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Survey of select practice behaviors by primary care physicians on the use of opioids for chronic pain

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Abstract

Objective— To assess the use of opioids by primary care physicians for the treatment of chronic pain.

Methods— A written survey was completed by 248 primary care physicians. Outcomes of interest included type of opioids prescribed, common pain diagnoses treated, opioid prescribing concerns, treatment of patients with a history of substance use disorders and clinic-based protocols for pain management.

Results— The mean age of the physicians who completed the questionnaire was 41 years. The majority were between the ages of 30 and 49 years (68%) with an equal number of men and women. Seventy percent were family physicians, 28.7% internists and less than 2% were community physicians and geriatricians. Physician concerns regarding opioid therapy included prescription drug abuse (84.2%), addiction (74.9%), adverse effects (68%), tolerance (60.7%), and medication interaction (32%). The survey found that the majority of the physicians were comfortable in prescribing narcotics to patients with terminal cancer. However, they were less comfortable prescribing narcotics to patients with low back pain and persons with a current or past history of drug or alcohol abuse. Physician management practices suggested that urine toxicology tests were underutilized with only 6.9% reporting obtaining this test before prescribing opioids and only 15.0% performing urine toxicology tests on patients already prescribed opioids. Logistic regression analysis revealed that whether or not physicians routinely conducted urine toxicology screens was significantly ($p = 0.015$) predicted by whether they had a system to track patients on opioids when prescribing narcotics. The primary limitation of the study is the reliance on physician self-report rather than objective measures of physician behavior.

Conclusions— The survey suggests physicians are concerned about drug abuse, addiction, adverse effects, tolerance, and medication interaction. Their comfort level in prescribing opioids varies with the patient characteristics. Urine toxicology testing is underutilized in the primary care setting.

Keywords

Chronic pain; Opioids; Track patients; Urine toxicology screen

Introduction

Pain is one of the most common symptoms for which patients seek the help of health care professionals^{1,2}. Opiate therapy is highly effective in the control of pain yet physicians are

cautious in prescribing narcotics. A survey done in the United Kingdom (UK) reported 81% of general practitioners believed the treatment of chronic pain was suboptimal³. A study conducted in Canada⁴, found 68% of the physicians believed that chronic pain was inadequately managed. Studies have identified a number of concerns^{5–10}: (1) potential for addiction, (2) potential for abuse/misuse, (3) fear of side effects, (4) fear of audit by a regulatory body and (5) cost. In a stratified random sample of physicians in the United States, 40% indicated regulatory pressure affected their prescribing practices of opioids¹¹.

These concerns are heightened by the lack of availability of specific guidelines to address the issues faced by primary care physicians^{12–14}. In a study entitled 'Disease Management for Chronic Pain' conducted by Jamison *et al.*¹⁵ primary care physicians reported that treatment algorithms lengthen clinic visits, and are confusing; 79% reported that these algorithms did not change their practice of chronic pain management. There is a need for management guidelines that are straightforward and effective in addressing the issues faced by primary care physicians. One such option in the primary care setting could be physicians utilizing treatment agreements such as conducting routine urine toxicology screening on all patients before starting narcotic therapy. This may be an important step as identified in a study¹⁶ showing that random urine drug testing reduced overall illicit drug use. A research study done in San Francisco¹⁷ identified 50% more illicit opioid users by conducting urine toxicology screens twice per week versus less frequent testing.

The primary outcomes of this report are to describe the types of opioid utilized, the chronic pain diagnosis for which opioids are used, opioid management issues, concerns about opioid therapy and physician comfort level in prescribing narcotics to different groups of patients with chronic pain. This is one of the first papers to provide a comprehensive look at physician practice behavior in a diverse sample of primary care physicians currently utilizing opioids for chronic pain treatment.

Methods

A cross sectional survey was conducted in 2004–2005 with a sample of 248 primary care physicians. Participants were asked to complete a 4-page written survey that included demographic information, narcotic prescribing concerns, and narcotic management. Dr. Fleming, lead investigator for the study, contacted primary care physicians in six health care systems including the University of Wisconsin Medical Foundation, the Medical College of Wisconsin in Milwaukee, Aurora Health care in Milwaukee, Dean Health Care, Group Health Cooperative of Wisconsin and Mercy Health System about participating in the study. Primary inclusion criteria included currently prescribing opioids for chronic pain, full time practice, and board certification in family medicine or internal medicine. The study was approved by the University of Wisconsin Health Sciences Human Subjects Committee. Of the 335 physicians who met the study criteria 22 refused to complete and 65 did not return the survey. The overall response rate was 74% (248/335).

