conferenceseries.com

JOINT EVENT

10th International Conference on Childhood Obesity and Nutrition

&

2nd International Conference on Metabolic and Bariatric Surgery

June 12-13, 2017 Rome, Italy

No association between LEPR Q223R and plasma leptin level in Caucasian female adolescents

Kseniia Dmitrievna Ievleva, Ekaterina A Sheneman, Tatyana A Bairova and **Lubov V Rychkova**
SC FHHRP-Siberian Branch of the Russian Academy of Sciences, Russia

Statement of the Problem: The hormone leptin are involved in regulation of energy metabolism. Effect of the leptin carried out through binding to its receptor in target tissues. Many polymorphisms of LEPR gene were found out including Q223R (Gln223Arg). This polymorphism produces molecular changes in extracellular region of the LEPR. Several studies showed the association of polymorphism with obesity and leptin level in adult and adolescent samples. However, some studies showed no association.

Methodology & Theoretical Orientation: A total of 128 Caucasian female adolescents living in Eastern Siberia (Irkutsk city, Russia) were observed. 59 of them were included in control group (average age 15.72±0.93; SDS BMI 0.84±0.55) and 69 adolescents with overweight and obesity was in main group (average age 16.04±1.07; SDS BMI 2.52±0.72). Plasma leptin level (PLL) was determined using commercially available enzyme-linked immunosorbent assay (LEPTIN ELISA kit, DBC, Canada) with an absorbance microplate reader MultiSkan ELX808 (Biotek, USA). Genomic DNA was extracted from EDTA-treated whole blood by commercial kits (DNA-Sorb-B, AmpliSens, Russia). Genotyping LEPR Q223R was performed using polymerase chain reaction (Eppendorf Mastercycler Gradient PC, Germany) with electrophoresis detection. Statistical analysis was performed by soft "STATISTICA8.0".

Findings: The plasma leptin level was significantly higher in main group (50.57±16.06) than in control group (23.91±14.13) ($p<0.001$). G-allele frequency was 43.1% in control and 40% in main group ($p=0.862$). Comparisons of the meaning circulating leptin levels stratified by LEPR Q223R genotype showed in table 1. We didn't find significant differences of leptin level between carriers of AA, AG and GG genotypes in both groups.

Conclusion & Significance: Thus, The plasma leptin level is increased in female adolescent with overweight and obesity. There is no significant association of LEPR Q223R with plasma leptin level and obesity in Caucasian female adolescents living in Eastern Siberia.

Group	Leptin level ()			P-value
	QQ (1)	QR (2)	RR (3)	
Control	21,99 ±15,61	22,7 1±8,27	28,05 ±16,07	P_{1-2}=0,83 P_{1-3}=0,47 P_{2-3}=0,44
Overweight and obesity	53,30 ±25,40	47,63 ±26,48	50,57 ±33,67	P_{1-2}=0,55 P_{1-3}=0,78 P_{2-3}=0,68

Table 1. Plasma leptin level stratified by LEPR Q223R genotype in studying groups

Biography

Kseniia Dmitrievna Ievleva finished the Faculty of Medical Biochemistry, Irkutsk State Medical University in 2014. In 2015, she got the certificate of Doctor of Laboratory. Now, she is a Post-graduate student in Scientific Centre for Family Health Problems and Human Reproduction. Her present study aims to "Examine the role of heredity in the development of obesity in adolescents living in Eastern Siberia".

asiy91@mail.ru

Notes: