



Comparison of intravenous acetaminophen with adjunct opioids versus standard pain management in postoperative patients

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BACKGROUND

- Acetaminophen (APAP) is a nonopioid, centrally acting analgesic recently approved parenteral formulation that can be used for mild to moderate pain, alone or in a combined regimen for moderate to severe pain.¹
- Studies have also shown synergistic utility of acetaminophen with opiates to provide improved pain management and minimize side effects.²⁻⁴

OBJECTIVES

To compare efficacy and safety of intravenous acetaminophen in postoperative patients receiving adjunct opioids versus standard pain management therapy

Primary Outcome

- Pain control from visual assessment scale (VAS) or verbal pain scores, length of hospitalization

Secondary Outcome

- Amount of opioid use in morphine equivalents, number of nausea and vomiting events, overall cost

METHODS

Retrospective multicenter analysis at Saint Joseph Hospital and Saint Joseph East from January 30th 2008 until December 21st 2011

- Group 1: postoperative patients that have received intravenous acetaminophen with adjunct opioids

- Group 2: controls that received standard postoperative pain management matched in 1:2 ratio with treatment group by age, gender, surgical procedure, surgeon, and epidural/femoral block use

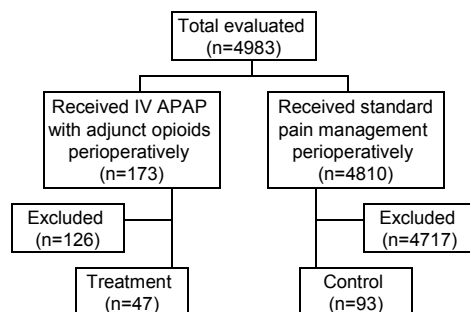
Inclusion Criteria:

Patients >18 years old, received postoperative pain management for the following laparoscopic surgeries:

- Appendectomy, cholecystectomy, gastrectomy, hysterectomy

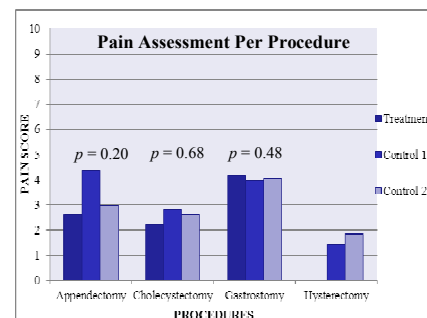
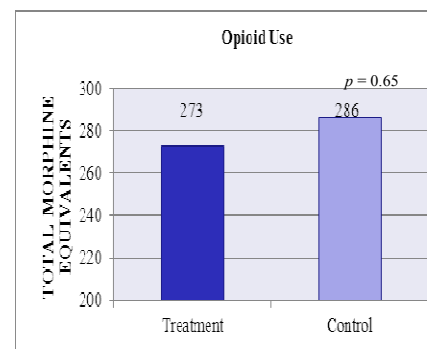
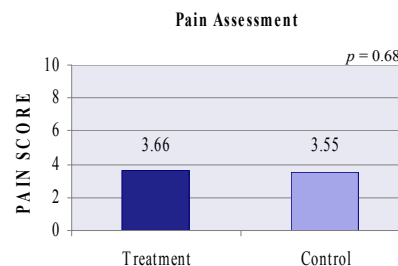
Exclusion Criteria:

- Patients undergoing multiple surgical procedures per encounter



	Treatment (n=47)	Control (n=93)	P Value
Age (years)	46±13	47±12	0.6
Gender: Male	22	43	0.95
Female	25	50	
Weight (kg)	129±45	118±36	
Block	16	32	0.97
Procedure			
•Appendectomy	5	10	
•Cholecystectomy	10	19	
•Gastrectomy	31	62	
•Hysterectomy	1	2	

	Treatment	Control	P value
Length of stay (days)			0.51
• 1	24	51	
• >1	23	42	
Nausea/Vomiting			0.50
• None	26	57	
• ≥1	21	36	
Cost Analgesia (\$)	39±17	9±6	<0.001
Cost Procedures (\$)	20267±5916	19013±6505	0.26



STATISTICAL ANALYSIS

- Categorical data: chi-squared test (x2)
- Continuous data: Student's t-test and ANOVA (parametric data)
- An *a priori* alpha of 0.05 was set for significance
- Data analysis will be performed using Microsoft Excel and StatView 5 (1992-1998)

CONCLUSION

- No significant differences between pain scores, length of stay, and incidence of nausea and vomiting between the treatment and control groups
- Increased pain and opioid usage associated with laparoscopic gastrectomy
- Significant differences between costs of analgesia in treatment compared to control group, but no significant differences in total cost

REFERENCES

1. Ofirmev™ Prescribing Information, Mallinckrodt Inc. Hazelwood, MO November 2010.
2. Sinatra RS, Jahr JS, et al. Efficacy and safety of single and repeated administration of 1 gram intravenous acetaminophen injection (paracetamol) for pain management after major orthopedic surgery. *Anesthesia* 2005; 102:822-31.
3. Wininger SJ, Miller H, et al. A randomized, double blind, placebo controlled multicenter, repeat-dose study of two intravenous acetaminophen dosing regimens for the treatment of pain after abdominal laparoscopic surgery. *Clinical Therapeutics* 2010; 44:2348-2369.
4. Memis D, Inal MT, et al. Intravenous paracetamol reduced the use of opioids, extubation time, and opioid-related adverse effects after major surgery in intensive care unit. *Journal of Critical Care* 2010; 23: 458-462.