Top 10 EM Articles

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Presenter: All

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- Other: No

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Top 10 EM Articles to Change Your Practice

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Dexamethasone and ketorolac compare with ketorolac alone in acute renal colic: A randomized clinical trial

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Background

- Renal colic classically presents with sudden, severe flank pain radiating to the groin
- Stretching of the renal pelvis leads to release of prostaglandins that cause smooth muscle spasms of the urinary tract wall
- NSAIDs (ex. ketorolac) are considered first line treatment for analgesia, which are known to decrease formation of prostaglandin precursors

Background

- Opioids are generally reserved for those with contraindications to NSAIDs, but carry their own risks
- Glucocorticoids act at the intracellular level to increase anti-inflammatory mediators and reduce pro-inflammatory mediators
- Analgesic effect of dexamethasone may be related to inhibition of prostaglandin formation

Hypothesis

- Co-administration of dexamethasone with ketorolac may alleviate renal colic, vomiting, and decrease narcotic requirement compared to ketorolac alone

Methods

- Double blind randomized controlled trial
- Randomized 120 patients with renal colic from an Emergency Department in Iran
- 60 patients received ketorolac
  - Ketorolac 30 mg IV
  - Sterile water placebo IV
- 60 patients received ketorolac + dexamethasone
  - Ketorolac 30 mg IV
  - Dexamethasone 10 mg IV

Methods

- Primary outcome was pain scores on Visual Analog Scale at 30 and 60 minutes after drug administration
- Secondary outcome was need for narcotics or anti-emetic drugs as well as grade of vomiting

Results

Table 1
Participant characteristics at baseline.

Variables		Groups		P- value
		Intervention ($N = 60$)	Control ($N = 60$)	
Age, median (IQR), y		35 (30–44)	38 (32–44)	0.2*
Body weight, mean (SD), Kg		75.38 (12.34)	74.06(9.79)	0.61**
Systolic blood pressure, median (IQR), mmHg		130 (120—130)	130 (125–138)	0.27*
Diastolic blood pressure, median (IQR), mmHg		80 (75–85)	80 (75–85)	0.47*
Initial pain score, median (IQR), cm		9.5 (8–10)	9.5 (8–10)	0.77*
Sex (male), No (%)		42 (70)	40 (70)	1***
Vomiting grade****, No (%)	0, No (%)	39 (65)	31 (52)	0.27***
	1, No (%)	15 (25)	23 (38)	
	2, No (%)	6 (10)	6 (10)	

* *P* value for between-group comparison of nonparametric quantitative data using Mann-Whitney *U* test.
** *P* value for between-group comparison of parametric quantitative data using independent-sample *t*-test.
*** *P* value for between-group comparison of qualitative data using Chi-squared test.
**** Grade 0: no nausea or vomiting, grade 1: suffering from nausea, grade 2: suffering from vomiting.

Results

Table 2
Pain score comparison in two groups at baseline and after follow-up.

Variable		Groups		P*	Adjusted P
		Intervention ($n = 60$)	Control ($n = 60$)		
Pain score	Baseline	9.5 (8,10)	9.5 (8,10)	0.77	
	30 min	3.5 (0.25,6)	5 (3,7)	0.009	0.005#
	Change	−5 (−7,−2)	−3 (−6,−1)	0.014	
	P**	0.00	0.00		
Pain score	Baseline	9.5 (8,10)	9.5 (8,10)	0.77	
	60 min	1 (0,5)	4 (0,6)	0.07	0.068#
	Change	−7 (−9,−3)	−5 (−9,−2)	0.21	
	P**	0.00	0.00		
Pain score	30 min	3.5 (0.25,6)	5 (3,7)	0.009	
	60 min	1 (0,5)	4 (0,6)	0.07	0.68&
	Change	−1 (−3,0)	−2 (−3,0)	0.15	
	P**	0.00	0.00		

Nonparametric quantitative data reported as median (Q1, Q3). P value considered significant if <0.017.

* *P* value for between-group comparison of nonparametric quantitative data using Mann-Whitney *U* test.

** *P* value for within-group comparison of nonparametric quantitative data using Wilcoxon signed-rank test.

\# *P* value using nonparametric ANCOVA test adjusted for baseline measure.

& *P* value using nonparametric ANCOVA test adjusted for measure at 30 min after intervention.

Results

Table 3
Clinical characteristics of the study groups.

Variables		Groups		P- value*
		Intervention No (%) (n = 60)	Control No (%) (n = 60)	
Need for narcotics 60 min after therapy		21 (35)	35 (58)	0.01
Need for antiemetic 60 min after therapy		7 (12)	17 (28)	0.02
Vomiting grade**	0, NO (%)	50 (83)	47 (78)	0.24
	1, NO (%)	9 (15)	8 (13)	
	2, NO (%)	1 (2)	5 (9)	

* *P* value for between-group comparison of qualitative data using Chi-squared test.
** Grade 0: no nausea or vomiting, grade 1: suffering from nausea, grade 2: suffering from vomiting.

Conclusion

- Treating renal colic with ketorolac plus dexamethasone may lead to better pain control ***earlier*** and ***reduce*** the amount of narcotics and anti-emetics required

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Ultrasonography or Radiography for Suspected Pediatric Distal Forearm Fractures

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Funding

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- All authors had no conflicts of interest

Introduction

- Buckle fractures of the distal radius are among the most common fractures in children

- Radiography is routinely performed as initial imaging of suspected fractures, but ultrasonography is becoming increasingly popular

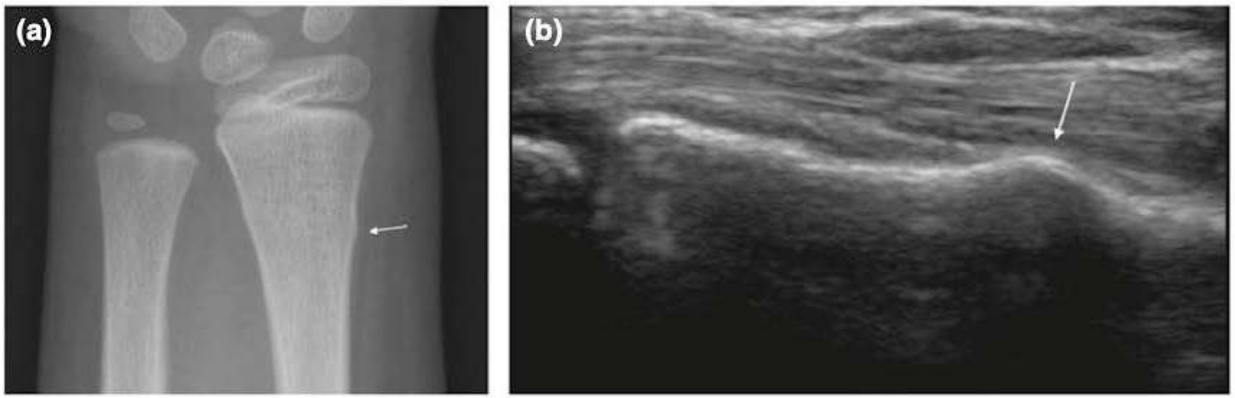

Figure 2: (a) Radiograph of a Distal Radius Type A Buckle Fracture (arrow). (b) Ultrasound Image of a Distal Radius Buckle Fracture (arrow) on the Same Patient.

Image from Snelling AJUM 2018

Introduction

- Ultrasonography for diagnosis of distal forearm fractures is accurate and timely
- Ultrasound does not expose the patient to any ionizing radiation
- Purpose of this study was to compare the effect of ultrasonography to radiography as the initial diagnostic imaging modality on patient centred outcomes

Methods

- Multi-centre, open-label, non inferiority, randomized controlled trial conducted at four centres in Australia

- Randomized 270 children presenting to the ED with isolated, acute, clinically non-deformed distal forearm injuries for which imaging was indicated
  - 135 children assigned to initial ultrasonography
  - 135 children assigned to initial radiography

Methods

- Patients in the ultrasonography group underwent a six-view forearm POCUS protocol
- Patients in the radiography group received biplanar imaging
- Initial treatment was standardized
  - Patients with buckle fractures were managed with a wrist splint

Methods

- Primary outcome was physical function of the arm at 4 weeks
  - Measured by t**he Pediatric Upper Extremity Short Patient-Reported Outcomes Measurement Information System (PROMIS) tool**
  - Non-inferiority margin of 5 points on the PROMIS tool was pre-specified by the researchers

- Secondary outcomes included function at 1 week and 8 weeks, patient/parent satisfaction, frequency of radiography, length of stay, and treatment time in the ED

Results

Table 1. Characteristics of the Participants at Baseline.*

Characteristic	Ultrasonography (N=135)	Radiography (N=135)
Male sex — no. (%)†	67 (49.6)	77 (57.0)
Age — yr	10.4±2.8	10.2±2.8
Weight — kg	43.1±17.9	41.1±17.2
Height — cm‡	146±18	144±18
Body-mass index percentile§	64.8±30.0	64.1±30.2
Right hand dominant — no. (%)	122 (90.4)	122 (90.4)
Right hand affected — no. (%)	64 (47.4)	64 (47.4)
Dominant hand affected — no. (%)	63 (46.7)	65 (48.1)
Previous forearm issue affecting physical function — no. (%)	3 (2.2)	0
Mechanism of injury — no. (%)		
Fall on outstretched hand	87 (64.4)	88 (65.2)
Strike or direct blow	25 (18.5)	21 (15.6)
Other fall	19 (14.1)	24 (17.8)
Hyperextension of wrist	3 (2.2)	0
Rotational force	1 (0.7)	2 (1.5)

* Plus–minus values are means ±SD. Percentages may not total 100 because of rounding.

