WESLEY EMERGENCY DEPARTMENT
THE QUEAS-E UPDATE
(Quality, Uniformity, Education, Attitude, and Service - in Emergencies)

Issue 110  July 2012

ESPA WEBSITE
ESPA stands for Emergency Services, Professional Association. We are a private ER group who has been partnered with Wesley Medical for over 40 years. We have the only pediatric ER in Kansas. We were recently voted The Best ER in Wichita. Check out our new website at www.espacare.com (old copies of QUEAS-E available to download).

EMS/NEURO/PEDIATRICS: “IM Ativan more efficacious than IV Ativan in prehospital status epilepticus”
Double-blind randomized trial of lorazepam (Ativan) intramuscular versus intravenous in 893 children with status epilepticus. In the intramuscular group, 329 out of 448 children had their seizures stopped by the time they arrived at the ED. In the intravenous group 282 out of 445 children had their seizures stopped. The intramuscular route was more efficacious because the lorazepam was administered more quickly (1.2 minutes in the IM group vs 4.8 minutes in the IV group).\(^1\) (This could potentially apply in the ED for the child without an IV.) The dose used for children 13kg to 40kg was 5mg IM lorazepam. For children > 40kg, 10mg in IM lorazepam was used [compared to 2mg IV (14-40kg) and 4mg IV (> 40kg)].

* Compared to diazepam, lorazepam (Ativan) is more efficacious when given IV in the landmark prehospital study in 2001.\(^2\)

** Compared to IV or rectal diazepam, multiple studies have shown that intranasal midazolam (Versed) is faster.\(^3\)

*** We now need a prehospital study in children comparing IM lorazepam (Ativan) to intranasal midazolam (Versed) [dosed usually 0.2mg/kg or can use the 5mg (13kg-40kg) and 10kg (> 40kg)].


UROLOGY: “Myths & tips about UTI”\(^1\)
• Soda pop is not associated with UTI occurrence.
• Delayed voiding habits (nurses, teachers, etc) are not associated with UTI occurrence.
• Hot tubs, tampon use, douching, type of underwear are not associated with UTI.
• Pre-coital and post-coital voiding does not prevent recurrent UTI.
• Cranberry juice (or capsules) do not prevent or treat UTI.

(cont’d on next page)
• Topical estrogen (but not oral estrogen) in some post-menopausal women can be helpful to prevent recurrence.
• Post-coital antibiotic (single dose of Bactrim or Cephalexin) may be helpful to prevent recurrent UTI.
• Uncomplicated cystitis can be self-limiting in 25-42% of women treated with placebo – only rare cases progress to pyelonephritis.
• Bactrim for 3-5 days is still your first choice for uncomplicated cystitis in the ED.

3. Christiaens TC et al. “Randomized Controlled Trial of Nitrofurantoin Versus Placebo in the Treatment of Uncomplicated Urinary Tract Infection in Adult Women” Br J Gen Pract 2002; 52: 729-34

DATA
Cochrane Database of Syst Rev; 2008: July 16(3): CDOOO193. This systematic review looked at 21 randomized trials of 2,588 patients comparing somatostatin analogues (Octreotide) to placebo or no treatment.

While the numbers are substantial, this kind of study is difficult for several reasons:
• Bleeding from esophageal varices is relatively rare.
• Patients who have varices and bleed represent a heterogeneous group of patients.
• Defining “successful hemostasis” and even “rebleeding” can be subjective surrogate markers.

COST
• Our charge to patients for an octreotide drip is over $3000 for 3 days for 1 patient. This is $300,000 for 100 patients with no change in mortality or morbidity.

PAIN CONTROL: “Ibuprofen combined with Acetaminophen for musculoskeletal pain is not superior than either agent alone”
A single blind randomized control trial of 96 patients with roughly 30 patients in each group: Ibuprofen alone, Acetaminophen alone and combination. There was no significant difference in any particular group as measured in the ED by pain scores or rescue analgesia.


