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**EP239****The cardiovascular complications and risk factors in cardiac patients with type 2 diabetes**Olexander Bilovol, Lesya Bobronnikova & Irina Ilchenko  
Kharkiv National Medical University, Kharkiv, Ukraine.**The purpose**

To investigate the prevalence and the relationship between cardiovascular complications (CVC) and risk factors (RF) in patients with essential hypertension (EH) and coronary heart disease (CHD) in combination with diabetes mellitus type 2 (DM-2).

**Materials and methods**

A retrospective analysis of case histories of 79 patients with cardiac profile (37 of them women, with an average patient age –  $59.6 \pm 6.2$  years) with hypertension stage II – III (hypertension duration -  $8.9 \pm 3.2$  years) and chronic forms of CHD (CHD duration –  $9.7 \pm 2.4$  years) with concomitant DM-2 (DM-2 duration –  $6.8 \pm 1.6$  years). Please observe the complications associated with diabetes, the level of psychosocial stress to conduct the survey on a scale Reader.

**Results**

In the studied group of heart rhythm disorder (arrhythmia extrasystolic and atrial fibrillation) were significantly more ( $P < 0.05$ ) occurred in women; males were more individuals with overweight (respectively 62% of males and 48% females). Atherogenic hyperlipidemia (AHL) was observed in 72% of women and 85% men. Myocardial infarction (MI) associated with the AHL and the violation of the compensation DM-2 (elevated glycosylated hemoglobin (HbA1c) in average  $8.14 \pm 1.23\%$ ) and is more common in men than in women (18% and 8%). The connection AHL non-compliance with diet, irregular meals, and stress levels on the scale of the Reader (95% CI: 0.016 – 0.038;  $P < 0.001$ ). A negative correlation was between stress levels and body weight ( $r = -0.42$ ); positive relationship – between stress, the incidence of MI and frequent infectious diseases ( $r = 0.54$ ). Manifestations of CVC were less pronounced in patients with an active lifestyle and in patients who had no bad habits ( $P = 0.01$ ).

**Conclusions**

The results of the analysis indicate that patients with hypertension and CHD with DM-2 have more RF and CVC. Accompanying illnesses are very common in these patients, and modifiable risk factors, including hypertension, DM-2? Psychosocial stress should be considered as one of the main directions for the best results from the treatment and prevention of CVC.

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**EP240****Metabolic syndrome as the result of the inversion of the cycle 'day/night'**

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**Background**

The pathophysiological base of metabolic syndrome is insulin resistance. According to Scott E.M., Grant P.J., insulin resistance is supposed to be formed during the evolution and connected by circadian rhythms. Melatonin is synchronizer of circadian rhythms. The modern lifestyle leads to the breach of melatonin synthesis because of absence of season changes in the length of a light day due to the using of artificial lighting.

**Aim**

The aim was studied influence of melatonin on the development of MS in inversion of the cycle 'day/night'.

**Design**

Group 'A' ( $n = 25$ ), patients with MetS (the National Cholesterol Education Programs Adult Treatment Panel) and inversion of the cycle 'day/night' (at least two night shift a week for 6 and more years), group 'C' ( $n = 23$ ), healthy people, working in day shifts. Blood pressure (BP) has been monitored for 24 years. It is determined waist circumference (WC), high-density lipoproteins (HDL) fasting triglycerides (TG), fasting glucose. The melatonin secretion has been determined according to excretion 6-sulfatoxymelatonin (MT6S) in urine.

**Results**

Total MT6S in both groups was equal,  $P = 0.077$ . MT6S at 0400 h in group 'A' ( $25.3$  95% CI: 17.8–32.8 ng/ml) was less  $P < 0.014$ . Night MT6S in group 'A' ( $10.2$  95% CI: 7.3–13 ng/ml) was higher  $P < 0.001$ . MT6S at 0400 h was connected with BP ( $r = -0.34$ ), TG ( $r = -0.34$ ), HDL ( $r = 0.26$ ), glucose ( $r = -0.38$ ),  $P < 0.05$ . Correlation has been determined between the day MT6S and WC ( $r = -0.28$ ,  $P < 0.05$ ). When the peak secretion of melatonin decreases, it is determined increasing the risk of abdominal obesity (OR 1.8, 95% CI: 0.8–3.7;