† One participant in the ultrasonography group was of female sex and nonbinary gender.

‡ Height data were missing for one participant in each of the two groups.

§ The body-mass index is the weight in kilograms divided by the square of the height in meters. Values for the percentiles shown are according to World Health Organization growth reference data based on age (https://www.who.int/tools/growth-reference-data-for-5to19-years/indicators/bmi-for-age). The body-mass index could not be calculated for one participant in each of the two groups.

Results

Table 2. PROMIS Scores.*

Variable	Ultrasonography		Radiography		Mean Difference (95% CI)
	No. of participants with data	Score	No. of participants with data	Score	
Primary outcome					
PROMIS score at 4 wk, per-protocol analysis	130	36.4±5.9	132	36.3±5.3	0.1 (−1.3 to 1.4)
PROMIS score at 4 wk, intention-to-treat analysis	133	36.4±5.9	133	36.3±5.3	0.1 (−1.3 to 1.4)
Secondary outcomes, per-protocol analysis					
PROMIS score at 1 wk	129	28.4±8.7	126	27.7±8.6	0.7 (−1.4 to 2.8)
PROMIS score at 8 wk	120	39.2±2.2	117	39.1±2.6	0.1 (−0.5 to 0.7)
Subgroup per-protocol analysis — PROMIS score at 4 wk†					
Diagnostic category					
No fracture	45	38.3±4.9	42	38.6±2.6	−0.3 (−2.0 to 1.4)
Buckle fracture	51	36.6±5.7	53	36.8±5.1	−0.2 (−2.3 to 1.9)
Other fracture	34	33.4±6.4	37	32.9±6.2	0.4 (−2.5 to 3.4)
Age					
5–9 yr	55	36.8±4.8	59	35.3±6.3	1.6 (−0.5 to 3.6)
10–15 yr	75	36.0±6.6	73	37.1±4.2	−1.1 (−2.9 to 0.7)

* Plus–minus values are means ±SD. The prespecified noninferiority margin was 5 points on the Pediatric Upper Extremity Short Patient-Reported Outcomes Measurement Information System (PROMIS) scale (range, 8 to 40, with higher scores indicating better function). Randomization was stratified according to trial site and participant age. Results from intention-to-treat and per-protocol analyses are reported for the primary outcome. Full per-protocol and intention-to-treat results are reported in Table S8. The per-protocol population underwent initial imaging as assigned, and outcome data were collected at 4 weeks (with a window of ±3 days). Outcome data for the intention-to-treat population were collected at any time.

† No apparent association was observed between group assignment and expert panel diagnosis of buckle fracture or no fracture (mean difference, 0.1 point; 95% CI, −2.9 to 3.1) or other fracture or no fracture (mean difference, 0.7 points; 95% CI, −2.6 to 4.0) or between group assignment and age category (mean difference, −2.7 points; 95% CI, −5.4 to 0.1).

Results

Table 3. Additional Secondary Outcomes.*

Outcome	Ultrasonography (N=135)	Radiography (N=135)	Point Estimate (95% CI)
Satisfaction at 4 wk†			
Participant-reported	1.57±0.83	1.72±0.92	−0.15 (−0.36 to 0.06)
Parent- or caregiver-reported	1.33±0.60	1.52±0.85	−0.19 (−0.37 to −0.01)
Pain at 4 wk†	0.9±1.7	0.8±1.5	0.10 (−0.28 to 0.48)
Treatment duration (IQR) — min‡			
Triage to emergency department discharge	109 (85 to 144)	125 (103 to 157)	−15 (−29 to −1)
Clinical review to emergency department discharge	70 (44 to 107)	98 (77 to 129)	−28 (−40 to −17)
Frequency of radiographic imaging§			
At initial presentation	0.90±1.54	2.78±0.91	0.33 (0.27 to 0.40)
Follow-up ≤8 wk	1.24±2.53	1.36±2.43	0.91 (0.48 to 1.73)

* Plus–minus values are means ±SD. No computed tomography scans were performed in the ultrasonography group; two were performed in the radiography group. Two participants in the ultrasonography group and none in the radiography group underwent magnetic resonance imaging. Data in the ultrasonography group were missing on participant- and parent- or caregiver-reported satisfaction in two participants and on pain in two participants. Data in the radiography group were missing on participant- and parent- or caregiver-reported satisfaction in three participants and on pain in two participants. Satisfaction and pain were analyzed with the use of linear regressions, treatment duration was analyzed with the use of median regression, and imaging was analyzed with the use of negative binomial regression. The full secondary outcome analysis is shown in Table S9. IQR denotes interquartile range.

† Lower scores denote higher satisfaction (on the 5-point Likert scale) and less pain (on the 6-point Faces Pain Scale–Revised). Point estimates are presented as mean differences.

‡ Point estimates are presented as median differences.

§ Point estimates are presented as rate ratios.

Conclusions

- Ultrasonography was ***non-inferior*** to radiography in terms of physical function of the arm at 4 weeks
- Ultrasound may be useful to ***reduce*** the number of radiographs done on initial ED visits
- Use of ultrasound may lead to a ***shorter treatment time*** and shorter length of stay in the ED, improve patient/parent satisfaction

Not another headache!

RESEARCH ARTICLE

Randomized Trial Comparing Low- vs High-Dose IV Dexamethasone for Patients With Moderate to Severe Migraine

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Abstract

Background and Objectives

Dexamethasone decreases the frequency of migraine recurrence after emergency department (ED) discharge. However, the optimal dose of dexamethasone is unknown. We hypothesized that dexamethasone 16 mg IV would allow greater rates of sustained headache relief than 4 mg when coadministered with metoclopramide 10 mg IV.

MORE ONLINE

Class of Evidence
Criteria for rating therapeutic and diagnostic studies
NPub.org/coe

MORE ONLINE

Background

- Migraine is a common cause of ED presentation for headache
- Many patients treated successfully in ED with metoclopramide will have recurrence of headache within 24-48 hours
- Dexamethasone has been shown to decrease incidence of “rebound headache” (NNT: 9)

COI

- No COI declared by authors

Study design

- Randomized, double-blind trial
- 2 EDs in New York City
- All patients received 10mg IV metoclopramide
- Randomized to 4mg vs 16mg IV dexamethasone

Primary Outcome

- Sustained headache relief for 48 hours
- Defined as none or mild headache for entire 48 hour follow-up
- Secondary outcome of obtaining headache relief within 2 hours

Results

- 209 patients randomized
- Trial stopped early for futility
- Similar rates of headache relief and maintenance between groups (34% vs 41%)

Table 2 Secondary Outcomes

Outcome	Metoclopramide 10 mg IV +		
	Dexamethasone 4 mg (n = 104)	Dexamethasone 16 mg (n = 105)	Absolute difference (95% CI)
Headache relief within 2 h, n (%)			
No	27 (26)	23 (22)	4 (−8 to 16)
Yes	77 (74)	82 (78)	
Rescue medications for headache in the ED, n (%)			
No	83 (80)	87 (83)	3 (−8 to 14)
Yes	21 (20)	18 (17)	
Worst pain after ED discharge, n (%)			
None/mild	67 (67)	76 (75)	8 (−4 to 21)
Moderate/severe	33 (33)	25 (25)	
Missing	4	4	
Medications for headache after ED discharge, n (%)			
No	55 (55)	60 (59)	4 (−9 to 18)
Yes	45 (45)	41 (41)	
Missing	4	4	
No. of days with headache during the week after ED discharge, median (25th, 75th percentile), n	2 (1, 5), 98	2 (0, 4), 99	0.4 (−0.3, 1.2)[a]

Abbreviation: ED = emergency department.
[a] Mean difference.

