Economic Burden of Opioid-Induced Constipation Among Long-Term Opioid Users with Noncancer Pain

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BACKGROUND: Opioid-induced constipation (OIC) can be a debilitating side effect of opioid therapy and may result in increased medical costs. The published data on the economic burden of OIC among long-term opioid users are limited.

OBJECTIVE: To assess the economic burden of OIC in patients with noncancer pain in a managed care population in the United States.

METHODS: This retrospective study used 2007-2011 data from the Truven Health MarketScan Commercial and Medicare databases. The study included adults with ≥12 months of insurance enrollment before and after starting long-term (≥90 days) use of opioids. Patients were excluded if they had cancer or a diagnosis of drug abuse or drug dependence during the study period, or if they had constipation or bowel obstruction within 90 days before starting opioid therapy during the study period. OIC was identified by International Classification of Diseases, Ninth Edition codes for constipation (564.0) or bowel obstruction (560.x) within 12 months of the initiation of an opioid. Patients with OIC were identified in the nonelderly, elderly (age ≥65 years), and long-term care populations. Differences in costs and healthcare resource utilization were calculated using propensity scoring.

RESULTS: A total of 13,808 nonelderly (age, 48.6 ± 10.4 years; female, 50%) and 2958 elderly patients (age, 78.7 ± 8.1 years; female, 70%) met the study inclusion criteria. Of 401 nonelderly and 194 elderly patients with OIC, 85 patients initiated opioid therapy in a long-term care facility (age, 80.7 ± 11.6 years; female, 77%). After matching by key covariates, patients with OIC had significantly more hospital admissions than patients without OIC (nonelderly, 33% vs 22%, respectively; P <.001; elderly, 51% vs 31%, respectively; P <.001) and longer inpatient stays (nonelderly, 3.0 ± 8.4 days vs 1.0 ± 3.0 days, respectively; elderly, 5.2 ± 12.2 days vs 2.1 ± 4.0 days, respectively; P <.001). The group with OIC had significantly higher total healthcare costs than the group without OIC in all 3 study cohorts (nonelderly, $23,631 ± $67,209 vs $12,652 ± $19,717, respectively; elderly, $16,923 ± $38,191 vs $11,117 ± $19,525, respectively; long-term care, $16,000 ± $22,897 vs $14,437 ± $25,690, respectively; all P <.05).

CONCLUSION: To the best of our knowledge, this is the first study to analyze the economic impact of long-term use of opioids among patients with OIC, using real-world data. The findings underscore the significant economic burden associated with long-term opioid use for noncancer pain in a managed care population. Effective therapies for OIC may reduce the associated economic burden and improve quality of life for long-term opioid users.

KEY WORDS: opioid-induced constipation, long-term opioid use, constipation, economic burden, elderly, healthcare resource utilization, long-term care, pain management
constipation (OIC) being one of the most common and persistent events.1

In a systematic review of randomized trials of the use of oral opioids for chronic noncancer pain, the reported incidence of OIC from individual trials was as high as 71%.3 OIC has been associated with significant clinical and economic burdens, and may have a negative impact on patients’ quality of life.4 In addition, persistent constipation may lead to serious medical sequelae, such as bowel obstruction and fecal impaction,5 resulting in the increased use of medical services and decreased productivity loss.6

To the best of our knowledge, this is the first study using real-world administrative data to have quantified the economic burden of OIC in patients who are receiving a variety of opioids specifically for noncancer pain. Previous studies have shown that OIC is associated with significant economic burden; however, these studies have included only patients with cancer-related pain7 or have included cancer and noncancer pain without differentiating between them.8

Because of the exponential growth in opioid use for noncancer pain9,10 and the lack of real-world data on its gastrointestinal-related risks, it is important to quantify the economic impact of OIC in this population. One study concluded that the economic burden of gastrointestinal events among opioid users for noncancer pain is substantial, but that study included only patients receiving immediate-release oxycodone or hydrocodone.11 In addition, that study followed patients only for a relatively short period (90 days), which may underestimate the burden of OIC, a chronic condition in many cases.

Furthermore, previous literature has focused on commercially insured and relatively young populations; therefore, the generalizability of their results to an older population is questionable. It is widely reported in the literature that elderly patients and long-term care residents are more likely to develop OIC than younger patients.12,13 However, little is known about the economic burden associated with OIC in these 2 patient populations. The paucity and limitations of the existing evidence underscore the need for new studies to evaluate the economic burden for long-term opioid users who have noncancer pain.

