#PS4-11-13 - Psychosocial Determinants in Patients With Early Breast Cancer Undergoing Neoadjuvant Therapy: Initial Results from a Prospective Study

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San Antonio Breast Cancer Symposium - December 9-12, 2025

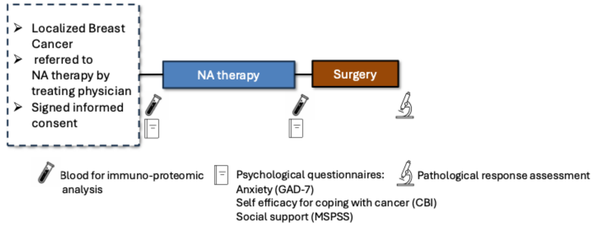
Background

- The use of neoadjuvant therapy (NAT) for early-stage breast cancer has increased significantly in recent years.
- Emerging evidence suggests a link between psychological factors, such as anxiety and depression, and tumor behavior, potentially mediated by the immune microenvironment.
- While previous studies have demonstrated an association between emotional distress and treatment response in patients with metastatic cancer, data in the early breast cancer setting remain limited.
- We are conducting a prospective study to examine the relationships between psychosocial factors, immunological biomarkers, and response to NAT in patients with early breast cancer **(Figure 1)**
- **Here, we present our preliminary findings on the psychosocial characteristics of this patient population.**

Methods

- Patients with early-stage breast cancer who were referred for neoadjuvant chemotherapy with or without biological therapy at a single large academic institution were eligible for the study.
- Eligible NAT regimens included ddACT, TCHP, ddACTHP, and the KEYNOTE-522 protocol (TCAC + pembrolizumab).
- After signing informed consent, and prior to administration of the first treatment, blood samples were collected for immuno-proteomic analysis. On the same day, patients completed psychological questionnaires assessing anxiety (GAD-7), self-efficacy in coping with cancer (Cancer Behavior Inventory), social support (MSPSS), and socio-demographic characteristics **(Figure 1).**
- Clinical characteristics of the patients, their tumors and treatments received were extracted from the EMR.
- Chemotherapy relative dose intensity was calculated using the Hryniuk method.
- Statistical analysis - Associations between psychosocial factors, Clinicopathological and demographic characteristics, and treatment related factors were examined using Mann-Whitney U tests for continues variable and Pearson correlations for categorial variables. All analyses were performed using SPSS (version 29).

Figure 1. prospective study to examine the relationships between psychosocial factors, immunological biomarkers, and response to NAT in patients with early breast cancer



Results

Table 1. Clinicopathological and demographic characteristics of the study population

Variable	Category	n(%)
N=40		
Age	Median (IQR)	49 (38.5-64.5)
	> 50	21 (53%)
	≤ 50	19 (47%)
Breast Cancer Subtype	ER+HER2-	8(20%)
	ER+HER2+	7 (17.5%)
	ER-HER2+	8 (20.%)
	TN	17 (42.5%)
Tumor size	< 2cm	7 (17.5%)
	≥ 2cm	33 (82.5%)
Lymph nodes	N0	14 (35%)
	N positive	26 (65%)
NA treatment	ddACT	10 (25%)
	KN522	15 (37.5%)
	TCHP	15 (37.5%)
pCR	Yes	21 (72.4%)
	No	8 (27.6%)
Relationship	Yes	26 (65%)
	No	14 (35%)
Employment	Employed	29 (72.5%)
	Unemployed	11 (27.5%)
Education	≥ 15	27 (69.2%)
	< 15	12 (30.8%)
Income	Above average	19 (47.5%)
	Below average	21 (52.5%)
Anxiety	Median (IQR)	5.5 (4-10.75)
	No/Mild	29 (72.5%)
	Moderate/Severe	11 (27.5%)
self-efficacy in coping with cancer	Median (IQR)	83.5 (68.25-92.75)
Social support	Median (IQR)	6.5 (5.58-7)

Table 2. Univariate analysis of demographic characteristics and psychosocial determinants . * *p*<0.05.