Limitations

- Relatively small number of enrolled patients compared to those presenting with headache 209/1823 headache visits
- Only about 1/3 of patients achieved sustained headache relief
- Only 2 centre study

Conclusions

- 4mg of dexamethasone is likely as good as higher doses

Pro tips

- Consider dexamethasone at a lower dose
- For patients with repeat visits, ask about whether they have issues with rebound headaches when deciding on dexamethasone for headache cocktail

School’s out…or in?

Background

- Guidelines have supported earlier return to school and non contact physical activity
- Limited evidence to guide return to school advice
- Absence from school has significant potential implications for patients

COI

- Multiple authors involved in concussion guidelines
- Multiple authors had received non-industry research funding
- One author is founder of concussion care clinic.

Study Design

- Prospective observational cohort study
- Planned secondary analysis
- 9 Canadian pediatric emergency departments

Primary Outcome

- Symptom burden at 14 days
- Measured with post-concussion symptom inventory

Results

- 2000 of 3063 eligible for sub-study
- 1130 had complete data
- Significantly decreased PCSI score in 8-12 and 13-18 age group (-1.668, 3.145)
- Stronger effect in those with more severe symptoms at time of injury

Results

Table 2. Effect of Early vs Late RTS by Quantiles of Initial Symptom for Each Age Group[a]

Initial PCSI	Summed score[b]	Early vs late RTS, SMD (95% CI)	*P* value
Age 5-7 years[c]			
Overall		−0.709 (−1.430 to 0.013)	.05
p10	2	−1.371 (−2.595 to −0.146)	.03
p25	3	−1.020 (−2.102 to 0.063)	.07
p50	6	−0.852 (−1.973 to 0.269)	.14
p75	10	−0.955 (−2.421 to 0.512)	.20
p90	13	0.419 (−0.981 to 1.819)	.56
Age 8-12 years[d]			
Overall		−1.668 (−2.339 to −0.997)	<.001
p10	3.9	−1.134 (−2.399 to 0.131)	.08
p25	6	−0.858 (−1.942 to 0.226)	.12
p50	10	−0.972 (−1.950 to 0.006)	.05
p75	15	−2.036 (−3.238 to −0.835)	.001
p90	19	−3.055 (−4.260 to −1.851)	<.001
Age 13-18 years[e]			
Overall		−3.145 (−5.247 to −1.043)	.003
p10	10	−1.799 (−5.951 to 2.353)	.40
p25	19	−2.419 (−5.859 to 1.021)	.17
p50	31	−3.103 (−6.178 to −0.028)	.05
p75	48	−3.852 (−7.733 to 0.028)	.05
p90	64	−4.475 (−8.370 to −0.579)	.02

Abbreviations: PCSI, Post-Concussion Symptom Inventory; RTS, return to school; SMD, standardized mean difference.

[a] The contrast for all groups was early vs late RTS.

[b] The total score of each of the quantiles listed.

[c] Additional model covariates (SMD > 0.1) for ages 5 to 7 years: site number, sex, maximum symptom duration from previous concussion(s), mechanism of injury, balance error scoring system tandem stance number of errors, and day of initial injury.

[d] Additional model covariates (SMD > 0.1) for ages 8 to 12 years: day of initial injury.

[e] Additional model covariates (SMD > 0.1) for ages 13 to 18 years: site and day of initial injury.

Limitations

- Observational study, not prospective or randomized
- School absence is multifactorial so confounders possible
- Unclear what additional accommodations were made

Conclusions

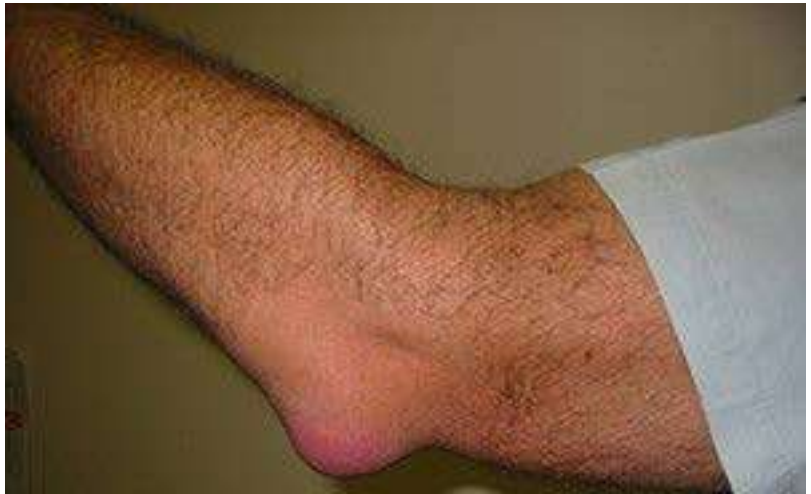
- Earlier return to school after 24-48 hours may improve time to recovery from concussion

Efficacy of empiric antibiotic management of septic olecranon bursitis without bursal aspiration in emergency department patients

Beyde A, Thomas AL, Colbenson KM, et al. Acad Emerg Med. Published online October 26, 2021. doi:10.1111/acem.14406

Background

- Olecranon bursitis is a common ED complaint
- For suspected septic olecranon bursitis many guidelines recommend aspiration of bursa prior to initiation of antimicrobial therapy.



Funding and COI

- none

Primary Outcomes

- Complicated versus uncomplicated bursitis resolution.

Uncomplicated resolution was defined as;

“bursitis resolution without subsequent bursal aspiration, surgery or hospitalization”

Study Design

- single centre observational study
- retrospective cohort study

Results

- 266 ED presentations with olecranon bursitis over an 8-year period identified through EMR review.
- Mean age 57 years, 85% male and 14% had diabetes
- Only 4(1.5%) underwent aspiration in ED

investigations	percentage
X-ray	61
WBC	46
ESR	34
CRP	36
Ortho Consult	26

- 15% were admitted from ED
- 29% discharged without antibiotics
- 56%(147) discharged with antibiotics.

Results

- The147 were **suspected septic bursitis**
- 9% lost to follow up
- 88% uncomplicated course--no surgery or admission
- 8 patients(6%) had delayed bursal aspiration at some point following ED visit
- 9 patients subsequently admitted for IV antibiotics—all had resolution without joint aspiration or surgery
- Initially admitted patients only 10% had bursa aspiration.
- Results even better for patients discharged from ED without antibiotics.

Limitations

- Abstractors not blinded to study objectives
- Data quality dependent on accuracy of medical records
- Single quaternary care ED
- ED has robust follow-up system for primary care
- Lack of diversity of patients
- 24 patients lost to follow-up(9%)

Discussion and conclusions

- Empiric antibiotics **without** bursal aspiration is a reasonable initial approach to ED management of patients with suspected septic olecranon bursitis
- About **90%** safely resolve with this approach regardless of outpatient or inpatient management.

Practice change and pro-tips

Opioid analgesia for acute low back pain and neck pain (the OPAL trial): a randomised placebo-controlled trial

Caitlin M P Jones, Richard O Day, Bart W Koes, Jane Latimer, Chris G Maher, Andrew J McLachlan, Laurent Billot, Sana Shan, Chung-Wei Christine Lin, on behalf of the OPAL Investigators and Coordinators*

Background

- Opioid analgesics are commonly used for acute low back and neck pain.
- Supporting efficacy data are scarce.
- Concerns surrounding opioid misuse and addiction have prompted questions regarding appropriateness of opioids as a treatment option

Funding and COI

- none

Outcomes

Primary

- Pain severity at 6 weeks

Secondary

- Pain severity at weeks 4,12, 26 and 52
- Physical functioning
- Patient reported satisfaction
  - Quality of life, physical
  - Quality of life, mental
- Adverse events

Study Design

- Randomized, double blind, placebo-control trial
- 157 primary care or emergency department sites

- 347 participants recruited over 6-year period
- Participants experiencing acute low back pain or neck pain were randomly assigned to receive either opioid analgesia or a placebo.
- 151 participants in opioid group and 159 participants in placebo group included in primary analysis
- Lost to follow-up/ withdrawal rates were 19% for opioid and 15% for placebo groups respectively