The objective of our study was to estimate the healthcare resource utilization and costs associated with OIC among patients who are receiving an opioid long term for noncancer pain. To better understand the economic burden among various populations, 3 subpopulations were involved in our analysis, including nonelderly patients, elderly patients, and patients who received opioids in long-term care facilities.

Methods
Study Design

This study was a retrospective claims analysis using data from the Truven Health MarketScan Commercial Claims and Encounters Database and Truven Health MarketScan Medicare Supplemental and Coordination of Benefits Database from January 1, 2007, through
Economic Burden of Opioid-Induced Constipation

December 31, 2011. The index event window, preindex window, and postindex follow-up window are defined in Figure 1. The initial opioid prescription during the index period (January 2008-December 2010) was assigned as the study index date. Patients had continuous plan insurance coverage for 1 year before (baseline period) and after the index date.

Sample Selection

Patients were included if they had at least 1 claim for an opioid prescription during the study period. To be included as long-term opioid users, patients had to have at least a 90-day supply of opioids\(^1\) with ≤15 days between prescription refills. Patients were excluded if they were aged <18 years or were diagnosed with cancer (International Classification of Diseases, Ninth Edition [ICD-9] code, 140.x-239.x), or had drug abuse (ICD-9 code, 305.x) or drug dependence (ICD-9 code, 304.x) during the study period. Patients who had claims for opioids during the 12-month preindex period were excluded from the study. In addition, patients were excluded if they had a primary or secondary diagnosis of constipation (ICD-9 code, 564.0) or bowel obstruction (ICD-9 code, 560.x) within the 3 months before the index date.\(^1\)

This study identified 3 study cohorts—nonelderly patients (aged 18-64 years); elderly patients (aged ≥65 years); and patients who used opioids at long-term care facilities, who could be either elderly or nonelderly. Each study cohort was divided into a constipation group, which included long-term opioid users who developed constipation, and a group without constipation, which included long-term opioid users who did not develop constipation.

Measurement and Outcomes

OIC was defined as at least 1 claim with a primary or secondary ICD-9 diagnosis code for constipation (564.0) or intestinal obstruction without hernia (560.x) in the 12-month postindex period after the initiation of long-term opioid therapy.

Healthcare resource utilization and healthcare costs were measured for a 12-month period after the initiation of opioids. All costs were presented as annual costs per

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**Figure 2** Flowchart of Cohort Selection with Sample Size

- Patients starting a new opioid medication during study period (2007-2011), N = 24,703,286
- Patients aged ≥18 years as of index date, N = 13,503,024
- Patients with a continuous enrollment for ≥12 months before and after the index date, N = 2,666,021

Exclusion criteria\(^a\) (N = 2,649,255):
- Patients with opioid use <90 days (N = 2,649,047)
- Patients who had constipation within 90 days before index date (N = 208)

Patients identified as long-term (>90 days) opioid users, N = 16,766

- Elderly cohort (≥65 years) N = 2958
- Long-term care cohort N = 566
- Nonelderly cohort N = 13,808

- OIC N = 194
- Non-OIC N = 2764
- OIC N = 85
- Non-OIC N = 481
- OIC N = 401
- Non-OIC N = 13,407

\(^a\)NOTE: Exclusion criteria were not mutually exclusive; patients may have been excluded for multiple reasons. OIC indicates opioid-induced constipation.
patient and were adjusted to 2011 values based on the current Consumer Price Index information provided by the US Bureau of Labor Statistics. The analysis of the healthcare resource utilization included the inpatient admission rate, inpatient length of stay, emergency department visit rate, the number of emergency department visits, office visit rate, and the number of physician visits during the follow-up period. The total healthcare costs included costs for inpatient, pharmacy, outpatient, emergency department, long-term care facility, and other costs.

### Statistical Analyses

The demographics, comorbidities, opioid use patterns, and resource utilization were compared between patients who developed OIC and those who did not using a bivariate approach. The comparisons of continuous variables were performed using t-tests and categorical variables using Pearson chi-square tests. The cost data were compared between the groups with and without OIC using a nonparametric test (Wilcoxon rank sum test), because cost data are often heavily skewed. Patients with OIC were matched by propensity score to patients without OIC with a 1:1 ratio using the nearest-neighbor matching algorithm. All the baseline demographic and clinical variables were used for the matching method.

