ABSTRACT

Local skin cooling as an aid to the management of patients with breast cancer related lymphedema and fibrosis of the arm or breast.

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Based on preliminary observations that topical cooling appeared to soften lymphedematous and fibrotic tissue, our goal was to systematically and quantitatively evaluate this effect. For this purpose, topical cooling was used as part of treatment of lymphedematous and fibrotic skin of women with breast cancer related lymphedema (BCRL) and localized fibrosis. Skin tissue hardness was assessed via the force required to indent skin to 4 mm (F4.0) and 1.3 mm (F1.3) and skin water was assessed by measurements of tissue dielectric constant (TDC). Measurements were done before cooling, after cooling, and after a single treatment session in 20 women with arm involvement and in 12 women with breast involvement. Pre-cooled arm and breast skin temperatures (mean ± SD) of 32.4 ± 1.4 °C and 33.8 ± 1.0 °C were reduced to 23.7 ± 2.0 °C and 24.7 ± 1.6 °C respectively via application of cold washcloths. Cooling was associated with a significant (p<0.001) decrease in F4.0 and F1.3 at arm and breast sites. At arm sites, force reductions ranged from 24% to 28% depending on indentation depth. Although the precise mechanism linking cooling to softening is as yet not fully understood, the fact that tissue is softened carries with it many potential benefits to patient and therapist. The near immediate tissue softening is associated with less pressure on underlying nerve endings and less input to sensory nerves thereby interrupting the pain cycle resulting in rapid pain relief. The rapidly softened tissue and decrease perception of pain offers the patient hope and encouragement in their therapeutic journey to reclaiming functional use of their affected body. Further, because softer tissue becomes more pliable, myofascial lengthening, scar tissue releasing, and other aspects of treatment are easier to perform thereby reducing treatment time and effort while achieving improved functional mobility.

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Dear Jean Yzer,

It is my pleasure to inform you that both your abstract submission, Local skin cooling to help manage breast cancer related lymphedema and fibrosis of the arm or breast has been accepted, and we invite you to present your abstracts during our symposium. If you’d like to accept, please reply to me no later than Monday, April 9 2018. Abstracts will be presented on Saturday 4/28, from 12:00 – 1:00 pm in the main cinema of Ida Noyes Hall