

## THREE MONTH FOLLOW UP OF THE EFFECTS OF CONTINUOUS POSITIVE PRESSURE DURING SLEEP (CPAP) ON THE VALUE OF GLYCATED HEMOGLOBIN HBA1C AND GLYCOREGULATION IN OBESE DIABETIC PATIENTS WITH CONFIRMED SEVERE OPSTRUCTIVE SLEEP APNEA

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Obstructive sleep apnea (OSA) is a serious disorder of breathing during sleep characterized by complete or partial interruption of breathing during sleep for 10 seconds and longer.

In this prospective longitudinal clinical study in obese patients with diabetes mellitus type II which is determined by polysomnography heavy degree of OSA is accompanied by the application of positive pressure during sleep in the course of three months and evaluated its impact on the value of glycosylated hemoglobin HbA1c as an indicator of long-term glycoregulation. A prospective clinical study in the quarterly monitoring included 98 patients (64 men and 34 women), who, after clinical, laboratory, spirometry and diffusion examination of lung function, made of respiratory gas analysis of arterial blood gases in rest, tests Epworth sleepiness scale, underwent polysomnography testing on Philips Respironics Alice PDX device.

Out of 98 obese patients suffering from diabetes mellitus type II and heavy degree OSA, average age 50.1, 23 of them were randomized in two groups: experimental - 11 patients with an average HbA1c of 9.9 %, the average BMI 37.1 and average AHI index of 36.7 (31 to 59) who used CPAP during sleep, and control group of 12 patients, with an average HbA1c was 9.1 %, average BMI 39.3 and AHI index was 39.7 (31 to 62). After three-month of using CPAP, the control of HbA1c in both groups was performed. Average HbA1c in the experimental group decreased with statistical significances ( $p < 0.01$ ) from 9.9 % to 6.7 %, compared to the control group patients with no significant changes.

The results of this study indicated that in obese patients with diabetes mellitus II and severe OSA, long-term glycoregulation can be significantly improved using the CPAP during sleep.

*Acta Medica Medianae 2019;58(2):38-43.*

**Key words:** obesity, diabetes mellitus type II, obstructive sleep apnea, CPAP