Pennsylvania Academy of Family Physicians Foundation

Pittsburgh CME Conference

November 7 - 9, 2014

Instructive Evidence-Based Cases in Pediatric Emergency Medicine ***(Patient Safety)***

Brian Schultz, MD
Children's Hospital of Pittsburgh of UPMC

Disclosures:

Speaker has no disclosures and there are no conflicts of interest.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

Instructive Evidence-Based Cases in Pediatric Emergency Medicine

Brian R E Schultz, MD
Assistant Professor of Pediatrics
University of Pittsburgh School of Medicine
Attending Physician, Division of Pediatric Emergency Medicine
Children's Hospital of Pittsburgh of UPMC
Pittsburgh, Pennsylvania

Disclosure

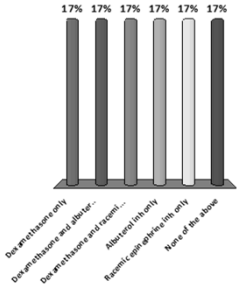
- Dr. Brian Schultz has no conflict of interest, financial agreement, or working affiliation with any group or organization.

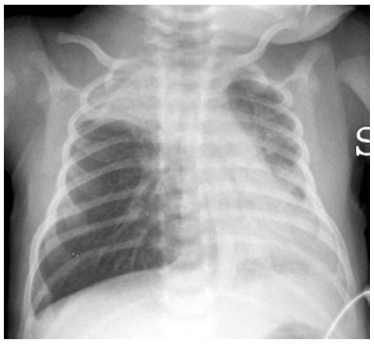
Scenario

- A 6 month old male presents with increased work-of-breathing and wheezing in January. This began after 2 days of cough, rhinorrhea, and low-grade fevers. He has never wheezed before. He has a history of eczema, and both his brothers (as well as his mother) have asthma. He has bilateral inspiratory crackles and bilateral expiratory wheezes on exam as well as moderate retractions.

What medicines would you use in treating this patient?

A. Dexamethasone only
B. Dexamethasone and albuterol inh
C. Dexamethasone and racemic epinephrine inh
D. Albuterol inh only
E. Racemic epinephrine inh only
F. None of the above

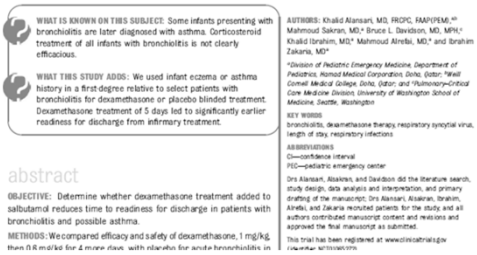




Oral Dexamethasone for Bronchiolitis: A Randomized Trial

Pediatrics
October 2013

Oral Dexamethasone for Bronchiolitis: A Randomized Trial



WHAT IS KNOWN ON THIS SUBJECT: Some infants presenting with bronchiolitis are later diagnosed with asthma. Corticosteroid treatment of all infants with bronchiolitis is not clearly efficacious.

WHAT THIS STUDY ADDS: We used infant eczema or asthma history in a first-degree relative to select patients with bronchiolitis for dexamethasone or placebo blinded treatment. Dexamethasone treatment of 5 days led to significantly earlier readiness for discharge from infirmary treatment.

AUTHORS: Khalid Alansari, MD, FRCPC, FAAP(PEM),[a,b] Mahmoud Sakran, MD,[a] Bruce L. Davidson, MD, MPH,[c] Khalid Ibrahim, MD,[a] Mahmoud Alrefai, MD,[a] and Ibrahim Zakaria, MD[a]

[a]*Division of Pediatric Emergency Medicine, Department of Pediatrics, Hamad Medical Corporation, Doha, Qatar;* [b]*Weill Cornell Medical College, Doha, Qatar;* and [c]*Pulmonary–Critical Care Medicine Division, University of Washington School of Medicine, Seattle, Washington*

KEY WORDS
bronchiolitis, dexamethasone therapy, respiratory syncytial virus, length of stay, respiratory infections

ABBREVIATIONS
CI—confidence interval
PEC—pediatric emergency center

Drs Alansari, Alsakran, and Davidson did the literature search, study design, data analysis and interpretation, and primary drafting of the manuscript; Drs Alansari, Alsakran, Ibrahim, Alrefai, and Zakaria recruited patients for the study; and all authors contributed manuscript content and revisions and approved the final manuscript as submitted.

