Reporting limb edema: Importance of including paired measurements of affected and control limbs

Harvey N. Mayrovitz, PhD, College of Medical Sciences, Nova Southeastern University, Ft. Lauderdale, Florida, Nancy Sims, RN, Lymphedema Treatment Services, Ft. Lauderdale, Florida

Outcome assessments of treatments for limb edema depend on reporting progressive changes in affected limb volumes. A useful method for unilateral edema is to compare treated limbs with contralateral "normal" limbs for reference. In this way treatment progression can be expressed as changes in percentage edema (%edema) based on measurements made on both limbs prior to treatment and progressively until treatment ends. However, some clinics only measure normal limbs once (prior to treatment) and determine changes in edema with reference to this initial measurement. Our goal was to compare outcomes that would be reported using these two different approaches. Bilateral limb volumes were measured (tape measure) and tracked with limb volume software* in arms of 80 postmastectomy women (unilateral lymphedema) and in 55 persons with unilateral leg edema. All had received 10 CDP treatments. When only initial control limb volumes were used as reference, the reduction in arm %edema was overestimated at 48.6%+/-4.1 as compared to 36.6%+/-3.6, $p<0.01$ if control limbs were included for each %edema determination. Similar overestimation patterns were found for leg measurements, with corresponding reductions in %edema of 78.3%+/-9.4 vs. 56.1%+/-8.5,$p<0.001$. Results suggest that significant reporting errors may arise if multiple control limb measurements are not included.

*LimbVolumes®, www.limbvolumes.org