Original Article

Reduced Opioid Prescription After Anterior Cruciate Ligament Reconstruction Does Not Affect Postoperative Pain or Prescription Refills: A Prospective, Surgeon-Blinded, Randomized, Controlled Trial

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Purpose: To investigate opioid utilization after anterior cruciate ligament (ACL) reconstruction in the setting of a multimodal pain regimen and assess the feasibility of prescribing fewer opioids to achieve adequate postoperative pain control. **Methods:** Patients undergoing ACL reconstruction in conjunction with a multimodal approach to pain control were randomized to receive either 30 or 60 tablets of hydrocodone (10 mg)–acetaminophen (325 mg). Patients were contacted at multiple time points up to 21 days after surgery to assess opioid utilization and medication side effects. We compared the mean number of tablets used between groups as the primary outcome. Preoperative variables associated with an increased risk of higher opioid pain medication requirements were also assessed. **Results:** The final analysis included 43 patients in the 30-tablet group and 42 in the 60-tablet group. There was no significant difference between groups in the number of tablets consumed (9.5 vs 12.2, $P = .22$), number of days opioids were required (4.5 vs 6.2, $P = .14$), 3-month opioid refill rates (12% vs 7%, $P = .48$), or postoperative pain control at any point up to 21 days after surgery. The 30-tablet group had a significantly smaller proportion of unused tablets compared with the 60-tablet group (69% of prescribed tablets [910 tablets] vs 80% of prescribed tablets [2,027 tablets], $P < .001$). Opioids were required after surgery by 91% of patients (n = 77), and 81% could have had their pain medication requirements met with a prescription for 15 tablets. Risk factors for increased postoperative opioid use included a family history of substance abuse ($\beta = 14.1$; 95% confidence interval, 5.7-22.4; $P = .0014$) and increased pain score at 2 hours after surgery ($\beta = 1.07$; 95% confidence interval, 0.064-2.07; $P = .037$). **Conclusions:** Orthopaedic surgeons may significantly reduce the number opioid tablets prescribed after ACL reconstruction without affecting postoperative pain control or refill rates. **Level of Evidence:** Level I, randomized controlled trial.

The American Academy of Orthopaedic Surgeons has recommended that clinicians, as a major prescriber of opioids in the United States, develop

standardized opioid prescription protocols to limit their contribution to the opioid epidemic.[1-3] Recent estimates have suggested that orthopaedic surgeons are responsible for 7.7% of opioid prescriptions and are among the highest distributors of opioid prescriptions per clinician compared with any other specialty.[3] Numerous observational studies have been performed in recent years to investigate opioid use after many common orthopaedic procedures.[4] These studies have suggested that patients frequently are prescribed more opioids than needed for adequate pain control, and these unused opioids are at risk of diversion to family and friends for illicit use.[5] It is therefore critical for clinicians to develop evidence-based guidelines for pain control that limit the availability of unneeded opioids.

Anterior cruciate ligament (ACL) reconstruction is one of the most common outpatient procedures performed in orthopaedic surgery.[6] Opioids are commonly

prescribed for pain control after this procedure, and a wide range of utilization has been reported in the literature. Postoperative opioid consumption has been reported to be as high as 28 to 38 tablets (210-285 morphine milligram equivalents [MMEs]) in a study comparing all-inside versus full−bone tunnel ACL preparation.[7] In contrast, authors have reported use as low as 12 tablets (139.5 MMEs) for adolescents and young adults who were prescribed 30 tablets of oxycodone at discharge and provided education regarding responsible use of opioids.[8] The concept of multimodal pain control with anesthetic blocks and nonsteroidal anti-inflammatory drugs is particularly important because it has been shown to be effective in decreasing overall opioid consumption.[9-11] Furthermore, a retrospective review of patients undergoing a variety of surgical procedures found that increased pill quantities prescribed after surgery had a strong association with higher opioid consumption.[12]

The purposes of this study were to investigate opioid utilization after ACL reconstruction in the setting of a multimodal pain regimen and assess the feasibility of prescribing fewer opioids to achieve adequate postoperative pain control. We hypothesized that patients provided with a prescription for 30 opioid tablets would consume fewer tablets than patients prescribed 60 opioid tablets.

