Oncologists' Receipt of Pharmaceutical Industry Payments and Use of Non-Recommended and Low-Value Cancer Care Services

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Personal payments from the pharmaceutical industry to US physicians are common and influence physician practice. Prior studies have found that industry payments sway physicians' selection among effective, medically appropriate treatments. However, whether industry payments may be associated with non-recommended and low-value care has not been assessed. The objective of this study was to estimate the association between oncologists' receipt of industry payments and use of non-recommended and/or low-value (NR/LV) interventions.

Population-based cohort study using fee-for-service Medicare claims and Open Payments records of industry payments. We identified four NR/LV cancer interventions: 1) denosumab for castrate-sensitive prostate cancer; 2) GCSF for patients at low risk for neutropenic fever; 3) nab-paclitaxel instead of paclitaxel for breast and lung cancer 4) branded drug instead of a generic or biosimilar. Study sample: Medicare beneficiaries with an incident cancer diagnosis (identified by new occurrence of a cancer diagnosis code in proximity to claims for cancer treatment) from 2014-2019. We applied additional requirements as appropriate to identify four sub-cohorts, corresponding to patients at risk for each of the NR/LV treatments, and identified the treating oncologist using claims. The primary exposure was receipt, by a patient's oncologist, of any industry payments for the corresponding NR/LV treatment of interest, within 365 days before the patient's index cancer date. The primary outcome was receipt of the corresponding NR/LV treatment. We fit general linear models controlling for patient characteristics and calendar year. To assess robustness, we also accounted for physician-level fixed effects in separate models.

Cohort sizes were: denosumab N=9,799; GCSF N=271,485; nab-paclitaxel N=86,394; branded drug N=13,386. Controlling for patient characteristics and calendar year, industry payment was associated with an increase in the absolute prevalence of denosumab (+17.5% [95%CI:15.3 to 19.7%]), GCSF (+5.8% [95%CI:5.4 to 6.1%]), and nab-paclitaxel (+7.6% [95%CI:7.1 to 8.1%]) use, but lower branded drug use (-4.6 [95%CI:-5.8 to -3.3]). In physician-level fixed effects models, industry payment was associated with increased denosumab (+7.4% [95%CI:2.5 to 12.2%]) and nab-paclitaxel (+1.7% [95%CI:0.9 to 2.5%]) use, but not with GCSF (+0.4% [95%CI:-0.3 to 1.1%]) or branded drugs (+1.2% [95%CI:-5.8 to 8.3%]).

Recent receipt of industry payments by physicians was associated with increased use of several forms of NR/LV cancer treatment. These findings raise quality-of-care concerns regarding physician-industry financial relationships. Additional work is needed to further explore the causal relationship between payments and non-recommended treatments, and between payments and patient outcomes.