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**INTERNATIONAL PUBLIC HEALTH CONFERENCE
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AND DEVELOPING PROSPECTS»,
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ULTRASOUND BIOMARKERS OF ATHEROSCLEROTIC PLAQUE IN PATIENTS WITH CAROTID ATHEROSCLEROSIS

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Introduction: Carotid atherosclerosis is the cause of 20–25% of all cerebral ischemic strokes. Clinical, biochemical and ultrasound markers, neuroimaging plaque characteristics have been proposed as indicators of a high-risk plaque for stroke. Although risk of ischemic stroke are assessed according of degree of stenosis, qualitative characterization of plaques should be performed to detect vulnerable plaques. Ultrasonography it is now more accessible method and possible to identify high-risk plaques for clinical practice.

Aim: To identify ultrasound feature of carotid plaque that associated with risk of stroke in patients with carotid atherosclerosis and different clinical presentation.

Materials and methods: The 106 patients with carotid atherosclerosis (74 men and 32 women, aged from 31 to 74 years (mean 62.6±0.9) were involved in the study. All patients divided on three groups: 35 patients (group 1) had presented with acute non-lacunar ischemic stroke in ipsilateral internal carotid artery (ICA) with stenosis degree >50%, 41 patients (group 2) who suffered from ischemic stroke and underwent carotid endarterectomy (CEA) on ipsilateral side, group 3 included 30 patients with stenosis of ICA and no history acute ischemic event (asymptomatic carotid stenosis). Neuroimaging was perform all patients. Carotid atherosclerotic examinations were performed with a high-resolution (10.0 MHz) color Doppler ultrasound by scanner «MINDRAY DC-40». The degree of ICA stenosis was determine by the European Carotid Surgery Trial (ECST) method. Informed consent was obtained from all participants and the study approved by the local ethics committee.

Results: Proportion patients with high degree stenosis > 70% was more in group 2 after CEA - in 63.4%, in asymptomatic patients prevalence moderate stenosis 50–69% - in 76.7% (p=0.00023). There was a statistically significant relationship between the degree of stenosis and the patient's gender in all patients. The proportion of women with stenosis from 50% to 69% significantly exceeds the proportion of men with a similar degree of stenosis (p = 0.00300), and the proportion of men with 70–99% stenosis is significantly higher than the same proportion of women (p = 0.00492). We estimate of the following ultrasound characteristics of carotid plaques: heterogeneous echogenicity, surface irregularity, ulceration, plaques circulation and calcification. Soft homogenous plaques frequently detected in symptomatic patients with stenosis ICA – in 21 (27.6%) compared with asymptomatic - 4 (13.3%) (p=0.0062). Significant differences were seen between plaques calcification in symptomatic and asymptomatic stenosis ICA (p=0.0399). Significant differences were seen between plaques prolongation: in asymptomatic stenosis group observed predominantly local segmental plaques – in 23 (76.7%), in symptomatic groups observed large prolong (>1.5 cm) – in 31 (40.78%) and circulation – in 66 (86.84%) plaques. Plaque surface irregularity did not seem to be related to the severity of stenosis as there was no statistically significant difference between symptomatic and asymptomatic groups (p=0.2086). However, while irregularly surfaced plaques are of equal frequency in symptomatic and asymptomatic stenosis, there was no ulceration in asymptomatic cases. Plaque echogenicity, plaque area, and plaque ulceration was defined as complex plaque and ultrasound markers of unstable plaques that increased stroke risk.

Conclusions: More plaques that are unstable were detect in symptomatic stenosis especially in group after CEA. Ultrasound evaluation of carotid artery stenosis should focus on the detection of these plaque characteristics in addition to quantifying the degree of stenosis. Carotid plaque assessment with ultrasonography provides superior risk stratification for individual patients.

KEY WORDS: atherosclerotic carotid stenosis, Doppler ultrasound, ischemic stroke.

IMPACT OF CLINICAL FORMS OF PULMONARY TUBERCULOSIS ON THE EPIDEMIC SITUATION

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Introduction: Despite all scientists, health care providers, and government officials, tuberculosis's epidemic situation in Ukraine and the Sumy region is improving slowly. The morbidity of active tuberculosis (without relapses) for 12 months of 2019 compared to the same period in 2018 in Ukraine and Sumy region was 49,2 and 49,9 per 100 thousand populations and 50,5 and 55,1, accordingly (p>0,05). The morbidity of children from 0 to 14 years increased from 8,9 to 9,0 per 100 thousand children in Ukraine and Sumy region – from 8,3 to 9,8. Besides, Ukraine is one of the world's five countries with the highest number of patients with multidrug-resistant pulmonary tuberculosis and tuberculosis with advanced drug resistance. Although WHO experts think that to stabilize the epidemic situation, it is necessary to achieve an indicator of «effective treatment» of at least 75,0 % of patients with MDR TB (WHO report, 2019), in Ukraine, this index does not reach 50,0 %. All the above determines the relevance of this problem.

Aim: The necessity of researching the relationship of different pulmonary tuberculosis forms on the development of contact (familial) tuberculosis is the aim.

Materials and methods: We researched 157 primary identified patients in focus initially detected pulmonary tuberculosis and 162 patients who were contacted persons that lived in this focuses of tuberculosis.

Results: Among those who were the source of tuberculosis infection, focal tuberculosis occurred in 5 people, and among contact – in 19, which is more, almost four times (p<0,05), infiltrative tuberculosis occurred in 95 and 100 people, accordingly; disseminated tuberculosis in 44 and 20 people, consequently; fibro cavernous tuberculosis in 9 and 3 people. The increased number of diseases for extrapulmonary tuberculosis attracts attention (4 – 2,5 % i 16 – 9,9 % consequently).

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

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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

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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