Performance Improvement
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WESLEY EMERGENCY DEPARTMENT
THE QUEAS-E UPDATE

(Quality, Uniformity, Education, Attitude, and Service - in Emergencies)

SPECIAL EDITION: "FEBRUARY IS HEART MONTH"

Issue 117 February 2013

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).

"The death of 'unstable angina' "

For years Acute Coronary Syndrome (ACS) has been an umbrella term for STEMI, NSTEMI and unstable angina. While STEMI and NSTEMI have had fairly rigid objective definitions; "unstable angina" (determined prospectively) has been "soft", subjective, and inaccurate.

Cardiologists first coined "unstable angina" in 1971 long before terms like STEMI or NSTEMI or biomarkers like troponin were even available. At the recent European Society of Cardiology meeting in Munich, the term "unstable angina" was retired leaving only STEMI and NSTEMI.

From an ER perspective, a person with only a few hours of ongoing worrisome chest discomfort with a non-specific EKG and negative troponin will still be "chest discomfort unresolved".

It may take many more hours to pass with another troponin before one can conclude whether this is a NSTEMI or not.

Journal Fam Practice September 15, 2012: 11

"Low fat diet has no effect on women's heart disease"

The Women's Health Initiative was a randomized controlled dietary modification trial involving 48,835 post-menopausal women aged 50-79 fallowed over 8 years. The diet intervention group on a low fat diet showed no significant differences from the control group. In addition to a low fat diet, fat was replaced with five services of fruit and vegetables daily with at least six servings of whole grains.

JAMA 2006; 295: 655-66

"Prolonged clopidogrel use after cardiac stenting is not beneficial"

American and European cardiology societies recommend six to twelve months of dual antiplatelet therapy with aspirin and clopidogrel (Plavix) after drug eluting stent to prevent late stent thrombosis. This recommendation is largely from older observational studies.

A recent randomized study of 1970 patients compared only six months of additional Plavix therapy up to twenty-four months of additional Plavix therapy. There was no difference in any beneficial outcome; however there was a two fold increase in bleeding complications requiring medical or surgical treatment in the 24 month group.

In the ED, we should be screening CV patients on Plavix and encourage them to discuss with their cardiologist to stop Plavix if they are on it for more than six months post stent.

Valgimigli M et al. Circulation April 24, 2012; 125(16): 2015-26

"Single measurement BP to determine if HTN is controlled will yield false positive results 1 out of 5 patients"

A study of 444 men with HTN totaling more than 100,000 BP readings over years found that each patient's measurements vary significantly. The most reliable way to establish a patient's blood pressure is to take several measurements over several weeks and average them.

This is why one should be cautious particularly in the elderly for starting or increasing blood pressure readings based upon ED measurements. Syncope is more dangerous than a few days-weeks of elevated BP.

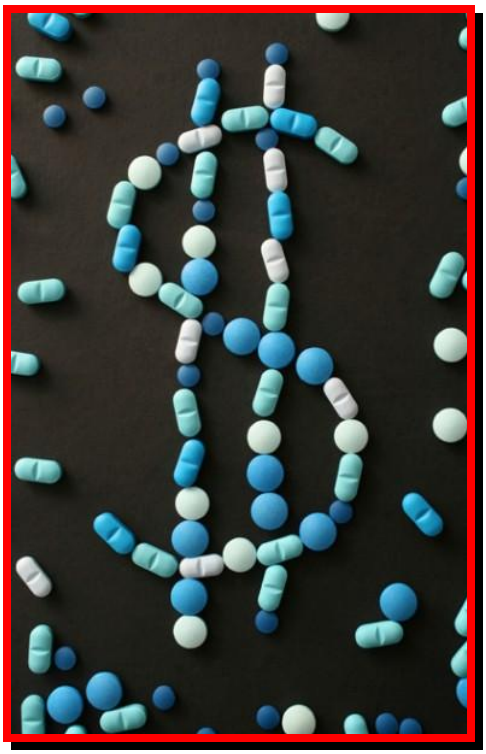
1. Ann Intern Med 2011; 154(12): 781-88
2. BMJ 2011; 342: d286

CV PREVENTION:
"Multivitamins do not help"

More than half of US adults take at least 1 dietary supplement each day. About 1 out of 10 take more than 5 supplements each day. Multivitamins/multiminerals are the most frequently used. The dietary supplement industry has grown from 4 billion in sales in 1994 to 23.7 billion in 2008.