Results

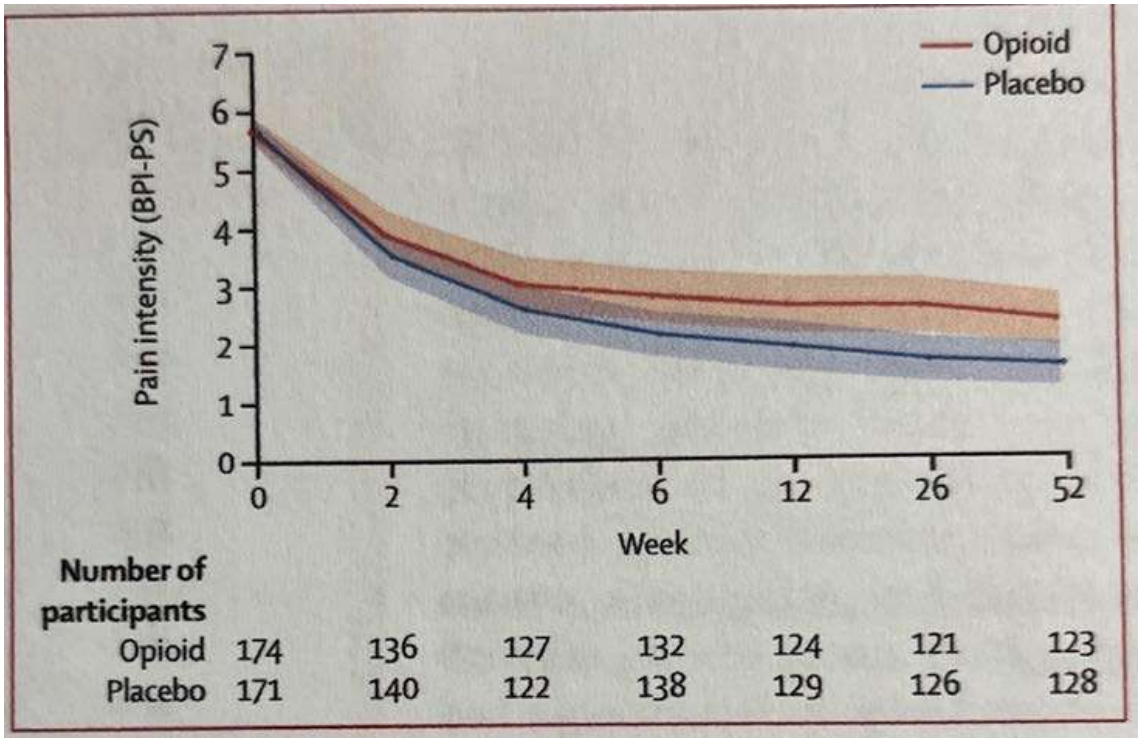


Figure 2: **Longitudinal plot of mean pain severity score**
Datapoints show mean scores at each timepoint, and the shaded areas show 95% CIs. Estimates are raw values (not modelled). BPI-PS=Brief Pain Inventory, pain severity subscale.

Results

- Opioid analgesia did **not** show significant superiority over placebo in decreasing pain intensity or improving functional outcomes for acute low back and neck pain.
- No difference in adverse effects.
- Opioid group had greater risk of opioid misuse at week 52

Limitations

- 25% of data were missing at the primary timepoint—reduced power and could introduce bias if not random
- Compliance of medication regime. Only 58% of participants reported compliance—only half were compliant.
- No data collection on what guideline of care offered to participants in both groups
- No collection of racial, ethnic or cultural data

Practice change and pro-tips

Open access Guidelines/Algorithms

Trauma Surgery & Acute Care Open

Antibiotic prophylaxis for tube thoracostomy placement in trauma: a practice management guideline from the Eastern Association for the Surgery of Trauma

Jennifer J Freeman ,[1] Sofya H Asfaw,[2] Cory J Vatsaas,[3] Brian K Yorkgitis ,[4] Krista L Haines,[3] J Bracken Burns,[5] Dennis Kim,[6] Erica A Loomis,[7] Andy J Kerwin,[4] Amy McDonald,[8] Suresh Agarwal, Jr.,[3] Nicole Fox,[9] Elliott R Haut ,[10] Marie L Crandall ,[4] John J Como ,[11] George Kasotakis [3]

Background

- In 2012 the Eastern Association for the Surgery of Trauma updated their guideline to "not recommend for or against antibiotic prophylaxis for tube thoracostomy insertion for traumatic hemothorax or pneumothorax"

east

Eastern Association for the Surgery of Trauma

Advancing Science, Fostering Relationships, and Building Careers

Methods

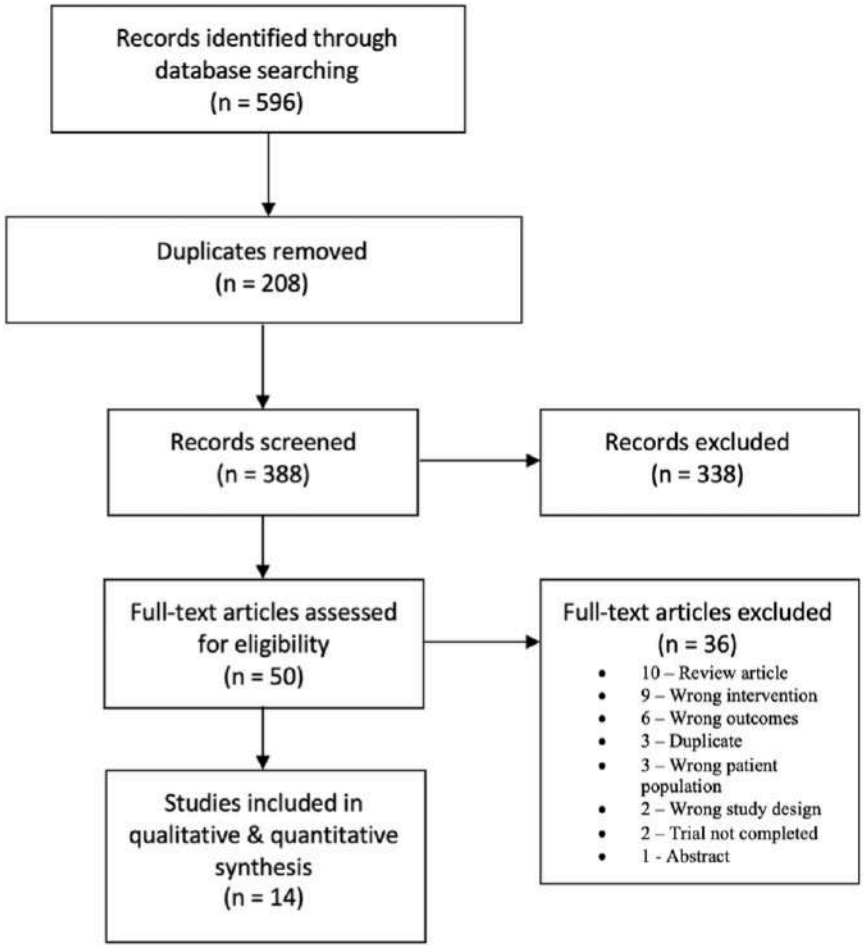


Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram for study selection for analysis.

Results

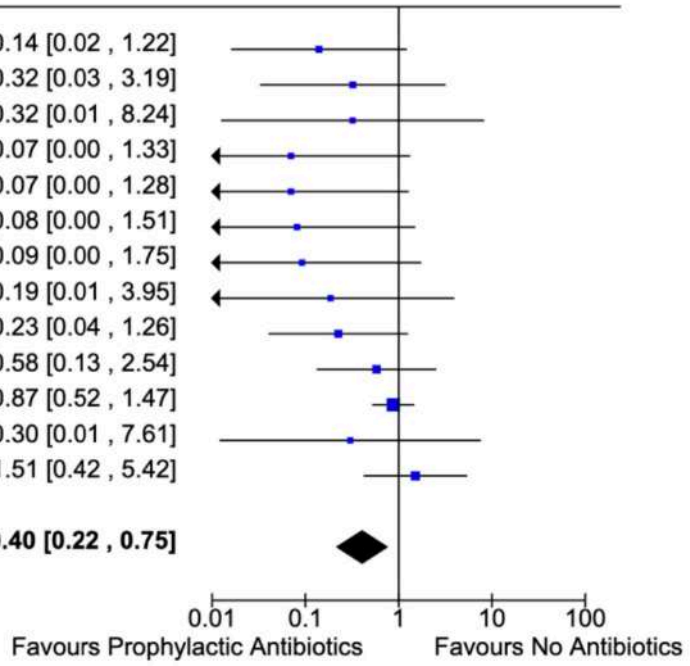
A

Study or Subgroup	Prophylactic Antibiotics Events	Total	No Antibiotics Events	Total	Weight	Odds ratio M-H, Random, 95% CI
Grover 1977	1	38	6	37	6.4%	0.14 [0.02 , 1.22]
Stone 1981	1	60	3	60	5.9%	0.32 [0.03 , 3.19]
LeBlanc 1985	0	26	1	26	3.2%	0.32 [0.01 , 8.24]
LoCurto 1986	0	30	5	28	3.8%	0.07 [0.00 , 1.33]
Brunner 1990	0	44	6	46	3.9%	0.07 [0.00 , 1.28]
Cant 1993	0	57	5	56	3.9%	0.08 [0.00 , 1.51]
Nichols 1994	0	63	4	56	3.8%	0.09 [0.00 , 1.75]
Gonzalez 1998	0	71	2	68	3.6%	0.19 [0.01 , 3.95]
Maxwell 2004	2	153	4	72	9.2%	0.23 [0.04 , 1.26]
Villegas 2009	3	63	5	63	11.5%	0.58 [0.13 , 2.54]
Dubose 2012	31	126	50	184	27.7%	0.87 [0.52 , 1.47]
Heydari 2014	0	54	1	50	3.3%	0.30 [0.01 , 7.61]
Cook 2019	6	272	4	272	13.8%	1.51 [0.42 , 5.42]
Total (95% CI)		**1057**		**1018**	**100.0%**	**0.40 [0.22 , 0.75]**
Total events:	44		96			

