Journal of Obstetrics, Gynecology and Cancer Research | ISSN: 2476-5848

The Effect of Electroacupuncture Therapy on Paclitaxel Chemotherapy Induced Peripheral Neuropathy and Quality of Life in Gynecological Cancer Patients

Safira Widhita Putrie[1], Wita Saraswati[2]*, Ario Imandiri[3], Fadil Fadil[4]

1. *Obstetrics and Gynecology Resident of Airlangga University, Dr. Soetomo Hospital, Surabaya, Indonesia*
2. *Obstetrics and Gynecology Department, Airlangga University, Dr. Soetomo Hospital, Surabaya, Indonesia*
3. *Medical Acupuncture Section, Faculty of Vocational Studies Department, Airlangga University, Surabaya, Indonesia*
4. *Neurology Department, Airlangga University, Dr. Soetomo Hospital, Surabaya, Indonesia*

Article Info

10.30699/jogcr.10.6.492

Received: 2025/01/03;
Accepted: 2025/02/20;
Published Online: 05 May 2025;

Use your device to scan and read the article online

Corresponding Information:
Wita Saraswati,
Obstetrics and Gynecology Department, Airlangga University, Dr. Soetomo Hospital, Surabaya, Indonesia

Email: witaoesman@gmail.com

ABSTRACT

Background & Objective: Gynecological cancer and its treatment can lead to various physical, emotional, cognitive, and social problems. Chemotherapy-induced peripheral neuropathy is a common complication that occurs after the administration of Paclitaxel chemotherapy.

Materials & Methods: A prospective experimental study with a pre-post control group design on patients diagnosed with gynecological cancer with neuropathic complaints after receiving paclitaxel chemotherapy at the gynecology oncology clinic of Dr. Soetomo Hospital Surabaya in October – November 2024. The research subjects will be divided into 2 groups. Assessment of neuropathic pain scale and QoL evaluation will be carried out to all subjects. The treatment group receiving additional electroacupuncture therapy and the control group, which given oral anticonvulsants and neurotropic vitamins, with 10 subjects per group, total 20 subject.

Results: From the statistical analysis of the neuropathic pain scores between groups after therapy, P=0.000 was obtained, concluding that there was significant difference in post-test scores. Meanwhile, for the comparison of QoL scores between groups, P=0.070 was obtained, concluding that there was no significant difference in post-test scores. The analysis continued with the Deviation Score Test between groups on QoL questionnaire, obtained P=0.002, indicating a significant difference, with a greater score increase in the treatment group compared to the control group.

Conclusion: Electroacupuncture significantly reduced the neuropathy pain score in CIPN patients and increased the quality of life in electroacupuncture group compared to control group.

Keywords: Chemotherapy, Electroacupuncture, Gynecology, Neuropathy, Paclitaxel, Quality of Life

Copyright © 2025, This is an original open-access article distributed under the terms of the Creative Commons Attribution-noncommercial 4.0 International License which permits copy and redistribution of the material just in noncommercial usages with proper citation.

1. Introduction

Gynecological cancer cases have been becoming a major cause of morbidity and mortality among women in developing countries (1). According to WHO, gynecological cancers rank among the six most prevalent cancers in women worldwide, with cervical cancer as the fourth most common and uterine corpus cancer accounting for 420,128 cases (4.3%) (2). In Indonesia, cervical and ovarian cancers are the most common types of gynecological cancers (3).

Gynecology cancers and their treatments can lead to a wide range of physical, emotional, cognitive, and social issues, which collectively impact the quality of life (QoL) of affected women (1). Pain is a common physical issue among gynecological cancer patients, with 17% of the pain attributable to antineoplastic therapies (4). Pain usually has an adaptive role, but it can negatively impact social and psychological well-being (5, 6). Chemotherapy-induced peripheral neuropathy (CIPN) is a frequent side effect of paclitaxel, affecting up to 97% of gynecological cancer patients receiving this treatment (7, 8). In the first month of treatment, over 68% of chemotherapy patients experience CIPN (9). Paclitaxel induces peripheral neuropathy due to its neurotoxic effects, which stem from the inhibition of microtubule activity and accumulation in dorsal root ganglia, leading to sensory and motor impairments (10-12). The main symptoms are pain and numbness in the hands and feet (7). CIPN diagnosis can be performed using the TCNS

scoring, but EMG and nerve biopsy are still the gold standard for diagnosing CIPN **(13)**.

