

4. Metabolism and Endocrine Diseases

Reference

Mukai Y. Acupuncture therapy for obesity using ear needle treatment – analysis of effectiveness and mechanism. *Zen Nihon Shinkyu Gakkai Zasshi (Journal of the Japan Society of Acupuncture and Moxibustion)*. 1981; 31(1): 67–74 (in Japanese with English abstract).

1. Objectives

To evaluate the effects and the mechanism of ear needle treatment on obesity.

2. Design

Randomized controlled trial (RCT).

3. Setting

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4. Participants

Fifty outpatients with simple obesity (120% or more of ideal body weight; age range 18–45 years, mean age 32.2). Patients with symptomatic obesity, a past history of diabetes or currently receiving treatment, or fasting blood sugar in excess of 110 mg/dL were excluded.

5. Intervention

Arm 1: Lung treatment group. Treatment for two weeks with intradermal needles. Two needles were inserted and retained at the respective locations on the ear flap, and replaced each week (n=25).

Arm 2: Shinmon (placebo) treatment group. Same as Arm 1 with different locations for insertion of the intradermal needles (n=25).

6. Main outcome measures

Change in dietary intake, satiety, and hunger, and change in fasting blood sugar, free fatty acid, insulin, gastrin, secretin, and gastrin levels after intake of 300 mL of water (some cases).

7. Main results

There was a significant difference ($P<0.05$) between Arm 1 and Arm 2 in the percent of participants showing decreased dietary intake (56% vs 28%), satiety increased by 2.5 points or more (24% vs 4%), 2.0 points or more (52% vs 16%), 1.5 points or more (64% vs 36%), and decrease in hunger (36% vs 12%). Fasting blood sugar, free fatty acids, gastrin, and secretin level showed no significant change. Insulin level alone decreased significantly ($P<0.05$) in Arm 1. Gastrin levels before and 10 minutes after intake of 300 mL of water showed gastrin secretion was promoted ($P<0.05$) in Arm 1 only.

8. Conclusions

Retaining intradermal needles at the Lung point in the cavum conchae of the ear in obese people decreases hunger sensation by promoting satiety, decreased dietary intake, decreased blood insulin levels, and increases gastrin secretion after oral intake of water.

9. From acupuncture and moxibustion medicine perspective

Locations for retention of intradermal needles were selected from a neuroanatomy perspective, and determined by impedance measurements.

10. Safety assessment in the article

Not mentioned.

11. Abstractor's comments

Few researchers have scientifically investigated the mechanism involved in obesity treatment by insertion of ear needles. This study is of great interest because it investigates simple obesity treatment in a multi-faceted manner in outpatients of a medical institution. It is also commendable that the study included a control group. Regrettably, the authors do not describe details of the interventions, such as timing of blood tests for fasting blood sugar, free fatty acids, insulin, gastrin, secretin, and gastrin after intake of 300 mL of water. In addition, they include too many outcome measures to focus the point of conclusion. Double masking is not used in this trial: using fake needles for a double-mask trial would be preferable. Researchers have deduced a relationship between the hypothalamus, cavum conchae, and the pancreas, and infer that what connects them is the autonomic nerve system. Elucidating that relationship would be a major breakthrough for obesity treatment as well as acupuncture and moxibustion medicine. Verification through future research is anticipated.

12. Abstractor and date

Okada A, Kaneko Y, 11 December 2010, Kawakita K, Takahashi N, 25 December 2010.