

LETTER TO THE EDITOR

EFFICACY OF MANUAL LYMPHATIC DRAINAGE IN PREVENTING SECONDARY LYMPHEDEMA AFTER BREAST CANCER SURGERY

Dear Editor,

Concerning: Zimmerman A., Wozniowski M., Szklarska A., Lipowicz A., Szuba A: Efficacy of manual lymphatic drainage in preventing secondary lymphedema after breast cancer surgery. Lymphology 2012, 45, 103-112

We have read with great interest the article written by Zimmermann et al (1). The authors of this RCT concluded that manual lymph drainage (MLD) applied immediately after the surgery is effective to prevent breast cancer-related arm lymphoedema.

We do not agree with this conclusion for the following reasons:

1) To investigate the preventive effect of MLD on the development of arm lymphoedema, the primary outcome has to be incidence of objective arm lymphoedema. The authors did not report how many patients have developed arm lymphoedema in the group receiving preventive MLD and in the group not receiving preventive MLD at 6 months post-surgery and they did not report the statistical difference between both groups.

2) The power of the study is very low. They only included 67 breast cancer patients. Of this small sample size, half of the patients underwent a sentinel lymph node biopsy, which is associated with a very small risk to develop arm lymphoedema (2,3). The other half of the patients underwent an axillary lymph node dissection and is associated with 15% risk of development of arm lymphoedema at 6 months post-surgery (4). So, we

estimate that only 5 patients have developed objective arm lymphoedema at 6 months post-surgery. It is not possible to make conclusions on such a very small group that have developed arm lymphoedema.

We also have following additional remarks:

The authors state that professional-based therapies (such as MLD, pneumatic compression, laser therapy) result in greater arm volume reduction than self-performed therapies (such as garment wear, exercises and limb elevation). Furthermore, they state that application of MLD results in 25% additional volume reduction. To our knowledge, these statements are not correct. The first statement has never been examined. Concerning the second statement, 4 RCTs investigating the treatment effect of MLD mentioned an additional lymphoedema volume reduction of maximum 7% (5).

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4. Devoogdt, N, MR Christiaens, I Geraerts, et al: Effect of manual lymph drainage in addition to guidelines and exercise therapy on arm lymphoedema related to breast cancer: randomised controlled trial. *BMJ* 343 (2011), d5326.
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Author's response:

Dear Editor,

We would like to thank Dr. Devoogdt and colleagues for their careful reading, analysis, and thoughtful comments concerning our article and conclusions. However, we do not agree with their comments for the following reasons:

1. In our study we have compared average arm volumes and percent volume increase – a measurement of arm edema. The differences between operated and not operated sides were shown in *Table 2*. *Table 3* shows comparison between the studied groups using analysis of variance (ANOVA) and we believe that the statistical analysis is sufficient and correct. The result proves that prophylactic MLD prevents an increase in arm volume-lymphedema. Three months after surgery the incidence of lymphedema in the control group was: 9%-mild; 24%- medium and 9% - significant. 3% of mild arm edema only was noticed in the MLD group. Six months after surgery in the control group 35% of women had mild, 27% medium and 9% significant edema and importantly no arm lymphedema was found in the MLD group. The volume difference between the upper limbs from 5% to 10% was

recognized as mild lymphedema, from 10% to 20% as moderate lymphedema, and above 20% as substantial lymphedema. Values below 5% were defined as the absence of edema (as explained in the manuscript). We did not include these data in the original paper because we thought that the most important finding is prevention of arm volume increase. However, the issue of when the volume increase is sufficient to call it lymphedema is debatable. We do not agree that cutoff point of 200ml increase in arm volume is necessary to diagnose lymphedema. In fact a much smaller increase in hand volume may cause significant impairment and loss of function.

2. Although this was a pilot study, the sample size was not too small for statistical analysis. The study groups did not differ by age, BMI, WHR, treatment, and stage of breast cancer – all factors that can influence the outcome. We agree that sentinel lymph node dissection (SLND) carries a smaller risk of lymphedema (6%), however the groups did not differ by the number of such patients. In fact the MLD group included fewer women with SLND than the control group 42% vs. 53%.

3. Our statement on effectiveness of different therapies was based on the review by Moseley et al (1). Moseley analyzed 43 studies on conservative therapies of lymphedema. Of course, study selection and new published studies may lead to different conclusions.

REFERENCE

1. Moseley, AL, CJ Carati, NB Piller: A systematic review of common conservative therapies for arm lymphoedema secondary to breast cancer treatment. *Ann. Oncol.* 18 (2007), 639-646.

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