In 1997, the National Institutes of Health (NIH) published a consensus on acupuncture, highlighting its potential benefits for oncology patients, particularly in managing pain and chemotherapy-induced nausea. Studies have shown promising results for acupuncture in alleviating CIPN symptoms, reducing neuropathic pain, and improving QoL **(14-16)**. However, research on acupuncture for CIPN remains scarce in Indonesia. A study by Iravani, Kazemi Motlagh **(17)** in Beijing demonstrated that acupuncture was effective and safe for CIPN management, although it did not specify the chemotherapy agents involved **(17)**.

This study aims to investigate the effect of electroacupuncture on peripheral neuropathy score due to paclitaxel chemotherapy and its impact on the quality of life of gynecological cancer patients. When CIPN patients undergo further electroacupuncture therapy, do their neuropathic pain scores drop, and their quality of life improve? This research will shed important light on electroacupuncture therapy as a potential alternative for gynecological cancer patients experiencing chemotherapy-induced peripheral neuropathy. This will assist medical professionals in making an informed choice regarding whether to suggest this treatment to their patients. Furthermore, this research will add to the expanding body of knowledge regarding electroacupuncture, which could result in better patient results.

2. Materials and Methods

This study was a prospective experimental study employing a quasi-experimental pre-post control group design. It was conducted on patients diagnosed with gynecological cancer who had undergone at least three cycles of paclitaxel chemotherapy and exhibited peripheral neuropathy symptoms. The research was carried out at the Gynecological Oncology Clinic of Dr. Soetomo General Hospital, Surabaya, and the Acupuncture Clinic of Universitas Airlangga Hospital, Surabaya, Indonesia, during October 2024. Participants were selected through consecutive sampling.

Inclusion criteria include female with gynecological cancer who: **(1)** Had completed at least three cycles of paclitaxel chemotherapy and reported peripheral neuropathy symptoms; **(2)** Had a Total Clinical Neuropathy Score (TCNS) ≥ 5; **(3)** Cooperative and willing to undergo electroacupuncture; **(4)** Provided written informed consent and committed to complete the study. Exclusion criteria were: **(1)** Allergies to Gabapentin or neurotropic vitamins (B1, B6, B12); **(2)** Contraindications to electroacupuncture, including pacemaker implantation, skin disorders, pregnancy, wounds, or tumor in the acupuncture area; **(3)** Physical disabilities preventing acupuncture; **(4)** Ongoing radiation therapy; **(5)** History of diabetes mellitus and coagulation disorders.

Dropout criteria were severe pain requiring stronger analgesics, missed more than one electroacupuncture session or failed to complete eight sessions, or discontinued Gabapentin and neurotropic vitamin regimen (Gabapentin 300 mg once daily and Vitamin B1, B6, B12 5000 IU every 12 hours).

The participants were randomized into two groups using random numbers assigned upon their arrival and matched to a predetermined treatment allocation sheet. To account for an estimated 10% dropout rate, each group enrolled 10 participants. Control group received standard pharmacological therapy consisting of oral Gabapentin 300 mg once daily and neurotropic vitamins 5000 IU every 12 hours for three weeks. While intervention group received the same pharmacological therapy with the addition of electroacupuncture eight times over three weeks, three sessions per week, using standard acupuncture points recommended for cancer pain management.

Before commencing the interventions, participants gave written informed permission and received a briefing about study objective. Baseline evaluations include Neuropathic Pain Score measured using the Total Symptom Score (TSS) and QoL assessed using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30). The intervention group started both the pharmacological regimen and the electroacupuncture therapy. Electroacupuncture needles were inserted at recommended points and stimulated using a standard electroacupuncture device to deliver low-frequency electrical pulses **(17)**. After three weeks, post-treatment evaluations were conducted using the same tools to assess changes in neuropathic pain and QoL.

