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Research Article

**ANALYSIS OF CANCER-ASSOCIATED SECONDARY  
LYMPHOEDEMA IN LOCAL POPULATION**Dr Musarat Jehan Baloch<sup>1</sup>, Dr Naila Jabeen<sup>2</sup>, Dr Ruby<sup>3</sup>, Dr Adina Anwar<sup>4</sup><sup>1</sup>Liaquat University Hospital, Hyderabad<sup>2</sup>Lecturer Radiology Department, DUHS<sup>3</sup>Chief Medical Officer Radiology Department Civil Hospital Karachi<sup>4</sup>Lecturer, Department Medical Education, DUHS**Abstract:**

**Introduction:** Lymphoedema is an oedematous condition with a specific and complex tissue biology. In the clinical context of cancer, the pathogenesis of lymphoedema ensues most typically from the modalities employed to stage and treat the cancer. **Objectives of the study:** The basic objective of the study is to analyse the cancer-associated secondary lymphoedema in local population. **Methodology of the study:** This descriptive study was conducted in Liaquat University Hospital, Hyderabad during January to July 2019 with the permission of ethical committee of hospital. The questionnaire was designed to collect information on the presence of upper body symptoms and self-reported arm swelling, using the same questions as in the original study described elsewhere. **Results:** Demographic and disease characteristics of the 158 women with complete outcome data (BIS and self-reported assessment of lymphedema) from the follow-up study were similar to the original Pulling through Study cohort. Prevalence of various upper body symptoms at the 6-year follow-up ranged from 7.4%–15.6%, with 19% of women reporting two or more moderate to severe symptoms. Generally, the prevalence of these symptoms declined between the baseline assessment at 6 months following breast cancer diagnosis and the follow-up study. **Conclusion:** It is concluded that lymphedema following cancer treatment continues to be a frequently reported morbidity. As patients continue to survive longer following cancer treatment it is important to carefully evaluate not only the symptoms of lymphedema, but also the impact on overall QOL and well-being.

**Key words:** Cancer, Associated, Life, Treatment, Lymphoedema

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**INTRODUCTION:**

Lymphoedema is an oedematous condition with a specific and complex tissue biology. In the clinical context of cancer, the pathogenesis of lymphoedema ensues most typically from the modalities employed to stage and treat the cancer (in particular, surgery and radiotherapy). Despite advances in cancer treatment, lifelong lymphoedema (limb swelling and the accompanying chronic inflammatory processes) affects approximately one in seven individuals treated for cancer, although estimates of lymphoedema prevalence following cancer treatment vary widely depending upon the diagnostic criteria used and the duration of follow-up [1].

Lymphedema is a significant health issue for cancer survivors. The condition can severely affect patients' health-related quality of life (HRQOL), a multidimensional construct that comprises items belonging to a number of domains, including emotional, functional, social/family, and physical domains [2]. Emotional well-being measures a person's coping ability and includes the person's perceptions of feelings ranging from joy to distress. Functional well-being identifies a person's ability to perform the activities of daily living, such as dressing, bathing, walking, and performing household tasks [3].

Social well-being includes feelings related to the quality and quantity of relationships with friends and family as well as wider social interactions. Physical well-being, the domain thought to be most affected by lymphedema, includes questions related to pain [4]. A large number of instruments have been developed to assess specific lymphedema symptoms. While these tools are useful in clinical practice, they do not encompass the physical well-being domain as it factors into overall HRQOL [5]. The natural history of cancer-associated lymphoedema is defined by increasing limb girth, fibrosis, inflammation, abnormal fat deposition and eventual marked cutaneous pathology, which also increases the risk of recurrent skin infections [6]. Lymphoedema can substantially affect the daily quality of life of patients, as, in addition to aesthetic concerns, it can cause discomfort and affect the ability to carry out daily tasks. Clinical diagnosis is dependent on comparison of the affected region with the equivalent region on the unaffected side and, if available, with pre-surgical measurements. Surveillance is indicated in this high-risk population to facilitate disease detection at the early stages, when therapeutic interventions are most effective [7].

**Objectives of the study**

The basic objective of the study is to analyse the cancer-associated secondary lymphoedema in local population.