Methods

Ninety-six patients were enrolled in this prospective, surgeon-blinded, randomized, controlled trial (ClinicalTrials.gov trial identifier NCT03876743). Patients were randomized into 1 of 2 groups using block randomization (Fig 1). They underwent ACL reconstruction performed by 2 fellowship-trained orthopaedic sports surgeons (M.A.T., V.K.T.) at a single academic institution. The exclusion criteria were patients who sustained concomitant ligamentous injuries or were undergoing revision surgery, those with another indication for opioid use, or those younger than 18 years; however, no patients considered for this study met any of these requirements, so no patients were excluded. Enrollment occurred from March 2018 to August 2019, and consent was obtained from each patient agreeing to participate. This study was performed under an institutional review board−approved protocol.

Preoperative questionnaires were used to collect preoperative patient demographic characteristics including age, sex, height, and weight, as well as potential risk factors for increased postoperative opioid use including smoking history, employment status, sports participation, personal or family history of substance abuse, and level of education. All patients underwent ACL reconstruction with either hamstring or bone−patellar tendon−bone autograft, based on surgeon and patient preference after a discussion of the
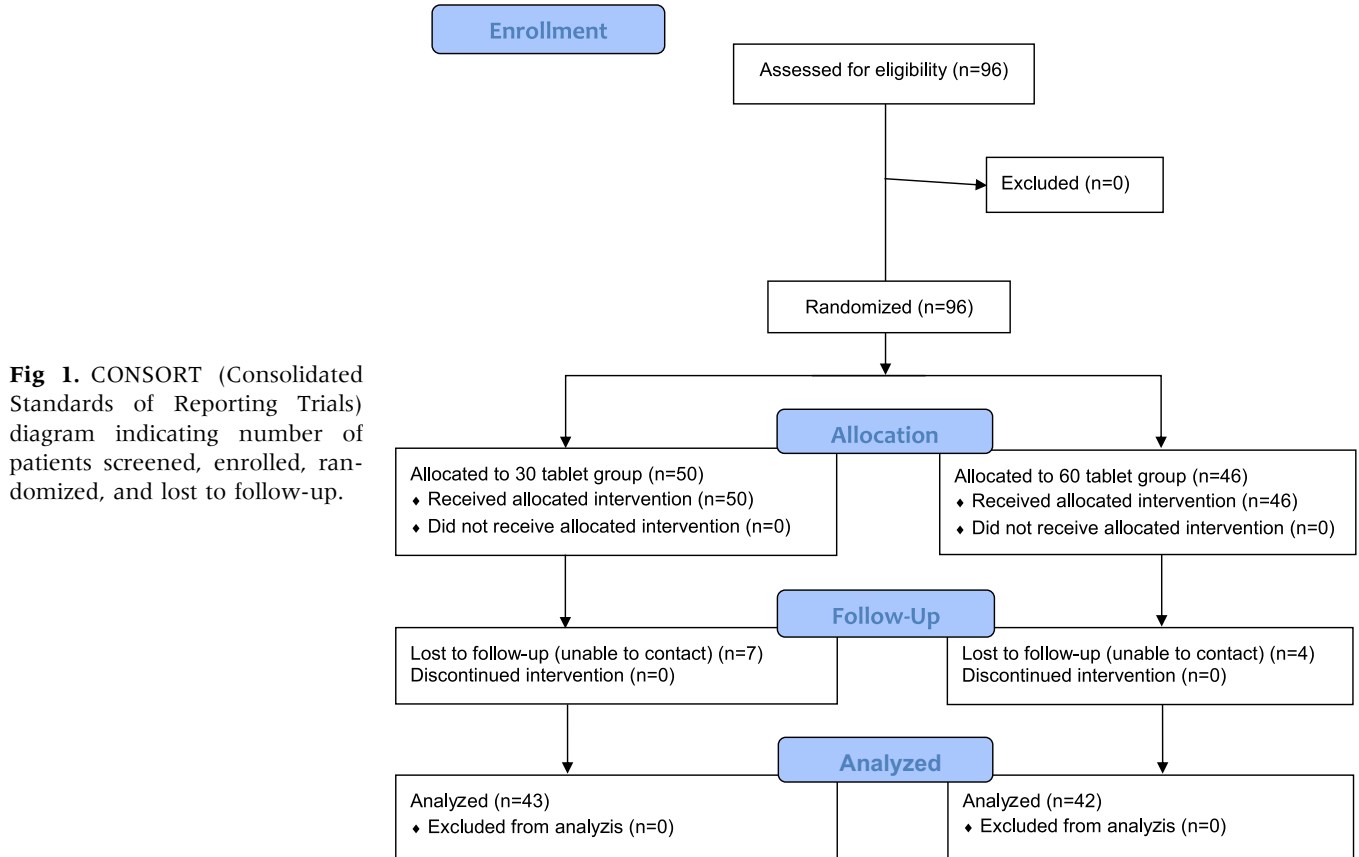
risks and benefits of each graft. An independent-tunnel surgical technique was performed with the method of graft fixation per surgeon preference. All meniscal repairs were completed with an all-inside technique. Any additional knee pathology identified, as well as interventions performed, during the procedure was recorded.

