Evaluation of acylated ghrelin and obestatin levels and ghrelin/obestatin ratio in obesity

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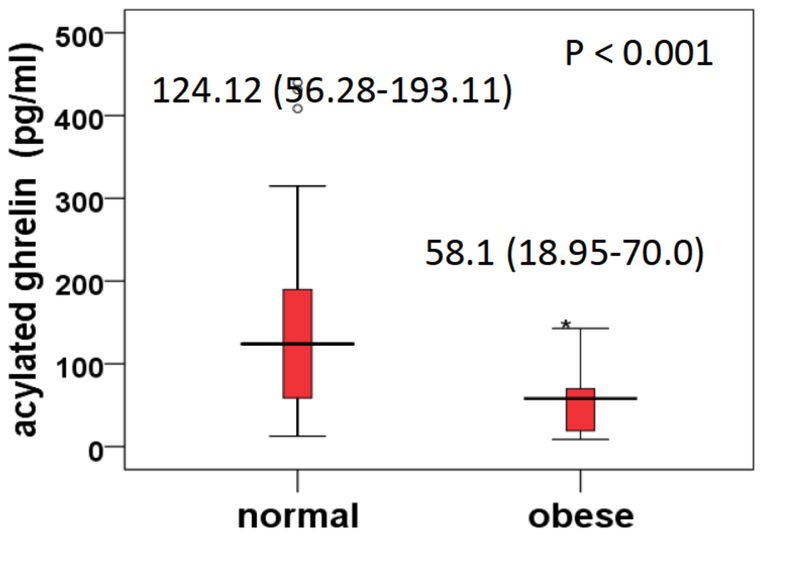
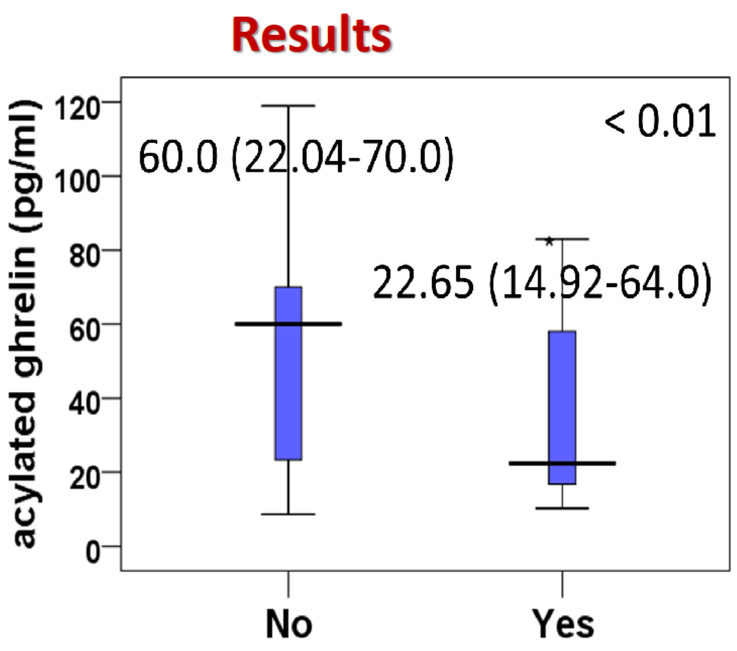
Background: Ghrelin is 28-amino acid peptide predominantly produced by the stomach and have an orexigenic property as well as potent GH-releasing activity. Acylated ghrelin (AG) is the active form of this hormone. Obestatin is a 23-amino acid peptide, is produced by post-translational modification of a protein precursor that also produces ghrelin. Obestatin has the opposite effect of ghrelin on food intake

