NESFATIN-1 AS A FACTOR OF BODY WEIGHT CHANGES IN PATIENTS WITH SOMATIC PATHOLOGY

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Nesfatin-1, discovered by Oh-I and his coworkers in 2006, is a multi-functional peptide derived from posttranslational processing of the nucleobindin 2 (NUCB2) gene. It is expressed in adipose tissue and is also found in plasma and some endocrine cells of the body. It has been shown to decrease food intake and body weight in rats after central (intracerebroventricular injection) or peripheral administration (Oh-I S., 2006).

According to suggested influence of nesfatin-1 on metabolism in rodents it's important to investigate its clinical significance in humans. First of all it is necessary to assess changes of nesfatin-1 plasma level in patients with morbid body weight fluctuations or diseases associated with obesity.

Thus, decreasing of nesfatin-1 plasma level was found out in patients undergoing gastric bypass or sleeve gastrectomy (Lee WJ., 2013); in patients with lung cancer, especially with significant loss of weight (Cetinkaya H., 2013); with nonalcoholic fatty liver disease (Basar O., 2012); with polycystic ovary syndrome (Deniz R., 2012); with endometriosis (Şengül Ö., 2014); in pregnant women with gestational diabetes mellitus (Aslan M., 2012), even with lower level of nesfatin-1 in breast milk (Aydin S., 2010), that can be an evidence of autonomous nesfatin-1 production by breast tissue; in patients with type 2 diabetes mellitus compared to healthy subjects and type 1 diabetes mellitus patients (Li QC., 2010); with obesity (Tsuchiya T., 2010); with acute myocardial infarction compared to patients with stable angina pectoris and healthy subjects (Dai H., 2013).

Instead, increased plasma level of nesfatin-1 probably should be found in patients with cystic fibrosis especially in severe stage and the lowest fat mass (Cohen RI., 2013); osteoarthritis, even in synovial fluid (Jiang L., 2013); with paroxysmal supraventricular tachycardia in positive correlation with heart rate (Celic A., 2013); in pregnant women with hyperemesis gravidarum (Gundor S., 2013) and type 1 diabetes mellitus (Li QC., 2010).

And in some cases it is suggested that nesfatin-1 hasn't any role in pathogenesis of disease because of non-significant fluctuations in its plasma level compared with healthy subjects. It was shown in overt and subclinical hyperthyroidism (Gungunes A., 2014); in patients undergoing hemodialysis, whereas it has negative correlation with protein intake (Saldanha JF., 2012); also there isn’t any significant difference after anaerobic physical exertion (Ghanbari-Niaki A., 2010) and any sex differences in healthy subjects (Li QC., 2010).

Accordingly to these data circulating nesfatin-1 may modulate metabolism in different diseases and participate in regulating body weight.