A multimodal approach to pain control was used during the perioperative period. All patients were administered ipsilateral, ultrasound-guided adductor canal blocks by anesthesiologists. Postoperatively, all patients received prescriptions for aspirin, 325 mg twice daily for 28 days, and naproxen, 500 mg twice daily for 28 days, and were randomized to receive either 30 or 60 tablets of hydrocodone (10 mg)−acetaminophen (325 mg).

Postoperatively, patients were assessed at designated time points. They were first assessed 2 hours after surgery, and the visual analog scale score for pain was recorded. Patients were then contacted by phone at 24 hours, 48 hours, and 7 to 14 days after surgery to record the following variables: numerical pain rating scale score, total number of opioid tablets used since surgery, last day on which patients used opioids, notable side effects, and any requests for prescription refills. Patients were considered lost to follow-up if they did not respond to phone and e-mail communication within the first 4 to 5 days after surgery. If patients were still taking opioids 14 days after surgery, they were again contacted at 21 days after surgery and the same variables were recorded. A retrospective chart review was also performed to assess for opioid refills within 3 months after surgery.

Dichotomous variables were compared using either the χ^2 test or Fisher exact test. Continuous variables were compared using independent-samples t tests. Results are reported as mean $\pm$ standard deviation. The primary outcome for this study was the total number of tablets used after surgery. Our null hypothesis was that there would be no difference in the number of opioid tablets used between the 2 groups. Studies published prior to the onset of this trial found that patients took an average of 28 to 38 tablets of either oxycodone or hydrocodone after ACL reconstruction.[7,13] We determined that reducing the number of opioids consumed by half would represent a clinically meaningful reduction in opioid utilization. Therefore, using the reported standard deviation from one of the aforementioned studies, with a mean of 14 tablets in the 30-tablet group, and setting the type I error rate at 5% and the power to detect a significant difference at 90%, we needed to enroll at least 31 patients per group. We therefore set the goal of accruing at least 40 patients in each group.

Furthermore, risk factors for increased opioid use after surgery were assessed by performing univariate and

Enrollment

Assessed for eligibility (n=96)

Excluded (n=0)

Randomized (n=96)

Allocation

Allocated to 30 tablet group (n=50)
♦ Received allocated intervention (n=50)
♦ Did not receive allocated intervention (n=0)

Allocated to 60 tablet group (n=46)
♦ Received allocated intervention (n=46)
♦ Did not receive allocated intervention (n=0)

Follow-Up

Lost to follow-up (unable to contact) (n=7)
Discontinued intervention (n=0)

Lost to follow-up (unable to contact) (n=4)
Discontinued intervention (n=0)

Analyzed

Analyzed (n=43)
♦ Excluded from analyzis (n=0)

Analyzed (n=42)
♦ Excluded from analyzis (n=0)

Fig 1. CONSORT (Consolidated Standards of Reporting Trials) diagram indicating number of patients screened, enrolled, randomized, and lost to follow-up.

multiple linear regression modeling, treating the number of tablets used after surgery as a continuous variable. All independent variables with $P < .1$ were included in the multiple regression analysis. All statistical analyses were performed using SPSS software (version 23; IBM).

