# A Retrospective Study of First-Line Analgesics for Distal

## Radius Fractures with Age Stratification

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#### Introduction

- Pain management in the emergency department(ED) is considered for almost every chief complaint
- Studies have found opioids to be equivalent or inferior, to nonsteroidal anti-inflammatories(NSAIDs) and acetaminophen<sup>1-3</sup>,
- Studies show poor pain control in the elderly and pediatric populations<sup>1,2,7</sup>
- Analgesic choice considerations-
  - \* Chief complaint
  - \* Age \*Gender
  - \*Comorbidities.
- Choices from pediatric to elderly patients have been studied<sup>1,2,7</sup>, but a systematic comparison with age as the variable has not
- This is a study of ED practice patterns regarding first-line analgesic choice for different age groups in a select group of patients

### **Hypothesis**

#### Objective

• Determine the first analgesic choice among ED patients with distal radius fractures(fx) by younger age group (YAG, ages 1-19 years of age) compared to Older age group (OAG, 20-95 years of age)

#### Hypothesis

The older age group will receive higher percentage of opioids compared to the YAG

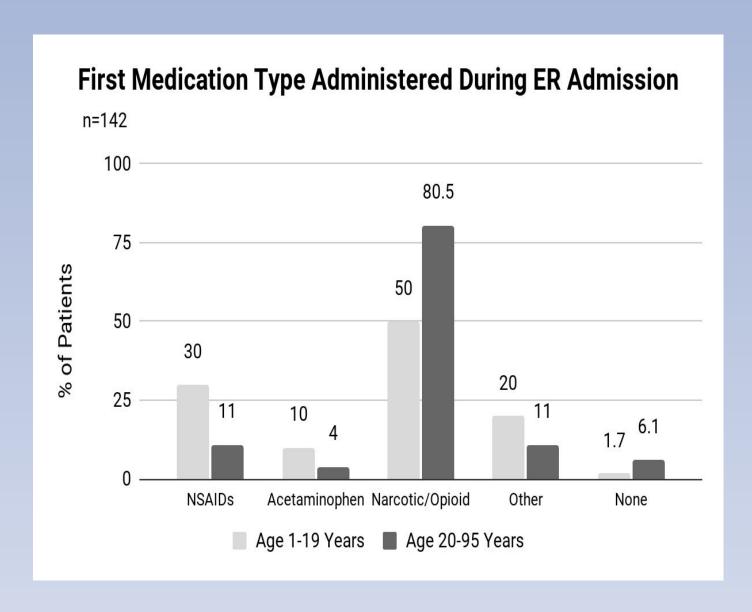
#### Methods

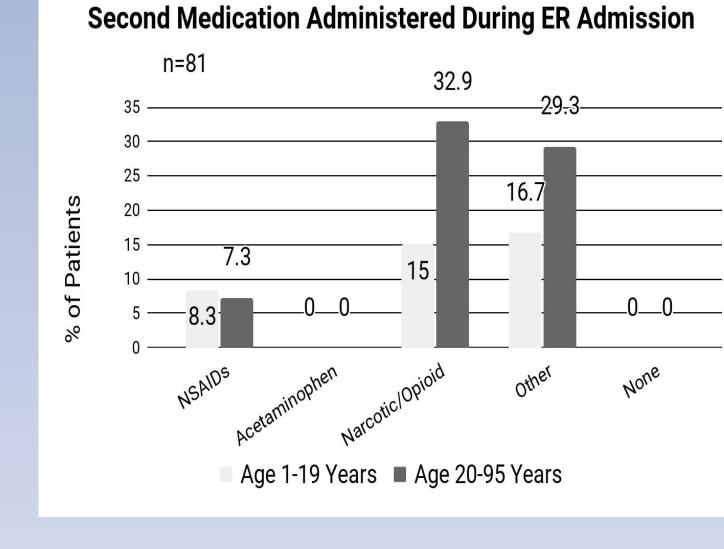
- Retrospective review of diagnosis-distal radius fracture from 01/01/15-12/31/19 in the ED
- Patients excluded if they required manipulation or reduction of the fracture
- Recorded past medical history, race, gender, age, and allergies
- Recorded first analgesic given (opioid or non-opioid analgesia) and stratified the data by age groups
- Patients were organized into subgroups YAG and OAG
- When comparing the percentage of opioids given in the YAG compared to OAG there was a statistically significant difference between groups (p=0.001). (See figure 4)
- IRB approval was obtained on February 11, 2020

