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ORIGINAL RESEARCH COMMUNICATION

Constitutional thinness and lean anorexia nervosa display opposite concentrations of peptide YY, glucagon-like peptide 1, ghrelin, and leptin[1,2]

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Background: Food intake is controlled by the arcuate nucleus through integration of peripheral hormonal signals such as leptin, ghrelin, peptide YY (PYY), and glucagon-like peptide 1 (GLP-1). The most common condition resulting in underweight young women in the developed world is restrictive anorexia nervosa (AN). However, constitutional thinness (CT) is also known to exist in the same low-weight range. Women with CT have normal menstrual periods and do not have the psychological or hormonal features of AN. Little is currently known about regulation of food intake in subjects with CT.

Objective: We tested the hypothesis that concentrations of leptin, ghrelin, PYY, and GLP-1 in persons with AN are significantly different from those in persons with CT.

Design: Concentrations of PYY, GLP-1, ghrelin, and leptin were measured in 3 groups of young women: normal weight (n = 7), CT (n = 10), and AN (n = 12). Samples were collected every 4 h for 24 h.

Results: PYY concentrations were significantly higher in CT subjects than in AN or control subjects. GLP-1 concentrations were significantly higher in AN than in CT subjects, whereas ghrelin was significantly higher in AN subjects than in control and CT subjects. CT subjects had the lowest ghrelin concentrations. Leptin concentrations were significantly lower in AN subjects. PYY and leptin circadian variations were not significantly different between CT and control subjects, whereas these profiles were blunted in AN subjects.

Conclusions: Orexigenic and anorexigenic hormones in CT contrast with an adaptative profile characterizing AN. The hormones appear to be valuable biomarkers for distinguishing these 2 categories of severely underweight subjects.

Key Words: Constitutional thinness • anorexia nervosa • peptide YY • ghrelin • glucagon-like peptide 1 • leptin

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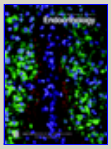

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