This trial has been registered at www.clinicaltrials.gov (identifier NCT00399373).

abstract

OBJECTIVE: Determine whether dexamethasone treatment added to salbutamol reduces time to readiness for discharge in patients with bronchiolitis and possible asthma.

METHODS: We compared efficacy and safety of dexamethasone, 1 mg/kg, then 0.6 mg/kg for 4 more days, with placebo for acute bronchiolitis in

Background

- Therapy for bronchiolitis remains largely supportive
- Some children w/ bronchiolitis develop asthma

Objectives

- Determine whether dexamethasone treatment added to beta-agonist therapy reduces time to readiness for discharge in patients w/ bronchiolitis **AND** possible asthma

Methods

- 02/2010 – 03/2012, Qatar
- ≤ 18 mos w/ moderate – severe bronchiolitis
- At risk for asthma –
  - Eczema
  - 1st-degree relative with asthma
- Double-blind RCT, dexamethasone vs placebo
- All patients received inhaled beta-agonist therapy

Methods (cont.)

- Primary outcome – time until ready for discharge
  - No supplemental O_2
  - Feeding well on own
  - Min or absent wheezing, crackles, & retractions
  - pOx ≥ 94%
- Additional outcomes –
  - Needing racemic epi inh
  - Readmissions
  - Revisits to the ED or a clinic after discharge

Results

- 190 patients (median age 3.5 mos)
- **Readiness for discharge –**
  - **Dexamethasone – 18.6 hrs**
  - **Placebo – 27.1 hrs**
- 5 placebo patients required PICU admission
- More placebo patients required racemic epi inh

Conclusions

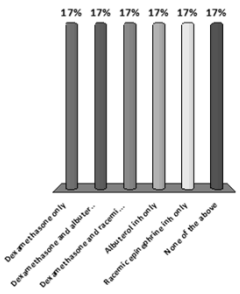
- Dexamethasone *may* benefit some children
- Need for replication???
  - Population differences?
  - Type of beta-agonist?
  - Dosage/Duration of dexamethasone therapy?

Scenario

- A 6 month old male presents with increased work-of-breathing and wheezing in January. This began after 2 days of cough, rhinorrhea, and low-grade fevers. He has never wheezed before. He has a history of eczema, and both his brothers (as well as his mother) have asthma. He has bilateral inspiratory crackles and bilateral expiratory wheezes on exam as well as moderate retractions. What medicines would you use in treating this patient?

What medicines would you use in treating this patient?

A. Dexamethasone only
B. Dexamethasone and albuterol inh
C. Dexamethasone and racemic epinephrine inh
D. Albuterol inh only
E. Racemic epinephrine inh only
F. None of the above



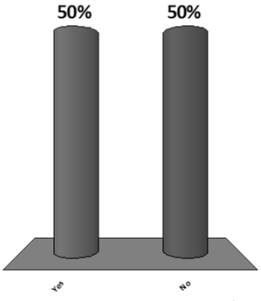
Scenario

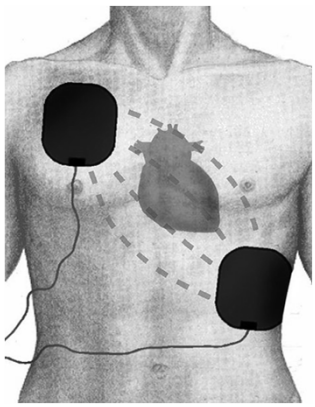
- A 14 year old female presents to your office 1 day after a fainting spell at home. It occurred shortly after getting up after lying down for awhile on the couch. This has happened several times in the past, and she often feels dizzy upon standing. It has never occurred during exertion, and she has no history of exercise intolerance. Her PE is normal. She has no FHx of cardiac illness in children or young adults. Her EKG is normal.

Would you refer her to a pediatric cardiologist?