A questionnaire was constructed around five primary questions. These questions or outcomes include the following:

1. Which opioids are commonly utilized by primary care physicians to treat chronic pain?
2. What type of pain diagnoses are treated with opioids?
3. What are the current practice behaviors of primary care physicians and their clinics?
4. What are physician concerns about abuse, addiction, side effects, tolerance and other consequences of prescribing narcotics to patients with chronic pain?

5. How comfortable are physicians prescribing opioids to different types of patients?

The questionnaire was pilot tested on a sample of 20 academic physicians in the University of Wisconsin, Department of Family Medicine for clarity, wording, and content. The survey was not tested for test-retest reliability or validity. Future studies may want to compare the responses to actual physician practice behavior.

The first section of the questionnaire asked about gender, age, specialty (internal medicine, family practice or other), year and place of residency, and history of receiving any lectures in medical school or residency about the use of narcotics for chronic, nonmalignant pain. Local pharmacists selected the opioids to be included on the checklist. Opioids chosen included butorphanol, codeine with acetaminophen, hydrocodone with acetaminophen, aspirin or ibuprofen, morphine slow or continuous release, oxycodone immediate or extended release, hydromorphone, fentanyl patch, meperidine, nalbuphine, pentazocine, propoxyphene and methadone.

The third section focused on pain diagnoses for which primary care physicians prescribe opioid therapy. A diagnosis checklist included osteoarthritis of the hips, knees, back and neck; rheumatoid arthritis; postherpetic and trigeminal neuralgias; phantom limb pain; avascular necrosis; post operative joint replacement with persistent pain; degenerative joint disease; chronic low back pain; spinal stenosis; tension or migraine headaches; fibromyalgia; lupus; bursitis; rotator cuff injury; trauma (either gunshot wound or old fracture); neuropathy; chronic pain due to inflammatory disease; and nonspecific pain in HIV or sickle cell patients. They were also asked to list up to five of the most common chronic pain diagnoses for which they would prescribe narcotics.

The fourth section included six practice-related questions. Respondents were asked to check either a 'Yes' or 'No' box. These included: (1) 'Do you do urine toxicology screens on all new patients being treated for chronic pain before starting narcotics?' (2) 'Do you do random toxicology screens once or twice a year on established chronic pain patients for whom you prescribe chronic narcotic therapy?' (3) 'Is there general agreement among the physicians and staff in your practice regarding prescription of chronic narcotics?' (4) 'Do you have a system established in your clinic to track patients who are prescribed narcotics?' (5) 'Do you have a policy established in your clinic for after-hours narcotics replacement?' Finally, they were asked, (6) 'Compared to my partners, I prescribe narcotics therapy for chronic pain: less often; more often; about the same.'

Section five addressed issues of opiate misuse: 'How do you manage patients who have misused their narcotics and are in active withdrawal? Please check all that apply:' (1) make them go through withdrawal for 1 or 2 days; (2) replace prescription immediately; (3) detox the first time they run out of medication; (4) detox after two or three times of running out of medication; (5) refer to alcohol/drug specialist; (6) refer to pain clinic; (7) refer to methadone clinic; and (8) other. 'What are your concerns about prescribing chronic narcotics? Please check all that apply': (1) addiction; (2) side effects; (3) tolerance buildup; (4) interaction with other medication; (5) lack of knowledge of which narcotic to use; (6) lack of knowledge of dosage requirements; (7) patients abusing the prescription; (8) my partners prefer not treating patients who have chronic pain with opioids; and (9) other.

The final set of questions addressed provider comfort level in prescribing narcotics based on patient characteristics. There were four questions designed on the basis of the Likert scale. On a scale from 1 to 10 with 1 being 'not at all comfortable' and 10 being 'very comfortable' – (1) How comfortable are you prescribing narcotics to someone with terminal cancer? (2) How comfortable are you prescribing narcotics to someone with chronic low back pain who has no history of alcohol or drug problems? (3) How comfortable are you prescribing narcotics to

someone with headaches who has a past history of drug and alcohol problems? (4) How comfortable are you prescribing narcotics to someone with headaches who has a current history (within the last 12 months) of drug and alcohol problems?

