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The interrelation between sleep disorders and glycated hemoglobin level in patients with type 2 diabetes mellitus

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Introduction. Numerous epidemiological studies have demonstrated a connection between short-term and poor-quality sleep with an increased incidence of type 2 diabetes mellitus (DM-2), abdominal obesity and metabolic syndrome (MS) in general. The assumption that sleep deficit can lead to MS has recently been finding more scientific evidence. At the same time, abdominal obesity and MS contribute to sleep disorders (sleep apnea syndrome), but there is not enough research on this problem for today.

The aim of our study was to investigate the frequency and characteristics of sleep disorders in patients with DM-2; as well as their dependence on the glycated hemoglobin (HbA1) c levels of the patients under study.

Matherials and methods. Group of surveyed and questioned patients included 34 patients with DM-2 (20 women and 14 men) treated at the endocrinology department of the Kharkiv Regional Clinical Hospital. The well-known questionnaire "the grade score questionnaire of subjective sleep characteristics was used during the study. The work with medical histories of patients was performed. Statistical processing of research results was carried out using Excel.

Research results. The data, obtained from questionnaire of subjective sleep characteristics, demonstrated that 66.3% of the respondents noted the marked disorders (42.8% women, 23.5% men). 20.5% of patients (11.7% women, 8.8% men), had the average severity of the disorders. A correlation analysis was performed between the indicators of the grade score questionnaire of subjective sleep characteristics and the level of HbA1c. The probable negative correlation between the

data, obtained from questionnaire, and the level of HbA1c in patients was found ($r=-0.65$, $p<0.05$), so more distinct sleep disorders were associated with a higher level of HbA1c.

Conclusions. Thus, a majority of patients with DM-2 have severe sleep disturbances. The negative correlation between HbA1c and sleep quality can be indicative of sleep disturbance as a marker of decompensation of diabetes mellitus and an independent factor, which may worsen the carbohydrate metabolism and the course of diabetes. Obtained data suggest, that normalization of sleep in patients with DM-2 can improve the metabolic status, and, conversely, normalization of diabetes indices can improve sleep quality.