To analyze the data, SPSS version 26 (IBM, USA) was utilized. Descriptive statistics were used to summarize baseline attributes. The data distribution's normality was assessed using the Shapiro-Wilk test. The Independent Sample T-Test was employed to determine whether the data were normally distributed. The Mann-Whitney U test was used to determine if the data were regularly distributed. For within-group comparisons, paired t-tests were used to examine scores before and after treatment. A p-value of less than 0.05 was statistically significant.

3. Results

This study was conducted at the Gynecological Oncology Clinic of RSUD Dr. Soetomo, Surabaya, and the Acupuncture Clinic of Airlangga University Hospital from October until November 2024. Over the course of this period, the researchers recruited 20 subjects. These subjects were divided into two groups: a control (n=10) and a treatment group (n=10).

The most common type of cancer observed in both groups was ovarian cancer (50% in each group), followed by cervical cancer (Table 1). Regarding chemotherapy regimens, 6 subjects in the control group

received three cycles of Paclicarbo chemotherapy, while 4 subjects received six cycles. In the treatment group, 5 subjects receive three cycles, and 5 subjects receive six cycles.

Neuropathic Score

In the treatment group, which shown at the Table 2, median TSS score pre-test was 13.15 (10–14.64). The control group had a median score of 13.65 (11.98–14.64). In the treatment group, the median TSS score post-test was 5.65 (4–6.32). In the control group, the median score was 11.66 (9.32–13.32). Paired t-test showed that in both control and treatment group, a significant difference was observed (P = 0.000) (Table 3).

Mann-Whitney test showed that for the pre-test TSS scores, there is no significant difference between groups (P = 0.354). For the post-test TSS scores, a significant difference was observed between groups (P = 0.000). These suggest that electroacupuncture, when combined with standard medication, may reduce peripheral neuropathy symptoms in patients undergoing Paclitaxel chemotherapy for gynecological cancers.

The TSS pre-test and post-test scores showed a significant difference (P=0.000), as did the questionnaire scores between the pre-test and post-test (P=0.000). The TSS pre-test and post-test scores indicated a significant difference (P=0.000), and similarly, the questionnaire scores between the pre-test and post-test also showed a significant difference (P=0.005).

Comparison between the control group and the intervention group (Table 3) showed that the TSS pre-test scores showed no significant difference (P=0.354), while the TSS post-test scores demonstrated a significant difference (P=0.000).

Quality of Life

In the treatment group, which shown at the Table 4, median QoL score pre-test was 463.04 (376.68-634.43). The control group had a median score of 470.27 (380.56-634.43). In the treatment group, the median QoL score post-test was 608.34 (508.33-883.33). In the control group, the median score was 501 (387.22-647.77). According to the results of the paired T-test, the QoL questionnaire score before and after therapy (Table 3) demonstrated a significant difference between the pre-test and post-test in the control group, with a p-value of 0.000. The QoL questionnaire score in the treatment group likewise shown a significant change between the pre-test and post-test, with a P-value of 0.005, according to the results of the Wilcoxon test.

There is no significant difference between the control and treatment groups in the pre-test questionnaire scores (Table 3), with an Independent Sample T-Test yielding a p-value of 0.899. Similarly, Mann-Whitney test for post-test scores showed no significant difference (p-value of 0.070).

However, when analyzing the difference in questionnaire scores, the Independent Sample T-Test revealed a significant difference (p-value of 0.002), indicating a difference in the changes of scores between the control and treatment groups.

Table 1. Characteristics of Gynecological Cancer Types in Study Subjects

Variables	Group	
	Intervention	Control
Gynecological Cancer Types		
Cervical cancer	3 (30)	4 (40)
Ovarian cancer	5 (50)	5 (50)
Endometrial cancer	2 (20)	1 (10)
Uterine cancer	0 (0)	0 (0)
Fallopian Tube cancer	0 (0)	0 (0)
Vulvovaginal cancer	0 (0)	0 (0)
Total	10 (100)	10 (100)

Table 2. Descriptive Analysis of TSS Scores Pre- and Post-Therapy

Group	Mean	Median	Min	Max
	Pre-therapy			
Intervention	12.94	13.15	10.00	14.64
Control	13.44	13.65	11.98	14.64
	Post-therapy			
Intervention	5.42	5.65	4.00	6.32
Control	11.22	11.66	9.32	13.32

