

Pain and Opioid Use After ACL Reconstruction

Ehab Nazzal

PI: John Xerogeanes, MD

Department of Orthopaedic Surgery
Emory University, Atlanta GA

Disclosures

No Relevant Financial Disclosures



Objectives

- Background of opioid epidemic in the United States
- Overview of opioid and ACL reconstruction research projects
- Future directions



Background– The Opioid Epidemic

- USA comprises less than 5% of world's population, yet consumes 80% of global opioid supply
- Between 1997-2007, US opioid prescriptions increased by over 600%



1 in 96



1 in 103

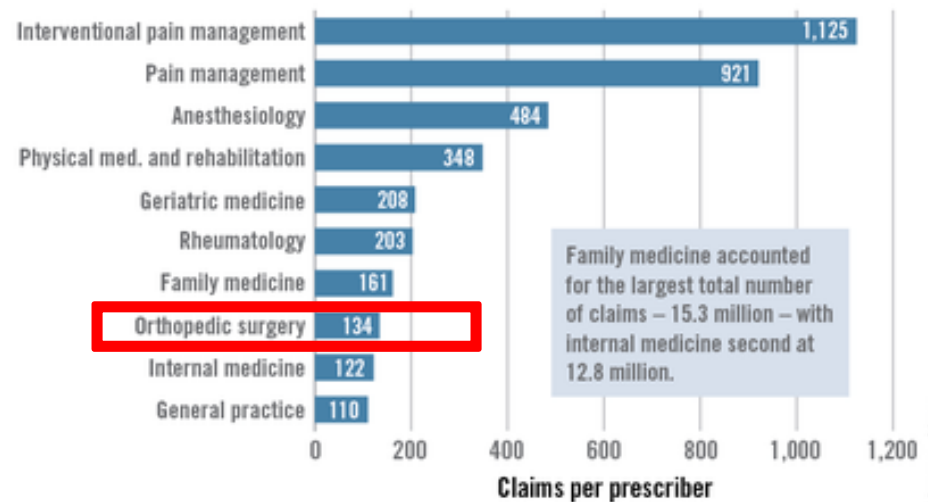


1 in 285

The Opioid Epidemic and Orthopaedic Surgery

- Often associated with significant post-operative pain
- Orthopaedic surgeons rank as highest prescribers of opioid narcotics amongst all surgical specialties
- Recent studies and surveys show lack of knowledge of how many pills patients are consuming, and patients often receive several times greater opioids than they require

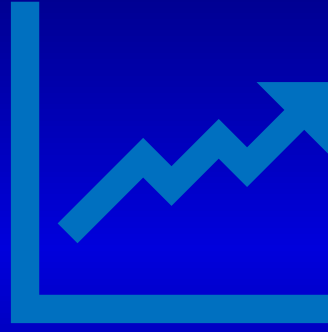
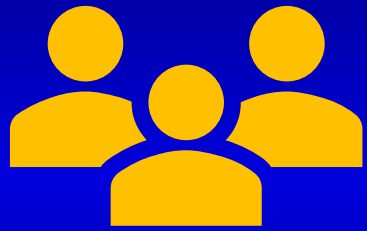
Top 10 prescribers of schedule II opioids by specialty, 2013



Note: Based on Medicare Part D data for 1,188,393,892 claims.

Source: JAMA Intern Med. 2015 Dec 14. doi:10.1001/jamainternmed.2015.6662

FRONTLINE MEDICAL NEWS



Association Between Quantity of Opioids Prescribed After Surgery or Preoperative Opioid Use Education with Opioid Consumption

