

Journal Watch

Effects by daily long term provision of ghrelin to unselected weight-losing cancer patients: a randomized double-blind study

Presented by Janjeevan Deol R2 on May 26, 2011

Reference: Lundholm K, Gunnebo L, Körner U, Iresjö BM, Engström C, Hyltander A, Smedh U, Bosaeus I. *Cancer*. 2010 Apr 15;116(8):2044-52

Abstract

Background- The short-term provision of ghrelin to patients with cancer indicates that there may be benefits from long-term provision of ghrelin for the palliative treatment of weight-losing cancer patients. This hypothesis was evaluated in a randomized, double-blind, phase 2 study.

Methods- Weight-losing cancer patients with solid gastrointestinal tumors were randomized to receive either high-dose ghrelin treatment (13 microg/kg daily; n = 17 patients) or low-dose ghrelin treatment (0.7 microg/kg daily; n = 14 patients) for 8 weeks as a once-daily, subcutaneous injections. Appetite was scored on a visual analog scale; and food intake, resting energy expenditure, and body composition (dual x-ray absorptometry) were measured before the start of treatment and during follow-up. Serum levels of ghrelin, insulin, insulin-like growth factor 1, growth hormone (GH), triglycerides, free fatty acids, and glucose were measured. Health-related quality of life, anxiety, and depression were assessed by using standardized methods (the 36-item Short Form Health Survey and the Hospital Anxiety and Depression Scale). Physical activity, rest, and sleep were measured by using a multisensor body monitor.

Results- Treatment groups were comparable at inclusion. Appetite scores were increased significantly by high-dose ghrelin analyzed both on an intent-to-treat basis and according to the protocol. High-dose ghrelin reduced the loss of whole body fat ($P < .04$) and serum GH ($P < .05$). There was a trend for high-dose ghrelin to improve energy balance ($P < .07$; per protocol). Otherwise, no statistically significant differences in outcome variables were observed between the high-dose and low-dose groups. Adverse effects were not observed by high-dose ghrelin, such as serum levels of tumor markers (cancer antigen 125 [CA 125], carcinoembryonic antigen, and CA 19-9).

Conclusion- The current results suggested that daily, long-term provision of ghrelin to weight-losing cancer patients with solid tumors supports host metabolism, improves appetite, and attenuates catabolism.

Strengths:

- Randomization (heterogeneity reduced through stratification)
- Double blinded
- Outcome measures included patient-rated factors using standardized tools

Weaknesses:

- Small sample size
- No placebo group
- Self reports of quality of life, anxiety, and depression differed to a statistically significant degree in the control group
- Administration of Ghrelin in experiment did not represent how it would be used in a clinical setting (ie. Prior to every meal)
- Although initial results calculated with an intention to treat analysis, the results presented were calculated with per protocol treatment analysis
- Inclusion/Exclusion criteria yields a small subset of patients

Relevance to Palliative Care:

- Weight loss and anorexia are complaints seen often in this setting. Difficult to treat and very distressing to patients and families.
- No significant adverse effects noted in this study.
- Possible future therapy for a symptom that is difficult to manage at the moment. However, further studies will be needed to give a better assessment of Ghrelin's efficacy.