Results

Of the 96 enrolled patients, 85 successfully completed the study and were available for analysis (88.5% follow-up): 43 patients in the 30-tablet group and 42 patients in the 60-tablet group. Patient demographic characteristics for each cohort are presented in Table 1. The average patient age was 32.2 ± 9.5 years, 45% were men, and the average body mass index was 27.3 ± 5.4. Additional knee pathology and procedural details are presented in Table 2. Meniscal pathology was found in 68% of patients, with 42% having undergone a concomitant meniscal repair at the time of ACL reconstruction. Chondral injuries were found in 40% of patients, although only 3 patients required chondroplasty. There were no significant differences in patient demographic characteristics, associated injuries, or procedural details between groups.

After surgery, there was no significant difference in the number of tablets used between the 30- and 60-tablet groups (9.5 ± 10.0 vs 12.2 ± 14.2, $P = .22$) (Table 3). The 60-tablet group had significantly more unused tablets than the 30-tablet group (48.3 ± 12.7 vs 21.2 ± 8.7, $P < .001$), totaling 2,027 unused tablets (20,270 MMEs) versus 910 tablets (9,100 MMEs). There was no significant difference in reported pain scores between groups at any of the follow-up time points, and there was no significant difference in the number of postoperative days opioids were used (4.5 ± 4.0 vs 6.2 ± 7.5, $P = .14$) or the percentage of patients experiencing any opioid-related side effects (55% vs 61%, $P = .55$). No patients experienced any major complications. There was also no significant difference in opioid refill rates within 3 months after surgery (12% vs 7%, $P = .48$).

Throughout the course of this study, 3,860 total opioid tablets (38,600 MMEs) were prescribed. Only 24% of the total prescribed tablets were used (922 tablets [9,220 MMEs]), leaving 76% of prescribed tablets (2,938 tablets [29,380 MMEs]) unused. In 8 patients (9.4%), no opioids were required after surgery (Fig 2). There were no identifiable differences in patient characteristics or preoperative variables that significantly varied in these patients compared with the remainder of the cohort. We observed that 67.1% of patients would have had their pain medication

Table 1. Baseline Patient Characteristics

	All Patients (N = 85)	30 Tablets (n = 43)	60 Tablets (n = 42)	P Value
Age, yr	32.2 ± 9.5	32.4 ± 10.5	31.9 ± 8.4	.66
Male sex	38 (45)	18 (42)	20 (48)	.60
BMI	27.3 ± 5.4	28.1 ± 6.3	26.4 ± 4.2	.14
Current smoker	4 (5)	3 (7)	1 (2)	.32
Prior smoker	10 (12)	5 (12)	5 (12)	.97
Employment status				.29
Employed	66 (78)	32 (74)	34 (81)	
Retired	2 (2)	1 (2)	1 (2)	
Unemployed	16 (19)	10 (23)	6 (14)	
Disabled	1 (1)	1 (2)	0 (0)	
Workers' Compensation case	2 (2)	1 (2)	1 (2)	.99
Participation in sports	51 (60)	27 (63)	24 (57)	.60
Preoperative medications				
Opioids within 30 days of surgery	0 (0)	0 (0)	0 (0)	NA
Opioids within 1 yr of surgery	3 (4)	2 (5)	1 (2)	.58
Benzodiazepines within 1 yr of surgery	10 (12)	6 (14)	4 (10)	.53
Muscle relaxants within 1 yr of surgery	0 (0)	0 (0)	0 (0)	NA
SSRIs within 1 yr of surgery	10 (12)	4 (9)	6 (14)	.48
Other pain medications within 1 yr of surgery	12 (14)	6 (14)	6 (14)	.97
Personal history of narcotic use	0 (0)	0 (0)	0 (0)	NA
Family history of substance abuse	10 (12)	4 (9)	6 (14)	.48
Education completed				.83
High school	14 (7)	7 (16)	7 (17)	
Undergraduate	48 (56)	26 (59)	22 (52)	
Graduate school	23 (27)	11 (25)	12 (29)	