VALUE MEDICINE/GI/CRITICAL CARE: “Octreotide for acute variceal bleeding.”
CRITICAL CARE:

“‘Ketofol’ results in fewer adverse events than Propofol or ketamine alone”

A retrospective chart review of 116 patients who underwent “ketofol” sedation looked for documented adverse events: hypotension, hypoxia, emergence reaction and vomiting - and compared them with reported adverse events for propofol and ketamine separately.

In this study combined ketamine (0.3mg/kg) and propofol (0.4mg/kg) referred to as "ketofol" had less adverse events than either agent used alone.

Annals Emerg Med 58(4S); October 11: S 227

PHARMACOLOGY/CARDIOLOGY:

“PPI use is associated with worse outcomes in patients on Clopidogrel or ticagrelor”

The PLATO trial compared those on PPI (N = 6,539) to those not on PPI (N = 12,060) who were on Clopidogrel or ticagrelor. The patients were followed for 1 year with regard to cardiovascular death, myocardial infarction or stroke. This type of study can only show association and not causation, but there was an independent and distinct association between PPI use, thienopyridines, and CV morbidity and mortality.

This should prompt all of us to limit the use of PPIs especially for assumed pathology (eg GERD), and get rid of Clopidogrel and ticagrelor 6 months-1 year after PCI stent placement.

Circulation 2012; 125: 978-86

TRAUMA: “Observation for blunt trauma occult pneumothorax”

For pneumothoraces not found on plain film but seen on CT, nearly 80% were observed conservatively in the hospital (total N = 588 occult pneumothoraces). Only 6% of these patients ultimately required a tube thoracostomy due to variables like positive pressure ventilation, size > 7mm, etc.

While there are many problems with this study, primarily selection bias; I think the conclusion that “the majority of adult patients with occult pneumothoraces can be managed conservatively” is still correct.

Moore FO et al. “Blunt Traumatic Occult Pneumothorax: Is Observation Safe? Results of a Prospective, Multicenter Study” J Trauma 70(5); 1019: May 2011

RESPIRATORY: “‘PERC rule’ redo”

There has been recent bashing of the PERC rule (Pulmonary Embolism Rule out Criteria) with some people stating that there is no prospective outcome study of the PERC rule. This is untrue.

In a 2010 prospective study of 115 patients, 65 were PERC negative and none had a PI.1 Another study, which was retrospective, applied the PERC rule in 425 patients and 216 were PERC negative of which 3 had a PE. This is a negative predictive value of 98%.2 The PERC rule has never claimed 100% accuracy, rather only 98%.3

OB/GYN/COST: “Review of therapies for resistant vomiting in pregnancy”
A recent review in the British Medical Journal offers a few fine points about the management of nausea and vomiting in pregnancy:

• There is no evidence that any one antiemetic is superior to another. This is critical information especially when one knows that Zofran 4mg ODT for 30 tablets is $30 and Phenergan 25mg for 30 tablets is $17 and Meclizine 12.5mg chewable is OTC around $10.

• There is also no evidence that Zofran 8mg is better than 4mg. (* If you must prescribe Zofran 4mg ODT, use it as an emergency rescue [disp 4] rather than routine.

• Non-pharmacological treatments such as ginger, chamomile or peppermint tea are popular (though good science is lacking, this is one area where "why not?" is a good rationale).

• Steroids (in a few small studies) either solumedrol 125mg or prednisone 40 po daily have shown good benefits.

British Medical Journal 2011; 342: d3606

BUSINESS: “‘Seeding Trials’ for Neurontin is seedy business”
In the litigation against Pfizer involving illegal marketing practices using Neurontin (gaba-pentin), many more unethical and illegal practices came to light when records were made public. One of these is called “seeding trials” in which physicians who are not researchers are paid to do “research” by recruiting patients to use escalating doses of gabapentin which the physicians oversee. The pharmaceutical reps then would collect the “data” and help the company analyze it.

Of course the company was well aware that this was all about paying doctors to market their drug and not really about research. Although this “data” was used in 2 research publications with no mention of the way the data was gathered in the methods.