Heterogeneity: Tau² = 0.28; Chi² = 16.26, df = 12 (P = 0.18); I² = 26%

Test for overall effect: Z = 2.90 (P = 0.004)

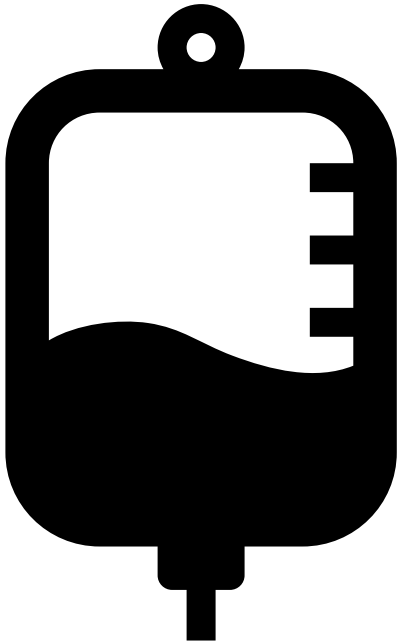
Test for subgroup differences: Not applicable



Conclusion

- "We conditionally recommend that antibiotic prophylaxis be given at the time of insertion to reduce empyema in adult patients who require tube thoracostomy for traumatic hemothorax or pneumothorax"

Practice Changing?



ORIGINAL ARTICLE

Cosmetic Outcomes of Simple Pediatric Facial Lacerations Repaired With Skin Adhesive Compared With Skin Adhesive With Underlying Adhesive Strips

A Randomized Controlled Trial

Erin Munns, MD,† Andrew J. Kienstra, MD,*† Patrick D. Combs, MD,‡ Giovanni Gabriele, MPH,§ and Matthew Wilkinson, MD, MPH*†*

Pediatric Emergency Care®
DEDICATED TO THE CARE OF THE ILL OR INJURED CHILD

Background

- Sutures, tissue adhesives and adhesive strips are all used for repair of lacerations in the ED.
- Some felt that adhesive strips alone were easier for children to remove so the authors hypothesized that
  - "repairing simple facial lacerations with skin adhesive and underlying adhesive strips would be superior to repairing wounds with skin adhesive alone in regard to cosmetic outcome"

Methods

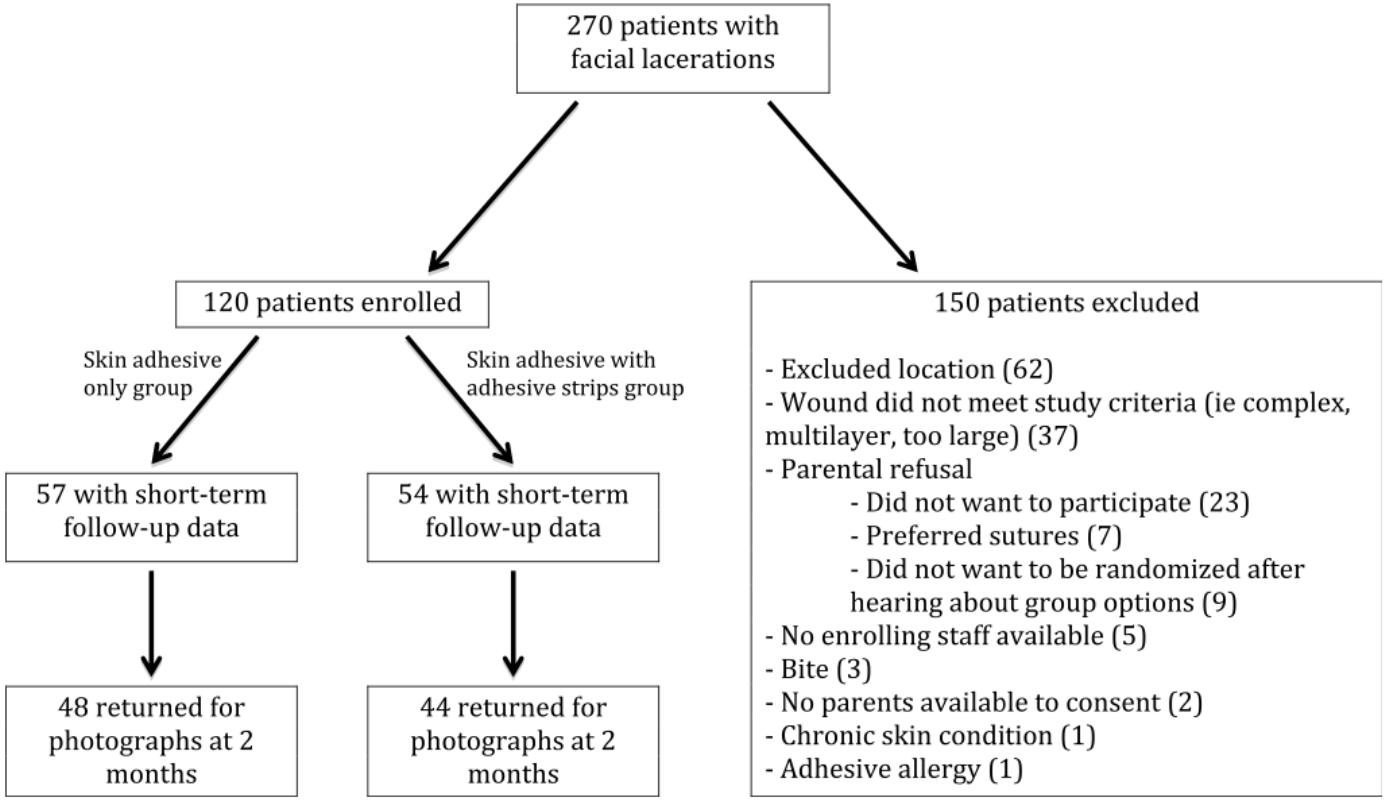


FIGURE 2. Enrollment data.

Results

TABLE 2. Comparison of Skin Adhesive With Underlying Adhesive Strips Versus Skin Adhesive Alone Outcome Measures

	Skin Adhesive Alone Group	Skin Adhesive With Adhesive Strips Group	*P*
Cosmetic VAS (mm), mean (SD)			
Rater 1	62 (18)	65 (21)	0.485
Rater 2	53 (15)	55 (18)	0.693
Combined average	58 (15)	60 (18)	0.540
Time to repair (s), mean (SD)	107 (77)	195 (123)	<0.001
Ease of repair (VAS) (mm), mean (SD)	18 (19)	24 (23)	0.127
Assistants used, median (IQR)	1 (1.25)	1 (1)	0.418
Unscheduled follow-up visits, n (%)	3 (5)	4 (7)	0.712
Wound dehiscence, n (%)	2 (3.5)	2 (4)	1.000
Need for additional procedures, n (%)	2 (3.5)	3 (5.5)	0.673
Infection, n (%)	1 (2)	1 (2)	0.234

IQR indicates interquartile range.

Results

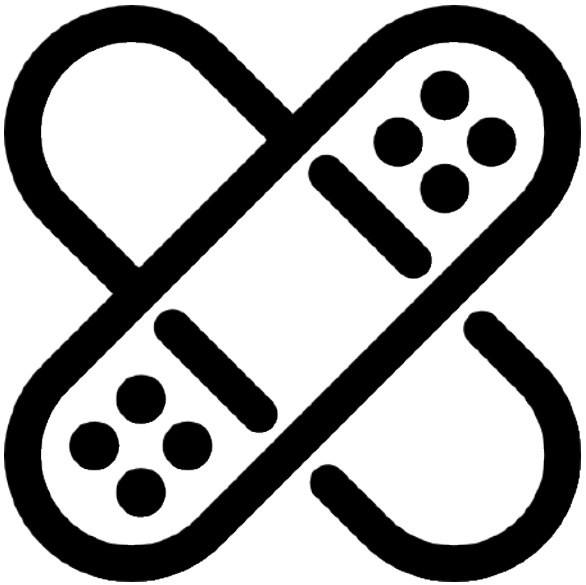
Closure type	Complication	Comments
Adhesive strips & skin adhesive	Additional visit	Returned to ED hours after initial visit for blood noted under glue, did not require any intervention
Adhesive strips & skin adhesive	Additional visit & infection	Returned to ED a few days after repair, placed on oral antibiotics
Adhesive strips & skin adhesive	Additional visit, dehiscence, & additional procedure	Patient ripped off the glue/strips and returned to ED where sutures were placed
Adhesive strips & skin adhesive	Additional visit, dehiscence, & additional procedure	Fell and hit head again causing dehiscence, required sutures
Adhesive strips & skin adhesive	Additional procedure	Did not approximate well when trying to repair so sutures placed during original visit
Skin adhesive alone	Additional visit	Parents concerned about wound appearance so scheduled appointment for next day, did not require intervention
Skin adhesive alone	Additional visit	Fell and hit head again causing it to bleed under the glue, did not require any intervention
Skin adhesive alone	Additional visit, dehiscence, & additional procedure	Went to primary doctor as wound re-opened and additional skin adhesive applied
Skin adhesive alone	Dehiscence & additional procedure	Wound re-opened, family friend applied more skin adhesive
Skin adhesive alone	Infection	Went to scheduled primary doctor follow-up and started on antibiotic ointment for infection

FIGURE 3. Short-term complications with descriptions.

