



A STUDY TO ASSESS THE EFFECTS OF INTERCOSTOBRACHIAL NERVE BLOCK ON THE QUALITY OF LIFE IN PATIENTS WITH POST MASTECTOMY PAIN

Physical Medicine

Dr. Sagnik Mukherjee

Senior Resident, North Bengal Medical College & Hospital, West Bengal.

Dr. Subhasish Pati

Assistant Professor, North Bengal Medical College & Hospital, West Bengal.

Dr. Partha Pratim Pan

Professor & HOD, North Bengal Medical College & Hospital, West Bengal.

Dr. Annada Sankar Mohe

Associate professor, North Bengal Medical College & Hospital, West Bengal.

ABSTRACT

Background: Chronic neuropathic pain related to PMPS with enough severity can impair quality of life. It has been suggested that ICBN blockade could be potentially useful in the management of PMPS. **Objectives:** To assess the effects of Intercostobrachial nerve block on the quality of life (QoL) in patients with post mastectomy pain syndrome. **Methods And Materials:** We have taken data of patients suffering from post-mastectomy pain syndrome who underwent Intercostobrachial nerve block. Data was collected retrospectively and analyzed. Changes in QoL was measured with SF-36 questionnaire. **Results:** Statistical analysis of Quality of Life measured by the mean scores of each of the eight domains in the SF-36 questionnaire form viz. physical functioning, physical role limitations, bodily pain, General health perception, Vitality, social functioning, emotional role limitations and mental health at 1 week, 4 weeks, 12 weeks follow-up, calculated from the data of patients suffering from post-mastectomy pain syndrome who underwent Intercostobrachial nerve block indicates a significant increase in QoL in all domains. **Conclusions:** Intercostobrachial nerve block has a beneficial effect on the QoL of patients suffering from post-mastectomy pain syndrome.

KEYWORDS

Intercostobrachial nerve block, post-mastectomy pain, Quality of Life

I. INTRODUCTION

Breast cancer, recognized as a common cancer among women, is one of the important causes of morbidity and mortality worldwide and accounts for more than 30% of all new cases of cancer in females¹. With regard to developments presented in screening, diagnosis, and especially therapies of this disease, survival of patients has improved in recent years, and as a result, the population at risk of complications attributable to treatment has increased, as well^{2,3}. 'International Association for study of pain' (IASP) defines Post mastectomy pain syndrome as chronic pain in the anterior aspect of thorax, axilla and/or upper half of the arm, beginning after mastectomy or quadrantectomy and persisting for more than 3 months after the surgery^{4,5,6}. It is typically neuropathic in character and is described as burning sensations, dysesthesia or paroxysms of lancinating, shock like pain⁷. The prevalence of PMPS has been reported to range from 20% to 68%^{8,9,10}. It has been suggested that ICBN blockade could be potentially useful in understanding the pathophysiology and aiding diagnosis of PMPS.¹¹

We had planned a prospective observational descriptive study to investigate the effects of Intercostobrachial nerve blockade on the quality of life in a group of patients with post-mastectomy pain.

II. MATERIALS AND METHODS

This is a Prospective Observational Descriptive analysis of all patients undergoing Intercostobrachial nerve block for Post-mastectomy Pain Syndrome from 10.04.2022 to 09.04.23. Ethical approval was obtained from a standard institutional ethical committee. Inclusion and exclusion criteria were strictly followed.

Female patients above 18 years of age with a History of mastectomy, who developed neuropathic pain in the axilla, upper arm, or lateral chest wall > 6 months after surgery were taken for the study, out of whom patients with Myofascial trigger points or cervical spondylosis with radiculopathy, Contraindication or History of adverse reaction to anesthetic agents or corticosteroids, history of intervention or surgery for treatment of Post Mastectomy Pain Syndrome, untreated cutaneous infection, systemic illness, or immunocompromised state and history of bleeding tendency or use of anticoagulants were excluded. Written informed consent was obtained from all participants in their own language after explaining to them about the purpose and safety of the study, the intervention procedures, and confidentiality of their information.

