

*SPECIAL REPORT*

**PREVENTION OF DERMATOLYMPHANGIOADENITIS  
BY COMBINED PHYSIOTHERAPY OF THE SWOLLEN ARM AFTER  
TREATMENT FOR BREAST CANCER**

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During the past 16 years, the Földiklinik has treated several thousand patients for arm lymphedema following treatment of breast cancer. In the course of managing these patients, we observed that independent of either the stage of lymphedema\* or the size of the limb, the patients who had recurring arm dermatolymphangioadenitis (DLA) (also termed cellulitis/lymphangitis) usually became free of DLA attacks in the absence of coexistent skin changes (fungal infections, lymph cysts, lymphocutaneous fistulae, varicose cutaneous lymphatics especially in the antecubital fossa, psoriasis, and neurodermatitis). We regarded these complicating factors of the integument as "DLA risk factors."

To quantify these clinical impressions, we reviewed the medical records between 1990-1994 of women with arm lymphedema after treatment of breast cancer who did not have cancer relapse, had had at least three episodes of DLA before treatment with combined physiotherapy (CPT) at the Földiklinik

and follow-up was at least two years after "phase I" or the intensive treatment period of CPT (1). Arm volumes were determined serially by circumferential measurements (the truncated cone method) (2). No prophylactic antibiotic drugs were administered. The data were statistically analyzed by the Mantel-Haenszel test for linear associations, by the t-test for paired samples, and by analysis of variance.

One hundred fifty (150) women fulfilled the criteria and were entered into the study. Of these, 95 women or 63.3% had no further episodes of DLA (group I); 38 women or 25.3% had one recurrent episode of DLA (group II); and 17 or 11.3% had three or more episodes of DLA. Fifty-nine (59) women or 39.3% had DLA risk factors as described earlier. Of these, 46 patients or 77.9% had episodes of DLA despite CPT, whereas in the 91 patients without risk factors, only 9 or 9.8% had DLA attacks. Of the 59 patients with DLA risk factors, 19 or 20% were in group I, 24 or 64% were in group II, and 16 or 94% were in group III. The increasing frequency of "risk factors" in groups II and III was statistically significant ( $p < 0.0000$ ). Patients in group II and III initially had significantly greater arm volumes (i.e., edema) than those in group I. Intensive (phase I) CPT treatment consistently reduced

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\*Stage one (reversibility): swelling is characterized by accumulation of high-protein edema fluid without trophic skin changes. Stage two (spontaneous irreversibility): swelling is characterized by accumulation of high-protein edema fluid with proliferation of connective and adipose tissue. Stage three: marked trophic skin changes or elephantiasis.

**TABLE 1**  
**Arm Edema ( $\pm$ SD) Before and After Combined Physiotherapy (CPT)**

Group	Before	Edema volume (ml)	
		Phase I	Phase II
I (n=95)	870 $\pm$ 450	512 $\pm$ 2190	509 $\pm$ 310
II (n=38)	1200 $\pm$ 561	659 $\pm$ 390	880 $\pm$ 456
III (n=17)	1112 $\pm$ 461	601 $\pm$ 258	974 $\pm$ 432

arm volumes in each group; however, whereas there was no relapse of arm edema in group I patients, there was a notable relapse of arm edema in groups II and III patients (see Table 1).

Recurring DLA is a debilitating complication of arm lymphedema after treatment of breast cancer and contributes to progression of the edema. There are an array of confusing terminologies to describe the acute inflammatory condition characterized by chills, fever, redness and heat and these include "cellulitis," "lymphangitis," and "erysipelas." We prefer the term DLA as suggested by Olszewski and Jamal (3).

From these data, we conclude that in women with arm lymphedema after treatment of breast cancer, recurrent DLA attacks can nearly be eliminated by improvement in arm swelling by CPT (phase I). If these women are free of skin risk factors (psoriasis, neurodermatitis, varicose lymphatics, lymph fistulae and/or fungal overgrowth), continued CPT (phase II) maintains reduction of edema (decongestion) and prevents further DLA episodes. On the other hand, if risk factors of the skin are present (see above) edema tends to recur gradually and susceptibility to DLA attacks persist. In these latter women, a long-term program of antibiotic drug therapy is probably warranted.

#### REFERENCES

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