21. Others

Reference

Takayama S, Shiga Y, Kokubun T, et al. The traditional kampo medicine Tokishakuyakusan increases ocular blood flow in healthy subjects. *Evidence-Based Complementary and Alternative Medicine* 2014: 1-8. doi: 10.1155/2014/586857 CENTRAL ID: CN-00993227, Pubmed ID: 24872835

1. Objectives

To evaluate the ability of tokishakuyakusan (当帰芍薬散) to increase ocular blood flow.

2. Design

Study 1: Double-blind, randomized controlled trial (cross-over) (DB-RCT cross-over).

3. Setting

A university department of ophthalmology, Japan.

4. Participants

Study 1: Thirteen healthy volunteers aged 20 to 70 years (mean age, 37.3±12.3 years; 6 males, 7 females) with intraocular pressure of ≤22 mmHg in both eyes (exclusion criteria: abnormal ocular fundus, history of ocular incisional surgery in either eye, history of systemic disease including hypertension and diabetes mellitus, and smoking history).

Study 2: Nineteen healthy volunteers (38 eyes) (mean age, 32.0±11.0 years; 8 males, 11 females).

5. Intervention

Study 1: Four Kampo medicines (TSUMURA Yokukansan [抑肝散] Extract Granules, TSUMURA Tokishakuyakusan [当帰芍薬散] Extract Granules, TSUMURA Keishibukuryogan [桂枝茯苓丸] Extract Granules, and TSUMURA Hachimijiogan [八味地黄丸] Extract Granules) at 5 g each were orally administered with 50 mL of warm water in a single arm. All subjects randomly received these 4 Kampo medicines in a blinded manner for 2 months. Subjects received 1 Kampo medicine, followed by at least 1 week of washout, and then received next Kampo medicine. Clinical tests were performed before and after administration (n=13).

Study 2: TSUMURA Tokishakuyakusan [当帰芍薬散] Extract Granules at 5 g was orally administered with 50 mL of warm water. Tests were performed at 15, 30, 45, and 60 minutes post-dose. After at least 1 week of washout, the control (50 mL of warm water) was administered to the same group (n=19) of subjects who were then evaluated in the same manner.

6. Main outcome measures

Intraocular pressure, blood pressure, pulse rate, and mean blur rate (MBR; a measure of ocular blood flow [OBF]) measured by laser speckle flowgraphy (LSFG) in both Studies 1 and 2.

7. Main results

Study 1: The four Kampo medicines did not cause intraocular pressure or blood pressure differences. The OBF was significantly increased 30 minutes after the administration of tokishakuyakusan (100% to 103.6%±6.9%; $P<0.01$).

Study 2: The OBF was significantly increased after the administration of tokishakuyakusan as compared with the control ($P<0.01$). In addition, intraocular pressure significantly increased from baseline to 30 to 60 minutes after the administration of tokishakuyakusan ($P<0.01$).

8. Conclusions

Tokishakuyakusan increases ocular blood flow irrespective of blood pressure and intraocular pressure in healthy volunteers.

9. From Kampo medicine perspective

The Kampo diagnostic questionnaire was used to reveal the conditions of "*qi* (気)," "blood," and "fluid" in subjects who received tokishakuyakusan in Study 2.

10. Safety assessment in the article

Not mentioned.

11. Abstractor's comments

The results of Study 1 (which had a crossover design) showed that only one of the four Kampo medicines, tokishakuyakusan, increased the ocular blood flow. The results of Study 2 showed the ability of tokishakuyakusan to increase ocular blood flow over time. Furthermore, ocular blood flow was increased after tokishakuyakusan administration irrespective of blood pressure and intraocular pressure especially in subjects who met the *sho* (証, pattern) for tokishakuyakusan in accordance with Kampo diagnosis. Since the study uses a surrogate endpoint (i.e., ocular blood flow in healthy subjects) to determine outcome, the evidence provided by this study is still not clinically robust. However, this study has potential. RCTs with the true endpoint (i.e., ocular blood flow in patients) are anticipated as a next step.

12. Abstractor and date

Tsuruoka K, 31 March 2017.