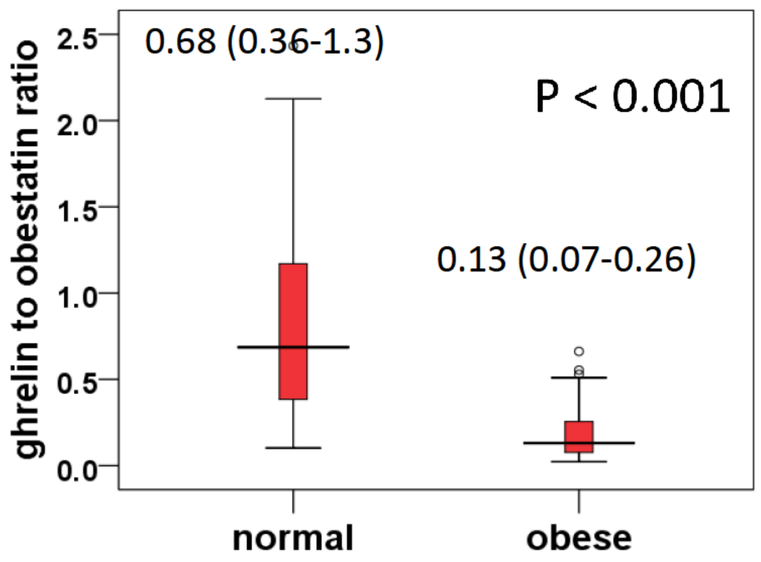
Objective and hypotheses: To evaluate acylated ghrelin and obestatin levels in obese and normal weight children and adolescents and their association with metabolic syndrome (MetS) and its parameters.

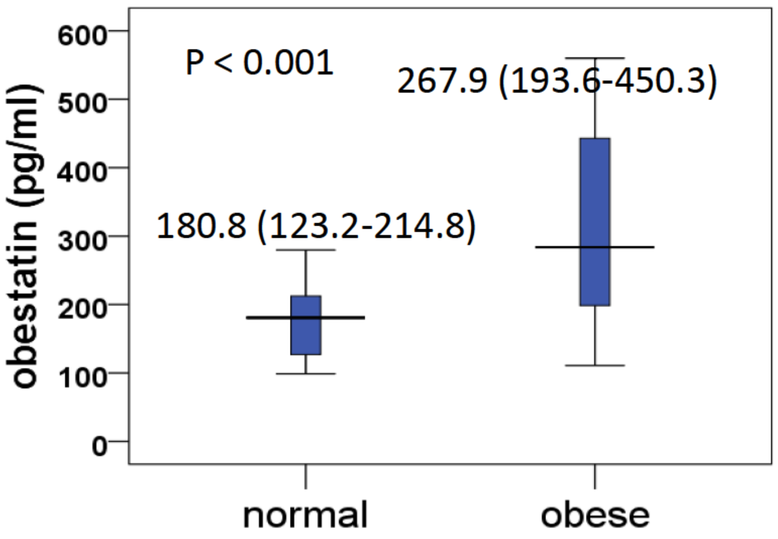
Method: Children and adolescents, 73 (31 normal weight control; 42 obese), aged 7-16 years, Serum AG, obestatin, insulin (ELISA), fasting plasma glucose (FPG), triglyceride (TG), total cholesterol (TC), low and high density lipoprotein (LDL-C and HDL-C) were measured. Insulin resistance was calculated by Homeostasis Model Assessment of Insulin Resistance (HOMA-IR). Metabolic syndrome was determined according to IDF criteria. Data for AG and obestatin were presented as median (25-75 percentiles).