Analysis

SPSS software was used to generate the frequency tables and multivariate analysis. Univariate analysis (means, frequencies, and standard deviation) was performed to assess differences by gender, age, and specialty, year of graduation from residency, practice behavior, concerns, and comfort level. Multivariate correlation analysis was done on prescribing narcotics for different types of chronic pain diagnoses as well as different types of narcotics used. Binary logistic regression was done to evaluate the effect of potential covariates on physician practices regarding urine toxicology screens. Urine toxicology screening is a dependent variable (binary logistic regression analysis model with odds ratio); screening is a dichotomous variable that includes (either or both) initial urine toxicology screens of patients starting on opioid pain medication or random toxicology screens of patients taking ongoing opioid pain medication versus not ordering a toxicology screen under either or both conditions. Several factors were considered in the multivariate analysis, including physician age and gender, as well as whether or not physicians worried about patient opioid abuse or dependence. Also included in the model were indicators of whether physicians had a system to track patients on opioids.

Results

Table 1 reports demographic characteristics of the primary care physicians in this survey. Gender ratio was equal with 122 males (49%) and 125 females (51%). Mean age was 41 years, and the majority of respondents were between the ages of 30 and 49 years (68%). One hundred and seventy-three respondents (70%) were from family medicine and 71 (28.7%) were from internal medicine. More than half of the physicians (56.3%) surveyed said that they attended lectures in medical school or residency about the use of narcotics for chronic nonmalignant pain. The majority of the physicians ($n = 161$; 78.9%) in this survey completed their residency training in the Midwest.

The most frequent narcotics used for the treatment of chronic pain were codeine, hydrocodone, oxycodone, morphine continuous release and oxycodone extended release. The most common chronic pain diagnoses in these patients were osteoarthritis, chronic low back pain, migraine headaches, degenerative joint disease, and fibromyalgia. There was minimal difference between provider genders or among age groups (below 29, 30–39, 40–49 or 50 years and above) of physicians in prescribing either type of narcotic or the type of diagnosis for which they would prescribe narcotics for patients with chronic pain.

Table 2 reports the practice behaviors of physicians. Urine toxicology screening was not very common among primary care physicians either before starting narcotics or during treatment of established chronic pain patients on narcotics. Ninety-three percent reported they do not do urine toxicology screening before starting narcotics on new patients being treated for chronic pain. Analysis showed 85% do not perform toxicology screens once or twice a year on established chronic pain patients for whom narcotics are prescribed. Only slightly more than half of participants (55.9%) had a system established in the practice to track patients on narcotics. More than one third of the practices had no general agreement among the physicians and staff regarding prescription of narcotics for chronic pain. One fourth of practices had no policy established in the clinic for after-hours narcotic replacement.

Table 3 reports physician concerns about prescribing narcotics. The primary concern of the majority (84.2%) of physicians was patients abusing their prescriptions. Addiction was the

second major concern (74.9%). Other concerns were the side effects (68%), tolerance (60.7%), medication interaction (32%), and lack of knowledge of which narcotic to use (17%).

Table 4 reports the level of comfort in prescribing narcotics to patients with chronic pain. Although the majority of physicians were comfortable prescribing narcotics to someone with terminal cancer, they were less confident prescribing narcotics to patients with low back pain. The comfort level of physicians was diminished further in prescribing narcotics to someone with chronic pain associated with a current or past history of drug and alcohol abuse.

Table 5 reports results from the logistic regression analysis. Physicians who had a system to track patients had 2.46 greater odds of conducting toxicology screens ($p = 0.015$) than those who did not use such a system. Physician age, gender, and whether or not physicians worried about patient opioid abuse or dependence did not predict screening practices.

Discussion

The study provides new information on the current practices of primary care physicians in managing patients with chronic pain. There was a high degree of concordance among physicians in prescribing narcotics for different types of chronic pain diagnoses as well as different types of narcotics used. This was maintained by physicians' gender and age. Low back pain (39.5%) is the most common diagnosis for which physicians would prescribe opioids. These results are similar to a survey of general practitioners done in the UK, where they identified low back pain (40%) and pain from osteoarthritis (36%) to be the common diagnoses reported in patients³.