**METHODOLOGY OF THE STUDY:**

This descriptive study was conducted in Liaquat University Hospital, Hyderabad during January to July 2019 with the permission of ethical committee of hospital. The questionnaire was designed to collect information on the presence of upper body symptoms and self-reported arm swelling, using the same questions as in the original study described elsewhere. At baseline assessment (6 months post-diagnosis), study participants completed a mailed, self-administered questionnaire on a range of demographic, treatment and general health characteristics. Lymphedema status was evaluated in the clinic using two objective measures, bio-impedance spectroscopy (BIS) and sum of arm circumferences (SOAC), and in the questionnaire by subjective account of self-reported arm swelling. Tumor characteristics were abstracted from histopathology reports at the Queensland Cancer Registry. Full details of the study design, outcome measures, and subsequent results have been published previously.

**Statistical analysis**

The data was collected and analysed using SPSS version 20.0. All the values were expressed in mean and standard deviation.

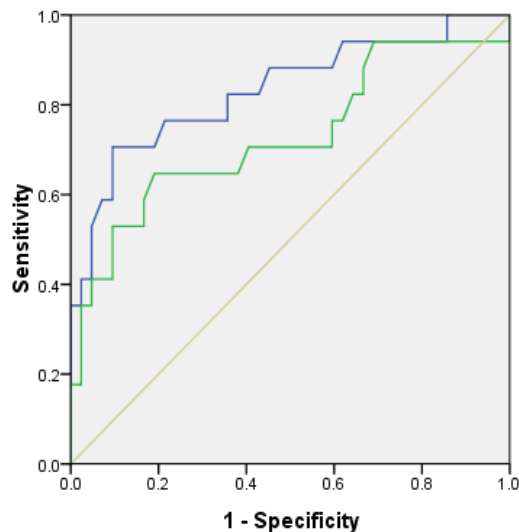
**RESULTS:**

Demographic and disease characteristics of the 158 women with complete outcome data (BIS and self-reported assessment of lymphedema) from the follow-up study were similar to the original Pulling through Study cohort. The additional 25 women with questionnaire information only ( $n=183$ ) did not alter this profile (data not shown). Similarly, the characteristics of the 190 women with sufficient data to determine cumulative burden of lymphedema between 6 and 18 months postdiagnosis, and therefore included in the survival analyses, were comparable to the initial research sample. Of note, the original cohort was shown to be representative of the wider Queensland breast cancer population. Prevalence of various upper body symptoms at the 6-year follow-up ranged from 7.4%–15.6%, with 19% of women reporting two or more moderate to severe symptoms. Generally, the prevalence of these symptoms declined between the baseline assessment at 6 months following breast cancer diagnosis and the follow-up study. This was, in part, due to somewhat lower prevalence reported at baseline by the participants in the follow-up study and, in part, due to modest but real declines in the proportions of women reporting symptoms. Numbness was the single symptom reported most frequently at both

time points, despite a reduction of almost 50% in prevalence.

**Table 01: Count (percent) of Women Reporting Moderate to Extreme Upper Body Symptoms at 6 Months**

Upper-body symptoms	6 Months Post diagnosis	
	Original sample (n=287) n (%)	Follow-up sample (n=183) n (%)
Tingling	40 (13.7)	20 (10.6)
Weakness	54 (18.6)	28 (14.8)
Pain	41 (14.3)	22 (12.2)
Poor range of movement	29 (10.1)	16 (8.9)
Numbness	86 (29.2)	53 (28.2)
Stiffness	42 (13.9)	23 (11.9)
<b>Number of symptoms</b>		
<b>0</b>	<b>148 (52.8)</b>	<b>103 (57.5)</b>
<b>1</b>	<b>59 (20.1)</b>	<b>36 (19.2)</b>
<b>2</b>	<b>25 (8.6)</b>	<b>16 (8.6)</b>
<b>3+</b>	<b>55 (18.5)</b>	<b>28 (14.6)</b>



**Figure 01: ROC curve of specificity and sensitivity**

### DISCUSSION:

Lymphedema is a significant health issue for cancer survivors. The condition can severely affect patients' health-related quality of life (HRQOL), a multidimensional construct that comprises items belonging to a number of domains, including emotional, functional, social/family, and physical domains [8]. Emotional well-being measures a person's coping ability and includes the person's perceptions of feelings ranging from joy to distress. Functional well-being identifies a person's ability to perform the activities of daily living, such as dressing, bathing, walking, and performing household tasks [4]. Social well-being includes feelings related to the quality and quantity of relationships with friends and family as well as wider social interactions. While these tools are useful in clinical practice, they do not encompass the

physical well-being domain as it factors into overall HRQOL [9].