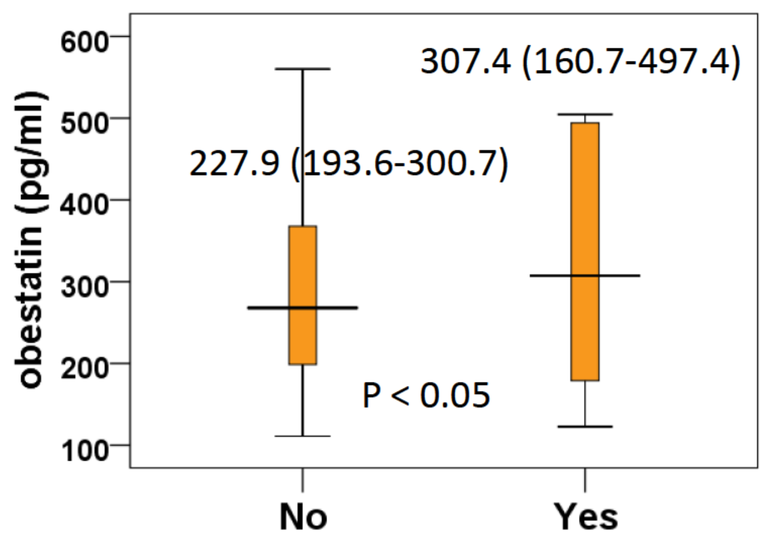
Results

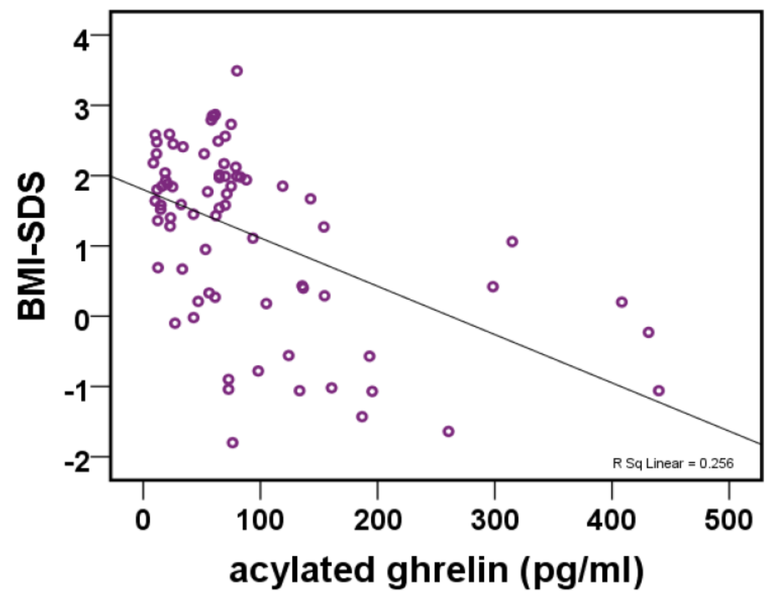


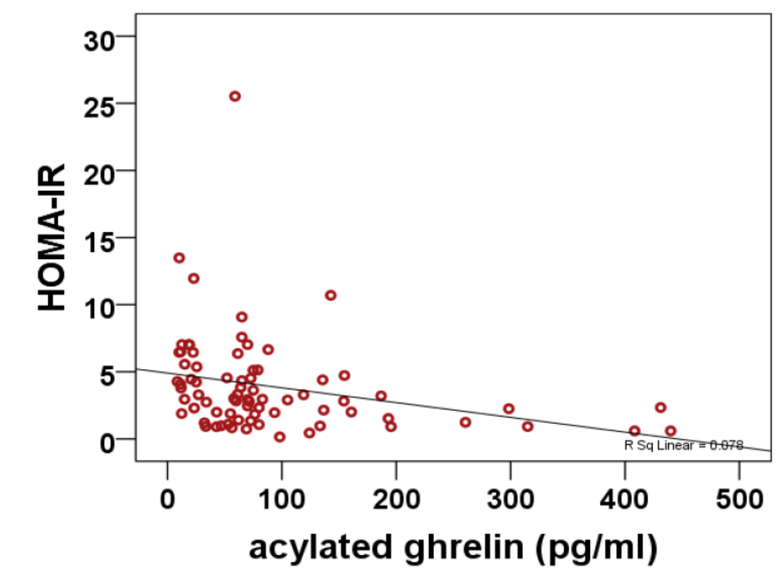


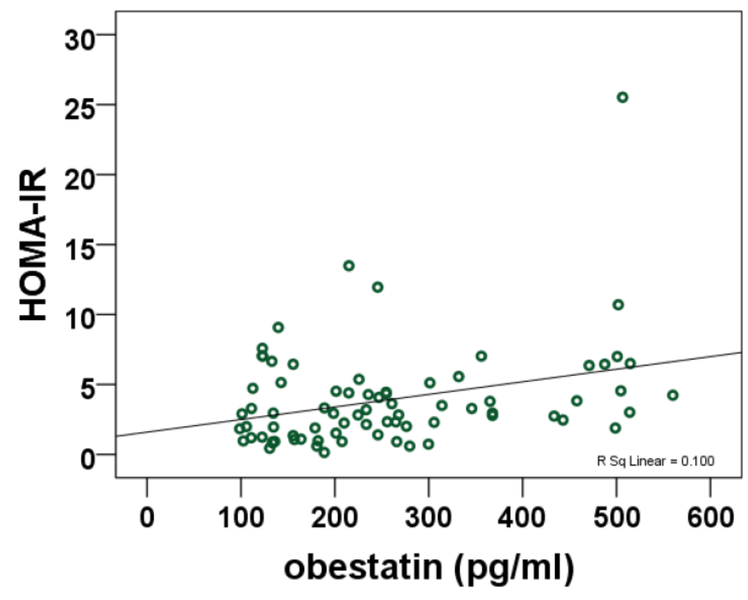


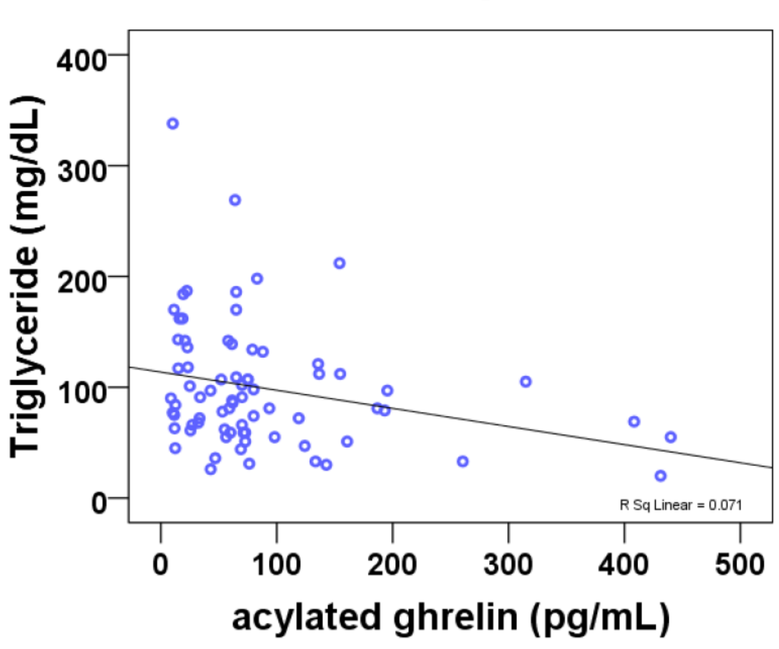


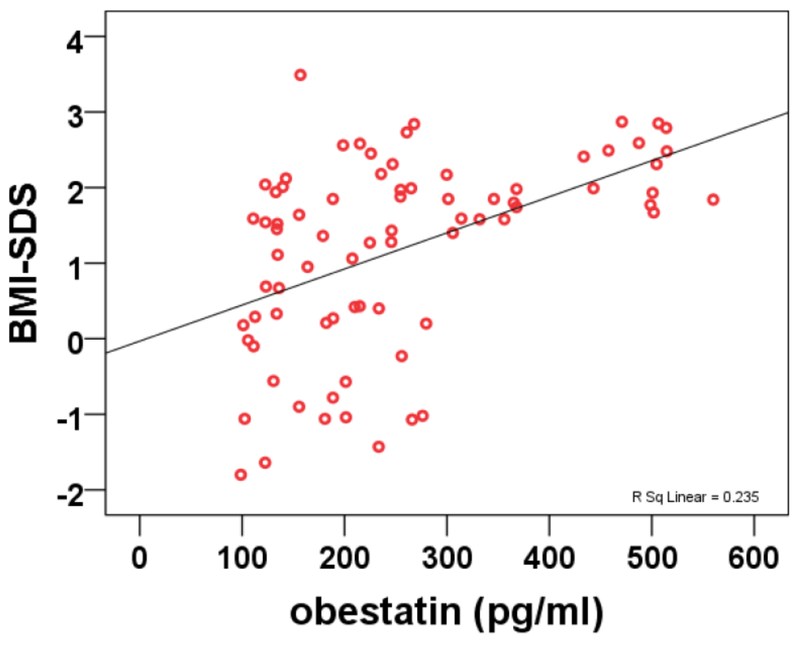












Acylated ghrelin had significant negative correlation with BMI-SDS, TG and HOMA-IR and obestatin has positive correlation with BMI-SDS as well as HOMA-IR.

Conclusion: Ghrelin is decreased and obestatin is elevated in obesity. So these are not the cause but are the effect of obesity. Obestatin is a valuable marker to investigate metabolic syndrome

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