Service Priorities and Programmes

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Acu-TENS Program for Patients with Severe Chronic Obstructive Pulmonary Disease in Community

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Introduction

Chronic obstructive pulmonary disease (COPD) is a chronic progressive disease and dyspnoea was the most essential and disabling symptom. Previous studies using acupuncture on COPD showed positive effects in dyspnoea relief. Transcutaneous Electrical Nerve Stimulation over acupoints (Acu-TENS) is non-invasive and could be self-applied in community. Chize (LU5) and Lieque (LU7) were the commonly used Acupuncture points in studies on COPD patients and were located over forearm.

Objectives

The aim of this study was to investigate the effectiveness of Acu-TENS in reducing dyspnoea in patients with COPD and hence subsequent home management through self administration.

Methodology

Quasi-experimental one-group Pretest-Posttest design was adopted. Inclusion criteria were patients with diagnosis of COPD of stage 3 or 4 according to the GOLD classification and medically stable. Exclusion criteria were patients who are unable to perform spirometry, incommunicable, have impaired skin sensation or malignant disease over application sites or has pacemaker. Patients were received one session of 45 minutes of Acu-TENS over Chize (LU5) and Lieque (LU7). Dyspnoea was measured by shortness of breath 100-mm visual analogue scale (SOBVAS). Respiratory rate (RR) was measured by counting the chest respiratory movement in one-minute and lung function was evaluated by Forced Expiratory Volume in First Second (FEV1). Paired-samples t test was used to analyze the result.

Result

From 1 August 2014 to 31 August 2015, seventy-eight patients (6 females and 72 males) with mean age of 74.5±8.8 years completed the program. Statistically significant improvements were found in all domains. Immediately after the Acu-TENS

intervention, SOBVAS reduced significantly from 40.6±18.4 mm to 20.1±13.7 mm (-50.5%, p=0.000) which exceeded the recommended minimal clinical important difference. RR reduced from 23.6±5.7 to 19.3±4.3 (-18.2%, p=0.000) and FEV1 also improved from 0.7±0.4 L to 0.8±0.4 L (14.3%, p=0.000). In this study, Acu-TENS using forearms acupoints was found to be effective in alleviating the dyspnoea symptoms and improving the pulmonary function in COPD patients. Hence, compliance of continuing home care program with self-application of Acu-TENS can be promoted in community. Patient's perceived control / confidence in managing dyspnoea attack is also enhanced which is conducive for patient to engage in more therapeutic or recreational activities. Further investigation is suggested to evaluate the sustained effect of Acu-TENS on Chize (LU5) and Lieque (LU7) for dyspnoea management.