The Weekly Probe

28th October 2016 **Volume 13 Issue 35**

Geriatric Flying Squad – with extra staffing the Geriatric Flying Squad have increased their hours of coverage.

Referral criteria:

- Resident in aged care facility
- An acute deterioration in condition
- When hospital transfer is being considered
- Consent is given by General Practitioner (if available)

Common conditions that GFS can assist with:

- Delirium (acute change or fluctuation in cognition and/or behaviour)
- Infections (pneumonia, urosepsis, cellulitis or sepsis of unknown origin)
- Outbreak management (viral gastroenteritis, influenza) – to proactively provide symptom management to the resident and support to the facility
- Terminal care following acute deterioration

Exclusion criteria:

- GP, resident or family declines flying squad review
- Clients with acute cardiac event, haemorrhage or surgical problem for active treatment
- Ongoing chronic issues requiring a long term management plan

Hours of service:

Monday - Friday	0800 - 2200
Saturday - Sunday	1000 – 2200

1. Fax Referral Checklist to **Southcare Intake** Mon-Fri between 8:00 to 16:30 on
   Fax: 9540 7869 Tel: 9540 7956
2. After hours/weekend direct call: Tel: 0419 382 406

THIS WEEK

The Positive side of Hyperemesis

It's difficult to console the pregnant patient who presents with hyperemesis and faces the potential of weeks of ongoing symptoms. However one recent study in JAMA shows that the risk of pregnancy loss is lower in those with nausea and vomiting.

Design, Setting, and Participants + Outcomes A randomized clinical trial- enrolled women with 1 or 2 prior pregnancy losses over a 4 year period in the US - symptom diaries were kept. They looked at the number of peri-implantation (hCG-detected pregnancy without ultrasonographic evidence) and clinically recognized pregnancy losses. They calculated Hazard ratios to compare the risk of miscarriage in those with the symptom c/w in those without the symptom.

Main Outcomes and Measures Results 797 women with a hCG-confirmed pregnancy. Of these, 188 pregnancies (23.6%) ended in loss. By week 8, 57.3% had nausea without vomiting and 26.6% nausea with vomiting,

Nausea (HR, 0.44; 95% CI, 0.26-0.74) and nausea with vomiting (HR, 0.20; 95% CI, 0.09-0.44) were associated with a reduced risk for *clinical pregnancy loss*. Ie **nausea ~ ½ the risk - vomiting ~1/5 of the risk.**

The associations of nausea (HR, 0.59; 95% CI, 0.29-1.20) and nausea with vomiting (HR, 0.51; 95% CI, 0.11-2.25) were similar for *peri-implantation losses* but were not statistically significant.

Conclusions – Nausea and vomiting is common in women with 1 or 2 prior pregnancies and this was associated with a reduced risk for pregnancy loss.

Refs - Hinkle SN et al, Association of Nausea and Vomiting During Pregnancy With Pregnancy Loss A Secondary Analysis of a Randomized Clinical Trial *JAMA Intern Med.* September 26, 2016. doi: 10.1001/jamainternmed.2016.5641

UREA AND UPPER GI BLEEDS

After hearing the comment last week "It must be a lower GI bleed as the urea is not elevated", Sharif has compiled a number of reference to try and answer this question. Luckily he had a copy of the Danish Medical Bulletin amongst his other Scandinavian "journals".

The thought is that as the haemoglobin is broken down and absorbed in the small intestine before being converted to urea. Apparently this does not occur with other protein meals. Renal hypoperfusion secondary to the blood lost from the GI bleed may play a minor role.

The ratio depends on the units used but as we use mmol/L, the ratio commonly quoted cut off urea: creatinine ratio is >100:1.
Note both units need to be the same eg urea 5.8 mmol/L, Cr 109 µmol/L (=0.109mmol/L) – ratio = 5.8 / 0.109= 53
(the equivalent ratio in the literature when the units are different (often quoted as blood urea nitrogen or BUN/Cr ratio) when mg/dL are used is > 20:1)

Using > 100:1 - 78 consecutive patients with a history of gastrointestinal bleeding 24 hours or less before admission. The predictive value of a urea/creatinine ratio > or = 100 in terms of upper gastrointestinal bleeding (UGIB) was 95% (95% confidence interval (CI): 83-99%), whereas the predictive value of a urea/creatinine ratio < 100, indicating lower gastrointestinal bleeding (LGIB), was 41% (CI: 25-59%).

