Investigating racial disparities in quality of chemotherapy-induced side effect management among medicare beneficiaries with early-stage breast cancer

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Abstract
If not controlled, chemotherapy-induced nausea and vomiting (CINV) can compromise quality of life (QOL) for patients with cancer and may lead to decreased chemotherapy adherence. Guidelines therefore recommend that patients receiving highly emetogenic chemotherapy regimens prophylactically use potent antiemetics (neurokinin-1 receptor antagonists, or NK1s) to prevent the side effect. Racial disparities in NK1 use may contribute to well-documented disparities in breast cancer patients' chemotherapy experience. We had three objectives: (1) Assess racial disparities in NK1 use; (2) Assess the role of NK1 use disparities in explaining racial variation in women's treatment experiences (namely, post-chemotherapy healthcare utilization); (3) Assess the impact of NK1 formulation changes on disparities over time.

Using 2006–2012 SEER-Medicare data, we identified a cohort of 1,130 early-stage breast cancer patients beginning highly emetogenic chemotherapy. We used Modified Poisson regression to assess relationships between 1) patient race and NK1 use, 2) patient race, NK1 use, and CINV-related healthcare utilization, and 3) chemotherapy initiation year and NK1 use. We examined any NK1 use and use of specific NK1 formulations (oral aprepitant and IV fosaprepitant). We present adjusted risk ratios (aRR) and 95% confidence intervals (CI).

Black women in our sample were 32% less likely than white women to use an NK1 (aRR: 0.68, 95% CI: 0.51-0.91) and 46% less likely to use aprepitant specifically (aRR: 0.54, 95% CI: 0.35-0.83). There were no disparities in fosaprepitant use. NK1 use disparities did not contribute to an increased incidence of CINV-related utilization among black women; risk of outpatient utilization was actually lower for black patients at 0.15, compared to 0.23 for white patients. All patients were more than twice as likely to use an NK1 in 2011 compared to 2007 (aRR white: 2.67, 95% CI: 2.13-3.35; aRR black: 2.54, 95% CI: 1.03-6.25). However, racial gaps have persisted. In 2011, the likelihood of NK1 use was 0.64 for white patients, compared to 0.32 for black patients.

We observed persistent racial disparities in NK1 use. Disparities may be explained by patient-level access barriers or prescribing variation. Future research should assess the underlying causes of disparities and the impact of disparities on QOL and chemotherapy schedule adherence.

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