A. Yes

B. No





Distinguishing Cardiac Syncope from Vasovagal Syncope in a Referral Population

The Journal of Pediatrics
December 2013

www.jpeds.com • The Journal of Pediatrics

Distinguishing Cardiac Syncope from Vasovagal Syncope in a Referral Population

Justin T. Tretter, MD[1], and Rae-Ellen W. Kavey, MD, MPH[2]

Objective To identify characteristics that distinguish cardiac from vasovagal syncope.
Study design We compared characteristics of patients ≤18 years of age with vasovagal and cardiac syncope. Vasovagal syncope subjects represented all patients presenting to outpatient cardiology during a 1-year period for initial evaluation of syncope diagnosed with vasovagal syncope. Cardiac patients were all patients identified by review of diagnoses known to include syncope as a symptom who presented with syncope to the emergency department or inpatient or outpatient cardiology during a 10-year period identified with cardiac etiology.
Results There were 89 patients 4–18 years of age with vasovagal syncope and 17 patients 4 months to 17 years of age with cardiac syncope. When we compared patients with cardiac syncope to those with vasovagal syncope, we found that syncope surrounding activity was present in 65% vs 18% ($P < .001$), family history of cardiac disease or sudden cardiac death was identified in 41% vs 25% ($P = .2$), abnormal findings on the physical examination supporting cardiac diagnosis were present in 29% vs 0% ($P < .001$), and abnormal findings on electrocardiograms were

Background

- Common in childhood
- Mostly vasovagal
- Most research has focused on adults

Objectives

- To identify characteristics that distinguish cardiac from vasovagal syncope

Methods

- Retrospective review
- Tertiary care children's hospital
- 2 groups of patients evaluated by Cardiology –
  - Referred → diagnosed w/ vasovagal syncope (1-yr period)
  - All patients w/ cardiac syncope (10-yr period)
- Medical records were systematically reviewed

Results

- 89 patients w/ vasovagal syncope (4 – 18 yrs)
- 17 patients w/ cardiac syncope (4 mos – 17 yrs) –
  - 10 in pulseless arrest
  - 16 presented to the ED
  - 13 w/ NO known cardiac history
- LQTS most common cardiac etiology

Results (cont.)

- **Cardiac** group **MORE** likely to have –
  - No previous event (71% vs 36%)
  - Surrounding activity (65% vs 18%)
  - Peak exercise (53% vs 6%)
  - Worrisome FHx (41% vs 26%)
  - Abnl PE findings (29% vs 0%)
  - Abnl EKG findings (76% vs 0)
- **Vasovagal** group **MORE** likely to have –
  - Presyncope (69% vs 12%)
  - Trigger (24% vs 0%)
  - Prolonged standing (82% vs 0%)
  - Prodromal symptoms (84% vs 41%)
  - Lightheadedness (79% vs 29%)

Conclusions

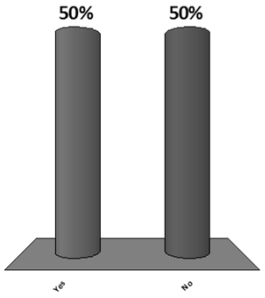
- Refer for any 1 of the following –
  - Exertional syncope
  - Concerning cardiac FHx
  - Abnl PE
  - Abnl EKG
- Nice framework
- Would have ↓ referrals by 60% at study site

Scenario

- A 14 year old female presents to your office 1 day after a fainting spell at home. It occurred shortly after getting up after lying down for awhile on the couch. This has happened several times in the past, and she often feels dizzy upon standing. It has never occurred during exertion, and she has no history of exercise intolerance. Her PE is normal. She has no FHx of cardiac illness in children or young adults. Her EKG is normal.

Would you refer her to a pediatric cardiologist?

A. Yes
B. No

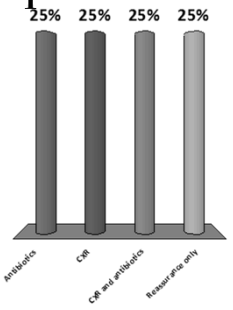


Scenario

- A 13 month old male presents to your office because of mom's concerns of prolonged cough. You saw him 10 days ago at which time you diagnosed him with acute bronchiolitis. Mom is concerned because he is still coughing. His total duration of cough is 14 days. He is not worsening, and his fever has completely resolved. He is afebrile on exam with a normal RR, a pOx of 99%RA, is smiling and playful, and has clear lungs.

How would you proceed?