This behavior exists despite the lack of solid evidence for their benefit in a multitude of large well-done scientific studies. In this most recent large, placebo-controlled randomized controlled trial of 14,500 middle-aged male physicians followed for over a decade there were no significant cardiovascular benefits in the study population or even in any subgroup. Robust data from multiple trials clearly confirm that CVD cannot be prevented or treated with vitamins.

Sesso HD et al. "Multivitamins in the Prevention of Cardiovascular Disease in Men" JAMA 2012; 308(17): 1751-60



COST & RISK:
"Pradaxa strikes out on both"

Pradaxa markets herself as being equivalent to Coumadin. Unfortunately, Pradaxa costs about $3200 a year compared to $50 a year for Coumadin (add $500 a year for additional INR monitoring).

In terms of risk, the FDA found Pradaxa to be the drug most frequently reported in the US to cause serious adverse events (817 reports) compared to Coumadin which was second with 490 reports. This becomes even more dramatic when one considers the relatively few patients on Pradaxa compared to all the patients on Coumadin. Combine this information with the idea that Pradaxa may actually increase risk of heart attack.

JAMA November 7, 2012; 308(17): 1727

COST: "Routine PT/INR testing is unnecessary and expensive as part of routine chest discomfort work-up"

While it is not recommended to do routine PT/INR for chest discomfort patients, it is common practice. A retrospective review of 1000 adult chest pain patients presenting to the ED at a tertiary teaching hospital were performed. Out of 1000 patient charts, in the ED, 640 had PT/INR and/or PTT tests were performed. 13% of these tests fell outside of normal ranges. All but 3 of the PT/INR elevations could have been predicted based upon warfarin treatment or alcoholic liver disease. More importantly, no abnormal tests received a change in management. In our ED for an uninsured patient, a PT/INR is $101 and a PTT is $153. These two tests done for 100 chest discomfort patients may be $254,000 with no change in treatment or outcome.

Emerg Med J 29(3); 184: March 2012

"The problem with calcium scores"

Calcium scores on CT angiography were originally utilized to assess risk. However, it has been proved that 40% of coronary artery plaques are not calcified.[1] These vulnerable soft plaques are also the most likely to be unstable and rupture. In addition, the sensitivity of a calcium score of "O" for the absence of stenosis 50% or greater has been shown to be only 45%.[2] So calcium scores have poor sensitivity and poor specificity – a bad test.

1. Scholte AJ et al. Heart 94(3); 290: March 2008
2. Gottlieb I et al. J Am Coll Card 55(7); 627: February 16, 2010

"SVT is a broad term; AV Nodal Re-entrant Tachycardia (AVNRT) is the correct specific term"

When a person comes in with a narrow complex tachycardia between 150-250 (with no delta wave) whose tachycardia is terminated by adenosine are often said to have "SVT".

This is broadly correct but not really as accurate as we should be. We forget that Supraventricular Tachycardia (SVT) includes regular supraventricular tachycardias like a-flutter and sinus tachycardia as well as irregular supraventricular tachycardias such as atrial fibrillation, multifocal tachycardia (MAT), etc. We should use the specific term AV Nodal Re-entrant Tachycardia (AVNRT) for a regular SVT with no delta wave that terminates with adenosine.