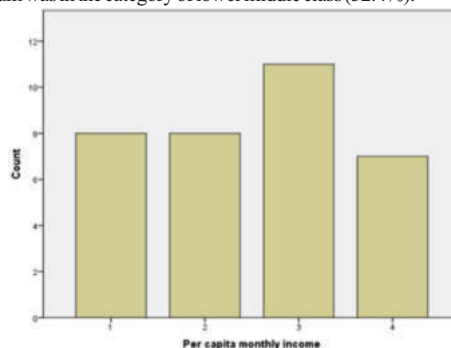
The patient's particulars, clinical history, and examination findings

were recorded on a predesigned, pre-tested proforma. The study population received treatment for Post-mastectomy pain in the form of intercostobrachial nerve block. All interventions were done in Intervention OT of the Department of Physical Medicine & Rehabilitation of North Bengal Medical College & Hospital using standard aseptic precautions. Quality of life data measured by the SF-36 questionnaire were collected at the baseline (visit 0), at 1 week (visit 1), 4 weeks (visit 2), and 12 weeks (visit 3) post-interventional period. Simple statistics were used for descriptive analysis. Statistical analysis was done using SSPS version 23.

III. RESULTS

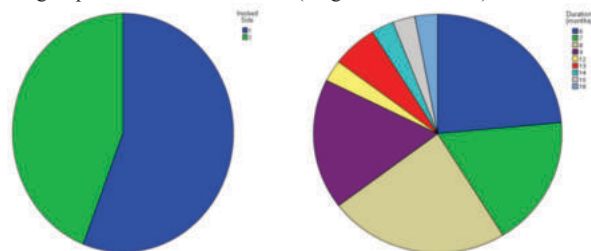
The total number of participants in this study was initially 47. 8 participants were excluded as they did not meet the inclusion criteria. 5 participants were excluded from the analysis as they dropped out of the study and did not appear for timely follow-ups. So the analysis was done for a total of 34 participants. Body Mass Index of participants ranged from 17.21 kg/m² to 29.31 kg/m². Mean BMI across the study population was 22.98 ± 2.65 kg/m².

Regarding the per capita monthly income (in rupees), the patients were classified according to the modified BG Prasad socioeconomic classification scale, January 2014. There were 5 categories viz. 5357 and above (Upper class), 2652-5356 (Upper middle class), 1570-2651 (Middle class), 812-1569 (lower middle class) and <811 (lower class). Out of these maximum was in the category of lower middle class (32.4%).

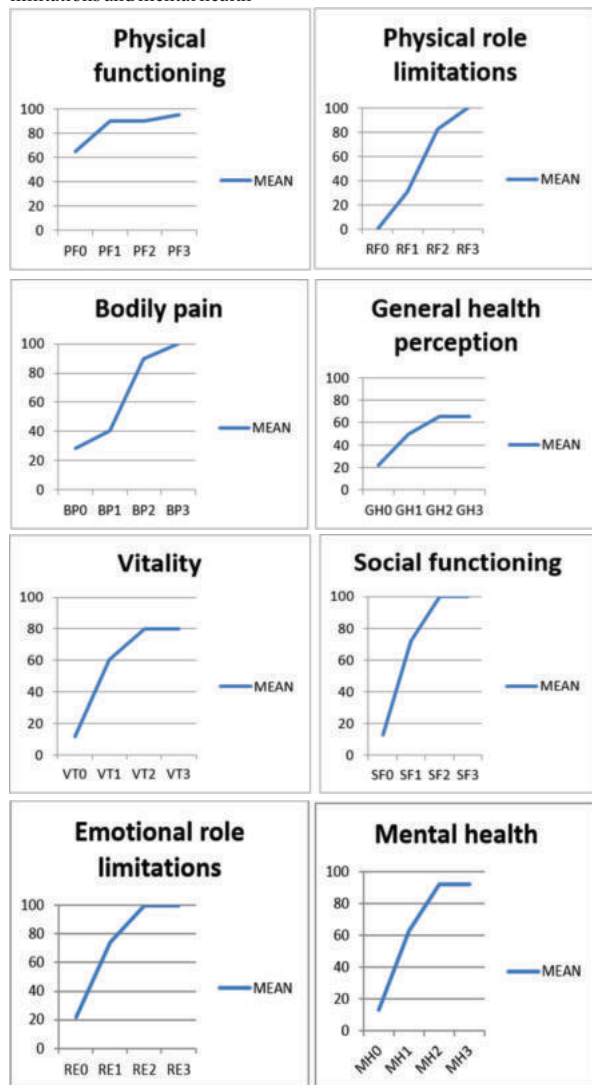


Right sided PMPS was slightly more common as compared to left side. Overall in 34 patients, 19 patients (55.9%) had right sided PMPS while 15 patients (44.1%) had left side involved.