A. Antibiotics
B. CXR
C. CXR and antibiotics
D. Reassurance only



Duration of symptoms of respiratory tract infections in children: systematic review

British Medical Journal
11 December 2013

BMJ

BMJ 2013;347:f7027 doi: 10.1136/bmj.f7027 (Published 11 December 2013)

RESEARCH

Duration of symptoms of respiratory tract infections in children: systematic review

OPEN ACCESS

Matthew Thompson *Helen D Cohen endowed professor of family medicine*[1], Talley A Vodicka *consultant*[2], Peter S Blair *senior research fellow*[3], David I Buckley *assistant professor*[2], Carl Heneghan *professor*[4], Alastair D Hay *professor of primary care and NIHR research professor*[5], on behalf of the TARGET Programme Team

[1]Department of Family Medicine, Box 354696, University of Washington, Seattle, WA 98195-4696, USA; [2]Department of Primary Care Health Sciences, University of Oxford, Oxford, UK; [3]School of Social and Community Medicine, Level D, St Michael's Hospital, University of Bristol, Bristol, UK; [4]Departments of Family Medicine, Medical Informatics and Clinical Epidemiology, Public Health and Preventive Medicine, Oregon Health and Science University, Portland, OR, USA; [5]Centre for Academic Primary Care, School of Social and Community Medicine, University of Bristol, Bristol, UK

Abstract

Objective To determine the expected duration of symptoms of common respiratory tract infections in children in primary and emergency care

Conclusions The durations of earache and common colds are considerably longer than current guidance given to parents in the United Kingdom and the United States; for other symptoms such as sore throat,

Background

- Very common
- Self-limiting
- Low risk of complications
- Supportive care
- *How long will the symptoms last????*

Objectives

- Determine the expected duration of symptoms of common respiratory tract infections in children in primary & emergency care

Methods

- Systematic review
- MULTIPLE data sources
- RCTs or prospective observational studies
- Children w/ ARTIs in primary care or EDs
- **Only data from placebo or no treatment groups**
- Time to resolution of symptoms or duration of symptoms

Results

- 23 RCTs, 25 observational studies
- In 90% of children –
  - Earache – 7 – 8 days
  - Sore throat – 2 – 7 days
  - Croup – 2 days
  - Bronchiolitis – 21 days
  - Acute cough – 25 days
  - Common cold – 15 days
  - Non-specific RTIs – 16 days

Results

- 23 RCTs, 25 observational studies
- In 90% of children –
  - Earache – 7 – 8 days
  - Sore throat – 2 – 7 days
  - **Croup – 2 days**
  - **Bronchiolitis – 21 days**
  - **Acute cough – 25 days**
  - **Common cold – 15 days**
  - **Non-specific RTIs – 16 days**

Conclusions

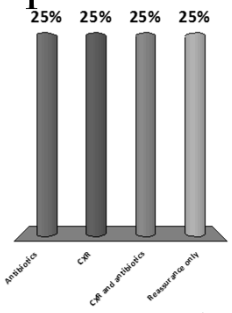
- Robust data
- Helps set parental expectations!!!!!
- *May* decrease revisits…
- *May* decrease unnecessary antibiotics…

Scenario

- A 13 month old male presents to your office because of mom's concerns of prolonged cough. You saw him 10 days ago at which time you diagnosed him with acute bronchiolitis. Mom is concerned because he is still coughing. His total duration of cough is 14 days. He is not worsening, and his fever has completely resolved. He is afebrile on exam with a normal RR, a pOx of 99%RA, is smiling and playful, and has clear lungs.

How would you proceed?

A. Antibiotics
B. CXR
C. CXR and antibiotics
D. Reassurance only

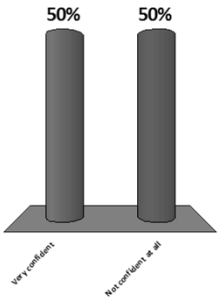


Scenario

- A 5 year old male presents to your office for abdominal pain. He was seen in a local community ED last night for this pain where he had an AXR that the treating physician told mom was "full of stool". He was prescribed Miralax and discharged home. The patient stools daily with no straining, withholding, pain, or blood. His stools are not bulky or overly hard. His pain has subsequently migrated to the RLQ, and he has developed vomiting and a low-grade fever. How confident do you feel of this diagnosis of constipation based on an AXR?

How confident do you feel of this diagnosis of constipation based on an AXR?