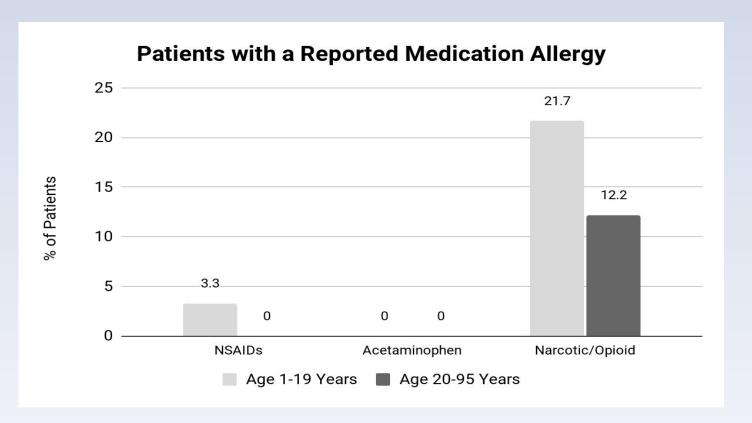
## Results

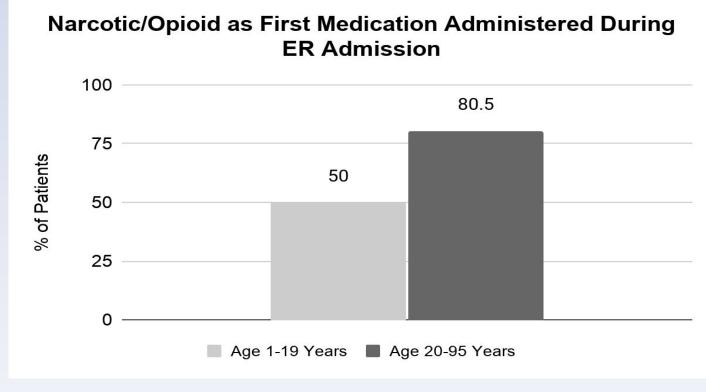
- N=142. 60 patients in YAG, 82 patients in OAG. 89 female, 53 male.
- The YAG received opioids 50% first line and The OAG received opioids 80% first line. See figure 4
- There was a significant difference when comparing the YAG and OAG (p=0.002). See figures 1 and 2
- Majority of allergies to Opioids. See figure 4
- Demographics in table #1

Table 1: Patient Demographics			
	Total N=142	By Group	
		Age 1-19 Years n= 60	Age 20-95 Years n= 82
Age in years (mean, SD)	36.4 (25.6)	9.9 (4.2)	55.7 (15.1)
Gender (n, %)			
Female	89 (62.7)	22 (36.7)	67 (81.7)
Male	53 (37.3)	38 (63.3)	15 (18.3)
Race (n, %)			
White	131 (92.3)	57 (95)	74 (90.2)
Black or African American	8 (5.6)	2 (3.3)	6 (7.3)
Asian	3 (2.1)	1 (1.7)	2 (2.4)









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#### **Discussion**

- Why so many opiates?
  - \* Physician gestalt Recognize a broken bone despite"blinding"
  - \* Opioid epidemic- 1990-2018, Peaking in 2018
  - \*Our study- dates- Jan 2015- Dec 2019
    \*Local culture in study location?
- Mostly males in YAG and Female in OAG. Likely due to "boys being boys in the YAG and older females having osteoporosis in older females. See table 1
- Both age groups received high percentages of opioids. See figure 3

#### Conclusion

- Occurrence of the high percentage of first-line opioid use for patients with a diagnosis of distal radius fx occurred at the birth of opioid crisis awareness and the initial implementation of massive public health measures.
- The greater use among older groups was not unexpected. However, it was surprising that the younger groups were prescribed at such high levels and older patients well beyond that. Measures to decrease opioid prescribing patterns continue to be necessary.

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