

THE UNIVERSITY OF KANSAS

CANCER CENTER

**Reducing Breast Cancer Related Lymphedema (BCRL) Through
Prospective Surveillance Monitoring Using Bioimpedance
Spectroscopy (BIS) and Patient Directed Self-Interventions**

Lyndsey Kilgore, MD
Department of Surgery, PGY4
University of Kansas Cancer Center
Lkilgore@kumc.edu
No Disclosures



Background

- Breast cancer related lymphedema (BCRL) is a chronic progressive disease that can result from nodal surgery for breast cancer
- BCRL rates have been reported between 20-40% in ALND pts
- BCRL has significant impact on patient quality of life and healthcare costs
- Bioimpedance spectroscopy (BIS) is a newer technology that directly measures tissue resistance to an electrical current to determine extracellular fluid volume
- BIS can be used to monitor subtle changes in pts to provide opportunity for early intervention and prevention of BCRL progression prior to development of clinical symptoms

Objectives

- Determine if prospective surveillance monitoring using BIS and patient directed self-interventions can reduce BCRL
- Identify patient and tumor characteristics that place patients at higher risk for development of BCRL

Methods

- 146 breast cancer patients with ALND from Nov 2014 to Dec 2017
- Baseline BIS measurements pre-operatively with serial post-op surveillance and ≥ 2 follow-up visits
- BIS of 2 standard deviations above baseline (10+points) defined BCRL
- Standardized at home conservative interventions including compression garment and patient directed self-massage for a period of 4-6 weeks for patients with BCRL diagnosis

Results

- 49/146 (34%) pts with BCRL
 - 40 (82%) had resolution of BCRL
- 9/146 (6%) had clinically persistent BCRL
- All 25 pts with subclinical BCRL resolved
- Only 2 (11%) pts with stage 1 had persistent BCRL
- No pts with stage 2 or stage 3 had resolution of BCRL

Results

- The majority of patients (89%) with persistent BCRL were obese compared to only 48% in the group where BCRL resolved
- Pts with persistent BCRL had significantly more positive lymph nodes on final surgical pathology
 - 8 (89%) had N2 or N3 disease
- 6/49 (13%) pts who developed lymphedema died secondary to breast cancer
- All 6 patients did not have resolution of their BCRL

Conclusions

- Early detection using BIS with easy patient self-directed interventions for early stage lymphedema can significantly improve patient outcomes and decreased the development of persistent BCRL
- Prospective surveillance programs focusing on comprehensive education, early identification and intervention that emphasizes compression garments and self-massage can have a high success rate for reducing persistent BCRL
- Persistent BCRL may be a negative predictor for survival