip with BMD -2.57 ± 2.57 ($p < 0.01$), T-index -1.56 ± 0.66 ($p < 0.001$). The correlation analysis of BMD and the risk of fractures revealed a negative linear correlation of T-index with FRAX Total with BMD ($r = -0.532$, $p < 0.01$), FRAX Hip with BMD ($r = -0.872$, $p < 0.01$), FRAX Total without BMD ($r = -0.280$, $p < 0.01$), FRAX Hip without BMD ($r = -0.339$, $p < 0.01$) with age ($r = -0.273$, $p < 0.01$), a positive correlation with the Z-index ($r = 0.790$, $p < 0.001$). No correlation was found with BMI ($p > 0.05$).

Conclusions: Thus, BMD decreases with age. Women with a history of fractures have a significantly different risk of fractures and BMD than women without fractures. The risk of FRAX-total and FRAX-hip is significantly correlated with densitometry. With the help of the screening method, we were able to reach the population faster and on a larger scale. All of the above should be considered for planning preventive measures for osteoporosis and its complications, as well as for subsequent diagnostic steps for early detection of the disease.

KEY WORDS: Osteoporosis, osteopenia, ultrasonic densitometry, risk factors of osteoporosis.

SPREAD OF HIV INFECTION IN SUMY REGION

Mykola P. Moskalenko, Valentyna M. Torianyk, Liudmyla P. Mironets, Anatolii P. Vakal

SUMY MAKARENKO STATE PEDAGOGICAL UNIVERSITY, SUMY, UKRAINE

Introduction: HIV appeared in Ukraine in the 1980s. During this time, the nature of the infection spread has changed significantly. In the beginning, drug injecting was the main mode of transmission. Later, starting from 2012, the Ukrainians have been getting infected through unprotected sex most times. In 2017, the part of such a mode was already 64% of all possible variants of HIV spread.

Aim: To investigate the patterns of HIV spread in Sumy region.

Materials and methods: Bibliosemantic, epidemiological, and statistical methods to analyze the existing statistical and other materials of health care institutions as for the spread of HIV among the population of Sumy region.

Results: HIV infection and related AIDS cases stay among the leading infectious diseases of the population of Sumy region. Despite the fact, that the overall infection rate is much lower than the national average one, the intensity of the HIV epidemic process but still is slowly increasing. According to the material of dispensary observation, the prevalence of HIV infection in the region is 137.7 cases per 100,000 population (Ukraine - 329.6 cases). Consequently, the prevalence rate for AIDS is 41.7 cases per 100,000 population (Ukraine - 100.9 cases). Over the last 20 years, 2,957 cases of HIV infection have been registered in Sumy region, as well as 942 cases of AIDS and 261 deaths from comorbidities. The first diagnosis of HIV infection in the region was made in 1987. From 1988 to 1995, no cases of the disease were recorded in Sumy region. From 1996 to 2008, the HIV infection rate increased from 0.76 to 16.3 cases per 100,000 population. During the period from 2008 to 2020, two minor morbidity spikes took place. First, there was an increase from 16.3 cases in 2008 to 18.5 cases per 100,000 population in 2010, and then a decrease to 14.8 in 2012 per 100,000 population. The second spike lasted from 2013 to 2017, when the prevalence rate was balancing from 17.9 to 19.8 per 100,000 population. In 2016, 18.5 cases were recorded in Sumy region, in 2017 this number rose to 19.8 cases per 100,000 population. In the same year in Ukraine, it was 37.8 per 100,000 population. The decrease of the HIV infection prevalence in Ukraine in 2014 and 2015 happened as there were no statistics from the Autonomous Republic of Crimea and some territories of Donetsk and Luhansk regions. In the following years, the rate of HIV infection in Sumy region has been fluctuated at the level of 21-22 cases per 100,000 population.

According to the medical records, in 2020, among the HIV-infected people who were under the regular medical check-up, there was the following sex ratio: 47% of women, 53% of men. Among the people diagnosed with AIDS, there were 34.6% of women and 65.4% of men. The distribution of urban and rural dwellers among HIV-infected patients is as follows: 75.3% - the first group, 24.7% - the second one; concerning AIDS, 77.6% and 22.4% respectively. In recent years, people aged 25-49 prevailed in the age structure of newly registered HIV-infected patients. In 2019, this age category made up 70.2%, including 72.7% among men and 66.7% among women. The share of people in their 50s and older also tended to grow, in 2019 it was 9.2%. In this age category, men dominate with the share of 70%.

Conclusions: The epidemic situation of HIV infection in Sumy region is to be regarded as stable in comparison with other regions of Ukraine. In recent years, in our region, the prevalence of HIV is captured 2.40 times and of AIDS 2.43 times less than in Ukraine. Each year in the 21st century, the HIV incidence in Sumy region has been almost twice as low as the national one.

KEY WORDS: epidemic, diseases, health care, AIDS.