

# Evaluating differences in patient perception of effectiveness of oral versus parenteral non-steroidal anti-inflammatory drugs



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## Introduction

Pain is the most common reason for emergency department (ED) visits. Providing safe, effective analgesia is not only central to providing good health care, but also to overall patient satisfaction. Prior work has shown that although parenteral administration of NSAIDs is more expensive and has greater risk of adverse effects than oral administration, there are no significant differences between the two routes in amount or efficiency of pain relief. However, some clinicians believe that patients presenting with pain to the ED prefer parenteral over oral NSAIDs, due to an assumed patient perception that shots are more effective than pills. Additionally, prior studies in this area have not examined patient ethnicity as a factor in administration preference.

## Objectives

- To determine patient preference for NSAID injection versus oral administration before and after education on the equivalence of these routes.
- To examine ethnicity as a factor in patient beliefs about NSAID administration routes.

## Methods

**Setting:** Parkland Memorial Hospital, a county facility with > 160,000 ED visits annually. Research assistants staffed the ED around the clock for 8 weeks in June and July 2014.

**Study population:** All adults who presented with a chief complaint of pain *and* were prescribed any type of NSAID during their current ED visit. Patient fluency in English or Spanish was also required.

**Data collection:** Assistants verbally collected data including age, gender, ethnicity, education level, medical history, and preferred pain medication. A three-item verbal NSAID administration preference survey was then given (Figure 1). This same survey was repeated following education on the equivalence of oral and parenteral NSAIDs.

**Data analysis:** Standard statistical methods. For simplicity, responses of “pill”, “same”, and “no preference” were pooled.

	before education (pill/shot/same)	after education (pill/shot/same)
1. “Medications like ibuprofen come in two forms: a pill or a shot. Which do you think is <b>BETTER</b> at taking away pain, or are they the same?”		
2. “Which do you think is <b>FASTER</b> at taking your pain away, the pill or the shot? Or are they the same?”		
3. “Would you <b>PREFER</b> to take the pill or the shot for your current pain?”		
<b>Patient education:</b> “Scientific studies have shown that the shot and the pill take the pain away at the same time and with the same amount of pain relief, but the shot costs more and hurts more.”		

**Figure 1.** NSAID administration preference survey and brief education read to patients by research assistants.

	before education		p before	after education		p before vs after
	shot	pill/same/no preference		shot	pill/same/no preference	
<b>BETTER</b>	48%	52%	>0.05	27%	73%	<0.001
<b>FASTER</b>	82	17	<0.001	45	55	<0.001
<b>PREFER</b>	53	46	>0.05	25	75	<0.001

**Table 1.** Patient responses to three-item NSAID administration survey before and after brief education on equivalence of shot and pill.

## Results

**Study population:** N=270 patients with diverse demographics: mean age 42 years; 49% female; ethnicity 37% African American, 37% Hispanic, and 23% Caucasian.

**Initial NSAID preferences (Table 1):** Before education, overall subjects were equally likely to PREFER pill versus shot. Similarly, there was no predominant belief as to whether pill or shot was BETTER at treating pain. But they strongly believed shot to be FASTER than pill.

**Effect of educational intervention (Table 1):** After education, most agreed that parenteral was no BETTER than oral administration. Most also PREFERRED pills over shots or had no preference. Education was also successful in convincing patients that parenteral was no FASTER than oral administration.

**Effect of ethnicity:** There were no statistically significant differences in these beliefs, either before or after education, when stratified by self-reported patient ethnicity.

## Conclusions

Despite clinician assumptions, most patients have favorable attitudes toward oral NSAID effectiveness and overall preference, and **these attitudes can be easily influenced for the better by brief education by clinicians in the ED.** This suggests **brief patient education is effective to reduce cost of treating minor pain in the ED.** Future work should compare effectiveness of various education methods.

## Limitations

- Excluded surgical candidates and acutely ill patients.
- No follow-up surveys given.
- Patient education limited in content and style.

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