Scalp Electrical Acupuncture

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Dear Editor:

I enjoyed reading a recent article by Hsing et al.¹ in your journal. The authors compared the effect of scalp electrical acupuncture (SEA) as true treatment and scalp acupuncture (SA) as sham treatment for the quantification of stroke severity; they concluded that the SEA significantly improved the score of the National Institutes of Health Stroke Scale while the SA did not. I would like to express my opinion on the authors' interpretations.

Therapeutic Agent

In a clinical trial for efficacy of capsulated antibiotics, the only difference between true and sham treatments is the contents inside the capsules; the difference can be illustrated by an equation below.

$$\begin{aligned}\text{Capsulated Antibiotics} - \text{Capsule} &= \text{Antibiotics} \\ \text{True Treatment} - \text{Sham Treatment} &= \text{Therapeutic Agent}\end{aligned}$$

If this equation is applied to the study of Hsing et al.,¹ it is as follows.

$$\text{SEA} - \text{SA} = \text{E}, \text{ where E} = \text{Electrical stimulation}$$

Therefore, the study¹ could be regarded as evidence of the benefits of scalp electrical stimulation to patients with stroke, rather than both acupuncture and electrical stimulation being involved in the patients' improvement as the authors interpreted; the acupuncture needle likely acted as a passive conductive electrode and was not therapeutic. In fact, multiple studies have been conducted using an electrical stimulator and noninvasive surface electrodes on the scalp for patients with stroke and the post-treatment improvements of motor skills were observed.² Thus, the necessity of the invasive needling may be questionable.

Specificity of Acupoint Locations

In the study,¹ the identical scalp acupoints were used for both true and sham groups. The only difference between the true and sham groups is the presence of electrical current. For that reason, the authors may not be able to eliminate the

possibility that electrical stimulation on nonacupoints could be as effective as that on acupoints, since they did not apply electrical current in the sham group and did not test on the nonacupoint scalp. In my opinion, the sham group should receive the identical protocol as the true treatment in terms of the presence and intensity of electrical current; the only difference between the true and sham groups should be the needle placement; otherwise the correlation between the acupoints and clinical outcomes might be overinterpreted in the study.¹ Without a well-designed sham group, no study is able to show any advantage for real acupuncture, or the advantage is accidentally generated by an imperfectly designed sham group.

Based on the abovementioned, the study of Hsing et al.¹ revealed that the scalp electrical stimulation was valuable to patients with stroke, but the significance of invasive needling and the needle placement on scalp acupoints were not demonstrable.

Disclosure Statement

No competing financial interests exist.

References

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