

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

Takayama S, Seki T, Watanabe M, et al. The herbal medicine daikenchuto increases blood flow in the superior mesenteric artery. *The Tohoku Journal of Experimental Medicine* 2009; 219: 319630.

**1. Objectives**

To evaluate the effects of daikenchuto (大建中湯) and orengedokuto (黃連解毒湯) on cardiac output (CO) and superior mesenteric artery (SMA) blood flow.

**2. Design**

Randomized cross-over controlled trial (RCT-cross over).

**3. Setting**

Single facility (Tohoku University Hospital), Japan.

**4. Participants**

Fourteen healthy adults (25-64 years old) without cardiac disease.

**5. Intervention**

Arm 1: distilled water (50 mL, 37°C).

Arm 2: TSUMURA Daikenchuto (大建中湯) Extract Granules 5.0 g.

Arm 3: TSUMURA Orengedokuto (黃連解毒湯) Extract Granules 2.5 g.

**6. Main outcome measures**

Hemodynamic parameters including CO, blood pressure, heart rate, and SMA blood flow, measured by impedance cardiography (ICG) before and at 5, 10, 15, 20, 30, 45, 60, 75, and 90 min after administration of distilled water, daikenchuto, and orengedokuto.

**7. Main results**

Although neither daikenchuto nor orengedokuto affected CO, daikenchuto significantly increased SMA blood flow compared with distilled water or orengedokuto ( $P < 0.05$ ). Five grams of daikenchuto significantly increased SMA blood flow between 5 min ( $P < 0.01$ ) and 90 min after administration, with a peak reached at 20 min.

**8. Conclusions**

Daikenchuto increases SMA blood flow without changing CO in healthy people.

**9. From Kampo medicine perspective**

None.

**10. Safety assessment in the article**

None.

**11. Abstractor's comments**

This study used a physiological approach to verify the blood flow-increasing effect of daikenchuto, which is used for *kansho* (寒証, cold pattern), and the blood flow-suppressing effect of orengedokuto, which is used for *netsusho* (熱証, heat pattern). Daikenchuto is well-known for its gastrointestinal prokinetic effect and is clinically applied to subileus cases regardless of *sho* (証, pattern) with certain efficacy. This study revealed that daikenchuto increases SMA blood flow, possibly providing practicing clinicians with valuable findings. However, as this study was performed in healthy people, it not certain that the outcome of daikenchuto therapy is the same in patients in the ileus state or with *hie* (冷え, a feeling of coldness) in the pelvis. Based on the results of this study in healthy adults, future studies are expected to identify the mechanisms of action (probably more than one) of these Kampo medicines (daikenchuto in subileus cases with *kansho* [寒証, cold pattern] and orengedokuto in hypertension and insomnia cases with *netsusho* [熱証, heat pattern]) using the same study protocol.

**12. Abstractor and date**

Ushiroyama T, 16 January 2011, 31 December 2013.