Meetings International SciTechnol

Yuan-Ho Lin et al., J Regen Med 2018, Volume: 7
DOI: 10.4172/2325-9620-C3-015

International Meeting on

TRADITIONAL & ALTERNATIVE MEDICINE

July 23-24, 2018 | Osaka, Japan

The effectiveness of wireless wearable medical electronic devices in the therapy of gait and pain in patients with knee osteoarthritis

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Several studies demonstrated that acupuncture is an effective treatment for osteoarthritis (OA) of the knee associated with pain-relieving and improvement in functional mobility. The purpose of this research is to develop a wireless wearable medical electronic device with three acupoints stimulation to relieve the pain of osteoarthritis. Methods: 60 participants with knee osteoarthritis had been included, and recieved 8-week - course with wireless wearable medical electronic devices. 22 of them had finished the treatment program. Patients with osteoarthritis received stimulating acupoints including Xuehai (SP 10), Liangqiu (ST34), and Neixiyan (EX-LE4) were selected. In the following 8 weeks, the participants wore the devices twice per week for 20 minutes. The VAS (visual analogue scale), WOMAC (The Western Ontario and McMaster Universities Osteoarthritis Index), Gait analysis, and pressure threshold meter were used to determine the severity of osteoarthritis and to confirm the effectiveness at the beginning, mid-term (4 week), and end-point (8 week) after treatment. Results: VAS score revealed significant difference between pre- and mid-test after 4-weeks treatment, and pre- and post-test after the 8-week treatment. The data of gait cycle significantly differed after 4-weeks treatment: left side, right sideand total cycle however the difference did not all last tothe end of treatment. Conclusion: Our findings suggest that wireless wearable medical electronic devices may be an effective and safe method for symptomatic treatment of osteoarthritis. Through the electrical stimulation and thermal action on the acupoints, patients with osteoarthritis would have pain relief and receive improvement in functional mobility.

Biography

Yuan-Ho Lin is the Professor of School of Chinese Medicine for Post-Baccalaureate, and a Chinese medical educator. He achieved with performing the research in the acute toxicity and anti-cancer effect of "Micro-Jin Bo" Jin Bo, basically small pieces of gold, suppressed the growth of tumor. Recent years, Professor Tsai put a lot of effort into the promotion to communities combined with TCM.

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