

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

Takayama S, Seki T, Watanabe M, et al. The effect of warming of the abdomen and of herbal medicine on superior mesenteric artery blood flow – a pilot study. *Forschende Komplementär Medizin* 2010; 17: 195–201 (in English with German abstract). Pubmed ID: 20829597

1. Objectives

Comparative evaluation of the regulatory effects of thermal stimulation to the abdomen and Daikenchuto (大建中湯) on superior mesenteric artery (SMA) blood flow in healthy people.

2. Design

Randomized controlled trial (RCT).

3. Setting

Five centers, including the Center for Asian Traditional Medicine, Graduate School of Medicine, Tohoku University, Japan.

4. Participants

Forty-two healthy male volunteers with no heart disease.

5. Intervention

Arm 1: participants received 20 minutes of thermal stimulation to the paraumbilical region with a warming device (40°C), and were then observed for 50 minutes.

Arm 2: participants took TSUMURA Daikenchuto (大建中湯) Extract Granules (5.0 g) with distilled water (50 mL, 37°C) and were then observed for 50 minutes.

Arm 3: participants took distilled water (50 mL, 37°C) and were then observed for 50 minutes.

Randomization was performed only in arm 1 and arm 2 (14 subjects per arm).

6. Main outcome measures

Hemodynamic testing: SMA blood flow was measured before taking daikenchuto, before thermal stimulation with a warming device, and before taking distilled water, and then 10, 20, 30, 40, and 50 minutes after the start of each intervention.

7. Main results

SMA blood flow increased significantly between 10 and 50 minutes after daikenchuto administration ($P<0.01$) and between 10 and 40 minutes after thermal stimulation ($P<0.05$). There was no significant difference between these arms. SMA blood flow did not change after administration of distilled water.

8. Conclusions

Daikenchuto increases SMA blood flow in healthy people. That increase is similar to the increase generated by thermal stimulation using a warming device.

9. From Kampo medicine perspective

None.

10. Safety assessment in the article

Not mentioned.

11. Abstractor's comments

This study employed a physiological evaluation method of verification in its investigation of blood flow increase stimulated by daikenchuto, which is used for *kansho* (寒証, cold pattern). It appears to be either a follow-up of a study in *The Tohoku Journal of Experimental Medicine* (2009; 219: 319–30) or concurrent research, as it compared the effects of thermal stimulation using a warming device (positive control) with administration of distilled water only (negative control). Daikenchuto is well known for its promotion of intestinal movement and is used clinically for sub-ileus conditions regardless of pattern: it is recognized for certain effects. This study found that increases in SMA blood flow induced by daikenchuto were similar to those induced by a thermal stimulation device, which suggests that it would be valuable to practicing clinicians. However, it should be pointed out that the subjects were healthy volunteers and the study did not clarify the question of whether the same phenomenon would be observed in people suffering from ileus conditions or conditions associated with coldness in the pelvic cavity. Based on this study of healthy people, researchers should be encouraged to use the study's protocols to further elucidate the action mechanisms (probably more than one) of Kampo medicines, specifically daikenchuto, in outpatients with cold-pattern sub-ileus conditions or habitual constipation.

12. Abstractor and date

Ushiroyama T, 31 December 2012.