Original Article

The Direct and Indirect Costs of Opioid-Induced Constipation

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Abstract

Context. Treatment with strong opioids is connected with frequent and problematic side effects. One of the most common side effects is opioid-induced constipation (OIC). The discomfort of OIC can limit the effectiveness of pain therapy. Because constipation typically persists for as long as opioid therapy is administered, its effects on the quality of life (QoL) of patients need to be taken seriously. Data and published studies on the cost implications of OIC are, however, scarce.

Objectives. To estimate the direct and indirect costs of OIC in a defined patient population during treatment with strong opioids.

Methods. The study is based on patient data from a Swedish noninterventional study, UPPSIKT. The cost analysis is based on 197 patients treated with strong opioids over a six-month period. Direct and indirect costs in this article are calculated per patient-month, and the cost for OIC is estimated as the difference in mean costs between months with and without constipation.

Results. The total costs per patient-month for patients with severe constipation are significantly higher than those for patients with mild, moderate, or no constipation. Patients with severe constipation have the highest total costs, Euro (EUR) 1525 per patient-month, whereas patients with mild, moderate, and no problems cost EUR 1196, EUR 1088, and EUR 1034, respectively.

Conclusion. Opioid use is costly to society, and the costs vary with OIC severity. OIC is discomforting, affects the QoL of patients, and can limit an effective pain therapy. J Pain Symptom Manage 2010;40:696–703.

Key Words

Opioid-induced constipation, OIC, costs, Sweden

Introduction

Chronic pain is a major health care problem, affecting almost 20% of adult Europeans.[1,2] The International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with

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actual or potential tissue damage, or described in terms of such damage."[3] The most common types are back injuries, headaches, and joint pain. Chronic pain also can be caused by diseases or disorders, such as cancer.[4]

Strong opioids, including morphine, codeine, oxycodone, methadone, and fentanyl, are commonly prescribed for the relief of chronic pain.[4,5] Daily problems with common side effects of opioid administration include sedation, dizziness, nausea, vomiting, constipation, and respiratory depression.[6] Most patients develop tolerance against side effects, but constipation is a major problem that may not diminish over time.[7]

As constipation is the most frequent side effect associated with long-term opioid therapy, a thorough history of the patient's bowel habits should be taken before initiating opioids. Prophylaxis should be considered when starting opioid therapy. Common constipation prophylaxis (e.g., fiber, fluids, and exercise) may not be sufficient, and oral laxatives are routinely needed.[8]

The discomfort of opioid-induced constipation (OIC) can limit the effectiveness of pain therapy via reduced compliance.[9,10] Studies have shown that opioid-treated patients with constipation have higher health care utilization, are absent from work more often, and report impairment in performing their daily activities compared with nonconstipated patients.[11,12] In opioid-treated cancer patients, constipation significantly impacts opioid use patterns, resource utilization, and costs. Alleviation of constipation may, therefore, optimize opioid therapy and reduce costs.[13] OIC also has a serious impact on quality of life (QoL).[14–16] Because constipation may persist for as long as opioid therapy is administered, it may be costly and debilitating and justifies being taken seriously. To our knowledge, however, the actual cost implications of OIC are poorly understood. The objective of this study was to estimate the direct and indirect costs of OIC in a naturalistic cohort of patients treated with strong opioids in Sweden.

Methods

Approach

The costs of treatment were calculated by multiplying resource use data from a large sample of patients treated with strong opioids by unit costs. The direct costs of OIC were calculated as observed resource usage multiplied by the corresponding unit costs for each patient during each study month. Indirect costs were calculated as the value of foregone productivity because of illness, using the human capital approach.

Patient-reported constipation was used to split the data set into two categories: patient-months in which patients had constipation and patient-months in which they did not. The costs of OIC were calculated as the mean differences between patient-months with and without constipation.

The Study Population

We used resource use data from UPPSIKT, a noninterventional study in Sweden. UPPSIKT includes data on patients treated with strong opioids (all types and administration forms) during a six-month period. Sample inclusion was based on physician-determined long-term need (minimum six months) of strong opioids, older than 18 years, and literacy in Swedish, which ensured generally a representative sample of patients treated with strong opioids in Sweden. Depending on the underlying disease, patients were treated by chronic pain specialists, palliative care specialists, cancer specialists, or primary care physicians. Each patient completed an informed consent form before inclusion in the study. The study was approved by the appropriate independent ethics committee.

The study enrolled 331 patients from 38 clinics with geographical dispersion in Sweden including both patients with malignant and nonmalignant pain. Data were collected via a baseline questionnaire completed by a physician and six monthly questionnaires completed by the patients over the following six months. A letter was attached to each questionnaire highlighting the importance of responding to all questions even if there were no changes in the patient's health status since their last completed questionnaire.

The baseline questionnaire captured information about age, gender, cause and type of pain, pharmacological treatment, side effects, reason for initiating or change of current strong opioid, and assessment of patients' well-being because of their pain.