Conclusion

- “Using adhesive strips to first approximate a wound before applying skin adhesive leads to a similar cosmetic outcome compared with … skin adhesive alone”

Practice Changing?



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Hypothermia versus Normothermia after Out-of-Hospital Cardiac Arrest

J. Dankiewicz, T. Cronberg, G. Lilja, J.C. Jakobsen, H. Levin, S. Ullén, C. Rylander, M.P. Wise, M. Oddo, A. Cariou, J. Bělohlávek, J. Hovdenes, M. Saxena, H. Kirkegaard, P.J. Young, P. Pelosi, C. Storm, F.S. Taccone, M. Joannidis, C. Callaway, G.M. Eastwood, M.P.G. Morgan, P. Nordberg, D. Erlinge, A.D. Nichol, M.S. Chew, J. Hollenberg, M. Thomas, J. Bewley, K. Sweet, A.M. Grejs, S. Christensen, M. Haenggi, A. Levis, A. Lundin, J. Düring, S. Schmidbauer, T.R. Keeble, G.V. Karamasis, C. Schrag, E. Faessler, O. Smid, M. Otáhal, M. Maggiorini, P.D. Wendel Garcia, P. Jaubert, J.M. Cole, M. Solar, O. Borgquist, C. Leithner, S. Abed-Maillard, L. Navarra, M. Annborn, J. Undén, I. Brunetti, A. Awad, P. McGuigan, R. Bjørkholt Olsen, T. Cassina, P. Vignon, H. Langeland, T. Lange, H. Friberg, and N. Nielsen, for the TTM2 Trial Investigators*

Background

- Hypothermia has been recommended with Return of Circulation after Cardiac Arrest by the AHA since 2003.
- The Temperature range Recommended is 32-36 C.
- This trial tests this recommendation.

Funding and Conflict of Interest

- Funding Government
- Many of the Authors had conflicts related to Pharmaceutical and Device Manufacturers

Methods

- Randomized, open label, prospective trail with blinded assessment of outcome
- International multi-centre
- Intention to treat
- 1850 Adults

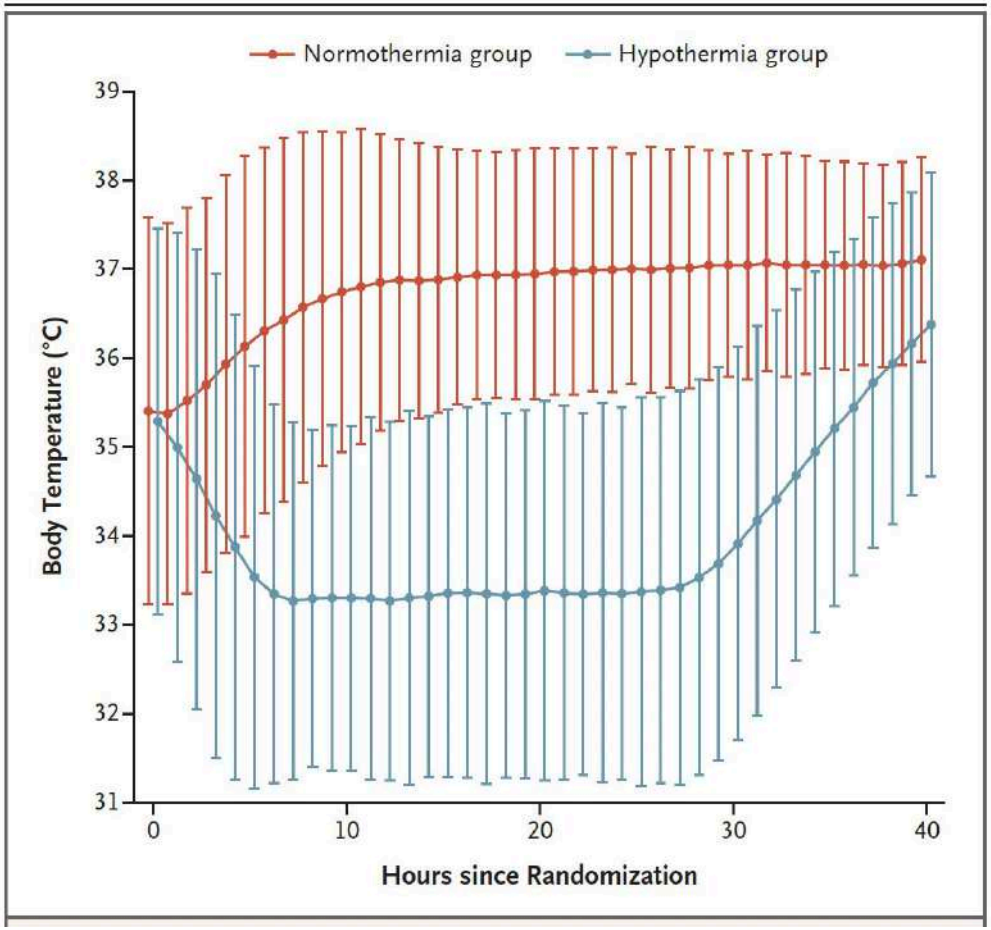
Intervention

- Intervention Group
  - **Temperature lowering to a target temperature of 33 C for 24 hours then gradually rewarmed about 1 C an hour.**
- Control Group
  - **Temperature control not initiated unless the temperature 37.5 C**