The differences in healthcare resource utilization, total costs, and cost components were calculated between the patients with OIC and their propensity score–matched group without OIC during the 12-month follow-up period. A generalized linear model with gamma distribution and log link was performed to estimate the impact of OIC on total cost, which was adjusted for covariates (age, sex, insurance plan, region, dose and duration of opioid use, baseline hospitalization, Charlson comorbidity score, nausea/vomiting, and constipation-related disease conditions). The analyses were performed using Statistical Analysis.
Software version 9.2.3 (SAS Institute; Cary, NC). *P <.05 was considered to indicate statistical significance.

**Results**

**Patient Cohorts**

Figure 2 outlines the selection of study cohorts. More than 24 million patients who started therapy with an opioid during the study period were identified. Of the 16,766 long-term opioid users who met the study criteria, 13,808 patients were classified as nonelderly and 2958 patients were classified as elderly; among these, 566 patients received an opioid medication in a long-term care facility.

Baseline characteristics of the study cohorts are summarized in Table 1. The mean patient ages were 48.6 years (standard deviation [SD], 10.4); 78.7 years (SD, 8.1); and 80.7 years (SD, 11.6) for the nonelderly, elderly, and long-term care cohorts, respectively. A total of 50%, 70%, and 77% of the patients, respectively, were female.

Among the nonelderly cohort, a higher proportion of patients with OIC were female (63.1%) compared with patients without OIC (49.8%). Patients with OIC had significantly higher comorbidity scores, and more patients experienced nausea or vomiting compared with the patients without OIC across all 3 study cohorts.

In the nonelderly and elderly cohorts, depression and Parkinson disease were more prevalent among patients with OIC than among those without OIC. No significant differences in any constipation-associated conditions were found between those with and without OIC in the long-term care cohort.

**Healthcare Resource Utilization**

After propensity score matching, the nonelderly and elderly patients with OIC had more hospital admissions and a longer inpatient length of stay than the group without OIC. Among the nonelderly patients, the group with OIC had more patients with physician office visits and a higher annual number of office visits than the group without OIC. Among the elderly patients, more patients with OIC had emergency department visits, and the group with OIC had a higher mean annual number of emergency department visits than the patients without OIC. In the long-term care cohort, there was no significant difference in healthcare resource utilization between the groups with and without OIC (Table 2).

**Healthcare Costs**

After matching by key covariates, patients with OIC had significantly higher total healthcare costs than patients without OIC in all 3 cohorts, including the nonelderly population ($23,631 ± $67,209 vs $12,652 ± $19,717, respectively; *P* < .001 [Figure 3]), the elderly population ($16,923 ± $38,191 vs $11,117 ± $19,525, respectively; *P* = .009 [Figure 4]), and the long-term care

<table>
<thead>
<tr>
<th>Table 2 Healthcare Resource Utilization by Constipation Status* in the Nonelderly, Elderly, and Long-Term Care Cohorts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healthcare resource utilization</strong></td>
</tr>
<tr>
<td><strong>Nonelderly</strong></td>
</tr>
<tr>
<td>OIC (N = 400)</td>
</tr>
<tr>
<td>131 (33)</td>
</tr>
<tr>
<td>3.0 (8.4)</td>
</tr>
<tr>
<td>172 (43)</td>
</tr>
<tr>
<td>1.0 (2.4)</td>
</tr>
<tr>
<td>395 (99)</td>
</tr>
<tr>
<td>20.7 (16.6)</td>
</tr>
<tr>
<td><strong>Elderly</strong></td>
</tr>
<tr>
<td>OIC (N = 190)</td>
</tr>
<tr>
<td>96 (51)</td>
</tr>
<tr>
<td>5.2 (12.2)</td>
</tr>
<tr>
<td>98 (52)</td>
</tr>
<tr>
<td>1.6 (2.5)</td>
</tr>
<tr>
<td>175 (92)</td>
</tr>
<tr>
<td>14.1 (14.7)</td>
</tr>
<tr>
<td><strong>Long-term care</strong></td>
</tr>
<tr>
<td>OIC (N = 79)</td>
</tr>
<tr>
<td>46 (58)</td>
</tr>
<tr>
<td>6.0 (8.0)</td>
</tr>
<tr>
<td>41 (52)</td>
</tr>
<tr>
<td>1.5 (2.3)</td>
</tr>
<tr>
<td>62 (78)</td>
</tr>
<tr>
<td>10.5 (12.6)</td>
</tr>
</tbody>
</table>

*Healthcare resource utilization was compared between long-term opioid users with constipation and a propensity score-matched cohort (1:1 ratio) of long-term opioid users without evidence of constipation during the 12-month follow-up period within the nonelderly, elderly, and long-term care cohorts, respectively.

