

## 4. Metabolism and Endocrine Diseases

### Reference

Mukaino Y, Arakawa K, Tsuneya Y. Comparison between cardia point and lung point on auricular acupuncture. *Zen Nihon Shinkyu Gakkai Zasshi (Journal of the Japan Society of Acupuncture and Moxibustion)* 1984; 33(3): 279–84 (in Japanese with English abstract). Ichushi Web ID: 1985031761

#### 1. Objectives

To evaluate the comparative differences in appetite suppression and water metabolism between obese patients treated by ear acupuncture at either the cardia point or the lung point.

#### 2. Design

Randomized controlled trial (RCT).

#### 3. Setting

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#### 4. Participants

Forty-two outpatients aged 18 to 50 years with simple obesity (body weight, 110% or more of ideal weight). Patients with fasting blood sugar over 110 mg/dL or receiving drug therapy for symptomatic obesity or obesity complications were excluded.

#### 5. Intervention

Arm 1: Cardia point group. Two intradermal needles each were inserted to a depth of approximately 1 mm at the cardia point of each ear (four needles in total), and retained in place with sticking plaster. The needles were replaced every week. Treatment continued for 2 weeks (n=20).

Arm 2: Lung point group. The same treatment was given, at the lung point (n=22).

One participant dropped out of each arm.

#### 6. Main outcome measures

Changes in dietary intake, hunger, satiety, water intake, urine output and frequency, and pre- to post-treatment comparison of body mass, fasting blood sugar, serum Na, blood urea nitrogen (BUN), serum osmolality, and antidiuretic hormone (ADH). Blood samples were taken mornings after fasting from 10:00 p.m. the previous night.

#### 7. Main results

Dietary intake and hunger decreased, and satiety increased in both groups, but there was no significant difference between groups. Water intake decreased in many cases, but there was no difference between groups. There were many cases in Arm 2 of increased urine output, but there was no significant between-group difference. Many participants in Arm 2 showed a tendency toward increased urinary frequency ( $P<0.10$ ). Serum osmolality and ADH level ( $P<0.02$ ) were significantly decreased in Arm 2, but not significantly changed in Arm 1, and the between-group differences were not significant. Both groups had similar body mass, and levels of fasting blood sugar, serum Na, and BUN.

#### 8. Conclusions

Auricular acupuncture at the cardia point and the lung point have the same effect on appetite suppression and body mass decrease, but varied on water metabolism: the physiological significance of the cardia point and the lung point differ.

#### 9. From acupuncture and moxibustion medicine perspective

Intradermal needle retention points were determined from a neuroanatomical perspective.

#### 10. Safety assessment in the article

Not mentioned.

#### 11. Abstractor's comments

This study holds great interest for its comparison of the effects of the lung point and the cardia point (electrodermal points near the vagus nerve in the cavum conchae region, which when stimulated are thought to suppress appetite by regulation of the autonomic nervous system). The study suggests the lung point has a specific physiological significance. It can be surmised that the locations of the lung point and the cardia point were determined by dermatometer measurements, but the authors make no mention of this. Regrettably, data on measures mentioned in the abstract, namely hunger and satiety, are not included in the paper.

Serum osmolality decreased, however, water intake decreased, ADH decreased, and urine output increased. The authors account for this inconsistency in the negative feedback system by suggesting ear acupuncture resets the automatic fluid regulation mechanism. The explanation is, however, incomplete. A yet to be published study in obese rats hypothesizing that the hypothalamus is the destination of each acupoint stimulus found evidence to suggest that afferent stimulation at the ear (which results in efferent stimulation of peripheral organs) is mediated by the hypothalamus. This study and a series of studies investigating ear acupuncture outcomes are anticipated to elucidate the mechanisms involved.

The cardia point and the lung point are electrodermal points in the same region, the cavum conchae, and their appetite suppression effects are similar. However, this study has clinical significance because it suggests that the lung point specifically affects water metabolism.

#### 12. Abstractor and date

Okada A, Kaneko Y, 28 December 2010, Takahashi N, 11 January 2012.