Krumholz SD et al. “Study of Neurontin: Titrate to Effect Profile of Safety (STEPS) Trial – A narrative account of gabapentin seeding trial” Arch Intern Med 171(12): 1100: June 27, 2011

GERIATRICS
For patients greater than 65 a recent review highlights many interesting statistics. Geriatric patients:

• make up 15-20% of all ED patients
• require 50% more lab
• require 50% more radiology
• require 400% more social services
• have a 7x greater usage of the ED
• have 20% longer length of stays
• have 2.5-4.6 higher rates of hospitalization
• have 5x greater rates of ICU admission

These realities have caused some ERs to have a geriatric ER with a geriatric coordinator (much like a child life specialist). The equipment is also geared toward the elderly with reclining chairs, low beds, large print dismissal instructions and other coordinated transfers to and from nursing facilities.


COST: “Knowing cost decreases lab ordering”
A recent study showed that when ER physicians are aware of the charge of the labs they order it resulted in 10% less lab ordering. (Should our CPOE display charges to make us better financial stewards for our patients?)

ACEP News July 2011: 34
RADIOLOGY: “CT risks”

• In just the past 20 years, radiation exposure to the US population from medical imaging has increased 600 fold.
• A chest CT gives 400 times more than the radiation of a plain radiograph.
• An estimated 1.5 percent of all cancer diagnoses in the US are attributable to CT use.
• Another harm of CT is identifying incidental findings of unknown significance that result in over-diagnosis and over-treatment - 50% or more of patients may have such findings on some types of CT imaging.
• Monitoring CT radiation doses is also sometimes extremely variable. In 2009, more than 400 patients received 8 to 30 times the normal radiation dose from a CT scan for stroke diagnosis.
• Most guidelines for CT use are largely expert opinion and not evidence-based. Even those do not factor the risks of radiation, cost, and unnecessary additional work-ups to rule out incidental findings.
• Informed consent for radiation risk would become increasingly important for malpractice risk reduction.
• Reducing CT scanning will become increasingly important for government quality reimbursements.

“Overuse of Computed Tomography and Associated Risks” American Family Physician 83(11); June 1, 2011: 1252-55

LAW:

“When informed consent is NOT required”
Capacity is the ability to understand a physician’s discussion of the potential benefits, harms, and alternatives to the recommended treatment.

The only person or entity that can give consent to treatment is:
• the patient with capacity
• the legal guardian of a minor or legal guardian of an incapacitated patient
• a court

So what does one do when for instance an unconscious adult is brought in to an emergency department with little information?

The “emergency” allows you to treat without informed consent. “Emergency” is often defined as a need for immediate care when an attempt to secure consent could cause a delay which could jeopardize a patient’s health.

What about a “minor” in whom a parent refuses care?

The definition of a “minor” in most states is less than 18 years old. (In Kansas, we also have a “mature minor” who is 16 or 17 years old who can consent on their own for treatment but are not afforded confidentiality from their parents.) There are other qualifications for an “emancipated minor”.

For a true minor, either one of the parents can give consent. If the parents are divorced, one of the parents generally has legal guardianship. It is the legal guardian who gives consent.

If a legal guardian refuses treatment deemed urgent, the social services department of the state can step in to consent called Parens patriae.

A patient who is mentally ill does not necessarily mean that the patient does not have capacity. A patient must have sufficient capacity to understand and make reasonable decisions.

You can involve family members but in a patient with capacity, you should ask the patient’s permission. A family member cannot make the decision on behalf of the patient with capacity (unless they consent to that decision: “Whatever my daughter wants…”).

(cont’d on next page)
Determining capacity or competence is occasionally a “grey” area – the patient who has had too much to drink but converses reasonably. Alcohol levels do not determine capacity. Legal experts talk about a psychiatric consult or a court ruling to help determine competency but in a typical ER these options are unavailable. You simply involve as many relatives as possible and negotiate and document a game plan.

Johnson LJ. “When Is Informed Consent Not Required” Medical Economics December 25, 2011: 79-81

**ID: “YouTube video for patients about antibiotic overuse”**
Look for “Get Smart About Antibiotics” on YouTube. Also found on CDC website Get Smart: Know When Antibiotics Work.