A. Very confident
B. Not confident at all



Pediatric Abdominal Radiograph Use, Constipation, and Significant Misdiagnoses

The Journal of Pediatrics
January 2014

THE JOURNAL OF PEDIATRICS • www.jpeds.com ORIGINAL ARTICLES

Pediatric Abdominal Radiograph Use, Constipation, and Significant Misdiagnoses

Stephen B. Freedman, MDCM, MSc[1,*], Jennifer Thull-Freedman, MD, MSc[2,**], David Manson, MD[3], Margot Follett Rowe, RN MSc[4], Maggie Rumantir, MD[5], Mohamed Eltorki, MD[6], and Suzanne Schuh, MD[7]

Objective To determine the proportion of children diagnosed with constipation assigned a significant alternative diagnosis within 7 days (misdiagnosis), if there is an association between abdominal radiograph (AXR) performance and misdiagnosis, and features that might identify children with misdiagnoses.
Study design We conducted a retrospective cohort study of consecutive children <18 years who presented to a pediatric emergency department in Toronto, between 2008 and 2010. Children assigned an *International Statistical Classification of Diseases and Related Health Problems 10th Revision* code consistent with constipation were eligible. Misdiagnosis was defined as an alternative diagnosis during the subsequent 7 days that resulted in hospitalization or an outpatient procedure that included a surgical or radiologic intervention. Constipation severity was classified employing text word categorization and the Leech score.
Results 3685 eligible visits were identified. Mean age was 6.6 ± 4.4 years. AXR was performed in 46% (1693/3685). Twenty misdiagnoses (0.5%; 95% CI 0.4, 0.8) were identified (appendicitis [7%], intussusception [2%, bowel obstruction [2%], other [9%]). AXR was performed more frequently in misdiagnosed children (75% vs 46%; $P = .01$). These children more often had abdominal pain (70% vs 49%; $P = .04$) and tenderness (60% vs 32%; $P = .01$). Children in both groups had similar amounts of stool on AXR ($P = .38$) and mean Leech scores (misdiagnosed = 7.9 ± 3.4; not misdiagnosed = 7.7 ± 2.9; $P = .85$).
Conclusions Misdiagnoses in children with constipation are more frequent in those in whom an AXR was performed

Background

- 50% of kids w/ abdominal pain in primary care
- AXRs have a limited ability to predict constipation
- Done in 75% of kids diagnosed w/ constipation in PEDs
- Potential misdiagnosis

Objectives

- Determine the proportion of children diagnosed w/ constipation who were misdiagnosed
- Determine if there is an association between AXR performance & misdiagnosis
- Determine features that might identify children w/ misdiagnoses

Methods

- Retrospective cohort study (11/2008 – 10/2010)
- Consecutive children w/ constipation
- Misdiagnosis – alternative diagnosis w/in 7 days **AND** –
  - Required a surgical or radiologic intervention
  - Related to index visit as determined by 3 evaluators
  - Not identified at index visit
- Severity → text word categories & Leech scores

Results

- 3,685 eligible visits (mean age 6.6 yrs)
- AXR performed in 46%
- 323 (9%) returns, 20 (0.5%) misdiagnoses
- AXR more frequent in misdiagnoses (75% vs 46%)
- **No difference in stool on AXRs between groups**

Conclusions

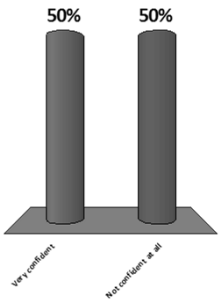
- Use caution in interpreting AXRs as constipation!!!
- *May* be useful for quantification
- Constipation = clinical diagnosis (≥ 2 of the following) –
  - < 3 stools/wk
  - ≥ 1 episode of fecal incontinence/wk
  - Large stool palpated (rectal OR abdominal exam)
  - Obstructing the toilet
  - Posturing suggesting withholding
  - Painful defecation

Scenario

- A 5 year old male presents to your office for abdominal pain. He was seen in a local community ED last night for this pain where he had an AXR that the treating physician told mom was "full of stool". He was prescribed Miralax and discharged home. The patient stools daily with no straining, withholding, pain, or blood. His stools are not bulky or overly hard. His pain has subsequently migrated to the RLQ, and he has developed vomiting and a low-grade fever.

How confident do you feel of this diagnosis of constipation based on an AXR?

A. Very confident
B. Not confident at all

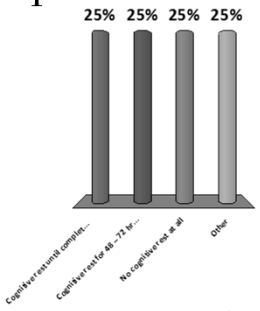


Scenario

- A 12 year old girl presents to your office 24 hours after head-to-head collision with another girl during a soccer match. She had no LOC and has not vomited. Her headache has not been worsening but is still quite bothersome. In addition, she feels dizzy and is having trouble focusing. She has no evidence of a skull fracture on exam. Her mental status and neurologic exam are normal.