NOTE. Data are presented as mean ± standard deviation or number (percentage). We used the Student t test for characteristics with continuous variables and the χ^2 test for categorical variables. The Fisher exact test was performed when any variable had fewer than 5 cases.

BMI, body mass index; NA, not applicable; SSRI, selective serotonin reuptake inhibitor.

requirements met with a prescription for 10 tablets (100 MMEs) and 87.1% would have had their requirements met with a prescription for 20 tablets (200 MMEs). Fig 3 shows the total number of opioid tablets used by groups of patients requiring varying numbers of tablets. It is interesting to note that the 57 patients who required 10 tablets or fewer used 28% of the prescribed opioids (259 tablets) whereas the 6 patients who used more than 30 tablets also used 28% of the prescribed opioids (261 tablets).

A family history of substance abuse and pain score at 2 hours after surgery were identified as risk factors for increased postoperative opioid use (Table 4). When we controlled for other variables, a family history of

Table 2. Procedural Details

	All Patients (N = 85)	30 Tablets (n = 43)	60 Tablets (n = 42)	P Value
Laterality of procedure				.020
Left	49 (58)	30 (70)	19 (45)	
Right	36 (42)	13 (30)	23 (55)	
Type of autograft				.43
Bone−patellar tendon−bone	15 (18)	9 (21)	6 (14)	
Hamstring	70 (82)	34 (79)	36 (65)	
Meniscal injury and treatment				.33
No injury	27 (32)	16 (37)	11 (26)	
Injury without treatment	4 (5)	1 (2)	3 (7)	
Injury with debridement	18 (21)	10 (23)	8 (19)	
Injury with repair	36 (42)	16 (37)	20 (48)	
Cartilage injury and treatment				.38
No injury	51 (60)	23 (53)	28 (67)	
Injury without treatment	31 (36)	19 (44)	12 (29)	
Injury with chondroplasty or intervention	3 (4)	1 (2)	2 (5)	

NOTE. Data are presented as number (percentage). We used the Student t test for characteristics with continuous variables and the χ^2 test for categorical variables. The Fisher exact test was performed when any variable had fewer than 5 cases.

Table 3. Outcomes

	All Patients (N = 85)	30 Tablets (n = 43)	60 Tablets (n = 42)	P Value
Pain postoperatively (of 10)				
2 h	5.3 ± 2.5	5.0 ± 2.7	5.6 ± 2.2	.30
24 h	5.3 ± 2.4	4.9 ± 2.2	5.6 ± 2.5	.113
48 h	4.4 ± 2.2	4.3 ± 2.2	4.6 ± 2.2	.34
7 d	2.8 ± 1.9	2.9 ± 2.0	2.6 ± 1.8	.57
21 d	2.6 ± 1.7	1.0 ± 0.0	3.2 ± 1.7	.13
Pills taken	10.8 ± 11.9	9.5 ± 10.0	12.2 ± 14.2	.22
Pills remaining	34.6 ± 17.1	21.2 ± 8.7	48.3 ± 12.7	<.001
Pill counts				
Pills prescribed,* n	3,860	1,320	2,540	
Pills taken	922 (24)	409.5 (31)	512.5 (20)	<.001
Pills remaining	2,938 (76)	910.5 (69)	2,027.5 (80)	<.001
Days taken postoperatively	5.4 ± 6.0	4.5 ± 4.0	6.2 ± 7.5	.14
Any side effects†	49 (58)	24 (55)	25 (61)	.55
Opioid refills within 3 mo after surgery	8 (9)	5 (12)	3 (7)	.48

NOTE. Data are presented as mean ± standard deviation or number (percentage) unless otherwise indicated. We used the Student *t* test for characteristics with continuous variables and the χ^2 test for categorical variables.

