



**Service Priorities and Programmes**  
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**Convention ID:** 124

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**Physiotherapy Training with Acu-TENS and Acupuncture on Mercury Toxicity Induced Peripheral Neuropathy (MTIPN): A case report**

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**Keywords:**

Acu-TENS

Acupuncture

Balance

Peripheral neuropathy

**Introduction**

Peripheral Neuropathy (PN) is damage to or disease affecting nerves, which may impair sensation, movement and balance, lead to increased risk of fall. Some patients also reported symptoms of numbness, tingling, and pain in feet. Physiotherapy training including balance training, Acu-TENS and acupuncture is reported to have positive effect on these patients, including their balance, pain and other sensation symptoms.

**Objectives**

To report the effect of Physiotherapy training with Acu-TENS and acupuncture on "MTIPN".

**Methodology**

The patient was a 54- year-old male patient who was newly diagnosed as MTIPN. His major complaints were bilateral lower limbs numbness and easily lost balance when turning or with the eyes closed. Balance training using the Balance Master (NeuroCom System○R) and Acu-TENS on Yanglingquan GB34, Xuanzhong GB 39, Sanyinjiao SP 6 and Taixi KI3 (Burst mode for 30 minutes) over bilateral lower limbs were implemented 1 day a week for 6 weeks. Then a further 6-week on balance master training with acupuncture to the same points was added on top of the previous training. The outcome measures of balance and postural control were as follow: Sensory organization test (SOT), Berg' s Balance Scale (BBS) and single leg stand (SLS).

**Result**

The subject had completed 12 sessions of training from 18 September 2017 to 14 December 2017. The patient demonstrated improvements in his SOT, BBS, and SLS. The composition equilibrium score in SOT was improved from 27% below norm score to 10% below norm score for the first 6 sessions. The equilibrium score was further improved by 3% at the end of 12th session. Moreover, better center of gravity alignment was showed after 12 sessions of physiotherapy training. The BBS score was increased from 45 to 54 (maximum score of 56) while SLS performance improved

in right leg from 0 sec to 8 sec and left leg from 1 sec to 10 sec. Conclusions: Improvement in postural control and balance were shown in this case of MTIPN with physiotherapy training, Acu-TENS and acupuncture. Yet, there is no standardizing protocol on the placement of Acu-TENS/ Acupuncture, duration and intensity of the Acu-TENS. So it is worth to study further on the effectiveness of Acu-TENS/ Acupuncture on balance of peripheral neuropathy patient as well as to investigate the beneficial dosage and placement of Acu-TENS.