Another important finding is the observation that physicians are reluctant to prescribe opioids due to a concern that their patients will abuse prescription opioids (84%) followed by addiction, side effects, and tolerance. Compton *et al.*¹⁸ identified in his study that increase in opioid abuse was especially worrisome. Bendtsen *et al.*¹⁹ found the presentation of drug seeking behavior (44%) was top on the list of opioid abuses. Other studies identified similar concerns in the use of narcotics for the treatment of chronic pain^{6–8,20}.

The majority of the physicians in the study were comfortable prescribing narcotics to patients with terminal cancer. They were less comfortable prescribing narcotics to patients with low back pain. The comfort level of physicians in prescribing narcotics for patients with chronic pain along with past history of drug or alcohol problems was low and even lower with a current history of drug or alcohol problems. The findings of the study were similar to a survey conducted in San Francisco²¹. This study found that 16% of primary care physicians said they would never prescribe opioids to a previous substance abuser and 42% said they would never prescribe opioids to a current substance abuser, even if recommended by an appropriate specialist. However, these studies did not explore the effect of long term doctor-patient relationship on the comfort level or on the prescribing of narcotics. When there is uncertainty about the pain diagnosis or concern about patient characteristics, more objective data such as a urine toxicology screen may be a useful diagnostic contributor in the management of chronic pain.

How does a physician minimize opioid abuse and addiction? A number of clinical guidelines have been proposed and include patient consent, psychological evaluation, substance abuse assessment, and random urine analysis prior to the initiation of opioid therapy. In addition, if patients are started on opioids a treatment contract is often used that includes an agreement to obtain opioids from only one physician and one pharmacy, no early refills, and no replacement for lost scripts. However, there is limited empirical evidence that these clinical guidelines improve patient outcomes. The one guideline that seems to work is urine toxicology testing.

Three studies found reduced rates of illicit drug use following initiation of routine urine testing^{16,17,22}.

One of the important findings of the study is the low frequency of toxicology testing for illicit drugs. This is surprising in view of the fact that patient self-report on current illicit drug use is not reliable or valid. Fleming *et al.*²³ compared self-report to toxicology tests in a large chronic pain sample of 801 patients on daily opioid therapy. In this study a urine toxicology screen identified 50 additional cases of marijuana use (156 by toxicology tests vs. 106 by self report) and 34 additional cases of cocaine use (60 by toxicology tests vs. 26 by self report). Chermack *et al.*²² reported that urine toxicology testing produced higher rates of substance use than self-report. Urine toxicology can be easily incorporated into the routine care of chronic pain patients with minimal patient resistance as long as all patients are treated the same.

Strengths of the study include a high response rate of physician participants and a diverse sample of primary care physician clinics located in eight counties throughout the state of Wisconsin. The clinic sites include rural, suburban, and urban settings. The questionnaire addressed a number of issues of critical concern to physicians and health care systems. This survey, like all surveys, has the inherent limitation of putting reliance on reported behavior rather than actual behavior²⁴; over-reporting in a survey when respondents are asked to 'check all that apply'; response to questions may reflect what the respondents perceive to be a desirable answer rather than their true opinion²⁵, and reliability of the instrument. The generalizability of the findings is not clear, as regional variations in treating and prescribing may not be represented in the current study, making it difficult to compare to studies in other parts of the country. Research is needed to assess the use of clinical guidelines and other clinic based approaches in order to address physician concerns about misuse of opioids.

Conclusion

The survey demonstrates physicians' concerns in prescribing narcotics to patients in chronic pain included prescription drug abuse, addiction, adverse effects, tolerance, and medication interaction. Comfort level of physicians in prescribing narcotics varied with different patient characteristics. The majority of the physicians were comfortable in prescribing narcotics to someone with terminal cancer but not to patients with back pain - even with no history of a drug or alcohol problem. They were even less comfortable prescribing narcotics to patients with a past or current history of a drug or alcohol problem. This survey also identified that only a small percentage of physicians are conducting urine toxicology screens on their patients either before or during opioid therapy. There was a high degree of concordance among physicians in prescribing narcotics for different types of chronic pain diagnoses as well as different types of narcotics used with the agreement persisting between gender and among different age groups.