*By the date of final follow-up at 21 days after surgery, there was one 30-tablet refill in group 1 and one 20-tablet refill in group 2.

†Potential side effects included lightheadedness, nausea, drowsiness, gastrointestinal symptoms, and constipation.

substance abuse significantly increased the average number of tablets used by 14.1 (95% confidence interval, 5.7-22.4; *P* = .0014) and each 1-point increase in the pain score at 2 hours after surgery increased the number of opioid tablets used postoperatively by 1.07 (95% confidence interval, 0.064-2.07; *P* = .037) (Table 5).

Discussion

This study found no significant difference in the number of opioid tablets consumed after ACL reconstruction whether patients were prescribed 30 or 60 tablets. There was a significant reduction in the number of unused opioids without any change in reported pain scores postoperatively. Orthopaedic surgeons have a duty to develop perioperative pain control regimens that limit postoperative opioid utilization and reduce the number of unused opioids circulating in the community.[9,10] ACL reconstruction is one of the most common outpatient orthopaedic procedures, and the majority of patients are prescribed opioids postoperatively.[6] In a large review of opioid utilization after some of the most common surgical procedures performed in the United States, Scully et al.[14] found that in more than 16,000 ACL reconstructions performed, 39% of patients required prescription refills at an average of 8 days after surgery. ACL reconstructions therefore represent an excellent opportunity to improve perioperative pain management through a multimodal approach while limiting unneeded opioid use and excess prescribing.

Opioid prescriptions and utilization after ACL reconstruction have varied greatly in the literature. A randomized controlled trial comparing all-inside versus full−tibial tunnel approaches to tunnel preparation

was performed and found that patients took between 28 and 38 tablets of oxycodone, 5 mg (210 and 285 MMEs, respectively), postoperatively.[7] There have also been reports of patients requiring as few as 12 tablets postoperatively.[15] Therefore, the goal of our project was to observe the outcomes of prescribing patients differing numbers of opioids after surgery. We hypothesized that patients would take fewer opioids if they were prescribed fewer tablets postoperatively.

Our results showed that patients used the same number of tablets regardless of whether they were prescribed 30 or 60 tablets (9.5 tablets [95 MMEs] vs 12.2 tablets [122 MMEs], *P* = .22). These findings are contradictory to the results of a prospective cohort study of patients undergoing ACL reconstruction by Farley et al.,[15] who found that prescribing patients 30
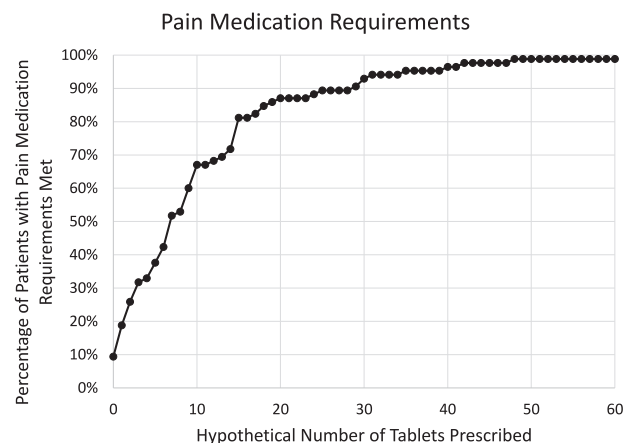
Fig 2. Graph showing percentage of study patients who would have had their pain medication requirements met based on number of tablets prescribed postoperatively.

