

**11. Gastrointestinal, Hepato-Biliary-Pancreatic Diseases****Reference**

Hayakawa M, Ono Y, Wada T, et al. Effects of Rikkunshito (traditional Japanese medicine) on enteral feeding and the plasma ghrelin level in critically ill patients: a pilot study. *Journal of Intensive Care* 2014; 2: 53.

**1. Objectives**

To verify the effectiveness of rikkunshito (六君子湯) on gastrointestinal motility function in critically ill patients.

**2. Design**

Double-blind, randomized controlled trial (DB-RCT).

**3. Setting**

One center, a university hospital advanced acute medical care center, Japan.

**4. Participants**

Twenty-three critically ill patients aged at least 18-years, predicted to need enteral feeding over at least 7 days (10 females, 13 males).

**5. Intervention**

Arm 1: TSUMURA Rikkunshito (六君子湯) Extract Granules 2.5g administered every 8 hours intragastrically by tube and commencing enteral feeding at 20ml/hr, suctioning from the gastric tube every 4 hours, increasing the feeding amount up to basal metabolic expenditure if the suctioned volume is 100ml or less, or reducing the amount if suctioning of greater than 100ml continues (n=10).

Arm 2: Metoclopramide (Primperan, Astellas Pharma Inc.) 10mg every 8 hours intragastrically by tube and enteral feeding as in arm 1 (n=13).

**6. Main outcome measures**

The primary endpoint was the period in which it was possible to increase the enteral feeding amount up to basal metabolic expenditure in 10 days, and the secondary endpoint was the increase in activated ghrelin in 10 days.

**7. Main results**

No statistically significant difference was observed in the amount of stomach contents suctioned from the gastric tubes or the rate at which it was possible to increase enteral feeding up to basal metabolic expenditure. The number of days until 50% of basal metabolic expenditure was reached was significantly shorter in arm 1 compared to arm 2 ( $P=0.004$ ). Activated ghrelin increased significantly in arm 1 ( $P=0.023$ ).

**8. Conclusion**

Rikkunshito increased activated ghrelin blood concentration and gastrointestinal motility function in critically ill patients.

**9. From Kampo medicine perspective**

None.

**10. Safety assessment in the article**

None.

**11. Abstractor's comments**

This is an important paper indicating that administration of rikkunshito for critically ill patients increases gastrointestinal motility function and raises activated ghrelin blood concentration more than when administering metoclopramide. Although there was no significant difference in the period until feeding amount reached basal metabolic expenditure, a pre-set endpoint, the figures in the paper show the tendency that the rate of increase of feeding amount was faster and the volume suctioned from patients' stomachs was lower in the rikkunshito group. The possibility of significant differences emerging seems high if a sufficient number of cases were registered. This study is also greatly significant as it indicates that the period until 50% of basal metabolic expenditure was reached was shorter in the rikkunshito group compared to the metoclopramide group, even with a small number of such cases. The authors predicted in the protocols registered with UMIN (the ID code is actually UMIN000003569, not the code that appears incorrectly in the paper) that 60 participants would be registered before commencing the trial, however, the fact that that number was not reached is problematic for this paper. In future studies it would be advisable to incorporate a sufficient number, and to make the period until 50% of requisite nutrition is achieved a primary endpoint.

**12. Abstractor and date**

Koike H, 20 February 2017.