

## Interventions for Lower-Extremity Lymphedema

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### Clinical Question

Which interventions for lower-extremity lymphedema are effective?

### Evidence-Based Answer

Complete decongestive physiotherapy (i.e., a noninvasive protocol consisting of skin care, lymph drainage massage, exercises, and compression bandaging<sup>1</sup>) effectively improves edema, rates of infection, and quality of life in patients with lower-extremity lymphedema. (Strength of Recommendation [SOR]: B, based on prospective cohort studies.) Microsurgery may be effective for patients in whom complete decongestive physiotherapy is ineffective. (SOR: C, based on a systematic review of case series.) There is insufficient evidence about the safety and effectiveness of oral benzopyrones to determine whether they are useful for the treatment of lymphedema. (SOR: A, based on a systematic review.)

### Evidence Summary

#### COMPLETE DECONGESTIVE PHYSIOTHERAPY

A prospective cohort study evaluated 150 patients with primary or secondary unilateral lower-extremity lymphedema who underwent complete decongestive physiotherapy.<sup>1</sup> The initial treatment phase consisted of daily physiotherapy for an average of 15 days, and the maintenance phase consisted of self-treatment for 12 months. Limb volume was reduced by an average of 68% after the treatment phase ( $P < .05$ ), and these reductions were maintained during the maintenance phase (volume reduction of 66% at six months and 65% at 12 months;  $P < .05$ ).

Another prospective cohort study evaluated the effectiveness of decongestive physiotherapy in 57 patients with gynecologic cancer who had unilateral lower-extremity

edema secondary to chemotherapy, radiation, and surgery.<sup>2</sup> Treatment consisted of daily structured decongestive physiotherapy for two to four weeks, followed by a maintenance phase consisting of self-care. The volume differences between the abnormal and normal leg decreased from 56% at baseline to 32% at one month ( $P < .05$ ). Responses from the SF-36 Health Survey, a validated quality-of-life assessment tool, demonstrated a 4% to 6% absolute improvement in physical function ( $P = .043$ ), social function ( $P = .013$ ), and mental health ( $P = .005$ ) at one month.

#### MICROSURGERY

A systematic review of surgical options for lymphedema found one prospective study ( $n = 42$ ) and four retrospective case series ( $n = 1,972$ ) evaluating lymphatic reconstructive procedures for lower-extremity edema.<sup>3</sup> Three studies ( $n = 1,894$ ) reported volume reductions of 42% to 59%. One small study measuring postoperative limb circumference ( $n = 9$ ) found reductions of more than 5 cm in six patients and no effect in three. One study ( $n = 111$ ) reported an average volume loss of 872 mL. Follow-up time ranged from 12 to 120 months in the four studies reporting this data. The authors of the systematic review emphasized that these procedures did not eliminate the need for ongoing conventional therapy, including compression, for long-term maintenance of benefits.

#### BENZOPYRONES

A Cochrane review analyzed 15 randomized controlled trials in which various benzopyrones were tested against placebo in patients with lymphedema.<sup>4</sup> None of the studies of these medications had sufficient data or were of sufficient quality to be analyzed.

## Clinical Inquiries

### Recommendations from Others

The International Society of Lymphology recommends complete decongestive physiotherapy as first-line treatment for lymphedema and reserves microsurgery as an adjunct or alternative if physiotherapy is ineffective.<sup>5</sup> Meticulous skin care, range-of-motion exercises, and limb elevation are recommended for patients with no contraindications. Limb elevation and use of compressive garments may be helpful in some patients. Isolated massage and “wringing out” are potentially harmful and are not recommended. Diuretics should be used only in patients with specific comorbid conditions or complications. Long-term diuretic use is discouraged because of the potential for electrolyte imbalance. Treatment with benzopyrones or thermal therapy is not recommended because of unproven effectiveness and potential harms.

A 2009 primer on lymphedema management states that absolute contraindications to complete decongestive physiotherapy include acute infections, congestive heart failure, and deep venous thrombosis.<sup>6</sup> Relative contraindications include hypertension, diabetes mellitus, paralysis, and bronchial asthma.

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