Total Opioid Utilization
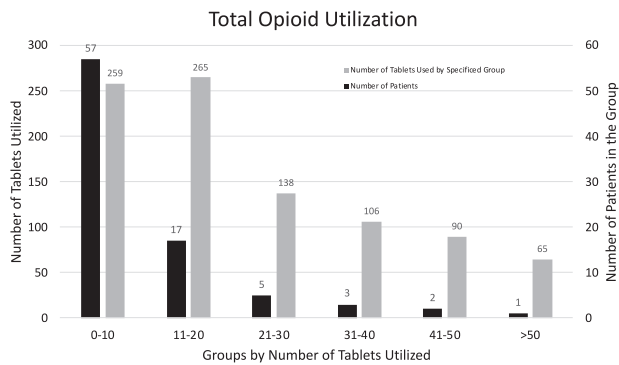
Fig 3. Bar chart grouping the patients based on the number of tablets they used in the postoperative period and showing the number of patients in each group (black bars), as well as the total number of tablets used by the patients in each group (gray bars).

tablets compared with 50 tablets significantly reduced the number of tablets taken, notably if the patients were provided with education regarding responsible opioid use (12.4 tablets [139.5 MMEs] vs 25.4 tablets [285.5 MMEs], $P < .001$). Opioid utilization information in the prior study was collected at a single time point, approximately 3 weeks after surgery, which raises concern for possible patient recall errors. A strength of our study was the prospective study design with early patient contact within the first couple of days after surgery, limiting potential errors in patient recall. The aforementioned study also did not mention the protocol for multimodal pain control or the use of anesthetic blocks, which have been shown in our study

and other studies to decrease postoperative opioid utilization.[11]

In addition, our study showed a significant ability to reduce the number of unused opioid tablets circulating in the community (21.2 tablets in the 30-tablet group vs 48.3 tablets in the 60-tablet group). The proportion of unused tablets was also significantly less in the 30-tablet group than in the 60-tablet group (69% vs 80%). This had no effect on overall pain control at any time point after surgery, the number of days opioids were required, the prevalence of any notable side effects, or opioid refill rates within 3 months after surgery. Similar findings have been observed following state-mandated policies that restrict the quantity of opioids prescribed after surgery.[16] The state of Vermont observed that a 33% reduction in prescribed opioids resulted in dramatic reductions in unused tablets without a significant difference in the proportion of patients reporting inadequate pain control. Clinicians have the potential to significantly reduce the volume of unused opioids circulating in the community by reducing the number of pills prescribed at discharge without significantly altering their patients' pain control.

When we combine all patients in our study into a single cohort, the patients used an average of 10.8 tablets (108 MMEs), or only 24% of the total amount prescribed in this study, over an average course of 5.4 days. This amount of opioid requirement after ACL reconstruction is less than the MME requirements reported in similar studies. In one series, patients prescribed 30 tablets of oxycodone, 7.5 mg, and provided

Table 4. Univariate Analysis to Assess for Risk Factors for Increased Opioid Tablets Used Postoperatively

Variable	β Coefficient (95% CI)	P Value
Age	0.032 (−0.24 to 0.31)	.81
Sex	−0.59 (−5.8 to 4.6)	.82
BMI	−0.019 (−0.50 to 0.46)	.94
Current smoker	8.0 (−4.1 to 20.1)	.19
Prior smoker	2.7 (−5.5 to 10.7)	.51
Employment status	−0.085 (−3.3 to 3.1)	.96
Workers' Compensation case	5.3 (−11.8 to 22.3)	.54
Family history of substance abuse	12.2 (4.6 to 19.8)	.0020
Education	2.1 (−1.9 to 6.0)	.29
Medications used within 1 yr prior to surgery		
Opioids	6.7 (−7.2 to 20.7)	.34
Benzodiazepines	6.7 (−1.2 to 14.6)	.10
SSRI	6.5 (−1.4 to 14.4)	.10
Other pain medications	−2.5 (−9.9 to 4.9)	.51
Graft type (BPB vs hamstring)	−1.5 (−8.3 to 5.3)	.66
Meniscal management*	1.3 (−0.72 to 3.2)	.21
Cartilage management†	−3.2 (−7.8 to 1.3)	.16
Pain score at 2 h postoperatively	1.04 (−0.039 to 2.1)	.059

NOTE. Univariate linear regression analysis was performed.

