**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ**
**БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**

# М А Т Е Р І А Л И

**104-ї підсумкової науково-практичної конференції**
**з міжнародною участю**
**професорсько-викладацького персоналу**
**БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ**
**06, 08, 13 лютого 2023 року**

Конференція внесена до Реєстру заходів безперервного професійного розвитку, які проводитимуться у 2023 році №5500074

**Чернівці – 2023**

**Kolodnitska T.L.**

## PARTICULATE AIR POLLUTANTS IMPACT ON HEART RATE VARIABILITY AND REPOLARISATION

*Department of Internal Medicine, Physical Rehabilitation and Sports Medicine*
*Bukovinian State Medical University*

**Introduction.** Short-term elevations are ambient particulate matter (PM) might trigger acute coronary events including myocardial infarctions (MI). Multiple studies have reported that. Some even suggesting that ambient PM might trigger MI within one or two hours. Pathways thought to be important in the association between ambient PM and acute cardiovascular events include systemic inflammation, autonomic dysfunction, endothelial dysfunction, and local inflammation and oxidative stress. Several mechanisms have been proposed to mediate this response to air pollution including adverse changes in systolic blood pressure, heart rate variability and repolarization.

**The aim of study.** To analyze rapid changes in measures of heart rate variability and repolarization associated with PM2.5 and UFP impacts.

**Material and methods:** informational-analytical, content-analysis.

**Results.** Decreased heart rate variability (HRV) has been associated with cardiac morbidity and mortality and is often used as a marker of autonomic dysfunction in the assessment of air pollution impacts on cardiac autonomic control. Factor analysis identified three representative ECG parameters: standard deviation of NN-intervals (SDNN) - marker of "total HRV", root mean square of successive differences (RMSSD) as marker of "parasympathetic modulation", and T-wave complexity. Abnormalities in T-wave morphology and repolarization reflect changes in the myocardial substrate; they have been found also to precede adverse cardiovascular events and increase the risk of coronary deaths. The associations between air pollution and ECG changes were studied within different time - from 30 min to 24 hours but the strongest effect was found for the first 5 hours. Many studies described decreases in SDNN in relation to increased impacts to UFP in the previous few hours and consistent decreases in SDNN and RMSSD in association with elevated PM2.5 concentrations in the preceding hours. The evidence of connection increasing pollutant concentration in ambient and increasing variability of T-wave complexity are still unclear. Last studies have also identified subgroups which were more susceptible to the harmful effects of UFP and PM2.5 than the general population. The patients with pre-existing diseases such as ischemic heart disease, previous myocardial infarction, or diabetes were at an increased exacerbation risk of their disease on days with high air pollution concentrations. Further, genetic factors (especially genotypes related to oxidative stress) can also play a role in responsiveness to particle metrics by some studies. However, some researchers of effects of UFP and PM2.5 on SDNN and RMSSD generally did not find the difference between the various participant subgroups, although for SDNN, there was only a tendency to stronger effects in individuals with diabetes or impaired glucose tolerance compared to healthier participants.

**Conclusions.** We have consistent evidence that recent UFP and PM2.5 impacts can induce acute pathophysiological responses. The results of researches on susceptible to air pollution population groups are still contradictory and require further study.

**Lukashevych I. V.**

## USE OF PLANT-BASED DRUGS IN THE TREATMENT OF NONALCOHOLIC FATTY LIVER DISEASE AND OBESITY

*Department of Propaedeutics of Internal Diseases*
*Bukovinian State Medical University*

**Introduction.** The incidence of hepatobiliary system diseases, in particular – nonalcoholic fatty liver disease (NAFLD) based on metabolic syndrome, has been increasing in the developing countries of the world in the last decade. As a rule, these situations cause the phenomenon of polypragmasy (polypharmacy) to build the full-fledged treatment complex, which, in turn, leads to the risk of side effects and complications, especially while using synthetic drugs. Therefore, current trends in drug therapy, especially in cases of multicomponent pathology, require the inclusion of

medicines in complex treatment, which have a wide range of adjustive properties and are characterized by softness, the gradualism of action, including minimal side effects or their absence. Plant-based preparations meet these requirements.

**The aim of the study.** To study the efficiency of the treatment of clinical manifestations of the "sludge" phenomenon among patients with obesity and NAFLD based on metabolic syndrome using alcohol tincture of Chelidonium majus L., prepared in accordance with officinal requirements in combination with ursodeoxycholic acid.

**Material and methods.** 32 patients with obesity and NAFLD against the background of metabolic syndrome with or without the "sludge" phenomenon who are aged 41 to 73 years, with a history of the NAFLD from 5 to 17 years, were examined. Women (63%) constituted the dominant contingent with a tendency to excessive body weight or stage I-II obesity. The diagnostic complex included a programmed examination of the abdominal cavity organs, complete blood count (CBC) and urinalysis, duodenal probing, determination of biochemical parameters of bilirubin fractions.

**Results.** The clinical course of the pathology among the patients was characterized by a tendency to the torpid progression, the decrease of life quality of the patients, the reduce of the efficiency of hepatoprotective and choleretic therapy, which required a longer duration of use, and the development of the asthenic syndrome tendency.

The examination revealed that 23 patients suffered from the "sludge" phenomenon, which occupies from 1/4 to 1/2 volume of the gallbladder. The moderate increase of gallbladder volume, thickness and density of its wall, incarceration of the intrahepatic bile ducts with normal size and increased echo-density of the liver parenchyma served as a background. Complete blood count showed a tendency to an upper limit of normal red blood cell. Biochemical analyses with Alkaline phosphatase and GGT showed the phenomenon of modest cholestasis (exceeding the norm by 1,5-3 times). Moreover, there was a clear tendency to an upper limit of normal SCr level and levels of uric acid maintenance. Besides, the levels of TC and TG have increased significantly (TC – 8,3±0,21 mmol/L; TG – 4,29±0,16 mmol/L), and the ALT and LDH (gen.) activity has remarkably increased. Due to habits and professional circumstances, almost all patients were noted at shifting the main meals, for instance, from the morning to the evening. The "sludge" phenomenon was particularly pronounced among fast-food eaters. The rehabilitation program of the studied patients included normalization and diversification of the nutritional diet, the time aspects of nutrition, especially increasing the quota of the liquid food component to 2,2-3,0 litres, depending on the body mass index. Choleretic and hepatoprotective therapy was additionally performed with an alcoholic tincture of Chelidonium majus L. (1:10) in combination with ursodeoxycholic acid during 1-1,5 months.

**Conclusion.** "Sludge" phenomenon develops among patients with obesity and NAFLD against the background of metabolic syndrome. Using the tincture of Chelidonium majus L. in combination with ursodeoxycholic acid is one of the most effective ways to improve the efficiency of these patients' rehabilitation. A beneficial aspect of the success of this approach is that the patients are aware of their continuing need to learn modern knowledge of healthy lifestyle and nutrition.

**Malkovych N.M.**

## USING OF INHALED ANTIBIOTICS IN THE TREATMENT OF PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA

*Department of Propedeutics of Internal Diseases*
*Bukovinian State Medical University*

**Introduction.** Antibiotics (AB) remain the main etiotropic drugs in the treatment of patients with community-acquired pneumonia (CAP). Long-term practice of antibiotic therapy has revealed not only the positive aspects of drugs of this group (reduction in mortality and the number of complications of CAP), but also disadvantages (development of resistance, side effects, including possible disorders of the cardiovascular system, etc.).It is especially important to avoid unwanted phenomena when using AB in people with such background pathological conditions as diabetes