Standardization of Burn Pain Control in the Outpatient Burn Population

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Study Purpose

The purpose of this study was to create a method of standardization of burn pain treatment and prescription of opioids for the outpatient burn population.

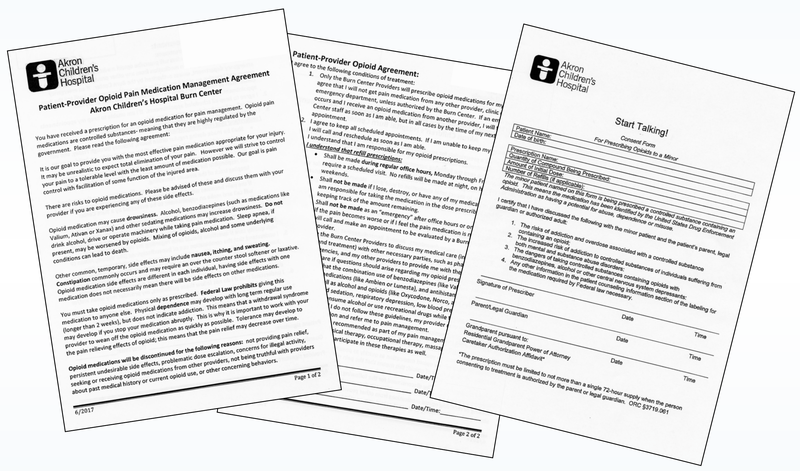
Introduction

Nationwide there is a recognized need for regulation and standardization of prescription opioids for acute pain due to the opioid epidemic. According to the CDC, in 2015 there were 52,404 drug overdose deaths in the U.S. with 63% involving an opioid and 15,000 of those prescription opioids. That data continued to increase to 70,200 drug overdose deaths in 2017 and 68% involving an opioid. Limited data exists about standardization of burn pain treatment in the outpatient setting; however, there are various treatment plans and minimal regulation of opioid prescriptions.

Background

Previous standard of practice prior to initiation of the burn pain scorecard:

- Utilization of the Ohio Automated Rx Reporting System with every opioid prescription
- Review of an Opioid Agreement for every initial opioid prescription



Methods

- A retrospective chart review was conducted analyzing burn outpatient pain control regimens and indications for prescription opioids
- An objective burn pain scorecard was created using chart review data, along with a treatment tier correlating to the scorecard scores
- The developed burn pain scorecard was used for a 3 month trial on all new patients >12 years of age evaluated by a burn specific advanced practice provider
- After the pilot study, a second retrospective chart review was completed for provider compliance; opioid type and amount prescribed; non-opioid prescriptions; recommendations and remaining unused opioid doses
- From results the burn pain scorecard and treatment tiers were revised

Results

- 136 new patients were treated by burn specific advanced practice providers and the burn pain scorecard was used on 68 patients
- On average, there were 7 unused opioid doses remaining
- No significant change in amount of opioids prescribed was found

Figure 1: Initial Burn Pain Scorecard - for use on all new outpatients >12 years of age

Burn Size	≤3% 4-10% 11-30% >30%	+1 +2 +3 +4	**PMH**	None Neuropathy/ Chronic Pain Substance use/abuse	0 +1 +1 +1
Location	Hand(s) Foot/Feet Genitalia	+1 +1 +1	**Surgical Intervention**	None 1 Surgery >1 Surgery	0 +1 +2
Length of Stay	None <3 days 3-7 days >7 days	0 +1 +2 +3	**Time Since Surgery**	>7 days 4-7 days <4 days	0 +1 +2
Procedural Sedation	None Minimal Moderate Deep/OR	0 +1 +2 +3	**Psych History**	ADHD, OCD Schizophrenia, Depression, Anxiety, or PHQ-9 ≥10	Any of these +1

Figure 2: Revised Burn Pain Scorecard - for all new patients, including pediatric patients <12 years of age

Burn Size (2nd degree or >)	≤3% 4-10% 11-30% >30%	+1 +2 +3 +4	**PMH**	None Neuropathy/Chronic Pain Substance use/abuse	0 +1 +1
Location (>0.25%)	Hand(s) Foot/Feet Genitalia	+1 +1 +1	**Psych History**	ADHD, OCD Schizophrenia, Depression, Anxiety, or PHQ-9 ≥10	Any of these +1

Definitions:

Substance Use/Abuse:

Illegal drug use (including marijuana), **alcohol use** (daily, multiple times weekly), **tobacco use**

Scoring and Treatment

- **1-2: Tier1:**
  - Alternating Ibuprofen 600mg and Acetaminophen 650mg Q6hr prn
    - If the burn is <24hrs add Oxycodone 5mg Q6hr prn for first 48hrs
- **3-4: Tier 2:**
  - Alternating Ibuprofen 600mg and Acetaminophen 650mg Q6hr prn
    - Prescribing Oxycodone 5mg for 2 doses daily for ___ amount of days until next appointment
- **>4: Tier 3:**
  - Alternating Ibuprofen 600mg and Acetaminophen 650mg Q6hr prn
    - Prescribing Oxycodone 5mg Q6hr prn for ___ amount of days until next appointment

***If the patient has active cellulitis, 48 hours of Oxycodone 5mg Q6hr prn**

Alternative dosing for patients ≥12 y/o weighing <50kg

- **Oxycodone dosing 0.1mg/kg/dose Q6hr prn**
- **Acetaminophen dosing 15mg/kg/dose Q6hr prn**
- **Ibuprofen 10mg/kg/dose with max dose of 400mg Q6hr prn**

Limitations

- Pain is subjective
- Lack of prior standardization data
- Initiation of the burn pain scorecard was a standard process change for providers

Conclusions

- Standardization of pain control and opioid prescriptions begin with patient and provider education
- Although pain is subjective, the ability to quantify patient's expected pain is helpful in objectively prescribing opioids
- The burn pain scorecard has been successful in standardizing medical decision making with opioid prescriptions across providers at the Akron Children's Burn Center

Future Plans

- Use of burn pain scorecard on inpatient discharge
- Continue data collection with updated burn pain scorecard
- Patient satisfaction in treatment of pain through patient survey
- E-prescribing for all opioids