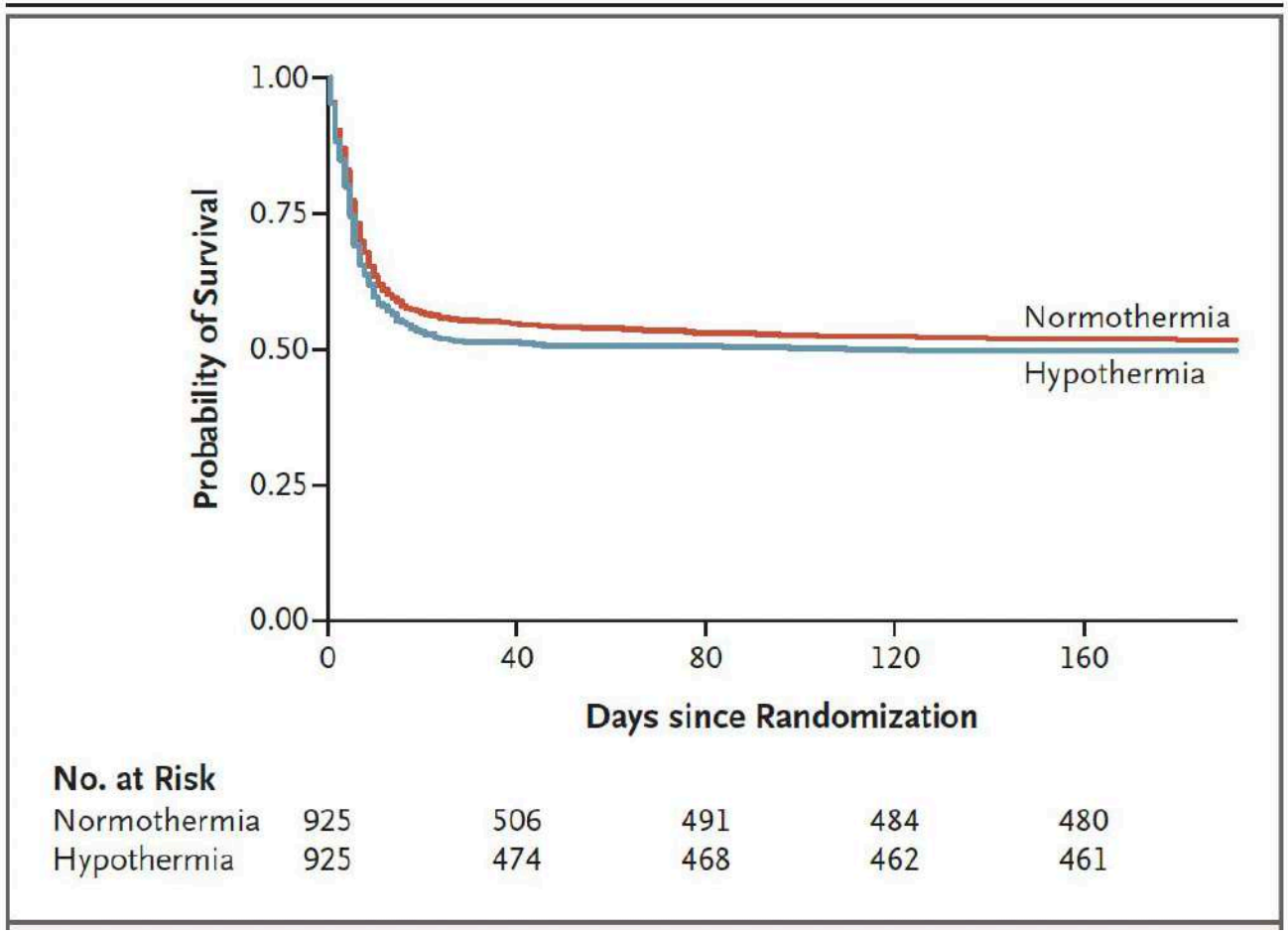
Methods

- Outcomes
  - **Death at 60 days**
  - **Function at 60 days**
    - Modified Ranking Score

Methods


Normothermia group
Hypothermia group
Body Temperature (°C)
39
38
37
36
35
34
33
32
31
0
10
20
30
40
Hours since Randomization

Results



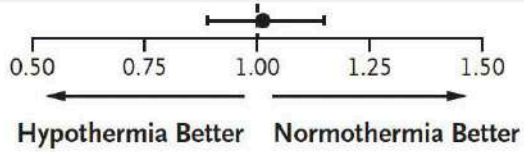
No. at Risk

Normothermia	925	506	491	484	480
Hypothermia	925	474	468	462	461

Results

A Death at 6 Months

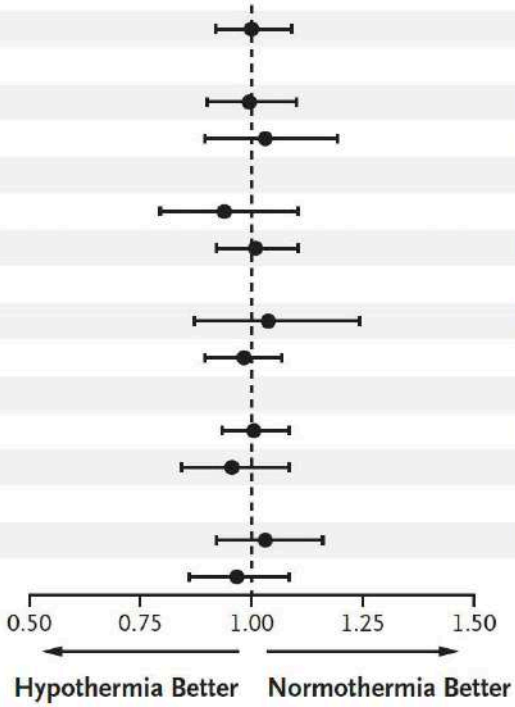
Subgroup	Hypothermia	Normothermia	Relative Risk of Death (95% CI)
	no. of patients		
All patients	925	925	1.04 (0.94–1.14)
Sex			
Male	738	729	1.03 (0.92–1.15)
Female	187	196	1.10 (0.94–1.29)
Age			
<65 yr	421	457	0.99 (0.83–1.18)
≥65 yr	504	468	1.04 (0.94–1.15)
Time to ROSC from cardiac arrest			
<25 min	419	416	1.09 (0.91–1.33)
≥25 min	506	509	1.02 (0.92–1.12)
Initial rhythm			
Nonshockable	259	231	1.04 (0.94–1.14)
Shockable	666	694	1.00 (0.87–1.15)
Shock on admission			
Not present	665	651	1.07 (0.95–1.23)
Present	260	274	1.01 (0.89–1.15)



Results

B Modified Rankin Scale Score of 4–6 at 6 Months

Subgroup	Hypothermia	Normothermia	Relative Risk of Score of 4–6 (95% CI)
	no. of patients		
All patients	881	866	1.00 (0.92–1.09)
Sex			
Male	701	679	1.00 (0.90–1.10)
Female	180	187	1.03 (0.90–1.19)
Age			
<65 yr	391	429	0.94 (0.79–1.10)
≥65 yr	490	437	1.01 (0.92–1.10)
Time to ROSC from cardiac arrest			
<25 min	395	389	1.04 (0.87–1.24)
≥25 min	486	477	0.98 (0.90–1.07)
Initial rhythm			
Nonshockable	252	218	1.00 (0.93–1.08)
Shockable	629	648	0.96 (0.84–1.08)
Shock on admission			
Not present	629	606	1.03 (0.92–1.16)
Present	252	260	0.97 (0.86–1.08)



Results

Serious adverse events — no./total no. (%)				
Arrhythmia resulting in hemodynamic compromise	222/927 (24)	152/921 (16)	1.45 (1.21–1.75)	<0.001
Bleeding	44/927 (5)	46/922 (5)	0.95 (0.63–1.42)	0.81
Skin complication related to device used for targeted temperature management	10/927 (1)	5/922 (<1)	1.99 (0.71–6.37)	0.21
Pneumonia	330/927 (36)	322/921 (35)	1.02 (0.90–1.15)	0.75
Sepsis	99/926 (11)	83/922 (9)	1.19 (0.90–1.57)	0.23

Limitations

- Excluded
  - **People under 18 years old**
  - **Pregnant Women**
- There was no control group with no Temperature intervention.

Conclusions

- Targeted Temperature Management has no advantage over preventing fever.

Circulation

ORIGINAL RESEARCH ARTICLE

Temperature Control After In-Hospital Cardiac Arrest: A Randomized Clinical Trial

Sebastian Wolfrum, MD*; Kevin Roedl, MD*; Alexia Hanebutte, MD; Rüdiger Pfeifer, MD; Volkhard Kurowski, MD; Reimer Riessen, MD; Anne Daubmann; Stephan Braune, MD; Gerold Söffker, MD; Eric Bibiza-Freiwald, MSc; Karl Wegscheider, PhD; Heribert Schunkert, MD; Holger Thiele, MD*; Stefan Kluge, MD*; for the Hypothermia After In-Hospital Cardiac Arrest Study Group

Temperature Management after Cardiac Arrest — All In or Fold?

Stephen Bernard, M.D., and Janet Bray, Ph.D.

March 9, 2023
N Engl J Med 2023; 388:941-942
DOI: 10.1056/NEJMe2214973

Outcomes after out-of-hospital cardiac arrest have improved over the past 20 years; however, the benefits of some methods used to treat these patients

Circulation
Volume 148, Issue 12, 19 September 2023; Pages 982-988
https://doi.org/10.1161/CIR.0000000000001164

American Heart Association.

AHA SCIENCE ADVISORIES

Temperature Management for Comatose Adult Survivors of Cardiac Arrest: A Science Advisory From the American Heart Association

Sarah M. Perman, MD, MSCE, FAHA, Vice Chair, Jason A. Bartos, MD, PhD, FAHA, Marina Del Rios, MD, MSc, Michael W. Donnino, MD, Karen G. Hirsch, MD, FAHA, Jacob C. Jentzer, MD, PhD, FAHA, Peter J. Kudenchuk, MD, FAHA, Michael C. Kurz, MD, MS, FAHA, Carolina B. Maciel, MD, MSCR, Venu Menon, MD, FAHA, Ashish R. Panchal, MD, PhD, Jon C. Rittenberger, MD, MS, Katherine M. Berg, MD, Chair, and on behalf of the American Heart Association Emergency Cardiovascular Care Committee, Council on Cardiovascular Surgery and Anesthesia; Council on Clinical Cardiology; Council on Cardiovascular and Stroke Nursing; Council on Peripheral Vascular Disease; Council on Cardiopulmonary, Critical Care, Perioperative and Resuscitation, and Stroke Council

Pro Tip

- It is time to abandon Targeted Temperature Management

Research

JAMA Internal Medicine | Original Investigation

Syncope and the Risk of Subsequent Motor Vehicle Crash
A Population-Based Retrospective Cohort Study

John A. Staples, MD, MPH; Shannon Erdelyi, MSc; Ketki Merchant, MSc, MBBS; Candace Yip, BSc; Mayesha Khan, MA; Donald A. Redelmeier, MD, MSHSR; Herbert Chan, PhD; Jeffrey R. Brubacher, MD

