

Abstract

Sleep apnea syndrome, or sleep apneic syndrome, is a serious illness that causes a high risk of cardiovascular disease development in patients. This disease is characterized by a breathless breathing disorder and falls into a class of disorder that accompanies sleep disturbances. Sleep apnea syndrome (SAS) affects 5-15% of the population, and 50-80% of patients with type 2 diabetes mellitus (T2DM) or severe obesity. SAS has a causal contribution to the development of disorders in glucose metabolism and T2DM. Diabetes mellitus type 2 is a complex metabolic disorder in which the organism is unable to process glucose as under normal physiological conditions due to a relative insulin deficiency and simultaneous peripheral insulin resistance. Insulin resistance is eventually compensated for by increased insulin secretion, which leads to the development of hyperglycemia after failure of this compensation. T2DM is very often associated with the presence of obesity, arterial hypertension, dyslipidemia and hyperuricemia. The aim of this study is to determine if the presence of SAS in non-diabetic subjects and patients with type 2 diabetes mellitus leads to disorders in the metabolism of fatty acids in the skeletal muscle. The results of the study contribute to the understanding of the molecular mechanisms of the development of type 2 diabetes mellitus in SAS and can be used to design innovative therapeutic approaches.

Keywords: sleep apnea, oxidation, fatty acids, diabetes mellitus, obesity, muscle biopsy