N Engl J Med 367; 15; October 11, 2012: 1438

"Radiofrequency ablation for paroxysmal atrial fib no better than medication"

Radiofrequency ablation for paroxysmal atrial fibrillation is a new therapy. In a recent study of 294 patients (MANTRA-PAF) radioablation therapy was compared to antiarrhythmic agents looking at time spent in atrial fibrillation on Holter monitor recordings. There were no significant differences between the two groups. While this may not completely close the door on referring a-fib patients in the ER for ablation, it looks like the particular patient in which ablation therapy may have any kind of advantage is increasingly hard to find.

N Engl J Med 367; 17; October 25, 2012: 1587-95

"Clopidogrel pretreatment for PCI does not decrease mortality"

For years, the ACC/AHA has recommended a thienopyridine (clopidogrel/ Plavix) prior to elective PCI. In 2011, they encouraged the use of clopidogrel load prior to emergent PCI/STEMI. Both of these recommendations were made without the scientific proof that this resulted in positive clinical outcomes.

A recent systematic review and meta-analysis of 37,814 patients recently published has attempted to answer this question. The analysis of randomized controlled trials showed that clopidogrel pretreatment was not associated with a reduction in death. Neither was clopidogrel associated with a higher risk of major bleeding. The mortality and safety were the primary end points of the study.

In the secondary analysis and subgroup analysis, there was a decrease in coronary events particularly in the STEMI subgroup. While this may be true, caution of interpretation should always be made when these kinds of interpretations are made that are not part of the primary end-points (because after-the-fact data snooping can lead to more bias).

In terms of the ER, we will no longer be offering a Plavix load in the ED unless a cardiologist specifically requests it.

JAMA 2012; 308(23); 2507-17: December 19

"The problem with non-inferiority trials"

Recently, I was asked by a resident "Why we didn't use direct-thrombin inhibitors like bivalirudin (Angiomax) instead of heparin for STEMI?"

My response is because there is no data that shows that Angiomax is any better than heparin. The trick that is played on all of us is that the studies telling us that Angiomax should be used are non-inferiority trials.

We should all be very leery of non-inferiority trials which are often failed superiority trials portrayed to look good. Non-inferiority trials are increasingly popular but do not demand the same scientific rigor or even desired patient outcome as trial designed to see if a new treatment is more effective than the standard therapy.

Recently, an entire review of the problems with non-inferiority trials has been published. All of us should read this article so that we can see non-inferiority trials (eg Angiomax) for what they are.

1. JAMA December 26, 2012; 308(24): 2594-604
2. JAMA December 26, 2012; 308(24): 2605-11
3. New England J Med 355; 21; November 23, 2006: 2203-16

QUEAS-E
CME
February 2013

Name_____

Date Completed_____

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1. "Unstable Angina" is a relatively clear diagnosis which can be made in the ER. T or F

2. A low fat diet for women has been proven to reduce heart disease. T or F

3. Clopidogrel after a stent should be used indefinitely with only a slight increase in bleeding risk. T or F

4. The drug which has the most frequent serious adverse events in the US is:
   a. Viagra
   b. Pradaxa
   c. Provera
   d. Warfarin

5. A multivitamin a day will not hurt you and may decrease cardiovascular disease. T or F

6. PT/INR and PTT as part of a cardiology work-up are standard. T or F

7. The proper term for a regular supraventricular tachycardia without a delta wave that terminates with adenosine is:
   a. Arrhythmia Not Related to Tachycardia (ANRT)
   b. AV Nodal Reactive Tachycardia (AVNRT)
   c. Supraventricular Tachycardia (SVT)
   d. AV Nodal Re-entrant Tachycardia (AVNRT)

8. Dual platelet inhibitor loading (Plavix 300mg po) decreases mortality in STEMI. T or F

9. Angiomax's presence in the market is based upon non-inferiority trials. T or F

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)

Continuing Medical Education
QUEAS-E Update Evaluation

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?

(Answers to post test: 1. F 2. F 3. F 4. b 5. F 6. F 7. d 8. F 9. T)

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