

## Poster 3

물리학

게시일시 및 장소 : 10 월 19 일(토) 08:30-12:30 Room G(3F)

질의응답 일시 및 장소 : 10 월 19 일(토) 11:00-11:30 Room G(3F)

### P 3-1

#### **Comparison of effects of sleep hygiene with/without cranial microcurrent therapy in chronic insomnia**

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##### **Purpose**

To investigate the therapeutic effect of sleep hygiene with/without cranial microcurrent therapy (MC) in patients with chronic insomnia

##### **Methods**

This study was designed as a prospective, double-blinded, and randomized controlled trial. Twenty-seven patients (20 females, 7 males, mean age; 60.7±9.4 years) with chronic insomnia were recruited from the outpatient clinic of university hospital. They were randomly allocated to two groups; MC group (14 patients, 9 females, 5 males, mean age; 61.5±8.8 years) and Sham group (13 patients, 11 females, 2 males, mean age; 59.9±10.3 years). All patients received sleep hygiene education. All patients had a sham or true portable microcurrent therapy device (PMTD; intensity, 25 µA; frequency, 8 Hz), and were treated with a PMTD 1 hour daily for 4 weeks. Treatment was given via electrodes clipped to the ear lobes (Figure 1) in MC group. In Sham group, sham treatment was provided by PMTD without current. Pittsburgh Sleep Quality Index (PSQI) and Insomnia Severity Index (ISI) were measured at baseline (pre-treatment), 2 weeks and 4 weeks of treatment. Within-group changes were analyzed with a repeated measures analysis of variance. Intergroup differences were analyzed using the independent t-test.

##### **Result**

In Sham group, the PSQI significantly decreased until 2 weeks of treatment ( $p < .01$ ) (Table 1, Figure 2). After 2 weeks of treatment, however, the PSQI increased. In MC group, the PSQI significantly decreased until 4 weeks of treatment ( $p < .01$ ). The change of PSQI in MC group was smaller than that in Sham group between baseline and 2 weeks of treatment ( $p = .018$ ), and greater than that in Sham group between 2 weeks and 4 weeks of treatment ( $p = 0.030$ ). In Sham group, the ISI significantly decreased until 2 weeks of treatment ( $p < .01$ ). After 2 weeks of treatment, however, the ISI was not decreased. In MC group, the ISI significantly decreased until 4 weeks of treatment ( $p < .01$ ). The change

of ISI in MC group was greater than that in Sham group between 2 weeks and 4 weeks of treatment ( $p=.048$ ).

### Conclusion

This study showed that combination treatment of cranial microcurrent therapy and sleep hygiene is more effective in treating chronic insomnia than sleep hygiene only as demonstrated by improvement and maintenance of sleep score for 1 month.

Table 1. Comparison of changes in Pittsburgh Sleep Quality Index and Insomnia Severity Index between MC and Sham group

	PSQI		ISI	
	MC (n=14)	Sham (n=13)	MC (n=14)	Sham (n=13)
Baseline	12.7±1.5	13.0±2.0	21.3±3.5	18.2±4.5
Δ	-1.6±2.2 <sup>b)</sup>	-4.5±3.4 <sup>b)</sup>	-4.3±5.9	-6.1±5.2
2WT	11.1±2.4 <sup>a)</sup>	8.5±3.6 <sup>a)</sup>	17.0±5.2 <sup>a)</sup>	12.1±6.0 <sup>a)</sup>
Δ	-1.8±1.7 <sup>b)</sup>	1.0±4.2 <sup>b)</sup>	-4.6±5.8 <sup>b)</sup>	0.0±5.8 <sup>b)</sup>
4WT	9.3±2.9 <sup>a)</sup>	9.5±2.7 <sup>a)</sup>	12.4±4.4 <sup>a)</sup>	12.1±5.7 <sup>a)</sup>

Values are presented as mean±standard deviation. PSQI, Pittsburgh Sleep Quality Index; ISI, Insomnia Severity Index; WT, week of treatment time; MC, cranial microcurrent therapy group; Sham, sham treatment group

<sup>a)</sup>  $p<0.05$ , derived from repeated measure of ANOVA for assessment time.

<sup>b)</sup>  $p<0.05$ , derived from independent t-test between MC and Sham group



Figure 1. Ear clip electrode placement on patients in the study

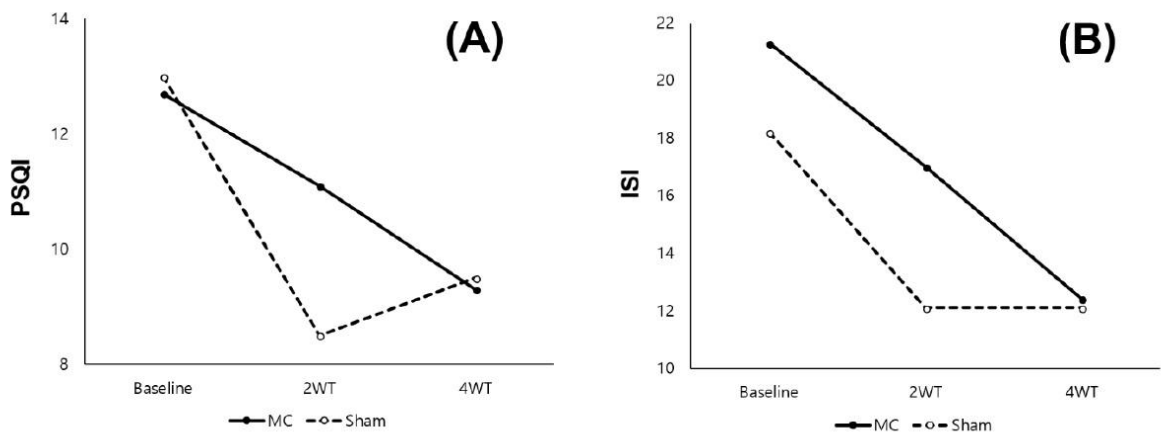


Figure 2. Sequential changes in Pittsburgh Sleep Quality Index and Insomnia Severity Index at each week of treatment (A) Pittsburgh Sleep Quality Index (B) Insomnia Severity Index