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The Relationship of Industry Payments to Prescribing Behavior: A Study of Degarelix and Denosumab

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Abstract

Introduction: The influence of financial ties to pharmaceutical companies remains controversial. We assessed a potential relationship between pharmaceutical payments and prescription patterns for degarelix and denosumab.

Methods: We compared Medicare Provider Utilization and Payment Data: Physician and Other Supplier PUF (Public Use File) (Medicare B) data containing 2012 claims with data on Open Payments (Physician Payments Sunshine Act) for the second half of 2013. Urologists and medical oncologists who billed Medicare for degarelix or denosumab were cross referenced in both databases and payments were aggregated into a consolidated data set. Adjusted beneficiary count and total Medicare reimbursement were compared according to the receipt of Sunshine payment. An association between Sunshine payment amount and total Medicare reimbursement was also assessed.

Results: Of the 160 prescribers of degarelix and 1,507 prescribers of denosumab 91 (57%) and 854 (57%), respectively, received Sunshine payment. Degarelix prescribers who received Sunshine payment had higher median total Medicare reimbursement ($13,257 vs $9,554, p = 0.01). Denosumab prescribers who received Sunshine payment had higher median adjusted beneficiary count (55 vs 50, p <0.001) and median total Medicare reimbursement ($69,620 vs $60,732, p <0.001). On multivariable analysis receipt of Sunshine payment (adjusted median difference $5,844, 95% CI 937−10,749) and oncology specialty (adjusted median difference $34,380, 95% CI 26,715−42,045) were independently associated with total Medicare reimbursement for denosumab.

Conclusions: In the case of degarelix and denosumab there is a weak association between pharmaceutical company payments and prescriber prescription behavior patterns.

Key Words: prostatic neoplasms; drug prescriptions; practice patterns, physicians'; Medicare Part B; reimbursement mechanisms

Abbreviations and Acronyms

CMS = Centers for Medicare and Medicaid Services

FDA = United States Food and Drug Administration

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Financial ties between pharmaceuticals and physician prescribers have long been scrutinized in the medical literature.[1–3] While limiting criminal behavior has historically been a focus of regulators, raising awareness of potential conflicts of interest has only recently entered the jurisdiction of the United States government. Whether biases exist in prescriber patterns is a matter of ongoing debate with varying opinions on the appropriateness of prescriber-pharmaceutical interactions.[4–6] However, the lack of large-scale national databases on prescriber patterns and pharmaceutical payments have limited formal study design.

In April 2014 CMS released 10 million billing records of a total of 880,000 health care providers, accounting for more than $77 billion in Medicare funds distributed in 2012. CMS later released payment data from drug manufacturers with 68,000 payment records amounting to more than $3.7 billion. To our knowledge they are the largest national databases on physician reimbursements and pharmaceutical payments to date.

Heavily marketed drugs may be particularly susceptible to prescriber bias. Two examples are degarelix and denosumab, which are 2 new treatments for prostate cancer. Degarelix, a GnRH (gonadotropin-releasing hormone) antagonist manufactured by Ferring Pharmaceuticals (Parsippany, New Jersey), was FDA approved in 2008 for the treatment of advanced prostate cancer.[7] Denosumab, a RANK-L (receptor activator of nuclear factor κ-B ligand) inhibitor manufactured by Amgen®, was FDA approved in 2011 for bone loss in patients with prostate cancer undergoing hormone ablation for metastatic prostate cancer.[8] Disclosures of advertising spending for these 2 drugs are limited as Ferring Pharmaceuticals is a private company and Amgen provides figures on a consolidated basis. However, in the case of denosumab, since obtaining FDA approval, sales have increased at a compounded rate of 60% per year from $554 million to $2.25 billion.[9,10] Whether prescriber adoption is influenced by payments from pharmaceuticals is unclear. A combination of the 2 CMS databases enables the opportunity of a focused study of these 2 drugs.

We sought to identify whether there is an association between pharmaceutical payments and prescription patterns of degarelix and denosumab in the CMS databases. Medicare B prescribers were stratified according to whether or not they received Open Payments (Physician Payments Sunshine Act) payments as a basis for comparison.

Materials and Methods

Data and Study Population

We used the 2012 Medicare Provider Utilization and Payment Data: Physician and Other Supplier PUF (Medicare B) database files provided by CMS to identify all urologists and oncologists who prescribed degarelix and denosumab.[11] Medicare B contains more than 10 million records of prescriber reimbursement data extracted from NCH (National Claims History) SAFs (Standard Analytic Files), including information on services and procedures provided to Medicare beneficiaries by physicians and other health care professionals. Data include physician national provider identifier, name, address, city, state, HCPCS (Healthcare Common Procedure Coding System) code, specialty, service count, beneficiary per day service count (adjusted beneficiary count), and billing and reimbursement amounts. Each line item represents a separate physician billing data for each drug. The database contains fee-for-service data and does not include indications for listed services or procedures.

Prescribing urologists and oncologists were extracted from the database. These prescribers were linked by name and address with the second half of the 2013 CMS Open Payments database to determine whether they received payments from Ferring Pharmaceuticals or Amgen.[12] The Sunshine Act database contains payment data, including includes physician name, address, city, state, specialty, manufacturer name and identifiers, payment amounts and payment characteristics such as the date and form of payment. Each line item represents a single payment to a physician.

Variables

HCPCS codes J9155 and J0897 were used to identify instances of degarelix and denosumab injections, respectively, in the Medicare B data set. Specialty, service count, beneficiary per day service count (adjusted beneficiary count) and average payment per service were listed for each prescribing provider. Service count represents a standardized Medicare defined billing unit. The adjusted beneficiary count represents the number of doses prescribed by each provider. The primary outcome (total Medicare reimbursement) was calculated by multiplying the average payment per service by the total service count. Prescribers were linked to the Sunshine Act database by first and last name. In the event of duplicate name entries matching was performed using the prescriber state, city and address. Sunshine Act payments were calculated by summing all listed reimbursements.

Statistical Analysis

For each drug we compared prescriber specialty, adjusted beneficiary count and total Medicare reimbursement