*bAs a result of incomplete matching (the exact match cannot be found given the greedy matching algorithm), 1 patient was excluded from the nonelderly population and 4 patients were excluded from the elderly population.

OIC indicates opioid-induced constipation; SD, standard deviation.
**Figure 3**  Total Costs and Cost Components in Nonelderly Patients, by Constipation Status

Within the nonelderly patients, the cost components were compared between long-term opioid users with constipation and a propensity score–matched cohort (1:1 ratio) of long-term opioid users without evidence of constipation during 12-month follow-up. OIC indicates opioid-induced constipation.

**Figure 4**  Total Costs and Cost Components in Elderly Patients, by Constipation Status

Within the elderly patients, cost components were compared between long-term opioid users with constipation and a propensity score–matched cohort (1:1 ratio) of long-term opioid users without evidence of constipation during 12-month follow-up. OIC indicates opioid-induced constipation.
Population ($16,000 ± $22,897 vs $14,437 ± $25,690, respectively; \( P = .049 \)).

Patients with OIC had significantly higher inpatient and emergency department costs among the elderly and nonelderly patients compared with their matched patients without OIC. In addition, nonelderly patients with OIC had significantly higher outpatient costs and other costs; however, the same trend was not found for the pharmacy cost.

Among elderly patients, those with OIC had significantly higher long-term care costs compared with their matched counterparts without OIC. Among patients initiating opioids in long-term care facilities, patients with OIC had higher total costs than patients without OIC.

The results from the multivariate regression (generalized linear model) suggest that elderly patients with OIC had 89% higher costs than elderly patients without OIC ($19,963 vs $10,556, respectively; \( P < .001 \)), whereas costs were 52% higher in nonelderly patients with OIC than in those without OIC ($15,737 vs $10,332; \( P < .001 \)). In the long-term care cohort, the healthcare costs were not significantly different between the patients with and without OIC (\( P = .42 \)).

Among the nonelderly and elderly patients, the common cost drivers included baseline hospitalizations, having nausea or vomiting during follow-up, and the higher Charlson comorbidity score. In addition, for the nonelderly patients, there are several significant cost drivers, including comorbid conditions, such as obesity, depression, multiple sclerosis, and Parkinson’s disease (Table 3).

### Table 3: Predictors of Total Cost in Elderly and Nonelderly Populations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Nonelderly Coefficient estimate</th>
<th>Nonelderly ( P ) value</th>
<th>Long-term care Coefficient estimate</th>
<th>Long-term care ( P ) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constipation vs nonconstipation</td>
<td></td>
<td>1.52</td>
<td>&lt;.001</td>
<td>1.89</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>1.00</td>
<td>.177</td>
<td>1.01</td>
<td>.01</td>
</tr>
<tr>
<td>Sex (female vs male)</td>
<td></td>
<td>1.03</td>
<td>.422</td>
<td>1.05</td>
<td>.021</td>
</tr>
<tr>
<td>Insurance plan (ref, PPO)</td>
<td>Comprehensive</td>
<td>0.78</td>
<td>&lt;.001</td>
<td>1.03</td>
<td>.716</td>
</tr>
<tr>
<td></td>
<td>HMO</td>
<td>0.61</td>
<td>&lt;.001</td>
<td>0.97</td>
<td>.294</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>1.47</td>
<td>.002</td>
<td>0.90</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>0.87</td>
<td>.187</td>
<td>1.03</td>
<td>.584</td>
</tr>
<tr>
<td>Region (ref, South)</td>
<td>North Central</td>
<td>0.93</td>
<td>.136</td>
<td>1.13</td>
<td>.082</td>
</tr>
<tr>
<td></td>
<td>Northeast</td>
<td>1.13</td>
<td>.037</td>
<td>0.97</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>0.91</td>
<td>.021</td>
<td>0.74</td>
<td>.408</td>
</tr>
<tr>
<td></td>
<td>West</td>
<td>0.95</td>
<td>.428</td>
<td>1.23</td>
<td>.001</td>
</tr>
<tr>
<td>Morphine equivalent daily dose, mg</td>
<td></td>
<td>1.00</td>
<td>&lt;.001</td>
<td>1.00</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Duration of opioid use during follow-up, days</td>
<td></td>
<td>1.00</td>
<td>.310</td>
<td>1.00</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Had ≥1 hospitalizations during preindex period</td>
<td></td>
<td>1.32</td>
<td>&lt;.001</td>
<td>1.38</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Had nausea/vomiting during follow-up</td>
<td></td>
<td>1.23</td>
<td>&lt;.001</td>
<td>1.23</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Charlson comorbidity score</td>
<td></td>
<td>1.06</td>
<td>&lt;.001</td>
<td>1.21</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Other comorbidity conditions</td>
<td>Depression</td>
<td>1.08</td>
<td>.321</td>
<td>1.23</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Obesity</td>
<td>0.88</td>
<td>.015</td>
<td>1.17</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>0.79</td>
<td>.015</td>
<td>0.78</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Multiple sclerosis</td>
<td>1.68</td>
<td>.094</td>
<td>2.17</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Spinal cord injury, paraplegia, quadriplegia</td>
<td>0.47</td>
<td>.178</td>
<td>1.20</td>
<td>.264</td>
</tr>
<tr>
<td></td>
<td>Parkinson’s disease</td>
<td>0.84</td>
<td>&lt;.001</td>
<td>2.35</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

