



Case Report

Case Report: Efficacy of Electro-Acupuncture for Taxane Induced Peripheral Neuropathy

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Summary

The primary reason for presenting this patient is to review the pain relief response she experienced from micro-current electro-acupuncture for Taxane induced neuropathy.

Chief Complaint: Neuropathic pain in hands bilaterally and R foot.

History

The patient is a 59 year old retired Caucasian female with invasive ductal breast cancer estrogen receptor, progesterone receptor and her 2-neu positive, 1.3 cm tumor right breast diagnosed July 2014, who started acupuncture once a week with the second course of chemotherapy (CMTX).

Her chemotherapy consisted of standard doses of carboplatin, pertuzumab and paclitaxel. She developed nausea, fatigue/exhaustion, anxiety and some neutropenia with first cycle of chemotherapy as well as neuropathy in her hands and feet. Due to the taxane neuropathy she received weekly acupuncture treatments with subsequent cycles of chemotherapy. During the last 3 courses of CMTX the pain in her hands was down to 2/10 while touching objects (from 4-7/10 initially) and 0/10 at rest. She was able to complete CMTX Dec 2014 followed by lumpectomy.

Validated Survey Based Clinical Assessment Tool

The FACT-Taxane neuropathy scale is a valid assessment tool for evaluating taxane induced peripheral neuropathy, Cella 2013 [1].

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It was used to evaluate her progress at the initial acupuncture treatment, just prior to her fourth chemotherapy dose and after her sixth (final) dose.

The results are shown on the table 1 below. Note the improvement in the majority of symptoms by the completion of therapy. The summary score has decreased from 36 to 21, a 45% decrease in symptoms. Note that seven months after completion of treatment her summary score has decreased to 6.

Survey Question	Timepoint	Baseline	Week 4	Week 7	Month 7
Numbness or tingling in my hands		2	3	3	0
Numbness or tingling in my feet		3	2	2	1
Discomfort in hands		2	3	3	0
Discomfort in feet		3	2	2	1
Joint pain or muscle cramps		2	2	2	1
Feel weak all over		3	1	2	1
Trouble hearing		2	0	1	1
Ringling or buzzing in my ear		3	1	1	0
Trouble buttoning buttons		3	0	1	0
Trouble feeling shape of small objects in my hands		2	1	1	0
Trouble walking		2	0	0	0
Feel bloated		3	0	0	0
Hands swollen		1	0	0	0
Legs or feet swollen		1	0	0	0
Have pain in fingertips		2	3	3	0
Bothered by the way my hands or nails look		2	0	0	1
Summary Score		36	18	21	6

Table 1: FACT-Taxane questionnaire results.

Assessment and Discussion

The patient eventually returned to a pain level of 0/10 after completing chemotherapy and radiation treatments. Starting within seven days of her first dose of chemotherapy acupuncture definitively lowered her pain from the start of her first dose, confirmed by a validated survey tool (FACT-Taxane neuropathy scale).

Acupuncture protocol used in this study: Baixie and bafeng bil/electrical stimulation (e-stim) of 5 micro amps, Guanyuan REN 4, Qihai REN 6, Sanyinjiao SP 6 Bilaterally (BIL), Zusanli ST 36 bil/Yuang Ling Quan GB 34 bil/e-stim to QiuxuGB 40 bil/e-stim, Quchi LI 11 bil/e-stim to Waiguan SJ 5 bil/e-stim, Lieque LU 7 bil, Zhaohai KID 6 bil, yintang, shishencong, x 30 minutes. (e-stim 5 micro-amps attached to points (LI 11 to SJ 5 bil, GB 34 to GB 40 bil). The Transcutaneous Electrical Stimulator (TENS) unit used in each treatment was the pantheon 8 channel intermittent mode 100 micro amps at 5 hertz (hz) for thirty minutes.

The patient eventually returned to her baseline of idiopathic neuropathy (prior to starting chemotherapy) of only in her right foot mid three toes at 3/10 after completing chemotherapy and radiation treatments. Starting acupuncture prior to her first dose or immediately afterward may have lowered her pain from the start of her first dose.

A multitude of theories of pain control mechanisms have been investigated over the past decades to evaluate and clarify these mechanisms of acupuncture and Electro Acupuncture (EA). These theories include: gate control theory, Melzack & Wall, 1965, spinal segmental mechanism, endogenous opioid system, descending noradrenergic and serotonergic systems and diffuse noxious inhibitory control [1,2]. Studies suggest that acupuncture may be clinically effective for various types of pain including low back pain, chronic knee pain, chronic headaches and recently, different types of chronic pain, Carlson & Sjolund, 2001 [3]. Electro-Acupuncture (EA) utilizes electrical stimulation, and has an analgesic effect on different types of acute pains and persistent inflammatory pain when applied to both rodent and human subjects as demonstrated by Baek, Do, Hyung & Park, 2005 [4]. JS Han in 2003 and 2004 reported analgesia is mediated by enkephalin, β -endorphin, endomorphin and dynorphin released in the Central Nervous System (CNS) and μ , δ and κ opioid receptors are involved in the mechanisms [5,6]. W Kim, S Kin & B Min concluded both endogenous opioid system and descending inhibitory system mediate the antiallodynic mechanism of EA and that spinal noradrenergic, serotonergic, cholinergic and GABAergic systems are involved in the mechanisms, Kim et al, 2013 [7]. Additionally supporting evidence was demonstrated in the study by Woojin, K, Kim, SK and Min 2013, on the Analgesic effect of electro-acupuncture on inflammatory pain in the rat model of collagen induced arthritis: mediation by cholinergic and serotonergic receptors in Brain Research, Woojin et al, 2013 [7]. The results of their research demonstrated that μ and δ opioid receptors, α 2- adrenoreceptors, 5 HT3, M1 muscarinic receptors, and GABA A and GABAergic receptors are involved in the mechanisms of EA induce analgesia effect on neuropathic pain Woojin et al, 2013 [7].

Conclusion

This report, though a solitary case study, supports the need for larger studies of acupuncture treatment of chemo-induced peripheral neuropathy.

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References

1. Cella D (2003) The Functional Assessment Of Cancer Therapy - Taxane (FACT-Taxane). Functional Assessment of Chronic Illness Therapy, Elmhurst, Illinois, USA.
2. Melzack R., Wall P (1965) Pain mechanisms: a new theory. Science 150: 971-979.
3. Carlsson CP, Sjolund BH (2001) Acupuncture for chronic low back pain: a randomized placebo-controlled study with long-term follow-up. Clin J Pain 17: 296-305.
4. Baek YH, Choi DY, Yang HI, Park DS (2005) Analgesic effect of electroacupuncture on inflammatory pain in the rat model of collagen-induced arthritis: mediation by cholinergic and serotonergic receptors. Brain Res 1057: 181-185.
5. Han JS (2003) Acupuncture: neuropeptide release produced by electrical stimulation of different frequencies. Trends Neurosci 26: 17-22.
6. Han J-S (2004) Acupuncture and endorphins. Neuroscience Letters 361: 258-261.
7. Kim W, Kim SK, Min BI (2013) Mechanisms of electroacupuncture-induced analgesia on neuropathic pain in animal model. Evid Based Complement Alternat Med 2013: 436913.



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