

Implementing the Prospective Surveillance Model (PSM) of Rehabilitation for Breast Cancer Patients with 1-Year Post-Operative Follow Up, A Prospective Observational Study

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INTRODUCTION

- Breast cancer survivorship care must address a multitude of issues including surveillance for and treatment of morbidity associated with breast cancer treatment
- Upper extremity morbidity after breast cancer treatment includes lymphedema, range of motion restriction, axillary web syndrome, numbness, weakness and pain
- The Prospective Surveillance Model (PSM) of rehabilitation aims for early identification, treatment and support of physical impairments in the post-operative patient and to teach all patients health-promoting skills
- This is the first prospective, observational study of the PSM in post-operative breast cancer patients

OBJECTIVES

- Implement the PSM of rehabilitation in breast cancer patients who were prospectively followed for 1 year post-operatively
- Describe the incidence of upper extremity impairments over the first post-operative year
- Determine the impact of early rehabilitation intervention
- Describe the differences between patients that required rehabilitation intervention versus those that did not require intervention

METHODS

- 110 patients with stage 0-III BC were enrolled and eligible for this study conducted at a public, safety-net hospital
- All patients were educated about lymphedema, received a post-operative exercise regimen and were provided with a patient navigator
- Patients were evaluated pre-operatively and post-operatively at designated intervals by a physical therapist with subjective assessments (Upper Extremity Functional Index and Quick Disabilities of the Arm, Shoulder and Hand and Pain Score) and objective assessments
- Indications for individualized rehabilitation intervention: Lymphedema > 3%, increase in arm circumference by > 1 cm, shoulder range of motion decrease by 20°, significant pain or activity limitations

RESULTS

- 1/3 of patients had upper extremity limitations meeting defined criteria for intervention
- Most common reason for intervention was lymphedema, followed by decreased range of motion and pain
- 16 patients with lymphedema: very mild <5% (n=3), mild 5-10% (n=9), moderate 11-15% (n=2) and severe > 15% (n=2)
- Patients in the intervention group had greater number of axillary lymph nodes removed, greater extent of axillary surgery (p=0.033), more chemotherapy, higher breast cancer stage (p=0.018), more self-reported functional limitations and higher pain scores compared with those in the no-intervention group:

	Intervention Group (n=36)	No-intervention Group (n=74)	P-value
Mean # of lymph nodes removed	9.3	5.6	0.006
Chemotherapy (%)	24/36 (67)	30/74 (41)	0.01
Breast-conserving surgery (%)	20/36 (56)	51/73 (70)	0.154
Radiation (%)	27/36 (75)	47/73 (64)	0.264
Mean Age (years)	55.1	59.2	0.049
Mean BMI (kg/m ²)	34.5	32.6	0.277
Mean Upper Extremity Function Index (UEFI)	36	52	0.002
Mean Quick Disabilities of the Arm, Shoulder and Hand (QuickDASH) score	50	37	0.047
Mean Pain Score	5	3	0.028

RESULTS – Cont' d

BC Stage:	Total # patients	% requiring intervention
0	23	13
I	41	29
II	33	39
III	13	62

Type of axillary surgery:	# patients (%)
None	18 (16)
SLNB	60 (55)
ALND	32 (29)

CONCLUSIONS

- The Prospective Surveillance Model identified a significant proportion of patients with with early stage lymphedema and other upper extremity limitations warranting early rehabilitation intervention
- Early rehabilitation intervention may decrease morbidity of treatment
- Clinicians should have heightened awareness for rehabilitation referral in patients with greater axillary surgery and higher burden of disease
- Patient-reported functional assessment scores (UEFI, QuickDASH and Pain Score) correlated with the objective assessments utilized to identify patients with upper extremity limitations
- Future studies should focus on implementing a screening tool for the early identification of patients with functional limitations in need of rehabilitation intervention

AFFILIATIONS

