

Medication use evaluation of intravenous acetaminophen in surgical patients

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Introduction

- According to multiple randomized controlled trials, intravenous (IV) acetaminophen (Ofirmev®) has proven to be efficient in managing postoperative pain, minimizes narcotic use, and is well tolerated [1-4].
- Dosing for Adults > 50 kg → 1000 mg every 6 hours/ 650 mg every 4 hours (maximum of 4000 mg per day)
- Ofirmev® was introduced to the WellStar North Fulton Hospital (WNFH) formulary in February 2018.
- Hospital protocol restricts Ofirmev® use to 24 hour doses in postoperative patients who are not candidates for non-steroidal anti-inflammatory drug (NSAID) therapy for the relief of mild to moderate pain, or undergo vertebral fusion surgery to which NSAID therapy may negatively impact bone healing. Exception: spine surgery

Objective:

- The main purpose of this study is to evaluate the appropriate use of Ofirmev® among surgical patients at WNFH.

Methods

- The electronic health record system was used to identify surgical patients who received at least one dose of Ofirmev® from February 2018 until August 2018.
- The following data was collected: patient age, gender, 24-hour post-operative opioid use in IV morphine equivalents, and reported adverse events.

Results

- In total, 75 records were evaluated in this study.
- Baseline characteristics are recorded in table 1.