QOL outcomes have been assessed in patients with various cancers who develop lymphedema and most frequently in breast cancer patients who have the condition. In 2013, Pusic and colleagues completed a systematic review of QOL outcomes in breast cancer survivors with lymphedema. The authors identified 39 studies that met the review's inclusion criteria. Seventeen different HRQOL instruments were used in the studies; the most commonly used instruments were the 36-item Medical Outcomes Survey–Short Form and the European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire, which measure overall QOL and do not include lymphedema-specific items [10]. However, the review identified 2 HRQOL instruments that were validated specifically for use

in women with breast cancer-related lymphedema: the Wesley Clinic Lymphedema Scale<sup>9</sup> and the Upper Limb Lymphedema-27 questionnaire. The review's findings indicated that exercise and complete decongestive therapy were associated with improved overall QOL in this patient population [11].

Functional well-being is much more frequently affected in patients with lower-extremity lymphedema than in those with upper-extremity lymphedema. In 1 study, 789 women with gynecological cancers were given questionnaires to determine the effect of lymphedema on functional well-being. Of the 616 women who returned completed surveys, 36% reported having lymphedema [12].

### CONCLUSION:

It is concluded that lymphedema following cancer treatment continues to be a frequently reported morbidity. As patients continue to survive longer following cancer treatment it is important to carefully evaluate not only the symptoms of lymphedema, but also the impact on overall QOL and well-being. Recent advances in the treatment of lymphedema include a more accurate genetic profile and more precise imaging of the lymphatics. As progress continues in the field, the ability to precisely identify patients at highest risk for developing lymphedema for targeted treatment.

### REFERENCES:

1. Beckjord EB, Reynolds KA, van Londen G, et al. Population-Level Trends in Post-Treatment Cancer Survivors' Concerns and Associated Receipt of Care: Results from the 2006 and 2010 LIVESTRONG Surveys. *Journal of psychosocial oncology*. 2013;125–151.
2. Cella DF, Tulsky DS, Gray G, et al. The Functional Assessment of Cancer Therapy scale: development and validation of the general measure. *J Clin Oncol*. 1993;11:570–579.
3. Armer JM, Henggeler MH, Brooks CW, Zagar EA, Homan S, Stewart BR. The Health Deviation of Post-Breast Cancer Lymphedema: Symptom Assessment and Impact on Self-Care Agency. *Self Care Depend Care Nurs*. 2008;16:14–21.
4. Carter J, Raviv L, Appollo K, Baser RE, Iasonos A, Barakat RR. A pilot study using the Gynecologic Cancer Lymphedema Questionnaire (GCLQ) as a clinical care tool to identify lower extremity lymphedema in gynecologic cancer survivors. *Gynecol Oncol*. 2010;117:317–323.
5. Armer JM, Radina ME, Porock D, Culbertson SD. Predicting breast cancer-related lymphedema using self-reported symptoms. *Nurs Res*. 2003;52:370–379.
6. Cella D, Nowinski CJ. Measuring quality of life in chronic illness: the functional assessment of chronic illness therapy measurement system. *Arch Phys Med Rehabil*. 2002;83:S10–17.
7. Pusic AL, Cemal Y, Albornoz C, et al. Quality of life among breast cancer patients with lymphedema: a systematic review of patient-reported outcome instruments and outcomes. *J Cancer Surviv*. 2013;7:83–92.
8. McWayne J, Heiney SP. Psychologic and social sequelae of secondary lymphedema: a review. *Cancer*. 2005;104:457–466.
9. Bulley C, Coutts F, Blyth C, et al. A Morbidity Screening Tool for identifying fatigue, pain, upper limb dysfunction and lymphedema after breast cancer treatment: A validity study. *Eur J Oncol Nurs*. 2014;18:218–227.
10. Dunberger G, Lindquist H, Waldenstrom AC, Nyberg T, Steineck G, Avall-Lundqvist E. Lower limb lymphedema in gynecological cancer survivors--effect on daily life functioning. *Support Care Cancer*. 2013;21:3063–3070.
11. Mortimer PS. The pathophysiology of lymphedema. *Cancer*. 1998;83:2798–2802.
12. Taylor MJ, Hoerauf A, Bockarie M. Lymphatic filariasis and onchocerciasis. *Lancet*. 2010;376:1175–1185.