Predictor	Category	Anxiety		Self-efficacy		Social support	
		Median (IQR)	p	Median (IQR)	p	Median (IQR)	p
Relationship	No	7.5 (4.25-14.25)	.048*	81 (52.75-90.75)	.05*	6.08 (5.08-6.85)	.036*
	Yes	5 (3.75-8.25)		87 (72-94.25)		6.71 (6.08-7.00)	
Employment	Unemployed	5 (4-7)	.654	60 (49-86)	.007*	6.42 (5.25-6.92)	.157
	Employed	6 (3.5-11.5)		88 (76.5-94.5)		6.75 (5.83-7.00)	
Education	< 15	5.5 (3.5-12)	.845	79.5 (61.75-94.75)	.893	6.38 (5.29-7.00)	.822
	≥ 15	7 (4-11)		83 (76-91)		6.58 (5.83-7.00)	
Income	Similar or above average	5 (3-9)	.145	90 (77-95)	.032*	6.83 (5.50-7.00)	.830
	Below average	7 (5-11.5)		81 (59.5-90)		6.42 (5.63-7.00)	

Figure 2. Association between psychosocial determinants, dose reductions and chemotherapy relative dose intensity.

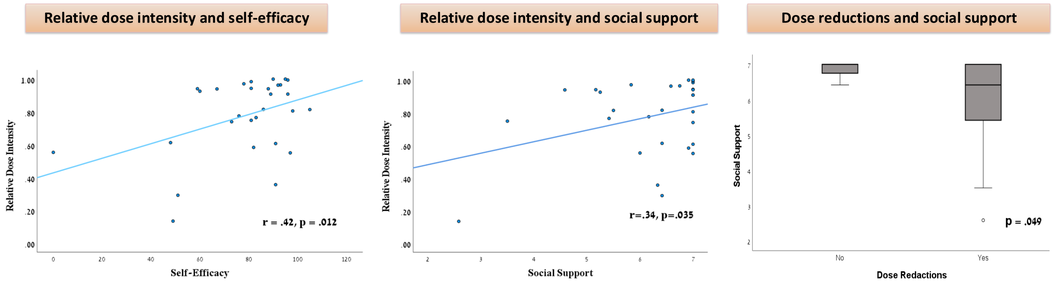
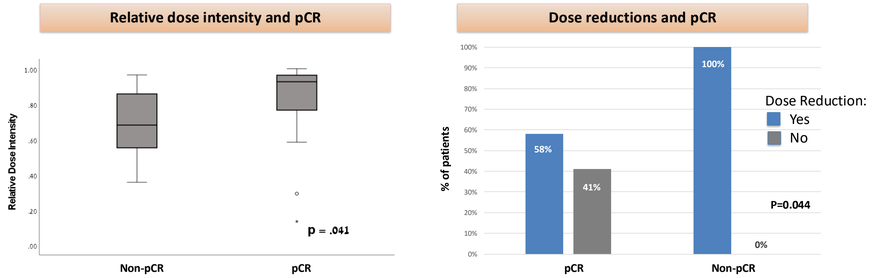
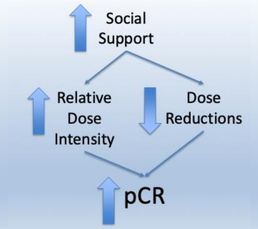


Figure 3. Association between dose reductions, chemotherapy relative dose intensity and pCR.



Conclusions

- Moderate to high anxiety was reported by approximately one-quarter of patients with early breast cancer prior to starting NAT.
- Being in a relationship was associated with lower anxiety, higher self-efficacy, and greater perceived social support.
- Higher perceived social support was significantly associated with higher chemotherapy relative dose intensity and reduced dose reductions rate , which in turn was associated with higher pCR rates.
- The study is ongoing, and additional data are needed to further explore the associations between psychosocial factors, immunological biomarkers, and response to NAT.



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