

A Randomized Trial Comparing the Combination of Intravenous Lidocaine and Ketorolac to either analgesics alone for ED Patients with Acute Renal Colic

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LITERATURE BACKGROUND

RESEARCH ARTICLE

Open Access

Effectiveness of intravenous lidocaine versus intravenous morphine for patients with renal colic in the emergency department

Hassan Soleimanpour^{1*}, Kamaledin Hassanzadeh², Hassan Vaezi¹, Samad EJ Golzari^{3,4}, Robab Mehdizadeh Esfanjani⁵ and Maryam Soleimanpour⁶

BMC Urology 2012, 12:13

Efficacy and Safety of Combination Therapy with Ketorolac and Morphine in Patient with Acute Renal Colic; A Triple-Blind Randomized Controlled Clinical Trial

Seyed Mohammad Hosseininejad¹, Hamed Amini Ahidashti¹, Farzad Bozorgi¹, Iraj Goli Khatir¹, Seyed Hosein Montazar¹, Fatemeh Jahanian¹, Mehran Amooei Khanabbasi^{2*}

Bull Emerg Trauma 2017;5(3):165-170

HYPOTHESIS

OBJECTIVE

- Combination of IV Lidocaine and Ketorolac will provide superior analgesia to either medication alone in patients with presumed renal colic pain.



STUDY SETTING AND DESIGN



PRT

Exclusion Criteria



- Aged > 64 years old
- Pregnancy/ breastfeeding
- Contraindication/allergy to NSAIDs or lidocaine
- Known renal or hepatic insufficiency
- Use of NSAIDs or opioids within 4 hours of presentation
- Weight > 100 kg
- Active PUD
- HR <50 or >150
- Altered Mental Status
- Severe CAD and/or arrhythmias
- Current warfarin use

Eligible patient to be enrolled

Lidocaine Group (L):
1.5mg/kg IV infusion

LIDOKET Group (LK):
IV ketorolac push +
IV lidocaine infusion

Ketorolac Group (K):
IV push ketorolac
30mg

Data Collection @ 0, 15
30 and 60 mins:
Pain scores and
Adverse Effects;
If necessary Rescue
Analgesia (Morphine)

Data analyzed using
Chi-square, paired T-
test, ANOVA

PRIMARY OUTCOMES



SECONDARY OUTCOMES



Results



PATIENT CHARACTERISTICS

Characteristics	Group		
	Lidocaine	Ketorolac	Combination
Age, mean (SD)	39.34 (10.95)	42.34 (10.47)	43.92 (10.36)
Male sex, frequency (%)	27 (54)	28 (56)	28 (56)
Pain, mean (SD)	8.36 (1.65)	7.94 (1.67)	8.4 (1.67)
Blood Pressure, mm Hg			
Systolic	125.82 (17.64)	131.84 (19.65)	132.92 (18.56)
Diastolic	76.22 (13.53)	82.10 (13.26)	80.68 (11.60)
Pulse Rate, beats/min	76.72 (13.53)	77.12 (13.89)	73.44 (10.29)
Respiratory Rate, beats/min	18.16 (3.34)	18.70 (3.33)	18.90 (3.55)
Oxygen Saturation	98.96 (1.24)	98.44 (1.50)	98.14 (2.04)

