The impact of optimism and coping on the experience of side effects of adjuvant chemotherapy in women with early-stage breast cancer

Keri Cronin, MD; Julie Fasano, MD; Charles Shapiro, MD; Guy Montgomery, PhD; Julie, Schnur, PhD; Amy Tiersten, MD; Aarti Bhardwaj, MD; Hanna Irie, MD, PhD; Paula Klein, MD; Anupama Goel, MD; Tianxiang Sheng, Theresa Shao, MD
Tisch Cancer Center, Mount Sinai Hospital, New York, NY
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Mount Sinai Tisch Cancer Center

Icahn School of Medicine at Mount Sinai

Background

- Adjuvant chemotherapy for early-stage breast cancer is associated with numerous side effects which may lead to early discontinuation.
- Psychosocial variables may influence how patients experience and tolerate these side effects.

Purpose

- This study aimed to evaluate whether psychosocial factors are associated with chemotherapy-related side effects.

Methods

- Prospective study of women with stage I–III breast cancer receiving standard neoadjuvant or adjuvant chemotherapy
- Questionnaires prior to treatment: the Revised Life Orientation Test (LOT-R), NEO-Five Factor Inventory Neuroticism Scale (NEO-N), Connor-Davidson Resilience Scale 10 (CD-RISC 10), and Brief COPE (B-COPE).
- PRO-CTCAE v1 and PROMIS surveys completed at baseline, during chemotherapy, end of treatment, and one year post-therapy.

Primary Objectives

- Test whether optimism has a longitudinal effect on symptom experience.

Secondary Objectives

- Investigate whether coping moderates the relationship between optimism and side effects.
- Identify potential risk factors for poorer tolerance and targets for behavioral intervention.
- Examine the mechanism through which optimism might influence symptom perception.

Results

Race		
	Asian	10.3%
	Black	24.3%
	Hispanic	18.7%
	White	37.3%
	Other	9.3%
Age		
	51 (range 42-58)	

Table 1. Patient demographics.

Treatment	Number of Patients
Adriamycin based therapy (AC-T, AC-THP, AC-TC, AC)	54
CMF	5
DC	13
DCarboHP	21
TCH	4
TH	5
Atezolizumab/ paclitaxel	1
AC-TC plus pembro	1

Table 2. Patient treatment regimens.

Predictor	Baseline	Midway	End	1 Year
Optimism (LOT-R)	-0.029 (-0.064, 0.006)	-0.012 (-0.048, 0.024)	-0.001 (-0.036, 0.034)	-0.020 (-0.059, 0.019)
Coping (Brief COPE)	0.013 (0.000, 0.027)*	0.007 (-0.006, 0.021)	-0.011 (-0.034, 0.013)	0.005 (-0.011, 0.021)
Resilience	-0.007 (-0.031, 0.016)	-0.001 (-0.025, 0.022)	-0.011 (-0.034, 0.013)	0.002 (-0.028, 0.031)

Table 3. Outcome Symptom Score. Higher optimism is modestly associated with lower symptom scores. Greater use of coping strategies is significantly associated with higher symptom burden. Compared to baseline, symptom scores were significantly higher at end of chemotherapy.

Results

- Symptom scores increased significantly by the end of chemotherapy (Estimate = 0.49, $p < 0.01$).
- Higher optimism was associated with lower symptom burden (Estimate = –0.03, $p = 0.05$).
- Resilience was not significantly associated with symptom scores.

Conclusions

- Patients with higher optimism experienced fewer chemotherapy-related side effects
- Higher symptom burden was associated with increased utilization of coping maneuvers

Future Interventions:

1. Develop brief, optimism and coping focused behavioral interventions
2. Implement early psychosocial screening

References: