

## SUMMARY

History of GDM not only increases the risk of developing type 2 diabetes mellitus, but also the risk of cardiovascular disease that is independent of type 2 DM. Hyperglycemia leads to significant electrophysiological, functional and structural changes in the cardiovascular system and they are interrelated. One of our main goals was to evaluate metabolic and hormonal changes and detect changes in the cardiovascular system and assess their mutual relations in condition of optimal metabolic control using a predetermined treatment algorithm. Echocardiography findings in our group of patients with GDM confirm the presence of incipient structural changes in left ventricular (significantly thicker IVS, PWD and RWT) compared to the control group. The original finding is that, under optimal compensation of diabetes any of monitored parameters of left ventricular diastolic function have not been changed. Furthermore, we found that complex metabolic care with optimal values of blood sugar together with weight gain monitoring in women with GDM leads to improvement of the 24-hour blood pressure profile without increased prevalence of non-dipper women and that nocturnal decline in BP depends on fasting plasma glucose. ECG body surface mapping did not show statistically significant changes in depolarization and repolarization using isopotential, isointegral or isoarea maps between the group of women with GDM and healthy pregnant controls, which is consistent with the results of spectral analysis of heart rate variability (HRV) examination. Despite of the optimal metabolic care in GDM women in our group, some electrocardiography parameters changes have been found and these changes correlated well with echocardiographic findings (left ventricular thickening) as well as with parameters of metabolic control of DM (HbA1C).

**Key words:** gestational diabetes mellitus, heart rate variability, ECG body surface mapping, ambulatory blood pressure monitoring, echocardiography