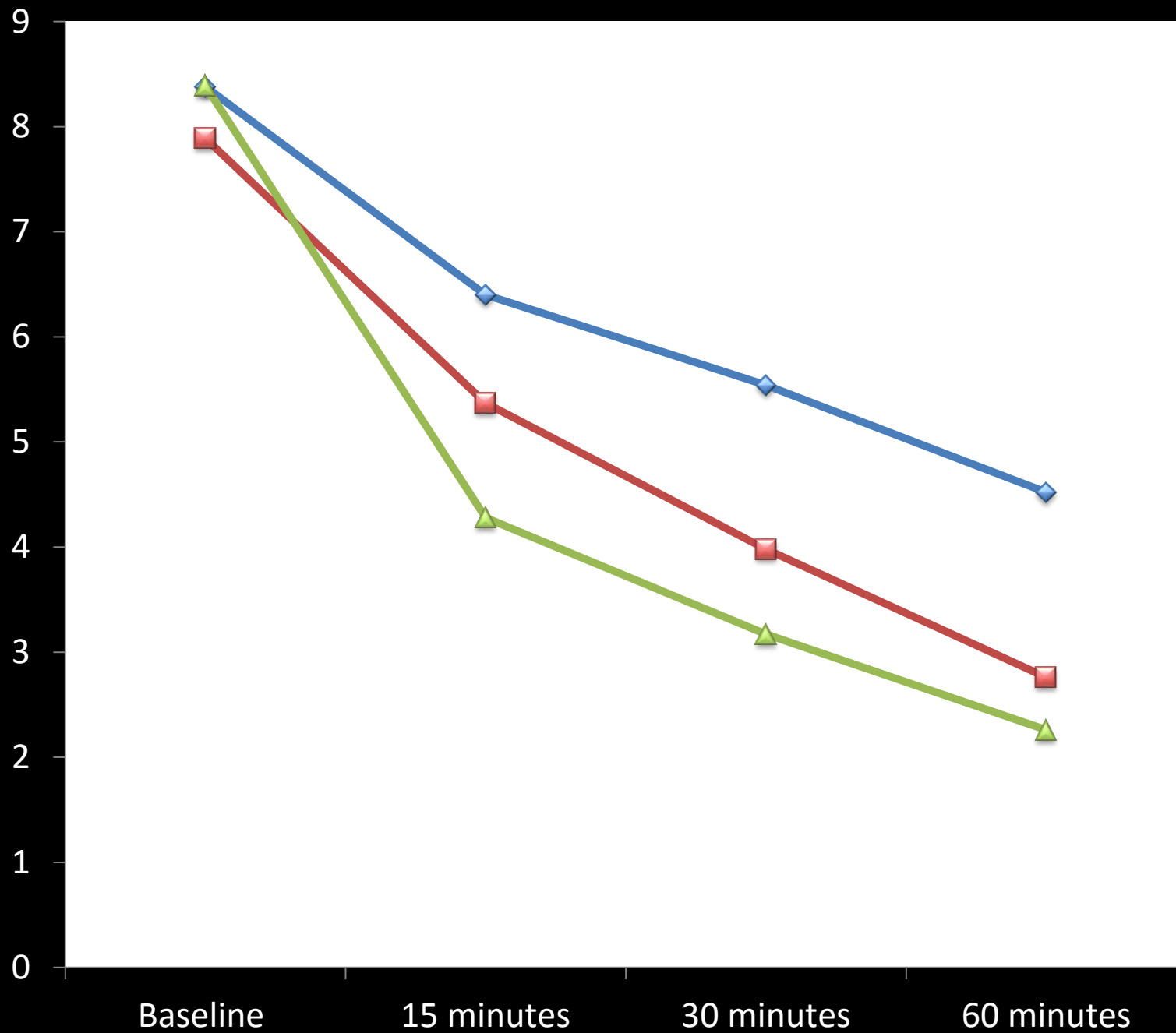
CHIEF COMPLAINTS & DIAGNOSES AT DISCHARGE

Group	Chief Complaint						
	Flank Pain	Abdominal Pain	Back Pain	Urinary Frequency/Burning	Groin Pain	Bloody Urine	
Lidocaine	39 (78.0) ^a	9 (18.0)	1 (2.0)	1 (2.0)	-	-	
Ketorolac	38 (76.0)	8 (16.0)	1 (2.0)	1 (2.0)	1 (2.0)	1 (2.0)	
Combination	36 (72.0)	12 (24.0)	1 (2.0)	-	1 (2.0)	-	
Total	113 (75.33)	29 (19.33)	3 (2.0)	2 (1.33)	2 (1.33)	1 (0.67)	
Group	Diagnosis						
	Renal Colic	Flank Pain	UTI	Abdominal Pain	Pyelonephritis	Back Pain	Ovarian Cyst
Lidocaine	29 (58.0)	5 (10.0)	1 (2.0)	6 (12.0)	2 (1.33)	4 (8.0)	3 (6.0)
Ketorolac	28 (56.0)	12 (24.0)	3 (6.0)	3 (6.0)	3 (6.0)	1 (2.0)	-
Combination	33 (66.0)	6 (12.0)	2 (4.0)	5 (10.0)	-	2 (4.0)	2 (4.0)
Total	90 (60.0)	23 (15.33)	6 (4.0)	14 (9.3)	5 (3.33)	7 (4.67)	5 (3.33)

