



Prophylactic Bioimpedance Spectroscopy for Breast Cancer-Related Lymphedema



COHORT X

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Background/Significance

- In the United States alone, the annual cost of cancer-related lymphedema has been estimated at \$7 billion
- Costs of healthcare for breast cancer survivors estimated to be \$120,000 higher
- 112% higher annual out-of-pocket expenses and \$3,325 additional costs
- Early detection and diagnosis of lymphedema are critical for its optimal management, stages 0 and 1 are reversible, stages 2 and 3 are less responsive to treatment.
- Subclinical BCRL can be detected using BIS before, during, and after surgical procedures and chemoradiation therapy.
- BIS is an important modality that can be used to evaluate the effectiveness of clinical interventions and to manage pivotal outcomes in patients with BCRL

PICOT Question

- P: Patients ages 20 to 80 diagnosed with breast cancer who developed lymphedema.
- I: Prophylactic Bioimpedance Spectroscopy for Breast Cancer-Related Lymphedema
- C: Treatment of BCRL after diagnosis.
- O: Reduction of chronic BCRL.
- T: Six weeks.

10 Day Reflective

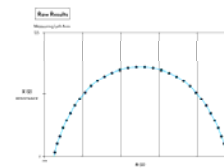
- Patient data was recorded for 10 days of practice and was organized by the nursing process that includes assessment, diagnosis, treatment/intervention, and follow-up.
- Performed a clinical needs assessment of my practice, reflected on my findings, and identified an opportunity to improve the care I currently provide
- Learned that I was not taking a sufficiently proactive approach to the early detection and prevention of acute and chronic BCRL.
- Need for an improved understanding of the prevention and management strategies that might be used to reduce the individual & public health burden of this disabling and distressing clinical issue
- Outpatient cancer center provides treatment for a high volume of breast cancer patients, made this a convenience sample for the QI project



Literature Review



- Early detection and diagnosis are critical components of the optimal management of BCRL.
- Stage 0 and 1 lymphedema are reversible, stages 2 and 3 are less responsive to treatment and may be irreversible
- Evident in patients who had undergone a mastectomy, ALND, regional node irradiation (RNI), or taxane-based chemotherapy who are at an increased risk of developing BCRL.
- BIS screening might be used as a standard approach to BCRL surveillance
- BIS provides benefits of precise identification and facilitates the early use of compression therapy
- BIS is considered a reliable and sensitive modality that can be used to detect early changes in interstitial fluid
- BIS can be used for early detection and intervention as L-Dex scores ≥ 6.5 above baseline clearly indicate subclinical (stage 0) lymphedema that can be managed with a four-week at-home intervention and follow-up



Impedance, Resistance, & Resistance Measured Data

Theoretical Framework

Lewin's Organizational Theory of Change



PDSA Cycle QI Model



Findings & Evaluation

