

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



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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 of 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 PM_{2.5} 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 of UFP in the previous few hours and consistent decreases in SDNN and RMSSD in association with elevated PM_{2.5} concentrations in the preceding hours. The evidence of connection between 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 PM_{2.5} 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 PM_{2.5} 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 PM_{2.5} 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