\( a \) The coefficient estimate represents the exponential of the maximum likelihood estimates of the coefficients.

HMO indicates health maintenance organization; PPO, preferred provider organization.
Discussion

Our study is the first to examine the economic burden associated with constipation among subpopulations (nonelderly, elderly, and long-term care cohorts) of long-term opioid users for noncancer pain using data from a real-world setting. We found that for patients treated with opioids for ≥90 days, constipation after opioid therapy significantly increased the healthcare resource utilization and the total healthcare costs among all 3 subpopulations.

In particular, OIC is associated with significantly increased inpatient, outpatient, and emergency department costs among the nonelderly population. Among the elderly population, OIC is associated with significantly increased inpatient and emergency department costs. In addition, our study identified significant and clinically important cost drivers, such as certain comorbid conditions, having vomiting or nausea, and having baseline hospitalization.

This finding is consistent with previous studies that evaluated the healthcare resource utilization of groups with OIC versus groups without OIC among opioid users. The studies by Iyer and colleagues and Candrilli and colleagues assessed the economic burden of OIC among patients receiving opioid therapy. However, these 2 studies did not differentiate between patients with cancer-related pain and those without cancer. Kwong and colleagues identified the substantial economic burden of gastrointestinal events among users of opioids for noncancer pain, but the target population was limited to patients receiving immediate-release oxycodone or hydrocodone, and the costs were evaluated for only 90 days after the initiation of an opioid.

Outside of the United States, there were few published studies assessing the economic burden of OIC. For example, a Swedish study examined the indirect and direct medical costs associated with OIC using survey data, and the researchers concluded that OIC imposed substantial costs to society, especially for patients with severe OIC. However, these studies did not differentiate among subpopulations (eg, the elderly and patients residing in long-term care facilities) with different levels of risk for OIC. The reasons may include age-related physiologic changes in the gastrointestinal tract; comorbidities (eg, Parkinson’s disease); concomitant use of multiple medications, especially other medications that cause constipation; difficulty reaching the bathroom; low fluid and fiber intake; and inadequate time and privacy to defecate. Such factors may be especially prevalent in the elderly and in patients residing in long-term care facilities. Therefore, it is particularly important to study the elderly population and the population residing in long-term care facilities, which are disproportionately affected by OIC.

The significant impact of OIC may not be well-recognized by healthcare professionals. Most symptoms of OIC persist for the length of treatment with an opioid, which has a substantially negative impact on patients’ quality of life and could reduce treatment adherence with pain management. For example, one survey-based study found that more than 33% of the population had missed, decreased, or stopped using opioids to reduce their OIC.

The trade-off between optimal opioid use for pain therapy and the risk for the discontinuation of opioids as a result of OIC poses a challenge in reaching the pain management goal. Thus, the alleviation of constipation may help optimize treatment with an opioid, help with pain control, and reduce economic burden. OIC is a persistent condition. Although over-the-counter laxatives can address some of the symptoms of OIC, alternative therapies are needed to relieve constipation and its related symptoms for patients receiving long-term treatment with an opioid.

The results of our study highlight the importance of providing patients with OIC with effective and available treatment options, as well as enhancing patient-physician communication regarding the management of OIC. Such efforts may reduce the economic burden of OIC in the population of long-term opioid users. Future research should focus on identifying the risk factors for and measuring the impact of OIC on pain management.

