

Reference

Fukuno A, Tsuru H, Kataoka K, et al. Acupuncture stimulation improves visual acuity without refractive change. *Zen Nihon Shinkyu Gakkai Zasshi (Journal of the Japan Society of Acupuncture and Moxibustion)*. 2008; 58(2): 195–202 (in Japanese with English abstract). Ichushi web ID: 2008225957

1. Objectives

To evaluate the effects of acupuncture stimulation on the improvement of visual acuity in subjects without refractive change.

2. Design

Crossover randomized controlled trial (RCT cross-over).

3. Setting

Department of Ophthalmology, the Meiji University of Oriental Medicine (current Meiji University of Integrative Medicine) Hospital, Kyoto, Japan.

4. Participants

Thirty patients (age 73.0 ± 1.4 [mean \pm standard error]) randomly selected from patients who underwent phacoemulsification and intraocular lens implantation procedures between January and December 2005 and had no overall physical problems or ocular disorder, other than cataract (60 eyes; 16 males, 14 females). Eyes of one subject were allocated to test and control intervention.

Intervention

Arm 1: Trial group. Disposable stainless steel needles (0.16 \times 30 mm, Seirin Co., Ltd.) were inserted and retained at the bilateral LI4 (合谷), Ex-HN5 (太陽), and Shang-jingming (上睛明穴, no WHO code) acupuncture points for 10 minutes while resting supine (n=30).

Arm 2: Control group. The same needles as Arm 1 were inserted and retained at the bilateral points one cm lateral from LI4 (合谷), Ex-HN5 (太陽), and a point one cm above the Shang-jingming (上睛明穴) for 10 minutes (n=30).

5. Main outcome measures

Uncorrected visual acuity and corrected visual acuity before and after acupuncture stimulation.

6. Main results

No significant difference in either change in uncorrected visual acuity or change in corrected visual acuity was observed between Arm 1 and Arm 2. No visual acuity enhancing effects were observed with acupuncture stimulation under drug-induced mydriasis.

7. Conclusions

Acupuncture stimulation enhances visual acuity in elderly people who cannot regulate refraction. The results suggest that a pinhole effect from miosis caused by acupuncture stimulation may be involved.

8. From acupuncture and moxibustion medicine perspective

The same results were observed in both the sham group and the acupuncture stimulation group in this experiment. That may be because LI4 (合谷), Ex-HN5 (太陽), and the Shang-jingming (上睛明穴) acupuncture points are locations identified on the basis of experience, and the results of this trial may be attributable to miotic reflex caused by trigeminal area stimulation.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

The mechanism of visual acuity improvement by acupuncture is not well known. This interesting paper examines the effectiveness of acupuncture in patients who received cataract surgery without refractive change, in order to elucidate that mechanism. The study is not an RCT with two or more groups, but rather a study with a crossover design. This design is not recommended by the WHO Clinical Research Methodology for Acupuncture because the results are difficult to interpret. The paper does not discuss the carry-over effect and the period effect, which are peculiar to this design. The study does not compare two independent groups; the interventions were carried out on a single eye in each subject, and the other eye was treated as the control. The sample size appears to be 60 (eyes), but the number of subjects was 30. This means that independence of measurement was not achieved, where one individual is treated as one individual, and subjects are randomly sampled. Therefore, statistical testing was not possible. Readers should be cautious. In addition, the control intervention (sham stimulation) involved needle retention, which would be expected to have a physiological effect. Further, it is premature to conclude that the improvement in visual acuity with acupuncture was due to the pinhole effect, as mentioned in the discussion. It is hoped that the authors will improve the design and evaluation methods of future studies, and pursue further research to find acupuncture and moxibustion applications for real ophthalmology disorders.

11. Abstractor and date

Kaneko Y, 15 September 2010, Shichido T, 9 December 2010.