**Title**: **Effect of Transcutaneous Vagus Nerve Stimulation on Shoulde-Hand Syndrome after Stroke**

**Author**: Kong Fane
Taian City Central Hospital, China

**Abstract**:
Objective: In this study, patients with shoulder-hand syndrome were treated with transcutaneous vagus nerve stimulation, and the clinical efficacy and mechanism of percutaneous electrical stimulation of the auricular vagus nerve for shoulder-hand syndrome were investigated by observing the improvement of pain, swelling and sympathetic skin reaction.
Methods: 42 patients with shoulder-hand syndrome who met the inclusion criteria were selected as the research subjects, and randomly divided into control group and treatment group with 21 cases in each. The control group was given conventional rehabilitation treatment, and the treatment group was given percutaneous electrical stimulation of the auricular vagus nerve, 30min/ time, once a day, 5 days/week, for 4 weeks. Visual analogue assessment (VAS), swelling degree, sympathetic skin reaction (SSR), and activity of daily living (ADL) were evaluated before and after treatment in 2 groups.
Results: The VAS score ($P > 0.05$) and swelling degree of the two groups were significantly decreased ($P > 0.05$), ADL score ($P > 0.05$) was significantly improved, and the amplitude of the affected side was decreased by SSR ($P > 0.05$). The above changes in the treatment group were more significant than those in the control group.
Conclusion: Transcutaneous vagus nerve stimulation can significantly improve the pain and swelling symptoms in patients with shoulder and hand syndrome, and improve the ability of daily living activities. It can be used as a new method for the treatment of shoulde-hand syndrome after stroke. Its therapeutic mechanism may be related to the decrease of sympathetic nerve excitability.