

Role of Spexin and Leptin in Obesity Among Male Pakistani Population

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Respected Editor,

There is an increased prevalence of obesity with an offshoot of metabolic disorders in our part of the world. Obesity is considered as a leading complex disorder that has increased worldwide at a shocking speed affecting mankind including Pakistan [1]. The metabolic changes accompanying obesity are insulin resistance, glucose intolerance, hyperleptinemia and chronic inflammation.

Leptin, a protein hormone comprising of 167 amino acids with a weight of 16 kDa, coded by leptin gene LEP A19G is secreted by the cells of adipose tissues. Leptin performs various roles in the human body, for instance the regulation of appetite, energy homeostasis, and neuroendocrine function [2]. Leptin being an imperative regulator of the mass of adipose tissue is thus a major factor for obesity and insulin resistance in the human body.

Spexin discovered by Mirabeau *et al.* in 2007 is a novel peptide expressed in human endocrine and epithelial tissues [3]. Spexin is expressed by orf39 gene located at the chromosome number 12 in several body tissues. A few studies explored the potential role of Spexin as

a biomarker of insulin resistance and obesity thus recognizing it as a possible shielding factor confronting progress of obesity. It has been observed that Spexin and Leptin both have a paradoxical effect. We conducted a pilot study in male subjects; analyzed Leptin and Spexin by ELISA according to manufacturer's kit manual and found their association with BMI and Body fats. Leptin and Spexin have been observed to exhibit opposite correlation with obesity. Table 1 shows the Spearman's correlation of Spexin and Leptin with BMI & Body fats. We observed a positive correlation between Leptin with BMI & Body fats. (rho value = 0.519, $p < 0.001$ & rho value = 0.464, $p < 0.001$), no statistical correlation was found between Spexin with BMI and fats. However, inadequate relation between circulating Spexin and Leptin levels has been detected to date. So, there is a need to investigate the role of Spexin on a large number of individuals with obesity. In future studies, if the statistical link is established on a larger number of subjects between elevated serum level concentration of Spexin and reduction in obesity, we can propose the use of Spexin as a therapeutic measure to overcome obesity [4]. There is also a need to investigate the genetic cause of Leptin and Spexin with reference to obesity that can help us to explore new ways to confront with the challenging disorder of obesity development.

Table 1: Correlation of Spexin and Leptin with study variables.

Spearman's Rho Variables		Age (Years)	BMI (kg/m ²)	Body Fat (%)	CHO2L (mg/dl)	TRIGL (mg/dl)	LDLC3 (mg/dl)	HDLC4 (mg/dl)
Spexin (ng/L) n= 44	rho value	0.164	-0.057	0.05	0.071	-0.028	0.041	0.16
	p-value	0.124	0.6	0.963	0.511	0.796	0.705	0.135
Leptin (ng/ml) n=44	rho value	0.006	0.519	0.464	0.143	0.055	0.142	0.151
	p-value	0.953	<0.001*	<0.001*	0.181	0.612	0.186	0.161

Where: CHO2L (Cholesterol), TRIGL (Triglyceride), HDLC4 (High Density Lipoprotein), LDLC3 (Low Density Lipoprotein), BMI (Body Mass Index). *shows statistical significance at $p < 0.05$ (Spearman's Rank Correlation was applied)

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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