

Intravenous Lidocaine: An Adjunct Treatment of Operative Pain



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PROBLEM

Administration of opiates has fallen under intense scrutiny as a growing epidemic of narcotic dependency plagues America. Anesthesia providers nationwide are making efforts to decrease opiate use in the peri-operative period. It is important for anesthesia providers to be aware of not only the side effects caused by narcotic use, but also the potential for reducing both the patient's need for narcotics and the amount of unwanted side effects from narcotics. The purpose of this project was to increase Student Registered Nurse Anesthetists (SRNA's) enrolled at Adventist University of Health Sciences (ADU) knowledge of intravenous lidocaine in the treatment of operative pain.

ANALYSIS & CONCLUSION

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test	3.8750	48	1.85226	.26735
	Post-Test	7.8542	48	1.83337	.26462

Paired Samples Test									
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Pre-Test - Post-Test	-3.97917	2.44505	.35291	-4.68914	-3.26920	-11.275	47	.000

IMPACT OF FINDINGS

- Although opioids remain an integral part of operative management, adverse side effects associated with their use can affect the immediate and long-term postoperative course.
- Studies suggest intravenous lidocaine may have benefit in peri operative pain.
- A perioperative multimodal approach often provides more effective pain relief than opioid treatment alone with a more favorable side effect profile.
- The educational offering to SRNA's enrolled at ADU on the benefits and use of intravenous lidocaine resulted in an increase in knowledge; preparing future anesthesia providers with alternative modalities in pain management and subsequently impacting the opioid epidemic plaguing America.
- This scholarly project will be converted into a Continuing Education (CE) Module to be submitted to the American Association of Nurse Anesthetist (AANA) CE department for approval and made available to Certified Registered Nurse Anesthetists.

LITERATURE REVIEW & OUTCOMES

Four major themes of lidocaine use intraoperatively were identified with the literature review: Decreased post-operative pain, decreased narcotic use, decreased opioid side-effects, and shorter length of stay.

The literature review demonstrates that intravenous lidocaine combined with opioid use outperforms the use of opioids alone in controlling post-operative pain (Grady et al., 2012), reduces the negative side effects caused by opioids (McCarthy et al., 2010), and outperforms placebo drugs used to control pain (Farg et al., 2013 and Kranke et al., 2015).

Benefits of Perioperative Lidocaine

1

Decreased Post-Operative Pain

•Grady et al. (2012) found that pain levels in fifty patients with lidocaine drips running during laparoscopic surgeries on female reproductive organs were less on post-operative day 2 compared to patients who received a placebo drip
 •Kranke et al. (2015) found that lidocaine was superior to placebo drugs in decreasing pain after various types of surgeries

2

Decreased Narcotic Use

•Farg et al (2013) found that use of IV lidocaine in the peri-operative period during spinal surgical interventions reduces pain and therefore patient's need for narcotics for 2 days post-operatively
 •McCarthy et al. (2010) found that lidocaine drips resulted in "significant reductions in postoperative pain intensity and opioid consumption" with opioid use reduced by 85%

3

Decreased Opioid Side Effects

•McCarthy et al. (2010) found that lidocaine drips resulted in a 23-hour reduction in post-operative delay of flatus, and a 28-hour reduction of post-operative delay of bowel movements.
 •Kranke et al. (2015) found that patients receiving lidocaine peri-operatively had less nausea

4

Shorter Inpatient Stay

•McCarthy et al. (2010) found that lidocaine drips resulted in a 1.5-day reduction in the length of inpatient hospital stay



METHODS

Design: Educational presentation for SRNAs, assessment of their baseline knowledge, and comparison of post-presentation test scores to assess the level of knowledge increase

Setting: The SRNA classroom per ADU faculty

Targets: SRNAs

Inclusion Criteria: The 50 SRNAs in the 2017/2018 cohorts present in class that day

Implementation: After administering an informed consent, the SRNAs completed a pre-test to assess baseline knowledge, listened to an educational presentation, and then took a post-test to assess their knowledge after the lecture

REFERENCES

References are available upon request.

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