

Reduction in Narcotic Use After Primary Total Knee Arthroplasty and Association with Patient Pain Relief and Satisfaction

Patricia D. Franklin, MD, MBA, MPH,* John A. Karbassi, MD, MPH,*
Wenjun Li, PhD,† Wenyun Yang, MS,* and David C. Ayers, MD*

Abstract: We examined the prevalence of narcotic use before and after total knee arthroplasty (TKA) and its association with post-TKA pain relief and satisfaction. Data on 6364 primary, unilateral TKA patients in a national registry were analyzed. Before TKA, 24% of patients were prescribed one form of narcotic. Of these, 14% reported continued narcotic use at 12 months after TKA, whereas the majority discontinued use. Only 3% of patients who did not use narcotics before TKA had a narcotics prescription at 12 months. Patients who used narcotics before TKA were more likely to have a narcotic prescription at 12 months post-TKA, reported greater pain at 12 months, and were more likely to be dissatisfied with TKA outcome. These findings have implications for patient pre-TKA counseling. **Keywords:** total knee arthroplasty, narcotics, pain, patient satisfaction, outcomes. © 2010 Published by Elsevier Inc.

Total knee arthroplasty (TKA) is a successful procedure that reliably and reproducibly relieves pain and improves function in patients with advanced knee arthritis. Despite its success, significant variation in functional improvement persists after TKA. In a national sample of more than 8000 TKA patients, improvement in pre-to-post physical function ranged from 0 to 30 points at 6 months as measured by the 12-item Short-Form Physical Component Summary (SF-12 PCS) [1,2]. Despite the variation, this cohort reported pain relief and mean PCS improvement comparable with previous national studies [3]. Although the PCS scores were normally distributed before TKA, the 12-month post-TKA PCS scores were in a bimodal distribution suggesting 2 patient subgroups: one group with a significant gain in function; the second, without. Possible explanations for this poorer post-TKA function include persistent knee pain, the impact of other musculoskeletal pain, or the presence of comorbid medical conditions.

Research evaluating pain relief and functional gain after TKA often does not adjust for the severity and presence of musculoskeletal disease in nonsurgical joints (eg, hips or spine). It is therefore difficult to determine if poorer post-TKA function and poorer pain relief are related to pain in the index surgical joint or arthritis in other joints. For example, if the goal of narcotic medication before TKA is to treat severe disease in the index surgical knee, the TKA surgery may eliminate both the knee pain and the need for narcotics after TKA. On the other hand, if narcotics are prescribed in patients with advanced musculoskeletal pain in multiple joints, even after pain relief in the surgical knee, the need for the narcotic medications may persist.

In this study, we analyzed prescription rates for narcotic medications in a national cohort of patients to determine the proportion of TKA patients using narcotics to manage pain before TKA and at 12 months after surgery, and to evaluate the level of pain and satisfaction with surgery at 12 months after TKA among patients using narcotic medications before and after TKA surgery. We hypothesized that narcotic use at 12 months after primary TKA would be associated with more pain and lesser satisfaction.

Methods

Institutional review board approval was obtained for retrospective analyses of de-identified data collected prospectively on a national sample of primary, unilateral TKA patients sponsored by Zimmer, Inc., Warsaw, Ind. More than 8500 patients in 146 practices with TKA

*From the *Department of Orthopedics and Physical Rehabilitation, University of Massachusetts Medical School, Worcester, Massachusetts; and †Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts.*

Submitted January 22, 2010; accepted May 3, 2010.

No benefits or funds were received in support of this study.

Reprint requests: Patricia D. Franklin, MD, MBA, MPH, Department of Orthopedics and Physical Rehabilitation, University of Massachusetts Medical School, 55 Lake Ave North, Worcester, Massachusetts 01655.

© 2010 Published by Elsevier Inc.

