The importance of detection subclinical breast cancer-related lymphedema after axillary lymph node dissection; prospective observational study

**Objectives:** Evidence shows early detection and timely intervention demonstrate the greatest promise of reducing incidence of late-stage lymphedema (LE) in breast cancer patients undergoing axillary lymph node dissection (ALND). This study’s aims were: 1- to detect the incidence of subclinical LE in patients who underwent ALND and were prospectively monitored by bioimpedance spectroscopy (BIS), and 2-to evaluate the importance of monitoring and early intervention of subclinical LE.

**Methods:** Data on subclinical LE was prospectively collected through our LE monitoring program. This program tracks patients who had ALND from a baseline, using an L-Dex U400 measurement preoperatively, and at 3-6 month intervals. Patients diagnosed with subclinical LE received short-term physical therapy, over the counter compression garments, and were educated in regards to exercise, elevation, infection precautions, BMI and hand use.  Data was collected from 2010 on 114 patients who underwent ALND and were subsequently monitored with BIS.

**Results:** The mean age was 56 (27-90) years and the mean BMI was 28 (17-48) kg/m² in this cohort of patients. The majority of the women underwent mastectomy (65%), received chemotherapy (88%) and 75% of women received RT. Surgery side and dominant hand were concordant in 50% of the women. Since BIS monitoring began, a total of 30 out of 75 patients (40%) were diagnosed with subclinical LE and received early intervention. Progression to clinical lymphedema occurred in 7% (2/30) over an average of 19 (2-36) months follow-up. 44 patients had preoperative baseline L-Dex measurements, but had limited follow-up (0 or 1 L-Dex measurement). In the limited follow-up group the incidence of clinical LE was 32% (n=14).

**Conclusions:** Periodic monitoring of women at high risk for LE, with modern technology, helps early detection and timely intervention for LE, reduces clinical LE incidence from 32% to 7%. Although it was not the aim of this study it is obvious that reducing clinical LE is not only important for the quality of life of the patient but also reduces health care cost in this group of patients; this observation needs to be further studied.