

Serum C1q/TNF-Related Protein-3 (CTRP3) Levels may be a Potential Future Biomarker in Obesity

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Background: We hypothesized that higher circulating levels of a novel adipokine CTRP3, would promote a favorable metabolic profile in obesity.

Objective: To study and correlate the circulating levels of serum CTRP3 and metabolic parameters in obesity.

Design: A non- randomized case control study in a tertiary care hospital.

Subjects & Methods: Sixty subjects were recruited from general population into the study and control groups, based on Body mass index (BMI as kg/m^2). There were no drop outs. Newly diagnosed, drug naïve obese subjects with BMI 25-35 kg/m^2 of both genders, aged 18-40yrs, with no associated co-morbidity or substance abuse, were grouped as CASES (n=30) and compared with age, sex and socioeconomic status matched CONTROLS (n=30) with BMI 19- 22 kg/m^2 . The baseline fasting metabolic parameters (HbA1c, SBP, DBP and TSH) were within normal range in both the groups, thus excluding confounders for CTRP3 and obesity.

Statistical Analysis: Unpaired Student's t-test and Pearson's correlations and linear regression Using SPSS -20 Software. Data was presented as mean \pm SD. $p < 0.05$ was considered significant.

Results: We found lower levels of serum CTRP3 ($p < 0.001$), adiponectin ($p = 0.025$), HDL ($p < 0.001$), and higher BMI ($p < 0.001$), leptin ($p = 0.04$), insulin ($p = 0.003$), HOMA-IR ($p < 0.001$), LDL ($p < 0.05$) and atherogenic index ($p < 0.001$) in cases. Also, CTRP3 inversely correlated with serum triglycerides ($p < 0.001$), atherogenic index ($p = 0.04$), leptin ($p = 0.02$), and positively with adiponectin ($p = 0.02$) in obese group.

Conclusions: Serum CTRP3 levels are lowered in obesity. This was probably the first study to show that CTRP3 levels are inversely correlated with the atherogenic index in obesity. Hence, in future, optimizing CTRP3 levels may prove as a potential therapeutic target to improve obesity and its co-morbidities.

Key Words: C1q/TNF-Related Protein-3 (CTRP3), Body Mass Index (BMI), Obesity, Adiponectin, Leptin & Atherogenic Index.

Biography:

Dr. Neha Bindlish Jain was born in New Delhi, India, in 1984. After graduating from University College of Medical Sciences and Guru Teg Bahadur hospital, Delhi, in the year 2008, she is currently pursuing her MD Physiology from the same institution. She also underwent a short term training course in autonomic function tests from Department of Physiology, AIIMS, Delhi, for a better understanding of her current research interest. To the best of her knowledge, the current research on C1q/TNF Related Protein 3 (CTRP3) and obesity shall be the first one to be conducted in India. This current research is her gateway to pioneer in the field of Physiology.