What would you recommend regarding this patient?

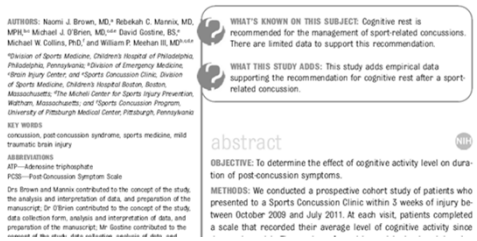
A. Cognitive rest until completely asymptomatic
B. Cognitive rest for 48 – 72 hrs then returning to school
C. No cognitive rest at all
D. Other



Effect of Cognitive Activity Level on Duration of Post-Concussion Symptoms

Pediatrics
February 2014

Effect of Cognitive Activity Level on Duration of Post-Concussion Symptoms



AUTHORS: Naomi J. Brown, MD,[a] Rebekah C. Mannix, MD, MPH,[b,c] Michael J. O'Brien, MD,[c,d,e] David Gostine, BS,[a] Michael W. Collins, PhD,[f] and William P. Meehan III, MD[b,c,d,e]

[a]Division of Sports Medicine, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania; [b]Division of Emergency Medicine, [c]Brain Injury Center, and [d]Sports Concussion Clinic, Division of Sports Medicine, Children's Hospital Boston, Boston, Massachusetts; [e]The Micheli Center for Sports Injury Prevention, Waltham, Massachusetts; and [f]Sports Concussion Program, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania

KEY WORDS
concussion, post-concussion syndrome, sports medicine, mild traumatic brain injury

ABBREVIATIONS
ATP—Adenosine triphosphate
PCSS—Post-Concussion Symptom Scale

Drs Brown and Mannix contributed to the concept of the study, the analysis and interpretation of data, and preparation of the manuscript; Dr O'Brien contributed to the concept of the study, data collection form, analysis and interpretation of data, and preparation of the manuscript; Mr Gostine contributed to the

WHAT'S KNOWN ON THIS SUBJECT: Cognitive rest is recommended for the management of sport-related concussions. There are limited data to support this recommendation.

WHAT THIS STUDY ADDS: This study adds empirical data supporting the recommendation for cognitive rest after a sport-related concussion.

abstract

OBJECTIVE: To determine the effect of cognitive activity level on duration of post-concussion symptoms.

METHODS: We conducted a prospective cohort study of patients who presented to a Sports Concussion Clinic within 3 weeks of injury between October 2009 and July 2011. At each visit, patients completed a scale that recorded their average level of cognitive activity since

Background

- Return-to-play instructions have been well-defined
- Limited data to support **cognitive** rest

Objectives

- Determine the effect of **cognitive** activity level on duration of post-concussion symptoms

Methods

- Single-center, prospective cohort study
- Presented w/in 3 wks of injury
- Extensive info collected at each visit (PCSS)
- Cognitive activity-days
- Primary outcome – duration of concussion symptoms

Results

- 335 patients
  - Mean age 15 yrs (8 – 23 yrs), 62% male
  - 19% LOC, 37% amnesia, 39% w/ previous concussion
- Mean PCSS score at initial visit – 30
- Overall mean duration of symptoms – 43 days
- Significantly associated w/ duration of symptoms –
  - Total symptom burden at initial visit (i.e., PCSS)
  - **COGNITIVE ACTIVITY LEVEL**

Conclusions

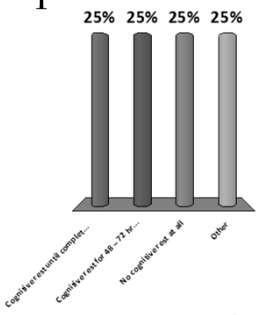
- Controversial…
- Harmful in long-term???
- 2 – 3 days off school **MAX** *--Micky Collins*

Scenario

- A 12 year old girl presents to your office 24 hours after head-to-head collision with another girl during a soccer match. She had no LOC and has not vomited. Her headache has not been worsening but is still quite bothersome. In addition, she feels dizzy and is having trouble focusing. She has no evidence of a skull fracture on exam. Her mental status and neurologic exam are normal.

What would you recommend regarding this patient?

