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Patient-reported measures of taxane-induced peripheral neuropathy and risk of dose reductions or worsening quality of life in Black women with breast cancer

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BACKGROUND



Black women have significantly higher rates of TIPN, potentially impacting dose delivery of curative chemotherapy, QoL, and physical functioning.

ECOG-ACRIN EAZ171 prospectively demonstrated higher rates of TIPN and dose reductions in Black patients receiving paclitaxel, compared to docetaxel.

OBJECTIVE: Utilize the prospective trial ECOG-ACRIN EAZ171 to determine whether PROMs, and which PROM, predict a) dose reduction of taxane therapy and b) longer- term detriment to HRQoL and physical function in Black patients with breast cancer

Association of patient-reported neuropathy with dose reductions, HRQoL, and physical functioning

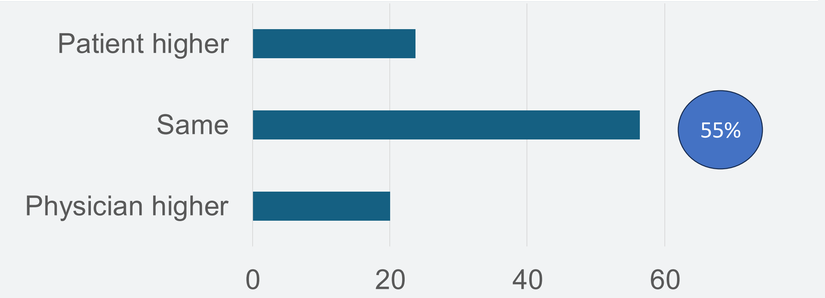
Change in PRO score during taxane therapy	OR for dose reduction (95% CI)	OR for worsening HRQoL at 1 yr*	OR for worsening physical function at 1 yr*
FACT/GOG-NTx subscale ≥ 2	**10.8 (4.5 – 25.9)**	2.8 (0.6-13.0)	2.6 (0.6-11.5)
FACT/GOG-NTx total ≥ 4	5.0 (2.6-9.9)	1.5 (0.5-4.6)	3.4 (1.1-11.0)
FACT/GOG-NTx item 1 ≥ 1	6.1 (3.0 – 12.6)	1.4 (0.6-3.3)	0.9 (0.4-2.1)
FACT/GOG-NTx item 2 ≥ 1	3.9 (2.0 – 7.5)	1.1 (0.4-2.7)	2.6 (0.8-8.6)
PRO-CTCAE severity ≥ 1	8.2 (3.7-18.3)	3.1 (0.8-11.8)	1.55 (0.5-4.8)
PRO-CTCAE interference ≥ 1	5.6 (2.9 – 11.0)	1.3 (0.4-3.6)	1.6 (0.6-4.4)

*164 patients with PRO data available at 1 year

*While patient reported TIPN DURING THERAPY was not associated with reduced HRQoL or physical function at 1 year,

- PERSISTENT TIPN at 1 year by FACT/GOG-NTx 4 item subscale, FACT/GOG-NTx total score, and PRO-CTCATE interference were associated with a reduction in HRQoL
- PERSISTENT TIPN at 1 year by FACT/GOG-NTx total score or neuropathy interference by PRO-CTCAE was associated with worse physical function (OR 5.3 95% CI 1.6-17.8 and OR 3.5 95% CI 1.2-10.6, respectively) .

Physician and patient concordance in TIPN severity using CTCAE and PRO-CTCAE

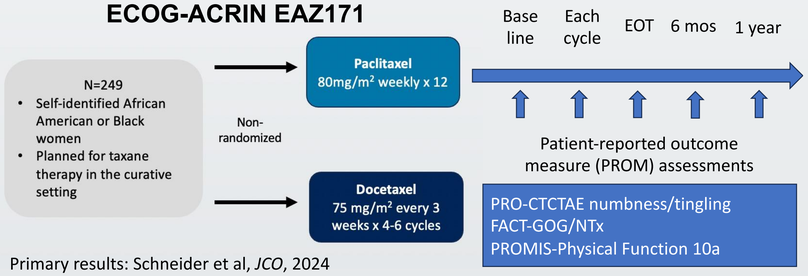


CONCLUSIONS

- Worsneing patient-reported neurotoxicity strongly predicted subsequent taxane dose reduction
  - Most significant for the 4-item FACT/GOG-NTx, making it an ideal PROM to monitor tolerability
- No association between patient-reported neuropathy during therapy and reduced HRQoL or physical functioning at 1 year
  - However, persistent TIPN at 1 year was associated with lower functioning
- There is a need for longitudinal phenotyping to determine in whom and when to intervene to prevent worse outcomes in the highest risk patients.

METHODS

ECOG-ACRIN EAZ171



Primary results: Schneider et al, *JCO*, 2024

TIPN defined as: Decrease ≥ 2 FACT-GOG/NTx 4 item subscale
Decrease ≥ 4 FACT/GOG/NTX total
Decrease ≥ 1 FACT/GOG-NTx single items 1 and 2
Increase ≥ 1 PRO CTCAE severity or interference

Outcomes:

- Treatment tolerability: taxane dose reduction or discontinuation
- HRQoL at 1 year: Decrease ≥ 7 in FACT-G
- Physical function at 1 year: Decrease ≥ 5 in PROMIS PF T score

Statistical analysis: Multivariate logistic mixed effect models with random intercept were used to determine the association of patient-reported TIPN with 1) subsequent dose reduction of taxane therapy due to neuropathy, and 2) subsequent reduction in HRQoL or physical function at one year. Covariates included baseline neuropathy, taxane type, age, ECOG PS, BMI, disease stage, nodal status, and HgbA1c level.

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