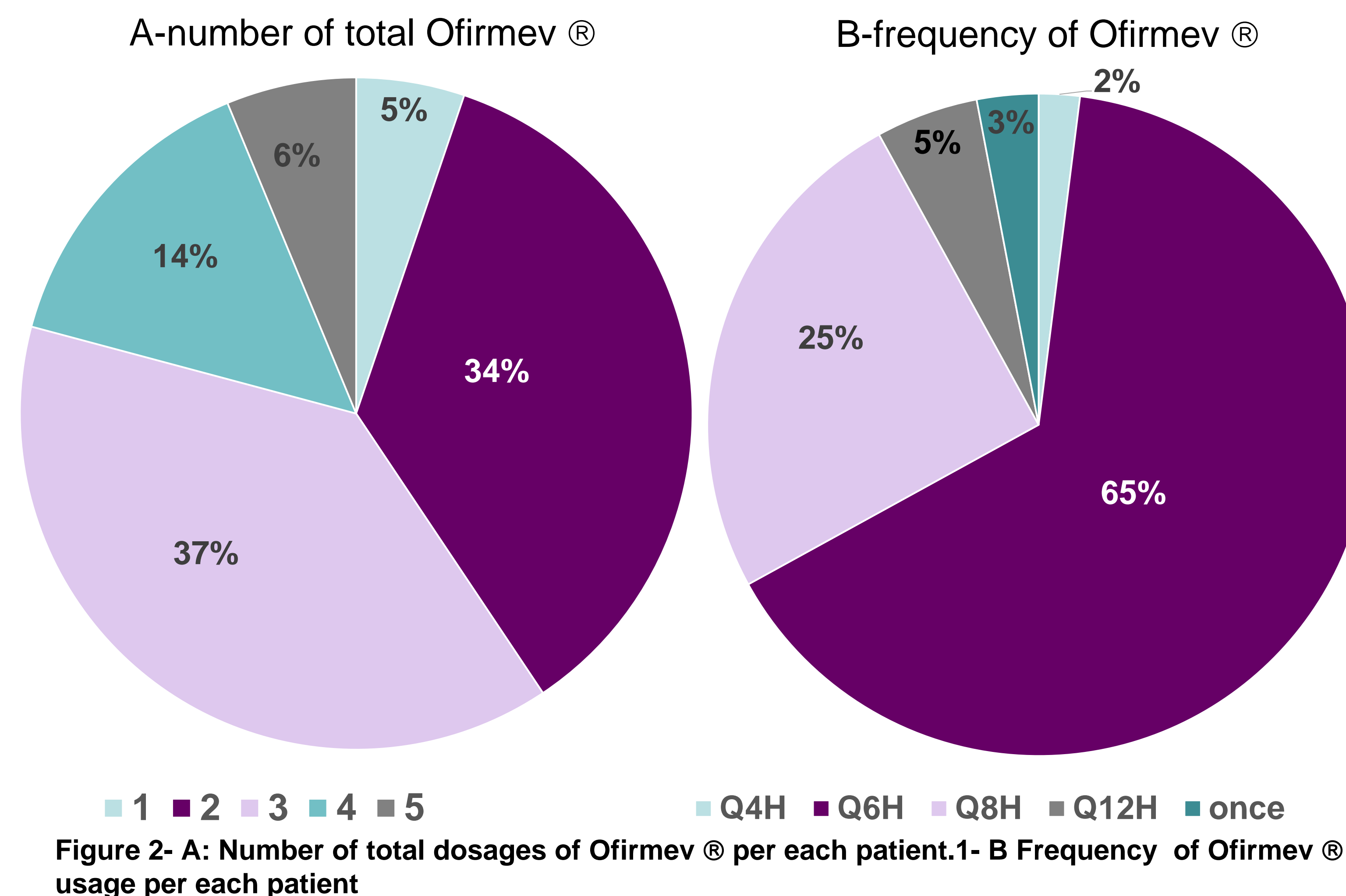
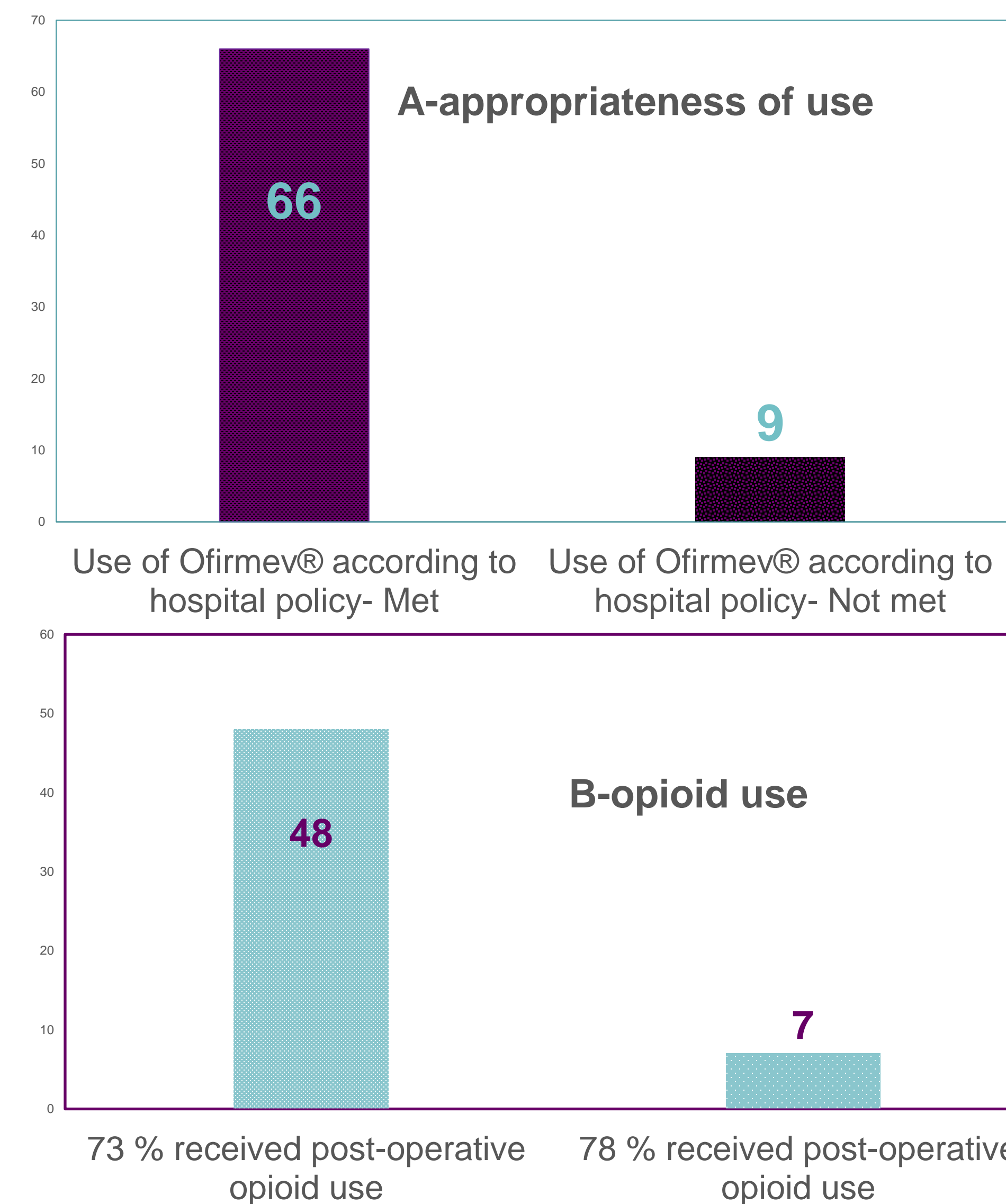
Gender	%
Male	46 (n = 35)
Female	54 (n = 40)
Age	
25-34 years	11 (n = 8)
35-44 years	12 (n = 9)
45-54 years	11 (n = 8)
55+ years	66 (n = 50)

