

IS THERE A LINK BETWEEN LE TREATMENT AND BREAST CANCER REOCCURENCE?

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The treatment of lymphoedema encompasses many modalities, from bandaging, compression garments, intermittent compression therapy (ICT), low level laser, a range of vibration-based and a range of manual lymphatic drainage (MLD) strategies, self/partner massage, exercise and activity, all generally forming part of what is often called complex physical therapy.

Many of the treatments, including MLD, compression devices and low level laser are known to increase lymph flow from and through the affected extremity (Williams, 2010; Lacomba et al, 2010; Bridenbaugh et al, 2003). However, there are occasional rumours that these lymph flow enhancing treatments can spread cancer cells and contribute to disease progression. For MLD (which is evidenced to strongly facilitate lymph flow [Williams, 2010]), it is clear that there are no indications of disease progression (Godette et al, 2006), and no real reason to withhold lymph flow enhancing treatments, even when there is loco regional tumour, on the assumption of an adverse outcome (Pinell et al, 2008). Without going into the detail, one of the key necessities for a metastatic spread is the presence

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of a suitable microenvironment for the tumour cells (if they escape from the site of the primary tumour through the action of a lymphoedema treatment into the venous or lymphatic system), rather than changes in rates of movement through

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variation in flow or pressure (Ruitler et al, 2001). It is tumour biology rather than host anatomy which is the key factor in tumour metastasis (Godette, 2006)

In the Lymphoedema Assessment Clinic at Flinders Medical Centre, the majority of patients are treated with a combination of low level laser and MLD.

To determine if there is any relationship between these treatments which are aimed at facilitating lymph flow and cancer re-occurrence rates, the authors undertook an analysis of this group of patients.

The hypothesis was that lymphoedema treatment is not a significant factor in the re-occurrence of breast cancer. Ethics permission from Southern Adelaide Health Service/Flinders University human research ethics committee was obtained to conduct the audit.

The primary data was collected as medical records for patients of the Flinders Breast Cancer Unit and Lymphoedema Assessment Clinic. This data consisted of a breast cancer diary in hard copy from 2000 to 2004 (947 records), then in electronic copy from 2005 to 2010 (687 records), totalling 1536 patients. The data contained all necessary bio-data regarding the patients. An electronic database was maintained for lymphoedema patients from 1994–2008 (131 relevant records). These data include detailed medical records.

A cancer re-occurrence diary was kept manually by the breast nurse in hard copy only from 2000–2010 (170 records).

From these heterogeneous data, records of treatment for breast cancer between 2000 and 2008 for 1298 individual patients, of whom 52 had treatment for lymphoedema, were extracted, as well as the records of cancer re-occurrence dated between 2000 and 2010 (*Table 1*).

To undertake the analysis, the date of diagnosis of cancer, site of cancer, date of diagnosis of clinically manifest lymphoedema, and whether they had treatment for their lymphoedema were recorded.

Results

All data were aggregated and summarised using MS Access 2007. The totals were copied to MS Excel 2007 and straightforward arithmetic used to calculate the proportions of the three groups.

Table 1

Data

	00	01	02	03	04	05	06	07	08	09	10	Total
Breast cancer patients	136	119	126	144	113	176	167	159	158			1298
Lymphoedema treatment	15	5	8	4	4	6	6	1	3			52
Patients with re-occurrence of cancer	1	3	5	1	2	7	8	2	8	11	3	51
Patients with re-occurrence of cancer who had lymphoedema treatment		1	1			1						3

To test whether there was a significant difference between the proportion of patients who underwent lymphoedema treatment against those who did not, a two-tailed statistical test with a confidence level of 99% was made (Table 2 and 3). The results show that there is no significant difference between the proportions of

cancer re-occurrence in both groups (i.e. the proportion of re-occurrence of cancer is about the same).

Discussion

While the sample of relevant patients treated for lymphoedema and who met the other admission criteria is relatively small, the authors' analysis indicates no statistically significant difference in cancer re-occurrence rates for those treated for their lymphoedema compared to those who received no treatment. Given that the backbone of treatment (and criteria for entry into the analysis) revolves around multiple low level laser and professionally of self-administered MLD treatments, this finding can perhaps put those worrying about these lymphatic flow stimulating events and their impact on cancer metastasis at rest.

As with many studies, the outcome of a given individual cannot be predicted in terms of metastatic spread. However, it would certainly not be wise to treat over an active cancer.

Conclusion

Treatment of lymphoedema consisting primarily of low level laser and MLD does not impact on cancer re-occurrence rates.

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Table 2

Ratio of re-occurrence

All patients	51/1298	0.03929
Without lymphoedema	48/(1298–52)	0.03852
With lymphoedema treatment	3/52	0.05769

Table 3

Comparison of patients with lymphoedema treatment versus those without

Confidence value	0.03929
z-value	0.0334
1-tail test	63.10%
2-tail test	26.20%

Key points

- » Lymphoedema treatment does not increase cancer re-occurrence rates.
- » Lymphoedema treatment is a planned sequence involving low level laser, MLD, activity and skin care.
- » The reluctance to use techniques and strategies which increase lymph flow should be reviewed.