Farley KX, Anastasio AT, Kumar A, Premkumar A, Gottschalk MB, Xerogeanes JW



Methods

109 Patients



50 Tablets of Percocet (7.5 mg oxycodone/325 mg Acetaminophen)

77 Patients

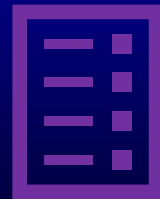


30 Tablets of Percocet (7.5 mg oxycodone/325 mg Acetaminophen)

78 Patients

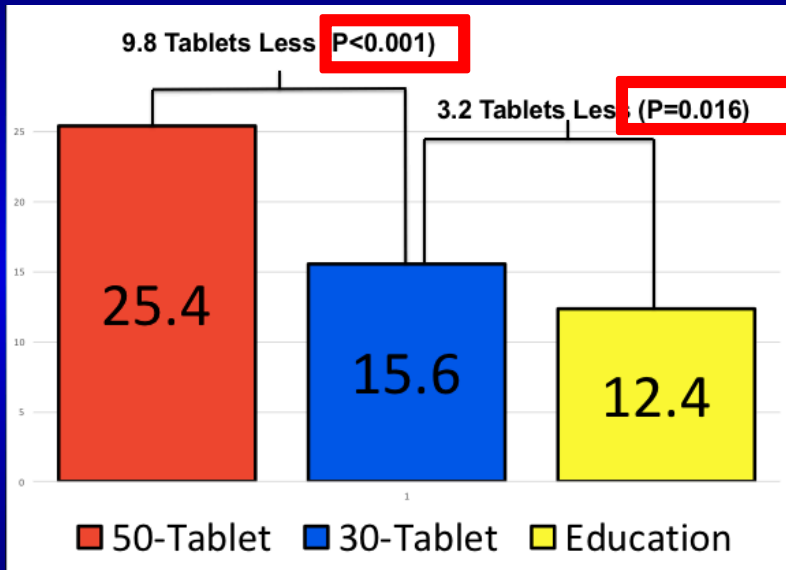


30 Tablets of Percocet (7.5 mg oxycodone/325 mg Acetaminophen) PLUS preoperative opioid education

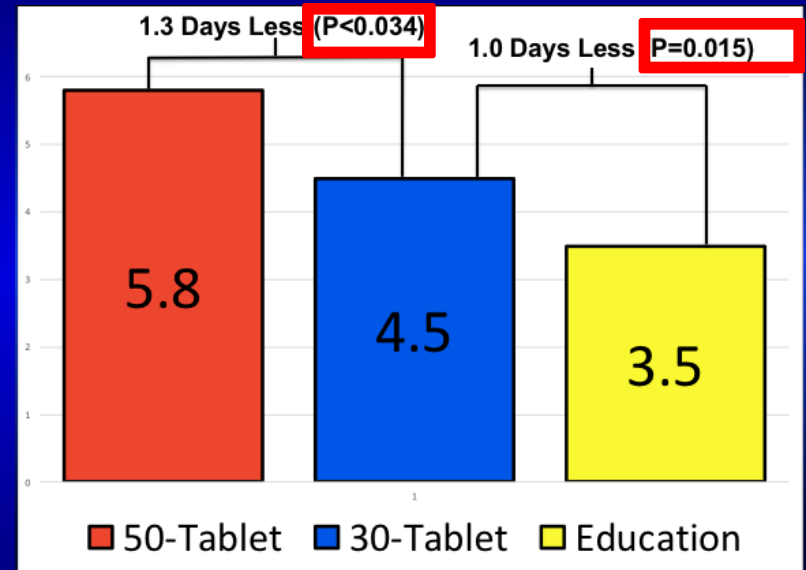


1. Number of opioid pills Consumed
2. Days of opioid consumption
3. Pain Levels (VAS)
4. Disposal
5. Side Effects

Results



Tablets Consumed



Days of Opioid Consumption

Results

Post-Op Day	50-Tablet	30-Tablet	30 + Education	P-value
Day 0	4.4 ± 2.4	5.2 ± 2.2	5.1 ± 1.6	0.268
Day 1	4.6 ± 2.2	5.2 ± 1.8	5.2 ± 2.2	0.415
Day 2	4.1 ± 2.3	4.4 ± 2.0	4.3 ± 2.2	0.752
Day 3	2.8 ± 1.8	3.8 ± 2.0	3.5 ± 2.2	0.095
Day 4	2.4 ± 1.6	3.3 ± 1.6	3.0 ± 1.9	0.114
Day 5	2.3 ± 1.8	2.8 ± 1.6	3.0 ± 1.9	0.554
Day 6	2.2 ± 1.7	2.7 ± 1.4	2.9 ± 1.9	0.466

Side Effects	50-Tablet	30-Tablet	P-value
Constipation	60 (55.0%)	29 (37.7%)	0.019
Nausea or Vomiting	31 (28.4%)	14 (18.2%)	0.108
Fatigue	18 (16.5%)	5 (6.5%)	0.041
Pruritus	2 (1.8%)	1 (1.3%)	0.775
Euphoria	9 (8.3%)	5 (6.5%)	0.653

Takeaways

1. Prescribing fewer tablets was associated with lower postoperative opioid consumption following ACL reconstruction (specifically, half of the prescribed opioids were consumed in each group)
2. Education was associated with lower duration and quantity of postoperative opioid use
3. Reductions in opioid consumption did NOT come at a cost to patient comfort during the postoperative recovery period

Characterizing the Effect of Opioid Tablet Strength on Pain Levels and Post-Operative Opioid Consumption Following ACL Reconstruction

Nazzal EM, Farley KX, Hunnicutt JL, Haley RM, Premkumar A,
Gottschalk MB, Xerogeanes JW