Table 3. Comparison between Control and Intervention Group

Variable	Control		Intervention		Test		P-Value		Result	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
TSS	13.44	11.22	12.94	5.42	0.000	0.000	0.354	0.000	NS	S
QoL	487.83	515.00	482.69	616.00	0.000	0.005	0.899	0.070	NS	NS

NS: not significant; S: significant

Table 4. Descriptive Analysis of Questionnaire Scores Pre- and Post-Therapy

Group	Mean	Median	Min	Max
	Pre-therapy			
Intervention	482.69	463.04	376.68	634.43
Control	487.83	470.27	380.56	634.43
	Post-therapy			
Intervention	616.00	608.34	508.33	883.33
Control	515.00	501.37	387.22	647.77

4. Discussion

It is a quasi-experimental pre-test post-test control group design study involving two groups. Following the treatment, re-evaluations were made using the TSS to measure neuropathic pain, and the EORTC QLQ-C30 questionnaire to assess quality of life. During the study, no side effects were reported from acupuncture needle insertions or the medications. QoL was measured using the EORTC QLQ-C30 questionnaire, which contains 30 items divided into global health status, functional scales, and symptom scales. The second stage involved linear transformation to standardize the raw score, with poor quality of life being indicated by scores < 500, moderate between 501-1000, and good > 1000.

The study found that ovarian cancer was the most common type of gynecological cancer in both the control and treatment groups, followed by cervical cancer. Gynecological cancers included cervical, ovarian, uterine, endometrial, vulvar, and vaginal cancers. Additionally, fallopian tube cancer was noted. In 2022, Indonesia reported 62,260 cases of gynecological cancer with 33,560 deaths, with ovarian cancer accounting for the highest number of cases at 15,100, and vaginal cancer being the least at 460 cases **(2)**.

A comparison of pre-test and post-test TSS scores in the control group showed a p-value of 0.000, indicating a significant decrease in neuropathic pain scores with the administration of Gabapentin 300mg every 24 hours and Vitamin B1, B6, B12 5000 IU every 12 hours. Anticonvulsant medications known as gabapentinoids, which include gabapentin and pregabalin, block presynaptic alpha-2-delta calcium channels in the dorsal horn to reduce neurotransmitter release **(18)**. Peripheral diabetic neuropathy and post-herpetic neuralgia have been demonstrated to respond well to gabapentin and pregabalin. Sleepiness, exhaustion, lightheadedness, and edema in the lower extremities are typical adverse effects **(19, 20)**.

Another therapy given is vitamin B (B1, B6, B12). Vitamin B (B1, B6, B12) can prevent nervous system disorders. The three vitamins complement each other because they work through different mechanisms. The active form of vitamin B, thiamine diphosphate, can help reduce microvascular problems in diabetes by acting as a cofactor for several enzymes principally

involved in the breakdown of carbohydrates. Additionally, vitamin B functions as a coenzyme in several metabolic processes, such as transaminase and L-amino acid decarboxylase, which are essential for the synthesis of neurotransmitters like as gamma-aminobutyric acid (GABA), serotonin, and dopamine. Vitamin B can rebuild myelin structure, lower neurotoxic cytokines, and promote neuron regeneration and function **(21)**.

A comparison of pre-test and post-test TSS scores in the treatment group yielded a p-value of 0.000, shows a significant improvement in neuropathic pain scores following acupuncture treatment. This finding aligns with a study by Iravani, Kazemi Motlagh **(17)** in Beijing, which showed that acupuncture was significantly effective and safe for managing CIPN, although the specific chemotherapy types were not mentioned **(17)**.

Other studies suggest that electroacupuncture may help inhibit nerve activity caused by neuropathic pain by reducing ion channel activation and suppressing glial cells from releasing inflammatory cytokines and chemokines. Additionally, acupuncture, as a non-pharmacological treatment, may increase norepinephrine (NE), 5-hydroxytryptamine (5-HT), and opioid peptide levels in the brain or spinal cord, hence activating pain control mechanisms **(11, 22)**. Electroacupuncture for analgesia is more effective than manual acupuncture. What needs to be considered regarding electroacupuncture are the type of wave, frequency, duration of stimulation, and intensity of stimulation **(23, 24)**.