A. Cognitive rest until completely asymptomatic
B. Cognitive rest for 48 – 72 hrs then returning to school
C. No cognitive rest at all
D. Other

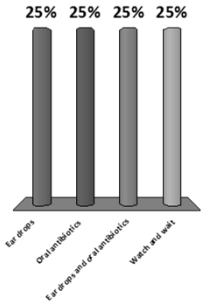


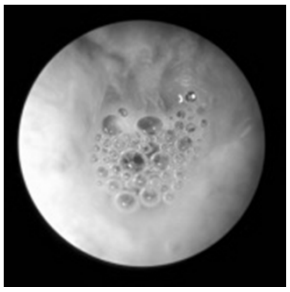
Scenario

- A 2 year old male presents to your office because of L-sided otorrhea for approximately 2 days. He had bilateral tympanostomy tube placed 5 months ago for frequent episodes of AOM. His L external auditory canal is filled with pus. How would you proceed in managing this child?

How would you proceed in managing this child?

A. Ear drops
B. Oral antibiotics
C. Ear drops and oral antibiotics
D. Watch and wait





A Trial of Treatment for Acute Otorrhea in Children with Tympanostomy Tubes

The New England Journal of Medicine
20 February 2014

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

A Trial of Treatment for Acute Otorrhea in Children with Tympanostomy Tubes

Thijs M.A. van Dongen, M.D., Geert J.M.G. van der Heijden, Ph.D., Roderick P. Venekamp, M.D., Ph.D., Maroeska M. Rovers, Ph.D., and Anne G.M. Schilder, M.D., Ph.D.

ABSTRACT

BACKGROUND

Recent guidance for the management of acute otorrhea in children with tympanostomy tubes is based on limited evidence from trials comparing oral antibiotic agents with topical antibiotics.

METHODS

In this open-label, pragmatic trial, we randomly assigned 230 children, 1 to 10 years of age, who had acute tympanostomy-tube otorrhea to receive hydrocortisone–bacitracin–

Background

- Tympanostomy tube insertion is very common
- Otorrhea is common in this population
- Evidence is lacking regarding best management

Objectives

- Compare the effectiveness of 3 strategies for the management of acute tympanostomy-tube otorrhea in children –
  - Immediate treatment w/ antibiotic-glucocorticoid eardrops
  - Immediate treatment w/ oral antibiotics
  - Initial observation

Methods

- Open-label, pragmatic RCT
- 1 – 10 yrs
- Tympanostomy-tube otorrhea ≤ 7 days
- Randomized to 3 groups –
  - Hydrocortisone-bacitracin-colistin eardrops
  - Amoxicillin-clavulanate PO
  - Initial observation for 2 wks
- Primary outcome – treatment failure

Results

- 230 children
- **Treatment failure –**
  - **Drops – 5%**
  - **PO – 44%**
  - **Obs – 55%**
- Median duration of initial episode of otorrhea –
  - Drops – 4 days
  - PO – 5 days
  - Obs – 12 days

Conclusions

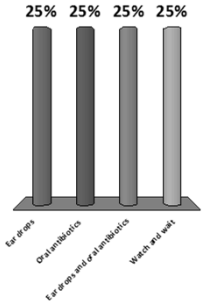
- Eardrops appear superior to PO antibiotics
- Dose of amoxicillin not high enough???
- Applicable to ciprofloxacin-dexamethasone???

Scenario

- A 2 year old male presents to your office because of L-sided otorrhea for approximately 2 days. He had bilateral tympanostomy tube placed 5 months ago for frequent episodes of AOM. His L external auditory canal is filled with pus.

How would you proceed in managing this child?

A. Ear drops
B. Oral antibiotics
C. Ear drops and oral antibiotics
D. Watch and wait

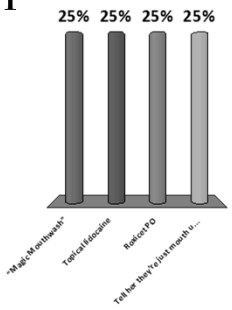


Scenario

- A 4 year old female presents to your office with signs and symptoms consistent with hand, foot, and mouth disease. Mom's biggest concern is that she cannot get her to drink anything. Acetaminophen and ibuprofen are not helping. She is still urinating normally, but mom is worried about her getting dehydrated.

