

The incidence of sleep apnea in patients with type 1 diabetes

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It is determined that sleep apnea itself can affect the level of HbA1c, thereby affecting the compensation of carbohydrate metabolism in type 2 diabetes.

Objective: To determine the quantity and type of sleep apnea in diabetes type 1, depending on the level of HbA1c

METHODS

The study involved 50 people with type 1 diabetes without the presence of diabetic autonomic neuropathy or diseases of the pulmonary system and ENT with HbA1c levels of 6.2% vs 9.2%. Patients performed polysomnographic monitoring-«SOMNOlab2 (PSG) Polysomnography (R&K)», daily monitoring of blood glucose-"CGMSGold" by "MedtronikMINIMED"(USA)

RESULTS

Indicator	Group1(n=20) Mean(min-max)	Group2(n=30) Mean(min-max)
HbA1c(%)	6,2(5,0-7,5)*	9,2(7,5-13,8)
The average value of glucose (AG) before going to bed(mmol/l)	8,1(6,5-9,4)*	9,2(3,2-16,6)
The minimum value of blood glucose during sleep (MGS)(mmol/l)	4,9(2,3-9,8)	5,5(2,0-11,5)
Obstructive sleep apnea (OA), total sleep time (TST)(number/h)	3,6(0,16-12,0)*	1,6(0,0-6,0)
The maximum duration of OA(sec.)	81,8(14,0-118,0)*	31,03(0,0-111,0)
Central sleep apnea (CA) TST(number/h)	0,5(0,0-4,7)*	2,7(1,0-45,0)
The maximum duration of the CA(sec.)	19,7(0,0-52,0)	12,6(0,0-73,0)
AverageSpO ₂ (%)	96,9(94,7-98,0)	96,4(94,1-98,2)
AHI TST	3,0(0,2-17,4)*	1,37 (0,0-13,4)
AHI NREM	4,46(0,0-17,4) *	1,38(0,0-13,4)

CONCLUSIONS

OA and CA at type 1 diabetes are found mainly in the REM phase, S1 and S2 stages of sleep. Compensated type 1 diabetes occurs in OA 2.25 times more likely to have a longer duration and which requires further analysis. It was determined that the CA occurs for decompensated patients 5.4 times more often than in the comparison group. This describes the violation of a central mechanism for the regulation of respiration. Sleep apnea for examined patients was not accompanied by a decrease in oxygen saturation, but the increase in AG bedtime and MGS reduce blood oxygen saturation.