In addition to a variety of physical issues, cancer patients frequently deal with psychological and spiritual issues that can lower their quality of life, particularly in patients who are in an advanced stage of the disease. EORTC QLQ-C30 questionnaire was used in some experiment **(25)**. The questionnaire containing 30 questions grouped into 15 domains to assess the quality of life of cancer patients, particularly those with cervical cancer, using the Indonesian version of the questionnaire, which was validated by Perwitasari et al **(26)**. The domains include global health status, physical function, role function, emotional function, cognitive function, social function, and symptoms **(13, 27)**. Combining treatment strategies with quality-of-life assessment needs to be considered **(23, 28)**. In cancer treatment, the patient's perspective is the key in cancer therapy. Quality of life assessment is necessary to consider the impact of cancer and the functional and psychosocial healthcare of patients **(28-30)**.

A comparison of pre-test and post-test scores in the control group showed a p-value of 0.000, indicating an improvement in quality of life, and in the treatment group, a p-value of 0.005, indicating a significant improvement in quality of life. A comparison of pre-test questionnaire scores between the control and treatment groups before therapy showed a p-value of 0.899, indicating no significant difference. After therapy, the p-value was 0.070, suggesting no significant difference in post-test scores between the groups.

However, an Independent Sample T-Test on the score differences showed a significance value of 0.002, indicating that both groups improved quality of life scores, with a larger improvement observed in the treatment group. Mental health and quality of life have been the most significant topics in clinical research over the last 20 years, and they have been highlighted as two of the most successful facets of patient treatment **(32)**.

Limitations of this study are some items in the questionnaire domain had a reverse scoring system, where the score decreased as the condition improved, and related to social aspects were factors that could not be intervened with the treatment.

5. Conclusion

A decrease in neuropathic pain scores was observed in patients with peripheral neuropathy following Paclitaxel chemotherapy who were treated with Gabapentin 300 mg every 24 hours, Vitamin B1, B6, B12 5000 IU every 12 hours orally, along with additional electroacupuncture therapy. Improvement in quality of life was found in patients with peripheral neuropathy following Paclitaxel chemotherapy who received Gabapentin 300 mg every 24 hours, Vitamin B1, B6, B12 5000 IU every 12 hours orally, and additional electroacupuncture therapy.

6. Declarations

Acknowledgments

We would like to express our sincere gratitude to all parties who participate in the guidance and support throughout this study.

Ethical Considerations

The study received ethical approval from the Universitas Airlangga Hospital's Ethics Committee (No. 146/KEP/2024) and the Dr. Soetomo General Hospital's Ethics Committee (No. 1108/KEPK/IX/2024).

Authors' Contributions

SWP conceived and designed the analysis, collected the data, performed the analysis, and wrote the paper. WS designed, wrote, and reviewed the paper. AI performed the analysis and reviewed the paper. F wrote and reviewed the paper.

Conflict of Interest

The authors declare no conflict of interest.

Fund or Financial Support

There is no grant support or financial relationship associated with this study.