**COMMUNICATION: Empathy independently adds to therapeutic benefit**
Recent studies of the placebo effect reveal that a substantial portion of symptomatic relief from both placebo and “real” drugs is derived from the positive effects of the clinical encounter which augments inherent pharmacological properties. The addition of a warm interpersonal relationship independently adds a substantial therapeutic benefit.

Ways to cultivate a warm clinical encounter include:
• careful listening to the patient’s story of illness
• offering a satisfying explanation for the patient’s distress
• expressing concern (…that sounds horrible…how long have you been suffering like this?)
• communicating positive expectations (…the good news is that in just a few days this should start gradually improving…)


**ORTHOPEDICS: “3 tests for rotator cuff”**
Murrell and Walton write that three clinical tests if all positive are 98% accurate (with only 2 tests required positive if the patient is older than 60). If all tests are negative, there is less than a 5% chance of a rotator cuff tear.

The tests are:
1) **“Empty Can Test”** (supraspinatus)
   The patient rotates arms thumbs down like spilling a can. The examiner places resistance against the patient’s arms. Break away weakness or severe pain is positive.
2) **“French Horn Test”** (external rotation)
   - for infraspinatus and teres minor
   The patient stands arms adducted against body with the elbow flexed at 90°. The examiner attempts to push the arm forward with external rotation while the patient resists.
3) **“French Horn Test”** (internal rotation)
   - for subscapularis
   The same position but examiner tries to pull arm back with internal rotation while patient resists.

“Diagnosis of Rotator Cuff” Lancet 2001; 357: 769-70

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Name_________________________________________  *Wesley Medical Center is accredited by the Kansas Medical Society to sponsor continuing education for physicians.

Date Completed_______________________________  Wesley designates this educational activity for a maximum 0.5 AMA PRA Category I Credit(s)™ Physicians should claim credit commensurate with the extent of their participation in the activities.

1. Which is more efficacious in the pre-hospital setting (or the ER without an IV):
   a. rectal valium
   b. IV valium
   c. IM Ativan
   d. IV Ativan

2. The first line treatment for uncomplicated cystitis is:
   a. cranberry juice
   b. Bactrim
   c. Cephalexin
   d. Ciprofloxin

3. Octreotide has proven to decrease morbidity in acute variceal bleeding.   T or F

4. Combining Acetaminophen to Ibuprofen gives additive analgesia in muscle injury.   T or F

5. Ketofol has less adverse effects than either Propofol or ketamine alone.   T or F

6. PPIs worsen cardiac outcomes on patients taking Plavix.   T or F

7. Zofran 4mg ODT for 30 tablets is around:
   a. $20
   b. $50
   c. $150

8. For someone you suspect a rotator cuff tear, the tests which can accurately diagnose according to two experts are:
   a. Change the light bulb test and Trombone test
   b. French Horn Test and Empty the Can test
   c. Empty the Trash and Change the light test
   d. Sit on your can and Change the Toilet Paper test

9. If a minor comes in for treatment with divorced parents and the parents disagree about consenting for treatment, you proceed with:
   a. whoever had custody when the child got sick or ill
   b. ask the child who they would like to make the decision
   c. call their attorneys for a court decision on who is the rightful decision maker
   d. whoever is the legal guardian

Circle the one correct answer.

To complete this educational activity, please check your test for accuracy. The correct answers can be found on the evaluation.  
(Evaluation following)
Please circle a response to the following:

1. Having read this CME activity, the participant should be better able to: demonstrate an increased awareness of current practices, new therapies and new technologies appropriate for patients in the Emergency Department?
   
   Agree  5  4  3  2  1  Disagree

2. The educational content in this CME article will be:
   
   Very useful  5  4  3  2  1  Not at all useful

3. In this article I learned:
   
   A great deal  5  4  3  2  1  Little

4. As a result of this CME article do you anticipate making a change in your practice?
   
   Yes [ ]  No [ ]

5. Additional comments:

6. What topics would you suggest for future articles?


For CME credit, please mail this sheet to: Wesley CME Dept., 550 N. Hillside, Wichita, KS 67214

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