$P < 0.05$ ), hypertension OR 1.6 (95% CI: 0.8–3.4;  $P < 0.05$ ) risk of nocturnal hypertension (OR 1.6, 95% CI: 0.8–3.4;  $P < 0.05$ , hypertriglycerides (OR 1.4, 95% CI: 0.7–2.1;  $P < 0.05$ ), HDL decreasing (OR 1.7, 95% CI 0.9–2.6,  $P < 0.05$ )

**Conclusions**

During the long inversion of the cycle 'day/night', disturbance of melatonin secretion leads to the development of metabolic syndrome.

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**EP241****Detection of subclinical diabetic autonomic neuropathy by reflex cardiovascular testing**Maram Mahdy, Fadila Gadalla & Hazem Khorshid  
Ainshams University Hospitals, Cairo, Egypt.**Background**

Diabetic autonomic neuropathy (DAN) is among the least recognized and understood complication of diabetes despite its significant negative impact on survival and quality of life in people with diabetes. Diabetic neuropathies including cardiac autonomic neuropathy (CAN), are a common chronic complication of type 1 and Type 2 diabetes and confer a high morbidity and mortality to diabetic patients. The reported prevalence of CAN varies greatly depending on the criteria used to identify CAN and the population studied. CAN is ultimately the result of complex interactions among degree of glycemic control, disease duration and vascular risk factors. CAN encompasses damage to the autonomic nerve fibers that innervate the heart and blood vessels, resulting in abnormalities in heart rate control and vascular dynamics and is associated with a high risk of cardiac arrhythmias, sudden death, (possibly related to silent myocardial ischemia) and large costs to the welfare system. Clinical symptoms of autonomic neuropathy generally do not occur until long after the onset of diabetes. Subclinical autonomic dysfunction, however, can occur within a year of diagnosis in type 2 diabetic patients and within 2 years in type 1 diabetic patients.

**Objective**

Possibility of the use of non-invasive cardiovascular tests for early detection of subclinical autonomic neuropathy in type 2 diabetic patients.

**Study design**

This study included 40 type 2 diabetic male patients (from 30 to 70 years old) with new onset or longstanding diabetes.

**Results**

20 (50%) diabetic patients had one abnormal test and 10 (25%) diabetic patients had two abnormal reflex cardiovascular tests. Cardiovascular tests were affected by age, higher body mass index, glucose control and diabetes duration.

**Conclusion**

Reflex cardiovascular tests can be used for the early screening of cardiovascular autonomic neuropathy before more sophisticated and specific tests.

Keywords: DAN and reflex cardiovascular tests

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**EP242****Dietary intakes in relation to carotid intima-media thickness in subjects with subclinical atherosclerosis**Eman Alissa<sup>1,2</sup>, Maisa'a Alsalmi<sup>1</sup> & Sara Helmi<sup>1</sup><sup>1</sup>King Abdulaziz University, Jeddah, Saudi Arabia; <sup>2</sup>King Fahd Medical Research Center, Jeddah, Saudi Arabia.

Demonstrating a relationship between diet and atherosclerosis should provide an opportunity for potential risk reduction at an early stage of the known long disease process instead of the need to intervene at the symptomatic disease stage. Thus, we aimed to evaluate the relationship between levels of nutrients intake as determined by food frequency questionnaire (FFQ) with the degree of atherosclerotic lesions as measured by carotid intima-medial ratio (CIMT).

One hundred eighty nine patients, aged between 40–78 years, were randomly recruited from the internal medicine clinics at King Abdulaziz University Hospital in Jeddah, Saudi Arabia. Dietary intake data were collected by a 92 item, semi-quantitative FFQ designed to assess average food intake over the previous 12 months. Macronutrient intakes were adjusted for total energy intake using the nutrient residual method and were also presented as the percentage of total energy intake (nutrient density). Common, internal and external carotid arteries on both sides were scanned and the presence of plaques was noted using high resolution B-mode ultrasonography. The mean values of maximum left and right CIMT were determined. The presence of atherosclerotic plaque was defined as any stenosis in either the right or left carotid artery.