References

1. Afiyanti Y. The quality of life of Indonesian women with gynecological cancer. Enferm Clin. 2020;30:65-9. [DOI:10.1016/j.enfcli.2020.07.013]
2. World Health Organization (WHO). Regional Office for the Western P. In WHO standard acupuncture point locations in the Western Pacific Region. 2008. Geneva, Switzerland: World Health Organization Publication.
3. Kemenkes RI. Pedoman Nasional Pelayanan Paliatif Kanker. Kementrian Kesehatan Repoblik Indonesia. 2017.
4. Caraceni A, Shkodra M. Cancer pain assessment and classification. Cancers. 2019;11(4):510. [DOI:10.3390/cancers11040510] [PMID] [PMCID]
5. IASP. International Associationfor the Study of Pain revises its definition of pain for the first time since 1979. Second Edition, IASP Task Force on Taxonomy, Edited by Merskey H and Bogduk N. 2020. Washington DC, USA: IASP Press. (Accessed: Mar 05, 2025). Available from: [https://www.iasp-pain.org/resources/terminology/#pain]
6. Hachimi-Idrissi S. Guidelines for the management of acute pain in emergency situations. 2020. 80 p. (Accessed: Mar 05, 2025). Available from: [https://researchportal.vub.be/en/publications/guidelines-for-the-management-of-acute-pain-in-emergen]
7. Klein I, Lehmann HC. Pathomechanisms of Paclitaxel-Induced Peripheral Neuropathy. Toxics. 2021;9(10):229. [DOI:10.3390/toxics9100229] [PMID] [PMCID]
8. Bennett MI, Kaasa S, Barke A, Korwisi B, Rief W, Treede RD. The IASP classification of chronic pain for ICD-11: chronic cancer-related pain. Pain. 2019;160(1):38-44. [PMID] [DOI:10.1097/j.pain.0000000000001363]
9. Seretny M, Currie GL, Sena ES, Ramnarine S, Grant R, MacLeod MR, et al. Incidence, prevalence, and predictors of chemotherapy-induced peripheral neuropathy: A systematic review and meta-analysis. Pain. 2014;155(12): 2461-70. [DOI:10.1016/j.pain.2014.09.020] [PMID]
10. Starobova H, Vetter I. Pathophysiology of Chemotherapy-Induced Peripheral Neuropathy. Front Mol Neurosci. 2017;10:174. [PMCID] [DOI:10.3389/fnmol.2017.00174] [PMID]
11. Zajączkowska R, Kocot-Kępska M, Leppert W, Wrzosek A, Mika J, Wordliczek J. Mechanisms of Chemotherapy-Induced Peripheral Neuropathy. Int J Mol Sci. 2019;20(6):1451. [DOI:10.3390/ijms20061451] [PMID] [PMCID]
12. Scripture CD, Figg WD, Sparreboom A. Peripheral neuropathy induced by paclitaxel: recent insights and future perspectives. Curr Neuropharmacol. 2006;4(2):165-72. [PMCID] [DOI:10.2174/157015906776359568] [PMID]
13. Basuki M, Hamdan M. Toronto clinical neuropathy score and modified Toronto clinical neuropathy score diagnostic tests in distal diabetic sensorimotor polyneuropathy patients. Inter J Psychol Rehabil. 2020;24(2):4188-97. [DOI:10.37200/IJPR/V24I2/PR200741]
14. D'Alessandro EG, Nebuloni Nagy DR, de Brito CMM, Almeida EPM, Battistella LR, Cecatto RB. Acupuncture for chemotherapy-induced peripheral neuropathy: a randomised controlled pilot study. BMJ Support Palliat Care. 2022; 12(1):64-72. [PMID] [DOI:10.1136/bmjspcare-2018-001542]
15. Lu W, Rosenthal DS. Acupuncture for cancer pain and related symptoms. Curr Pain Headache Rep. 2013;17(3):321. [PMID] [PMCID] [DOI:10.1007/s11916-013-0321-3]
16. Sudewa IBA, Subagiartha IM. Efek nyeri terhadap mutu kehidupan. Smf/Bagian Anestesiologi Dan Reanimasi Fakultas Kedokteran Univesitas Udayana Rsup Sanglah Denpasar. 2017.
17. Iravani S, Kazemi Motlagh AH, Emami Razavi SZ, Shahi F, Wang J, Hou L, et al. Effectiveness of Acupuncture Treatment on Chemotherapy-Induced Peripheral Neuropathy: A Pilot, Randomized, Assessor-Blinded, Controlled Trial. Pain Res Manag. 2020;2020:2504674. [DOI:10.1155/2020/2504674] [PMID] [PMCID]
18. Moisset X, Bouhassira D, Couturier JA, Alchaar H, Conradi S, Delmotte MH, et al. Pharmacological and non-pharmacological treatments for neuropathic pain: Systematic review and French recommendations. Rev Neuro. 2020;176(5):325-52. [DOI:10.1016/j.neurol.2020.01.361] [PMID]
19. Bates D, Schultheis BC, Hanes MC, Jolly SM, Chakravarthy KV, Deer TR, et al. A Comprehensive Algorithm for Management of Neuropathic Pain. Pain Med. 2019;20(Suppl 1): S2-s12. [DOI:10.1093/pm/pnz075] [PMID] [PMCID]