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Table 1

Physician characteristics (N = 248)

Item	N (%)
Physician age (years)	
29 or less	26 (10.8)
30–39	94 (39)
40–49	70 (29)
50 or more	51 (21.2)
Specialty	
Family medicine	173 (70)
Internal medicine	71 (28.7)
Other (geriatrics, community physician)	3 (1.2)
Years since completed residency	
(1) Less than 10	118 (54.6)
(2) 10–20	49 (22.7)
(3) Over 20	49 (22.7)
Location of residency – region	
Midwest	161 (78.9)
Northeast	20 (9.8)
South	14 (6.9)
West	9 (4.4)
Had lectures in medical school or residency about the use of opioids	
Yes	139 (56.3)
No	85 (34.4)

Note: Total 'N' may be < 248 due to missing responses

Table 2
Practice approaches to narcotic prescribing (N = 248)

	Yes, <i>n</i> (%)
Do you conduct urine toxicology screens on all new patients treated for chronic pain before starting narcotics?	17 (6.9)
Do you do random toxicology screens once or twice a year on established chronic pain patients for whom you prescribe chronic narcotics therapy?	37 (15.0)
Do you have a system established in your clinic to track patients who are prescribed chronic narcotics?	138 (55.9)
Is there general agreement among the physicians and staff in your practice regarding prescription of chronic narcotics?	161 (65.2)
Do you have a policy established in your clinic for after-hours narcotic replacement?	187 (75.7)
Compared to partners, I prescribe narcotics therapy for chronic pain:	
Less often	81 (35.1)
About the same	116 (50.2)
More often	34 (14.7)

Table 3
Physician concerns about prescribing opioids for chronic pain (N = 248)

	<i>n</i> (%)
Patients abusing the prescription	208 (84.2)
Addiction	185 (74.9)
Side effects	168 (68.0)
Tolerance build up	150 (60.7)
Interaction with other medication	79 (32.0)
Lack of knowledge of which narcotic to use	42 (17.0)
Lack of knowledge of dosage requirement	30 (12.1)
My partners prefer not treating patients who have chronic pain with opioids	30 (12.1)
Other	29 (11.7)

Table 4
Physician comfort with prescribing narcotics for different pain conditions (N = 248)

Different age group of physicians (years)	Terminal cancer	Chronic low back pain with <i>no</i> history of alcohol and drug problems	Headaches with a <i>past</i> history of drug and alcohol problems	Headaches with a <i>current</i> history of drug and alcohol problems	Summative comfort score for all four items
29 or less (<i>n</i> = 26)	Mean Std. Dev	6.3 1.8	3.1 1.6	2.2 1.6	20.5 4.2
30–39 (<i>n</i> = 94)	Mean Std. Dev	6.7 2.0	2.9 1.4	1.8 1.2	20.8 3.9
40–49 (<i>n</i> = 70)	Mean Std. Dev	7.0 1.9	3.0 1.8	1.8 1.2	21.6 4.0
50 or more (<i>n</i> = 51)	Mean Std. Dev	6.9 2.2	3.0 1.8	2.1 1.6	21.5 4.5
Total (<i>n</i> = 241)	Mean Std. Dev	6.8 2.0	3.0 1.6	1.9 1.3	21.1 4.1

Note: Scale = 1–10, where 1 = not at all comfortable, to 10 = very comfortable

Table 5
Likelihood of ordering a urine toxicology screen (N = 248)

	OR	95% CI		<i>p</i> value
		Lower	Upper	
System to track patients	2.46	1.2	5.08	0.015*
Physician age (continues variable)	0.97	0.93	1.01	0.127
Worry about opioid abuse	1.53	0.46	5.09	0.491
Physician gender	0.81	0.41	1.61	0.545
Worry about opioid addiction	1.11	0.45	2.75	0.824
Constant	0.15			0.078

Urine toxicology screening as the dependent variable [binary logistic regression analysis model with odds ratio) 'screening' is a dichotomous variable that includes (either or both) initial urine toxicology screens of patients starting on opioid pain medication or random toxicology screens of patients taking ongoing opioid pain medication

*
 $p < 0.05$