- This study showed 88% appropriate use with hospital policy.
- There was a higher percentage of opioid use in the non-appropriateness group compare to appropriateness group (78% vs. 73%) (table 2)

Results

		24-hour post-operative opioid use in IV morphine equivalents		
		Received	Not received	Totals
Use of Ofirmev® according to hospital policy	Met	48	18	66
	Not met	7	2	9
	Total	55	20	75

Figure 1- A: appropriate use of Ofirmev®. 1-B: Opioid usage.



- Average number of total dosages of Ofirmev ® was 2.31.
- Median frequency of Ofirmev® was Q6H (table 3).

Table 3: Average number of total dosages of Ofirmev® and median frequency of Ofirmev® (subgroup based on age)

Age (Years)	Frequency of Ofirmev ® usage (Median)	Number of total dosages of Ofirmev ® (Mean)
25-34 years	Q6H	2
35-44 years	Q8H	1.5
45-54 years	Q8H	3.25
55+ years	Q6H	2.5

Discussion/ Conclusion

- This study showed 88% compliance with the hospital policy for use of Ofirmev® among surgical patients from February 2018 until August 2018.
- Statistically significant differences of opioid use between the non-appropriate group compared to the appropriate group were not evaluated due to the sample size.
- There were no reported adverse events.
- Limitations of this study: appropriate use was not evaluated for patients who did not receive Ofirmev®
- Future research on this topic should include pain score comparisons.

References

1. Yu-Chen Y and Prabashni R. Clinical and Economic Evidence for Intravenous Acetaminophen. *Pharmacotherapy*. 2012; 32(6): 559-579.
2. Barr J, Fraser G, Puntillo K, Wesley Ely E, et al. Clinical Practice Guidelines for the Management of Pain, Agitation, and Delirium in Adult Patients in the Intensive Care Unit. *Crit Care Med*. 2013; 41:263-306.. Accessed June 2, 2014.
3. Hochberg MC, Altman RD, April KT, Benkhalti M, et al. American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. *Arthritis Care Res*. 2012;64(4):465-74.
4. Peacock WF, Breitmeyer JB, Pan C, Smith WB, Royal MA. A randomized study of the efficacy and safety of intravenous acetaminophen compared to oral acetaminophen for the treatment of fever. *Acad Emerg Med*. 2011;18(4):360-366.
5. Shaffer EE, Pham A, Woldman RL, et al. Estimating the Effect of Intravenous Acetaminophen for Postoperative Pain Management on Length of Stay and Inpatient Hospital Costs. *Adv Ther*. 2017;33(12):2211-2228.