20. Zhulhajsyirah Z, Wahyudin E, Tammas J. Efektivitas Dan Efek Samping Penggunaan Gabapentin Pada Pasien Neuropati Diabetik Di Rsup Dr. Wahidin Sudirohusodo Makassar. Maj Farm Farmakol. 2018;22(2):44-7. [DOI:10.20956/mff.v22i2.5699]
21. Hakim M, Kurniani N, Pinzon RT, Tugasworo D, Basuki M, Haddani H, et al. Management of peripheral neuropathy symptoms with a fixed dose combination of high-dose vitamin B1, B6 and B12: A 12-week prospective non-interventional study in Indonesia. Asian J Med Sci. 2018;9(1):32-40. [DOI:10.3126/ajms.v9i1.18510]
22. Ma X, Chen W, Yang NN, Wang L, Hao XW, Tan CX, et al. Potential mechanisms of acupuncture for neuropathic pain based on somatosensory system. Front Neurol. 2022;16: 940343. [DOI:10.3389/fnins.2022.940343] [PMID] [PMCID]
23. Saraswati W, Rosyiadi MR, Imandiri A. Electroacupuncture Versus Analgesics for Patients with Stage IIIB Cervical Cancer Post Cisplatin Chemotherapy. Med Acupunct. 2019; 32(5):293-9. [DOI:10.1089/acu.2020.1425] [PMID] [PMCID]
24. Maoying Q, Mi W. Acupuncture Analgesia in Clinical Practice. In: Xia Y, Cao X, Wu G, Cheng J (eds). In Acupuncture Therapy for Neurological Diseases. 2010. Berlin, Germany: Springer. [DOI:10.1007/978-3-642-10857-0_7]
25. Fredheim OM, Borchgrevink PC, Saltnes T, Kaasa S. Validation and comparison of the health-related quality-of-life instruments EORTC QLQ-C30 and SF-36 in assessment of patients with chronic nonmalignant pain. J Pain Symptom Manage. 2007;34(6):657-65. [PMID] [DOI:10.1016/j.jpainsymman.2007.01.011]
26. Perwitasari DA, Atthobari J, Dwiprahasto I, Hakimi M, Gelderblom H, Putter H, et al. Translation and validation of EORTC QLQ-C30 into Indonesian version for cancer patients in Indonesia. Jpn J Clin Oncol. 2011;41(4):519-29. [DOI:10.1093/jjco/hyq243] [PMID]
27. Shimoyama M, Shimoyama N. Palliative care of the patient with gynecologic cancer. Jpn J Clin Med (Nihon rinsho). 2012;70:777-82. [PMID]
28. Zhao H, Kanda K. Translation and validation of the standard Chinese version of the EORTC QLQ-C30. Qual Life Res. 2000;9(2):129-37. [DOI:10.1023/A:1008981520920] [PMID]
29. Elumelu TN, Adenipekun AA, Abdus-salam AA, Bojude AD, Campbell OB. Quality Of Life In Patients With Head And Neck Cancer On Radiotherapy Treatment At Ibadan. Researcher. 2011;3(8):1-10. (Accessed: Mar 05, 2025). Available from: [https://www.sciencepub.net/researcher/research0308/01_6513research0308_1_10.pdf] [DOI:10.7537/marsrsj030811.01]
30. Modares Gilani M, Mousavi AS, Akhavan S, Sheikhhasani S. Investigating the quality of life of patients with cervical cancer in Iran. J Obstet Gynecol Cancer Res. 2022;7(6):530-5. [DOI:10.30699/jogcr.7.6.530]

How to Cite This Article:

Widhita Putrie, S., Saraswati, W., Imandiri, A., Fadil, F. The Effect of Electroacupuncture Therapy on Paclitaxel Chemotherapy Induced Peripheral Neuropathy and Quality of Life in Gynecological Cancer Patients. J Obstet Gynecol Cancer Res. 2025;10(6):492-8.

Download citation: RIS | EndNote | Mendeley | BibTeX |