Reviewer's report

Title: Effect of octanoic acid-rich formula on plasma ghrelin levels in cachectic patients with chronic respiratory disease

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Reviewer: Hiroshi H Kimura

Reviewer's report:

The authors have investigated the effect of oral administration of an octanoic acid-rich formula on plasma ghrelin profiles and nutritional status in patients with chronic respiratory disease. They found that the formula contributes to increase in body weight, serum levels of visceral proteins and plasma acyl-ghrelin levels, and suggested that the nutritional improvement may be associated with an inducing of acyl-ghrelin production by the formula.

This study is of great interest and provides a new insight into nutritional support in cachectic patients with chronic respiratory disease. However, I have several questions for the authors that require further explanation.

General comments

In the present study, two-week administration of octanoic acid-rich formula can increase plasma acyl-ghrelin levels, although significant body weight gain was observed. The authors suggest that the formula is superior to other formulas in the maintenance of higher levels of acyl-ghrelin. This interpretation is reasonable, but further comment may be required about the effect of other nutritional intervention including supplementation of other kinds of formula on plasma ghrelin profiles.

Because the authors did not determine the exact food intake during nutritional supplement, orexigenic effect of an increase in acyl-ghrelin is unclear. However, I think that the comment about the change in appetite loss and compliance of the formula can be made.

Specific comments

1. In this study, cachectic patients with stable respiratory disease were enrolled. The authors should clearly describe the patient profiles especially about underlying diseases. When the patients with chronic respiratory infection were included, the nutritional improvement may attribute not only to orexigenic effect of acyl-ghrelin but also to anti-inflammatory effect. It is likely to become a better discussion if the authors can describe the effects of two-week administration of the formula on circulating levels of pro-inflammatory cytokines and catecholamines.

2. It was demonstrated that single administration of 400 ml of formula between breakfast and lunch induced higher acyl-ghrelin levels before dinner in figure 1.
However, the data of statistical analysis was not shown. This should be improved.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.