Limitations

Our study is subject to several limitations that are inherent to the use of a claims analysis, which might have influenced our estimates of the economic burden of OIC. First, the patients we identified as having OIC may represent more severe constipation cases as a result of our reliance on ICD-9 codes and not on patient-reported measures. Therefore, our estimated economic burden may reflect more severe cases of OIC.
Second, nonreimbursable items, such as over-the-counter medications, were not captured in the commercial insurance claims. As a result, the estimated pharmaceutical costs associated with OIC may be conservative.

Third, healthcare resource utilization and cost data should be interpreted carefully, because these were not limited to visits and costs resulting only from OIC. In other words, it is not possible to establish the causality relationship between the incremental economic burden and OIC given the nature of retrospective study design.

Fourth, OIC is also likely to be associated with productivity loss, which cannot be assessed through claims database analyses.

Fifth, patients with OIC may have had more serious or severe medical comorbidities, and may have used more healthcare resources and medical services that cannot be attributed to OIC. Propensity score matching cannot correct bias from unmeasured confounders, and this may tend to overestimate the magnitude of the difference in economic costs between patients who did and did not experience OIC.

Conclusions

Notwithstanding these limitations, results from this study are consistent with previous findings that OIC is associated with significant economic burden. Our study adds to the current knowledge by assessing elderly patients, nonelderly patients, and residents in long-term care facilities who receive long-term opioid therapy for the management of noncancer pain. Our findings show that OIC is associated with increased healthcare costs in all 3 subpopulations that were included in the study. The economic burden of OIC should be considered when evaluating the cost-effectiveness of treatments for the management of pain. The use of effective therapies may reduce the economic burden that is associated with OIC. Future research using alternative sources, such as patient surveys or chart reviews, is needed to better determine the burden of OIC on pain management from a societal perspective, especially in high-risk subpopulations, such as the elderly.

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References


Author Disclosure Statement

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**STAKEHOLDER PERSPECTIVE**

Opioid-Induced Constipation Associated with Considerable Economic Burden

By Matthew Mitchell, PharmD, MBA, FAMCP
Director, Pharmacy Services, SelectHealth, Murray, UT

**PAYER/EMPLOYERS:** Opioid-induced constipation (OIC) is not a top-of-mind concern for health plans as they evaluate their top 10 classes of drugs in terms of total spending, an approach that helps payers determine their priorities and opportunities for cost management. However, pain medications, especially opioids, are always a hot topic and are on the radar for providers of health insurance, including large, self-funded employer groups who consider that medication category as a major concern. Based on my professional experience, employers are concerned about the substantial costs associated with employees’ use of pharmaceutical therapies for pain management, the associated costs for medical procedures (e.g., lower back pain), and other costs related to pain management. In particular, the frequent use of opioids may involve the concern for decreased work productivity, as well as the risks for overuse, misuse, and/or abuse associated with pain medications. Furthermore, there are other direct medical adverse events associated with opioid use, including constipation, irritable bowel disease, and even irritable bowel syndrome, which may also be relevant in this context.

The topic of OIC may not get the “respect” it deserves, perhaps because until recently few prescription medications have been approved by the US Food and Drug Administration (FDA) for OIC, and, therefore, the majority of drugs used for that condition have been over-the-counter therapies. The present study by Wan and colleagues featured in this issue of American Health & Drug Benefits is the first published analysis to demonstrate the economic burden of long-term constipation among long-term users of opioids.1 This study is a step in the right direction to enhance our understanding of OIC, and the way it fits into the entire cost spectrum of pain management for payers, including employers.

**PATIENTS:** Unfortunately, many patients who require high doses of opioids may also have other factors contributing to their constipation, such as limited mobility, nonopioid-constipating drugs, and/or other contributing medical conditions. A sick patient population and an ambiguous coding for constipation make specific, nonconfounding analysis of the impact of OIC difficult. Because as payers we consider the real-world environment of our members, we also need to consider the entire patient population who may be using drugs intended for the management of OIC. This may include patients using opioids on a short-term basis, patients using opioids on an as-needed basis, patients who require around-the-clock opioid dosing for pain, and patients with cancer or other terminal conditions who require very high opioid doses.

**RESEARCHERS:** With newly available FDA-approved OIC agents, more data will likely be generated that will not only demonstrate the economic burden associated with OIC, but also help to better define the most appropriate patient subpopulations for these therapies. Another helpful tool will be clinical guidelines to further differentiate the appropriate timing, sequencing, and treatment combinations to regulate the management of OIC.

Although the overall financial burden of OIC may not seem impactful on the surface, OIC is something that needs to be addressed by payers and other stakeholders, and will likely become a more prevalent topic for consideration as more therapies become commercially available for patient use.