Methods

78 Patients

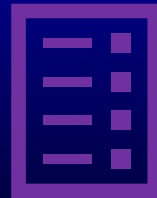


30 Tablets of 7.5 mg Percocet
PLUS preoperative opioid
education

69 Patients



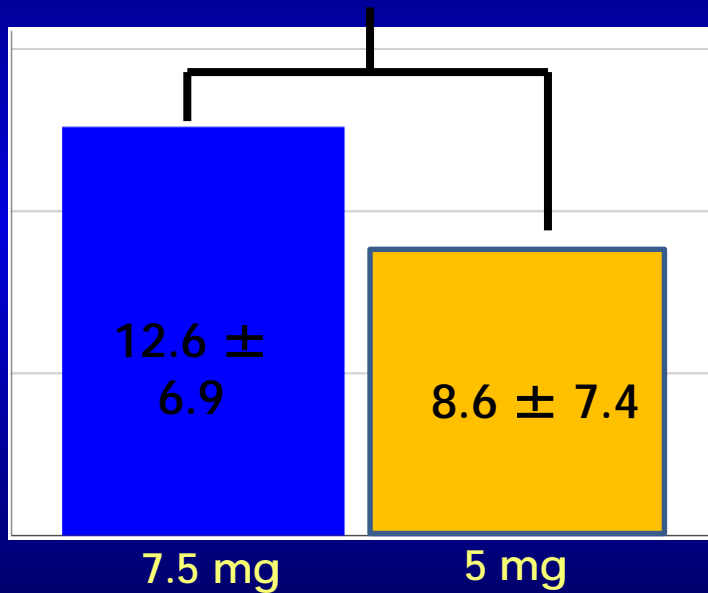
30 Tablets of 5 mg Percocet
PLUS preoperative opioid
education



1. Number of opioid pills Consumed
2. Days of opioid consumption
3. Pain Levels (VAS)
4. Disposal
5. Side Effects

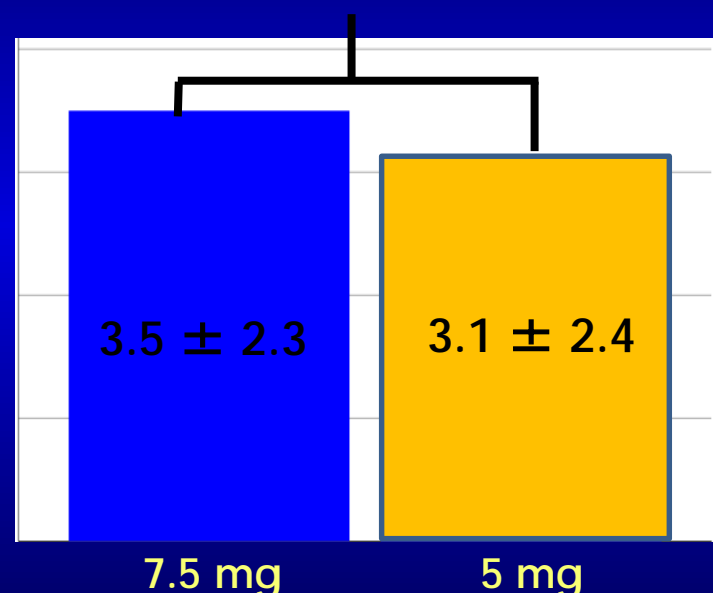
Results

4 tablet difference (p=0.002)



Tablets Consumed

0.4 day difference (p=0.252)



Days of Opioid Consumption

Post-Operative Day	7.5 mg Percocet	5 mg Percocet	P-value
0	5.16 ± 2.02	5.65 ± 2.20	0.257
1	5.17 ± 1.90	5.71 ± 1.94	0.161
2	4.38 ± 2.01	4.66 ± 1.91	0.483
3	3.72 ± 1.98	3.75 ± 1.77	0.942
4	3.21 ± 1.60	3.28 ± 2.03	0.867
5	2.87 ± 1.69	3.09 ± 1.84	0.612
6	2.77 ± 1.49	3.24 ± 1.97	0.324

Results

Side Effects	7.5 mg Percocet	5 mg Percocet	P-value
Euphoria	6 (8.5%)	4 (5.8%)	0.378
Nausea or Vomiting	11 (15.5%)	9 (13.0%)	0.679
Constipation	27 (38.0%)	24 (34.8%)	0.690
Fatigue	5 (7.0%)	2 (2.9%)	0.441
Pruritus	4 (5.6%)	2 (2.9%)	0.681

Takeaways and Clinical Implications

1. A reduction in opioid tablet dosage resulted in a lowered total OME consumption per patient
2. This reduction in opioid consumption did NOT come at a cost to patient reported pain levels
3. Clinically, there was STILL room to drive down opioid consumption



Future Directions



Graft Type and Revision Status



Patient Pain Perception



Liposomal Bupivacaine



Patient catastrophizing and anxiety

Acknowledgments

Dr. Xerogeanes

Dr. Premkumar

Dr. Samady

Dr. Hunnicutt

Regina Hash

Joan Reed

Kevin Farley

Bryce Haynes

Emily DeMaio

Rebecca Haley

Thank you for your time!



EMORY
SPORTS MEDICINE
CENTER