Funding and COI

- Government

Methods

- Six Urban Emergency Departments in British Columbia
- 2020-2022
- Retrospective Randomized Cohort Study
- 9223 Patients presenting with Syncope
- 54366 Controls (four controls for each patient)

Figure 2. Forest Plot Results for Selected Subgroup Analyses

Variable	HR (95% CI)	P value
Sex		
Female	0.96 (0.86-1.07)	.45
Male	0.91 (0.82-1.01)	.07
Age, y		
19-25	0.92 (0.74-1.15)	.45
26-35	0.90 (0.74-1.09)	.28
36-65	0.93 (0.83-1.03)	.16
66-85	0.99 (0.83-1.17)	.87
≥86	0.71 (0.36-1.39)	.32
Population density		
Urban	0.94 (0.86-1.01)	.11
Rural	0.91 (0.73-1.15)	.43
ED disposition		
Hospitalized	0.84 (0.65-1.10)	.21
Discharged	0.94 (0.87-1.02)	.14
Cardiovascular disease		
Yes	1.00 (0.85-1.18)	.96
No	0.91 (0.84-0.99)	.04
Syncope cause		
Vasovagal	0.91 (0.83-0.99)	.03
Orthostatic	0.92 (0.75-1.13)	.44
Cardiac	1.15 (0.86-1.52)	.35
Other cause	1.06 (0.78-1.44)	.71
Nonsyncopal TLOC	0.86 (0.53-1.41)	.56
No TLOC	0.97 (0.72-1.30)	.82
Canadian Syncope Risk Score		
Positive (score of ≥1)	1.00 (0.85-1.19)	.95
Negative (score of ≤0)	0.92 (0.85-1.00)	.05
San Francisco Syncope Rule		
Positive (score of ≥1)	0.95 (0.86-1.05)	.31
Negative (score of 0)	0.92 (0.83-1.02)	.12
Physician driving advice		
Yes	0.80 (0.45-1.40)	.43
No	0.94 (0.87-1.01)	.09
All	0.93 (0.87-1.01)	.07

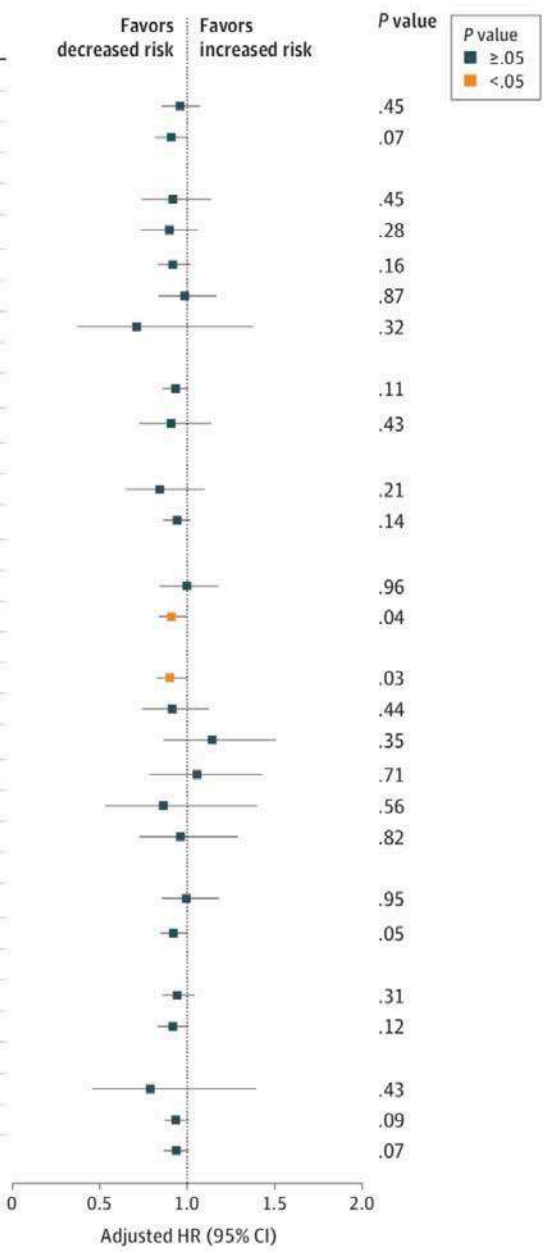
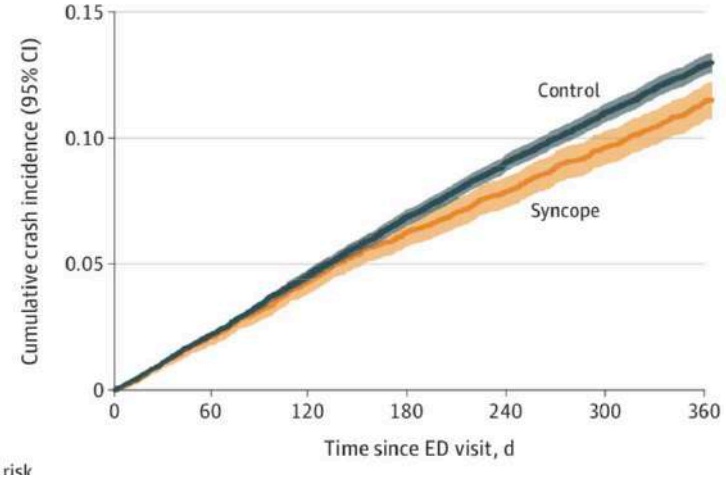


Figure 1. Cumulative Motor Vehicle Crash Incidence



No. at risk

Limitations

- Retrospective
- Did not consider the cause of Syncope

Conclusions

- Discharge Instructions for patients with a diagnosis of Syncope do not need to be excluded from driving.

Pro Tip

- No Driving Exclusion after Syncope

American Journal of Emergency Medicine 38 (2020) 1551–1553

Contents lists available at ScienceDirect

American Journal of Emergency Medicine

journal homepage: www.elsevier.com/locate/ajem

Original Contribution

The utility of the speed bump sign for diagnosing acute appendicitis

Dr. Mustafa Mahmood Eid, M.B.Ch.B *, Dr. Maythem Al-Kaisy, M.B.Ch.B

Al Ain Hospital, United Arab Emirates

ARTICLE INFO

ABSTRACT

Background

- Appendicitis is a common presentation in Emergency Departments.
- The diagnosis can be challenging.
- Are there simple history factors that are specific for the diagnosis?

Funding

- Government

Table 3
Illustrates pain over speed bumps in association with acute appendicitis.

Pain over speed bumps	Appendicitis positive	Appendicitis negative	Total
Positive	77	3	80
Negative	8	2	10
Total	85	5	90

Methods

- 100 Consecutive patients
- 15 years or older.
- United Arab Emeritis

Results

Table 4
Shows pain over speed bumps with 95% CI in contrast to different clinical factors used for acute appendicitis diagnosis.

Criteria	Sensitivity %	Specificity %	Positive predictive value %	Negative predictive value %	Positive likelihood ratio	Negative likelihood ratio
Pain over speed pump	90.5	40	96.25	20	1.5	0.23
Migratory pain	65	78	54	42	1.2	0.5
WBC	48	73	85	27	1.0	1.1
Nausea or Vomiting	75	30	62	25	0.9	1.3
Rebound tenderness	63	82	65	53	1.4	0.4

Results

Table 6
Description of patient who is speed bump sign positive and negative appendicitis.

Patient with speed bump positive with negative appendicitis	Diagnosis
Patient No. 1	Pelvic Inflammatory Disease
Patient No. 2	Ruptured Ovarian Cyst
Patient No. 3	Urinary Tract Infection

Limitations

- Single Centre
- 100 patients
- However, a similar study in the BMJ
- Showed the same results

Conclusions

- The History of Pain with Speed Bumps is highly specific for Appendicitis.

Summary

- 1. Add Dexamethasone to NSAIDs for Renal Colic.
- 2. Consider US for Forearm fractures to reduce X-Ray Utilization.
- 3. Dexamethasone 4mg is as good as higher doses for preventing Rebound Migraine Headache.
- 4. Early return to school may improve recovery time for Pediatric Concussion.
- 5. Do not Aspirate Olecranon Bursitis.

Summary

- 6. Do not give opiates for patients with acute nonspecific back and neck pain.
- 7. Give prophylactic Antibiotics when doing a chest tube for Trauma patients.
- 8. Adhesive strips with Tissue glue is equivalent to glue alone.
- 9. Forget about Hypothermia when treating patients after Cardiac arrest.
- 10. Sycopal with no clear worrisome cause do notneed to be excluded from Driving

Summary

- 11. The Speed test is highly specific for appendicitis.

Thank you!

Please fill out your session evaluation now!

#myfmf

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