0883-5403/2506-0004\$36.00/0

doi:10.1016/j.arth.2010.05.003

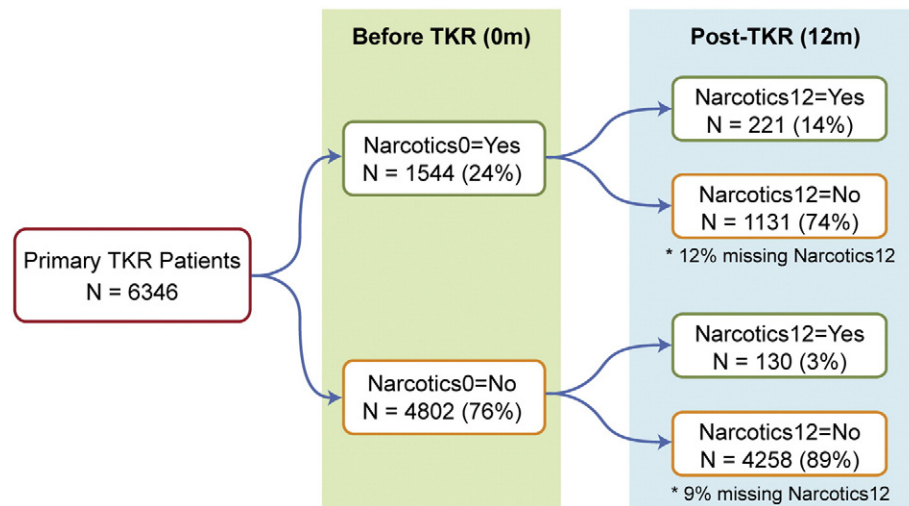


Fig. 1. Total knee arthroplasty patient narcotic prescriptions before TKA and at 12 months post-TKA.

between 2000 and 2004 participated. The cohort has been described elsewhere and is representative of national TKA patients and surgical practice [2]. The subset of patients ($n = 6346$) with complete baseline medication data, outcome, and satisfaction records were identified. Descriptive statistics to determine the rate of narcotic use before and after surgery and bivariate analyses to identify the pre-TKA patient attributes and clinical metrics associated with 12-month narcotic use and pain level were executed. Logistic regression models evaluated the association of 12-month narcotic use with patient dissatisfaction with surgery outcome. All analyses were performed using STATA, version 10 (Stata Corp, College Station, Tex).

Results

Overall, the analytic cohort was representative of national TKA patients. Two thirds of the sample were women, 66% were older than 65 years, and 91% were white. More than 95% had a primary diagnosis of osteoarthritis and 56% were obese (body mass index [BMI] >30 kg/m²) at the time of TKA. At baseline, the mean age was 68 years; mean function (SF12 PCS) [4]

was 30 and emotional health (SF-12 Mental Component Summary, or SF-12 MCS) was 52.

Surgeons reported that 24% of the 6346 patients ($n = 1544$) had a prescription for at least 1 narcotic medication including Percocet, Vicodin, Darvocet, Tylenol with codeine, or other. Of the patients prescribed narcotics before TKA, 14% continued with a prescription for narcotics at 12 months after TKA; 74% did not and 12% did not report 12-month narcotic information. Approximately 3% (2.6%) of patients who did not use narcotics before TKA had a prescription for narcotics at 12 months. Although more than 4 of 5 patients who used narcotics before TKA no longer had a prescription; those who received narcotics before TKA were significantly more likely to report continued narcotic use after TKA ($P < .001$; see Fig. 1).

Table 1 compares the demographic, pain, and function details for patients before TKA who were prescribed or not prescribed narcotics. Patients using narcotics before surgery had a mean age of 65 years, mean BMI of 33 kg/m², mean pre-PCS of 28, mean Knee Society Score of 35, mean MCS of 49, and 71% were women.

Table 1. Description of Patients before TKA by Narcotic Use

	Narcotics 0 = Yes ($n = 1544$)		Narcotics 0 = No ($n = 4802$)		Percent Reporting Narcotics Use	P-Value for Comparison*
	Mean/ n	SD/%	Mean/ n	SD/%		
Age	65.25	11.01	68.11	9.67		.000
Sex						
Female	1089	70.5	3135	65.3	25.8	
Male	442	28.6	1623	33.8	21.4	.000
BMI	32.55	7.49	31.69	6.78		.000
Pre-SF-12 scores						
SF-12 PCS	28.24	7.06	30.58	7.85		.000
SF-12 MCS	48.66	11.96	53.02	10.80		.000
Pre-KSS knee score	34.79	15.17	37.06	15.57		.000

KSS indicates Knee Society Score.

* χ^2 Test for categorical variables. Wilcoxon rank sum test for continuous variables.

Download English Version:

<https://daneshyari.com/en/article/4063437>

Download Persian Version:

<https://daneshyari.com/article/4063437>

[Daneshyari.com](https://daneshyari.com)