Regarding the duration of PMPS, the patients having pain for less than six months were excluded. The mean duration of symptoms across all the groups was 8.62 ± 2.92 months (range: 6 to 18 months).



Quality of Life(QoL) data collected from the SF-36 questionnaires show an improvement in the mean scores of all the eight domains in the form viz. physical functioning, physical role limitations, bodily pain, General health perception, Vitality, social functioning, emotional role limitations and mental health



IV. DISCUSSION

With the ever increasing burden of breast cancer in women, there has also been a rise in the incidence of treatment related complications, be it due to radiation, chemotherapy or surgery. Among the interventional managements different types of nerve blocks have been reported to be successful in alleviation of chronic pain. The studies on the effect of Intercostobrachial nerve block are very few, but they have shown satisfactory improvement in the post intervention period. Regarding the per capita monthly income (in rupees), the patients were classified according to the modified BG Prasad socioeconomic classification scale, January 2014. Maximum patients were in the category of lower middle class (32.4%). Though the per capita monthly income has no effect on post-mastectomy pain syndrome, patients with higher

economic status tend to adhere more to the rehabilitation program and lifestyle modifications. Right sided PMPS was slightly more common as compared to left side. Overall in 34 patients, 19 patients (55.9%) had right sided PMPS while 15 patients (44.1%) had left side involved. The mean duration of symptoms of PMPS across all the groups was 8.62 ± 2.92 months (range: 6 to 18 months).

Statistical analysis of Quality of Life measured by the mean scores of each of the eight domains in the SF-36 questionnaire form viz. physical functioning, physical role limitations, bodily pain, General health perception, Vitality, social functioning, emotional role limitations and mental health at 1 week, 4 weeks, 12 weeks follow-up, indicates a significant increase in QoL in all domains.

V. CONCLUSION

The primary aim of our study was to assess the impact of intercostobrachial nerve block on the quality of life of patients suffering from Post-mastectomy Pain Syndrome. The data collected from the study indicates a significant increase in QoL across all domains of Physical and mental health.

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Nil.

Conflicts of interest

There are no conflicts of interest

REFERENCES:

- 1) El-Sayed No, Ali Zh. Effect of counseling intervention post mastectomy for women undergoing adjuvant chemotherapy on their quality of life. The Medical Journal of Cairo University. 2011;79(2).
- 2) Narod SA, Iqbal J, Miller AB. Why have breast cancer mortality rates declined? J Cancer Policy. 2015;5:8-17.
- 3) Ramesh NK, Bhatnagar S. Phantom breast syndrome. Indian journal of palliative care. 2009 Jul;15(2):103.
- 4) Tasmuth T, Smitten KV, Hietanen P, Kataja M, Kalso E. Pain and other symptoms after different treatment modalities of breast cancer. Annals of Oncology. 1995 May 1;6(5):453-9.
- 5) Stevens PE, Dibble SL, Miasowski C. Prevalence, characteristics, and impact of postmastectomy pain syndrome: an investigation of women's experiences. Pain. 1995 Apr 1;61(1):61-8.
- 6) [No authors listed]. Classification of chronic pain. Descriptions of chronic pain syndromes and definitions of pain terms. Prepared by the International Association for the Study of Pain, Subcommittee on Taxonomy. Pain Suppl. 1986; 3: S1-S226.55
- 7) Jung BF, Ahrendt GM, Oaklander AL, Dworkin RH. Neuropathic pain following breast cancer surgery: proposed classification and research update. Pain. 2003 Jul 1;104(1):1-3.
- 8) Vilholm OJ, Cold S, Rasmussen L, Sindrup SH. Effect of levetiracetam on the postmastectomy pain syndrome. European journal of neurology. 2008 Aug;15(8):851-7.
- 9) Smith WC, Bourne D, Squair J, Phillips DO, Chambers WA. A retrospective cohort study of post mastectomy pain syndrome. Pain. 1999 Oct 1;83(1):91-5.
- 10) Peintinger F, Reitsamer R, Stranzl H, Ralph G. Comparison of quality of life and arm complaints after axillary lymph node dissection vs sentinel lymph node biopsy in breast cancer patients. British Journal of Cancer. 2003 Aug 12;89(4):648.
- 11) Wijayasinghe N, Andersen KG, Kehlet H. Neural blockade for persistent pain after breast cancer surgery. Regional anesthesia and pain medicine. 2014 Jul 1;39(4):272-8.