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Ghrelin and leptin secretion in patients with moderate Alzheimer's disease

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Weight loss is a characteristic finding of patients with Alzheimer's disease (AD). It seems that precedes cognitive impairment by some years, but the underlying causes are not fully understood. Ghrelin and leptin are involved in energy homeostasis, and may be implicated in weight losing observed in these patients. Objective: To examine the potential relationship between ghrelin and leptin levels and weight loss in patients with AD. Design: The study included 27 patients (10 men and 17 women) with AD of moderate severity, and 23 controls (10 males and 13 females), matched for age and BMI. Body fat and lean mass content were assessed using a portable apparatus. Cognitive function was assessed with the Mini-Mental State Examination. Basal serum samples for the measurement of leptin, ghrelin, insulin and glucose were obtained, and serum ghrelin, insulin and glucose were measured after a 75-gr glucose load in both groups. Results: Patients with Alzheimer Disease (AD) have lower lean mass content compared to controls. Basal ghrelin and leptin is similar in patients with AD and controls. The area-under-the-curve for ghrelin (AUC) is lower in male patients with AD compared to control males, while no difference was observed between females AD and controls. Conclusion: Male patients with AD, in contrast with female patients, fail to maintain a normal energy homeostasis even in the early stages of the disease, as shown by the decreased lean mass content in males AD compared to controls. Disruption of the normal compensatory modulation of ghrelin secretion might contribute to the metabolic changes observed in male patients with AD.