The impact of ASCO/CCO guidelines on the use of adjuvant bone-modifying agents by specialized and general oncologists for elderly patients with breast cancer

Nicole H. Dalal[1], Hao Tang[2], Marissa Reitsma[3], James C, Dickerson[1], Shannon Phillips[3], Becky Staiger[4], Jeremy Goldhaber-Fiebert,[3] Jennifer L. Caswell-Jin[1]

[1]Department of Medicine (Oncology), [2]Center for Population Health Sciences, Stanford University School of Medicine, [3]Department of Health Policy, [4]Division of Health Policy and Management, School of Public Health, University of California, Berkeley

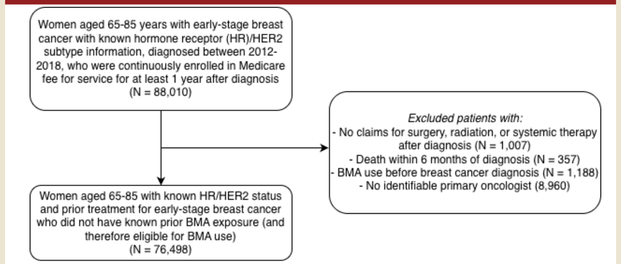
Background

- Postmenopausal patients with nonmetastatic breast cancer experienced reduced bone recurrence and improved survival with adjuvant bisphosphonate use.
- In 2017, the American Society of Clinical Oncology (ASCO) and Cancer Care Ontario (CCO) jointly published guidelines recommending discussion of adjuvant bisphosphonate therapy for all postmenopausal patients with early-stage breast cancer deemed candidates for systemic therapy.

Aims

- To understand whether the ASCO/CCO guidelines were effective in changing prescribing patterns for adjuvant bone-modifying agents (BMAs).
- To understand if there was a difference in the effect of the guidelines on care provided by specialized versus generalist oncologists.

Methods



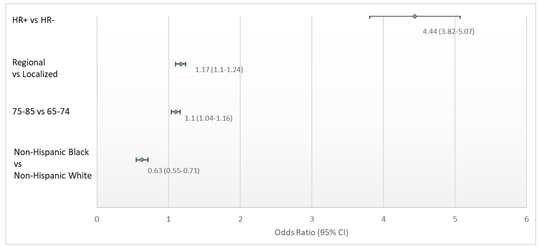
Primary endpoints were:

1. Use of BMA within 1 year of diagnosis;
2. Choice of bisphosphonate versus denosumab.

- Using claims codes, we assigned each patient a primary oncologist and measured each oncologist's level of breast cancer specialization. We defined breast cancer specialization as the proportion of breast cancer patients among all the oncologist's breast, lung, or colon cancer patients in the SEER-Medicare database. We designated oncologists with the highest quartile of breast cancer cases as "specialized" and the other 75% as "generalist."
- We used multivariate logistic regression to examine the correlation of key factors (age, comorbidity, race/ethnicity, the treating oncologist's degree of breast cancer specialization) with each endpoint.

Results

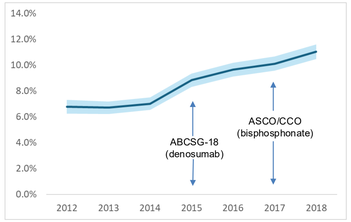
BMA use varied across the population.



Patients with HR+ disease, regional (versus localized) stage disease, older (versus younger) patients, and white (versus black) patients were more likely to receive BMA.

Guideline publication did not statistically significantly impact the temporal trend of overall BMA use; however, we observed an increase in bisphosphonate use over denosumab after the 2017 ASCO/CCO guideline.

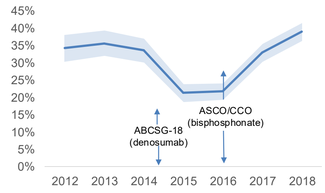
BMA use increased over time in the overall population.



BMA use increased from 6.8% (6.3 - 7.3%) in 2012 to 11.0% (10.5 – 11.6%) in 2018.

In 2015, the ABCSG-18 trial was presented at the San Antonio Breast Cancer Symposium, demonstrating reduction in disease recurrence as well as in risk of fractures with the use of adjuvant adjuvant denosumab for postmenopausal women on adjuvant aromatase inhibitors. The ASCO/CCO guidelines recommending bisphosphonate over denosumab were published in 2017.

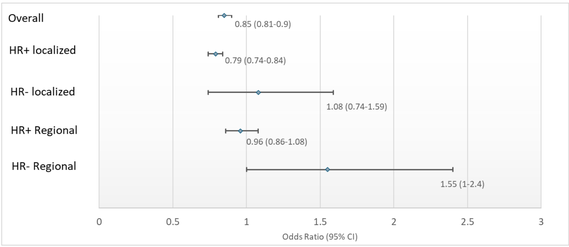
Fraction of all BMA use that was bisphosphonate (vs denosumab) varied over time



The ABCSG-18 presentation correlated with a reduction in bisphosphonate use relative to denosumab, while the ASCO/CCO guideline publication correlated with an increase in bisphosphonate use relative to denosumab.

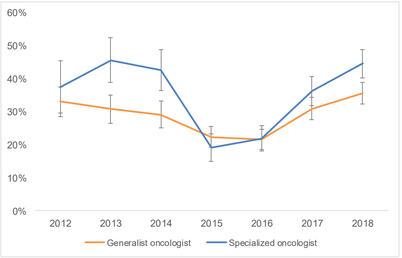
Results

Specialized oncologists used less BMA overall than generalist oncologists (OR 0.85 [0.81 – 0.9])



Specialized oncologists were less likely to use adjuvant BMAs compared to generalist oncologists. This finding was entirely driven by reduced usage in HR+ localized disease.

An increased proportion of bisphosphonate use out of total bisphosphonate and denosumab use was most prominent among specialized versus generalist oncologists.



Specialists consistently used more bisphosphonates over the study period. After the ASCO/CCO guideline publication, both specialists and generalists tended to use more bisphosphonate, but this effect was greater in specialist oncologists.

Conclusions

- Specialized oncologists used adjuvant BMAs less frequently in patients with lower-risk HR+ disease compared to generalized oncologists.
- Specialized oncologists were more sensitive to the ASCO/CCO guideline release, with greater uptake of bisphosphonates over denosumab.
- Broader alignment with specialist prescribing patterns could promote more efficient resource utilization across the Medicare population.

Funding: Cancer Prevention Institute of California Research Fellowship Award (Nicole Dalal); NCI (U01 CA253911) (Jennifer Caswell-Jin); Stanford Cancer Institute (Jennifer Caswell-Jin & Jeremy Goldhaber-Fiebert)

Contact: nhdalal@stanford.edu