Title:
Bilateral Leg Lymphoedema: Is Early Identification by Objective Measurements Possible

Abstract:
Over the last two decades early detection and with this, the possibility of early intervention, for lymphoedema (LO) has become more important. Traditionally early identification of unilateral limb LO, be it arm or leg, is facilitated by the presence of a normal limb acting as control. For patients undergoing pelvic lymph node dissection or radiotherapy, the early identification is limited as either, or both, limbs may change at varying degrees.

A number of methods for assessment such as circumference (CIRC), volume or bioimpedance spectroscopy (BIS) are dependent upon having a control limb for comparison. Suggested methods to overcome this have been comparison of a ratio of the ipsilateral arm and leg or with BIS, an intra-cellular and extra-cellular fluid ratio within each limb.

Data collected from a study to establish normal reference ranges (Box et al, 2003) was re- configured to determine ipsi-lateral arm/leg ratios for CIRC, volume (by calculation) and BIS. Data from a group of women previously diagnosed with bilateral leg LO who participated as a control group for an aquatic intervention study (Reul-Hirche H et al, 2009) has been compared to investigate the accuracy of these methods.

Given the diversity in the clinical presentation of bilateral leg LO, limitations have been identified for all methods. Further research is needed before one method can be recommended for the early identification of leg LO in patients with bilateral risk. Moving forward for this group of patients requires a multi-modal assessment to facilitate early clinical detection of limb changes.