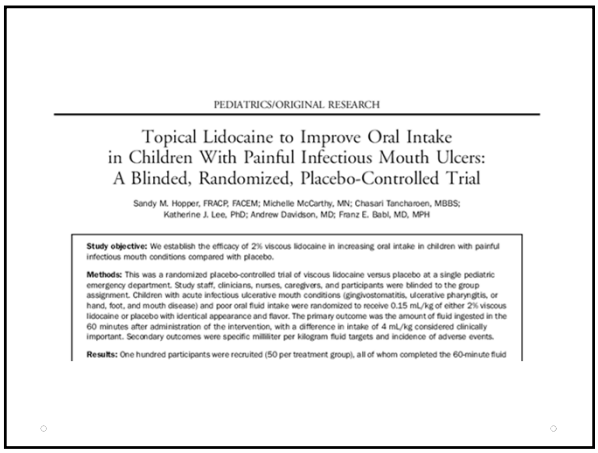
How would you manage this child's pain?

A. "Magic Mouthwash"
B. Topical lidocaine
C. Roxicet PO
D. Tell her they're just mouth ulcers and to suck it up….



Topical Lidocaine to Improve Oral Intake in Children With Painful Infectious Mouth Ulcers: A Blinded, Randomized, Placebo-Controlled Trial

Annals of Emergency Medicine
March 2014



PEDIATRICS/ORIGINAL RESEARCH

Topical Lidocaine to Improve Oral Intake in Children With Painful Infectious Mouth Ulcers: A Blinded, Randomized, Placebo-Controlled Trial

Sandy M. Hopper, FRACP, FACEM; Michelle McCarthy, MN; Chasari Tancharoen, MBBS; Katherine J. Lee, PhD; Andrew Davidson, MD; Franz E. Babl, MD, MPH

Study objective: We establish the efficacy of 2% viscous lidocaine in increasing oral intake in children with painful infectious mouth conditions compared with placebo.

Methods: This was a randomized placebo-controlled trial of viscous lidocaine versus placebo at a single pediatric emergency department. Study staff, clinicians, nurses, caregivers, and participants were blinded to the group assignment. Children with acute infectious ulcerative mouth conditions (gingivostomatitis, ulcerative pharyngitis, or hand, foot, and mouth disease) and poor oral fluid intake were randomized to receive 0.15 mL/kg of either 2% viscous lidocaine or placebo with identical appearance and flavor. The primary outcome was the amount of fluid ingested in the 60 minutes after administration of the intervention, with a difference in intake of 4 mL/kg considered clinically important. Secondary outcomes were specific milliliter per kilogram fluid targets and incidence of adverse events.

Results: One hundred participants were recruited (50 per treatment group), all of whom completed the 60-minute fluid

Background

- Painful infectious mouth ulcers are common
- Often present due to pain &/or dehydration
- Topical viscous lidocaine often used
- No RCTs to support its use

Objectives

- Establish the efficacy of 2% viscous lidocaine in increasing oral intake in children w/ painful infectious mouth conditions compared to placebo

Methods

- Randomized, blinded, placebo-controlled trial
- Single pediatric ED
- Eligible participants –
  - 6 mos – 8 yrs
  - Acute infectious ulcerative mouth conditions
  - H/O poor PO intake
- Lidocaine vs placebo
- Primary outcome – amount of fluid ingested w/in 60 mins

Results

- 100 participants (median age 2 yrs)
- 73% mildly dehydrated
- 42% herpetic gingivostomatitis
- **Oral intake 60 mins after drug administration –**
  - **Lidocaine – 8.49 ml/kg**
  - **Placebo – 9.31 ml/kg**

Conclusions

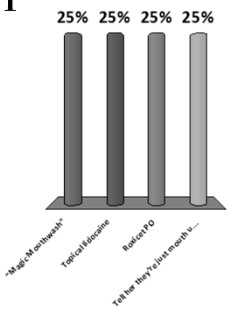
- Viscous lidocaine does not appear to work
- "Magic Mouthwash" likely does nothing either
- Role of ED staff encouragement???
- PO analgesics

Scenario

- A 4 year old female presents to your office with signs and symptoms consistent with hand, foot, and mouth disease. Mom's biggest concern is that she cannot get her to drink anything. Acetaminophen and ibuprofen are not helping. She is still urinating normally, but mom is worried about her getting dehydrated.

How would you manage this child's pain?

A. "Magic Mouthwash"
B. Topical lidocaine
C. Roxicet PO
D. Tell her they're just mouth ulcers and to suck it up….



Questions?????

THANK YOU!!!!!