BMI, body mass index; BPB, bone−patellar tendon−bone; CI, confidence interval; SSRI, selective serotonin reuptake inhibitor.

*Meniscal management included no injury versus injury with no intervention or injury with either debridement or repair.

†Cartilage management included no injury versus injury with no intervention or injury with treatment by chondroplasty.

Table 5. Multiple Regression Analysis to Assess for Risk Factors for Increased Opioid Tablets Used Postoperatively

Variable	β Coefficient (95% CI)	P Value
Family history of substance abuse	14.1 (5.7-22.4)	.0014
Pain score at 2 h postoperatively	1.07 (0.064-2.07)	.037

NOTE. This analysis included variables with $P < .1$ on univariate analysis.

CI, confidence interval.

formal education regarding responsible opioid consumption used 139.3 MMEs over a period of 3.5 days.[15] Another study retrospectively reviewed knee arthroscopy procedures and found that patients undergoing ACL reconstruction used an average of 20.6 tablets of either oxycodone or hydrocodone, in addition to a prescription for diazepam, and 66% of patients no longer needed opioids by postoperative day 4.[8]

The use of multimodal pain control and anesthetic blocks is a critical component to consider when assessing postoperative opioid utilization. A retrospective review of patients undergoing ACL reconstruction at a single institution noted that after the implementation of a multimodal postoperative pain protocol, the mean number of opioids prescribed at discharge decreased from 73 tablets to 40 tablets and the percentage of patients requesting opioid refills decreased from 29.2% to 11.4%.[11] A meta-analysis of randomized controlled trials testing acetaminophen, nonsteroidal anti-inflammatory medications, or selective cyclooxygenase 2 inhibitors in addition to morphine after surgery found 15% to 55% reductions in morphine consumption.[17] Regional anesthesia has also been shown to significantly reduce perioperative opioid utilization, with a report of adductor canal blocks reducing 24-hour opioid consumption by 7.4 MMEs.[18] All of the patients in our study received an adductor canal block and were prescribed aspirin and naproxen in addition to the opioid prescription.

Numerous variables that predict increased opioid utilization after ACL reconstruction have been identified in the literature, such as additional procedures being performed at the time of surgery (i.e., meniscal repair or chondroplasty), age, and preoperative opioid use.[19,20] By design and for isolation of other factors, our study excluded any patients using opioids at the time of surgery; however, we did assess for opioid use within 1 year prior to surgery as a risk factor and did not find it to be significant. In this study, however, a family history of substance abuse and an increased pain score at 2 hours after surgery were significant risk factors for increased opioid utilization in the postoperative period. In the general surgery literature, a family history of substance abuse has previously been reported as a risk factor for increased opioid intake.[21] Genetic studies of opioid use have suggested significant heritability of

drug use behavior, with relatives of probands with opioid use disorders being 10 times more likely to have opioid-related disorders.[22,23] Further studies are required to more accurately identify risk factors associated with opioid utilization after surgery.

Limitations

This study had several limitations. The sample size was small, which increases the odds of a type II error. Additionally, this was not a double-blind study in that patients were aware of their group assignments, which may have influenced their subjective pain scores and opioid use. The mechanism of recording consumed tablets was self-reported, leading to potential patient reporting bias. However, this does improve on previously published data on this topic, wherein pill count information was collected from a single questionnaire assessed approximately 3 weeks after surgery.[15] We also did not limit patients from seeking out alternative treatment methods for their pain, although this study did control for types of anesthetic blocks and provided uniform prescriptions for nonopioid medications. Unlike other studies, we did not introduce a preoperative educational session or handout, which may have further decreased a patient's opioid use. Finally, patients were followed up for a maximum of 3 weeks, which limits the ability to assess for the development of chronic opioid dependence.

Conclusions

Orthopaedic surgeons may significantly reduce the number opioid tablets prescribed after ACL reconstruction without affecting postoperative pain control or refill rates.

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