PAIN SCORES

Time	Group	Mean(SD)	95% CI
Baseline	Lidocaine	8.36 (1.65)	5 - 10
	Ketorolac	7.94 (1.67)	5 - 10
	Combination	8.40 (1.66)	5 - 10
15 min	Lidocaine	6.34 (2.62)	1 - 10
	Ketorolac	5.22 (2.74)	0 - 9
	Combination	4.28 (2.54)	1 - 9
30 min	Lidocaine	5.52 (3.07)	4 - 10
	Ketorolac	3.88 (2.92)	0 - 9
	Combination	3.14 (2.61)	0 - 7
60 min	Lidocaine	4.48 (3.04)	0 - 10
	Ketorolac	2.70 (2.96)	0 - 9
	Combination	2.16 (2.30)	0 - 7

Pain Score



—◆— Lidocaine

—■— Ketorolac

—▲— Lidoket

RESCUE ANALGESIA

	Lidocaine	Ketorolac	Combination
15 MIN	0 (0.0%)	0 (0.0%)	0 (0.0%)
30 MIN	7 (14.6%)	3 (6.5%)	4 (8.7%)
60 MIN	7 (14.6%)	5 (10.9%)	3 (6.5%)

ADVERSE EVENTS REPORTED BY GROUP

	Lidocaine	Ketorolac	Lidoket	P-value
15 MIN	18 (38%)	7 (14%)	14 (28%)	0.103
30 MIN	16 (32%)	3 (6%)	9 (18%)	0.50
60 MIN	11 (22%)	3 (6%)	9 (18%)	0.163

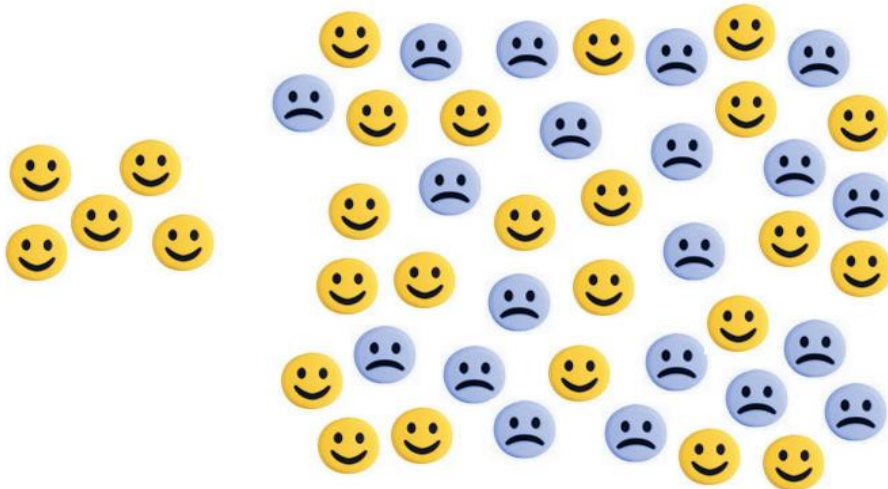
LIMITATIONS

SELECTION BIAS

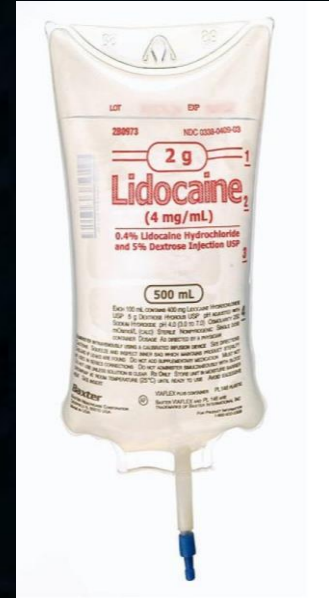
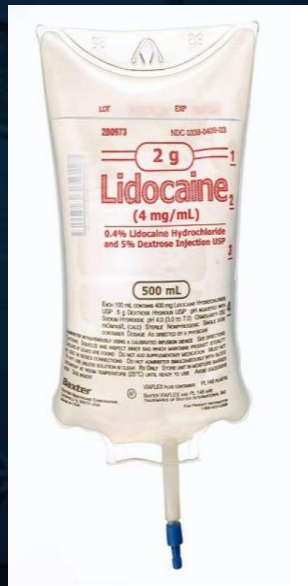


SELECTION BIAS EVERYWHERE

Exclusion Criteria



CONCLUSION



Therapeutic
Gymnastics

Questions?

