Symptom trajectories using remote symptom monitoring across treatment type and stage among patients with breast cancer

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Background

- Patients with breast cancer receiving cancer treatment may endure an array of symptoms negatively impacting their health and treatment adherence.
- Remote symptom monitoring (RSM) using patient reported outcomes allow for real-time reporting of symptoms from patients, enabling earlier identification and intervention for worsening conditions.
- A better understanding of treatment trajectories may allow for more effective symptoms interventions.

Objectives

- Assess 3-month pain, gastrointestinal, respiratory, and urinary symptom trajectories by treatment type and stage.

Methods

Design and Participants

Design:

- A secondary analysis of data from a hybrid, type 2 single-arm trial of a navigator-supported RSM program.

Participants:

- Patients with breast cancer receiving chemotherapy, immunotherapy or targeted therapy at the University of Alabama at Birmingham from May 2021-May 2024.
- Patients with at least one survey per month for three months were included.

Exposures and Outcomes

Exposure:

- Stage was defined as early (stages I-III) and metastatic (stage IV).
- Treatments were categorized as chemotherapy or targeted/immunotherapy.

Outcomes:

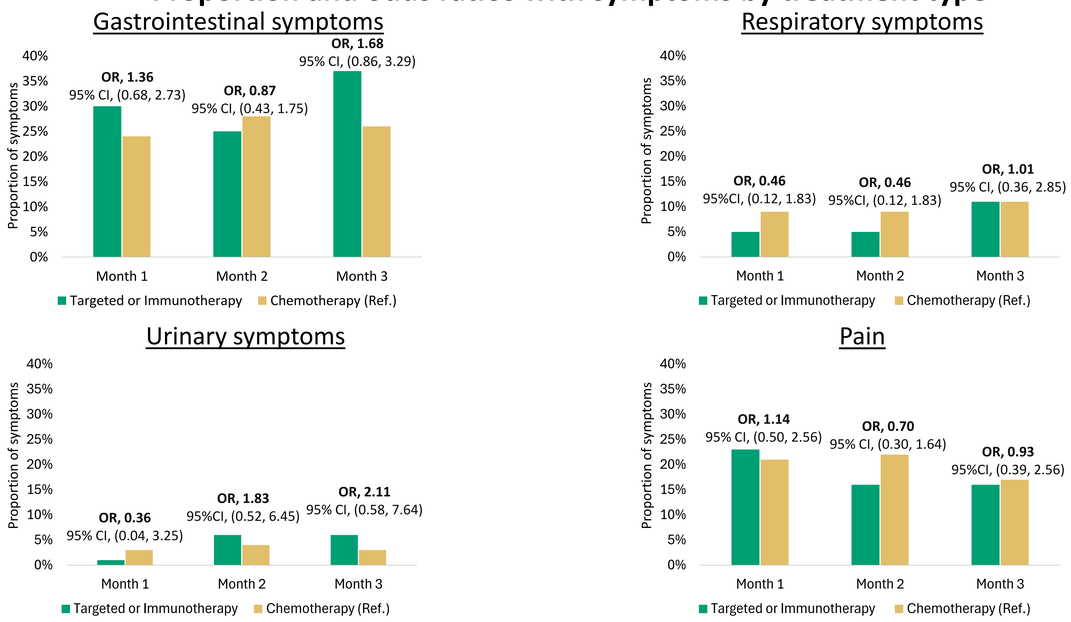
- Pain, gastrointestinal, respiratory, and urinary symptoms were reported via weekly surveys. We then aggregated these as any severe symptom per month for 3 months.
- Symptoms were categorized as moderate or severe using the PRO-CTACAE grading tool.

Statistical Analysis

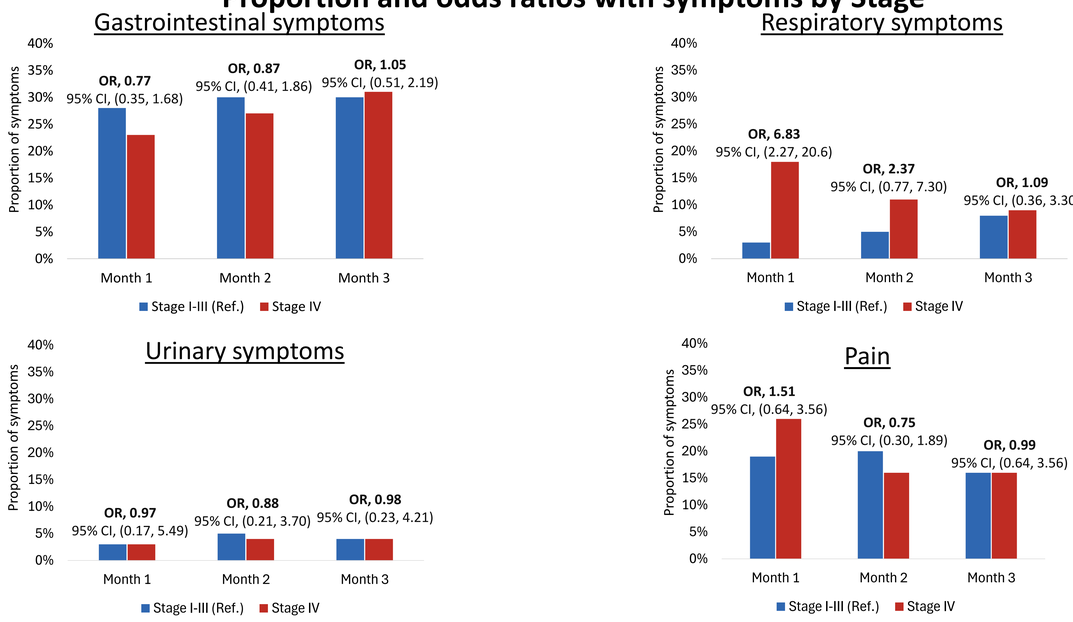
- Generalized linear mixed-effect models estimated associations between 3-month symptom trajectories by treatment type and stage.
- Adjusted for age at treatment initiation, race, and comorbidity status, and included an interaction term for time and treatment or stage.

Symptom trajectories in the first three months of treatment varied by time, treatment type, and stage

Proportion and odds ratios with symptoms by treatment type



Proportion and odds ratios with symptoms by Stage



Results

Table 1. Patient and clinical characteristics (N=292)

	Frequency (%)
Age at enrollment (years)	
Median, IQR	56 (45-66)
Race and Ethnicity	
White	186 (54)
Non- White	106 (36)
Elixhauser comorbidity index	
0-1	61 (22)
2-3	133 (48)
4+	82 (30)
Stage	
I	88 (30)
II	88 (30)
III	44 (15)
IV	70 (24)
Treatment type	
Targeted or Immunotherapy	74 (25)
Chemotherapy	218 (75)

Conclusions

- These preliminary analyses demonstrate the richness of the OncoPro data and its ability to capture various treatment-related symptoms.
  - These data will allow for a better understanding of the patient's symptom burden which may lead to more effective direct supportive care efforts
- Symptom trajectories in the first three months of treatment varied between chemotherapy and targeted or immunotherapy; however, results were not statistically significant. These results should be confirmed using a larger sample.
- Similarly, symptom trajectories also differed by cancer stage and time, though not statistically significant.

Future Directions

- Additional analyses on larger samples are needed to better quantify the symptom burden, and to understand the impact of symptoms on treatment modifications and hospitalizations.

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