Using the > 20:1 (X the value by 5) - One study of 126 patients - 74 upper bleeds and 52 lower bleeds. The mean ratio was significantly higher in upper than lower bleeders, 34.8 and 17.8 respectively ($p < 0.001$). No lower bleeder had a ratio of greater than or equal to 36, whereas 38% of upper bleeders had a ratio of greater than or equal to 36. The BUN/Cr ratio correlated significantly with an upper GI source of bleeding ($P = .03$), with a ratio greater than 36 having a sensitivity of 90% and a specificity of 27%

In a larger study of 790 patients with UGIB and 162 with LGIB. The mean (+/- SD) BUN/CREAT ratio was significantly higher in UGIB than LGIB (22.5 +/- 11.5 vs 15.9 +/- 8.2; $p = 0.0001$). Using a ratio of < or = 33, the sensitivity and specificity for LGIB was 96 and 17%, respectively. There was a significant correlation of transfusion requirements and admission hematocrit to this ratio.

Paediatric studies have also confirmed that the higher the ratio, the larger the protein load and the larger the Hb drop.

There are 2 main scoring systems to stratify risk of death in UGIB. The Rockall score and the Blatchford score- both are available on CIAP – Tools – Mdcalc (best used through the Firstnet CIAP window)- if you can't remember the name search under "bleeding".

The Blatchford score has been validated to predict patients' risks of needing blood transfusion or intervention to control bleeding, rebleeding, or dying.
Only the Blatchford score includes urea – urea alone not the ratio- low risk are those with urea < 6.5 (in addition to Hb level, initial SBP, sex, HR> 100, melaena present, recent syncope, hepatic disease history and heart failure history) in order to.

Editor: Peter Wyllie

Take Home Point- Urea / cr ratio is higher in UGIB compared with LGIB- the higher the value , the more likely that it is a UGIB and the more substantial the bleed. However there is a degree of overlap if the values of urea and the urea/ Cr ratio so it needs to be combined with history and examination.

Refs :

- Richards RJ, Donica MB, Grayer D. Can the blood urea nitrogen/creatinine ratio distinguish upper from lower gastrointestinal bleeding? J Clin Gastroenterol 1990; 12:500./
- Mortensen PB, Nøhr M, Møller-Petersen JF, Balslev I. The diagnostic value of serum urea/ creatinine ratio in distinguishing between upper and lower gastrointestinal bleeding. A prospective study. Dan Med Bull 1994; 41:237.
- Ernst AA Usefulness of the blood urea nitrogen/creatinine ratio in gastrointestinal bleeding. Am J Emerg Med. 1999 Jan;17(1):70-2.
- Urashima M BUN/Cr ratio as an index of gastrointestinal bleeding mass in children. J Pediatr Gastroenterol Nutr. 1992 Jul;15(1):89-92.
- Blatchford O, et. al. A risk score to predict need for treatment for upper gastrointestinal haemorrhage. Lancet 2000. Volume 356, No. 9238, p1318–1321,

"LET'S REPEAT THE ECG IN 10 MINUTES TIME"

It's not uncommon for a patient to present with chest pain and have a non-diagnostic ECG. However there are some who have ongoing pain who later develop changes c./w a STEMI.

One group sought to describe the timing of ECG diagnosis of STEMI in patients whose initial ECG was non-diagnostic. They also sought to compare the delivery of American College of Cardiology/ American Heart Association guidelines-based care and in-hospital outcomes in this group compared with patients diagnosed as having STEMI on initial ECG.

Methods- Analysis of 41,560 patients diagnosed as having STEMI –this included those diagnosed on initial ECG (N = 36,994- 89%) and those with an initial non-diagnostic ECG that were diagnosed on a follow-up ECG (N = 4,566- 11%).

Results- In general, baseline characteristics and clinical presentations were similar between the 2 groups.

The chart below demonstrates the timing of the delayed changes. For patients with an initial non-diagnostic ECG, 72% had an ECG diagnostic for STEMI within 90 minutes of their initial ECG.

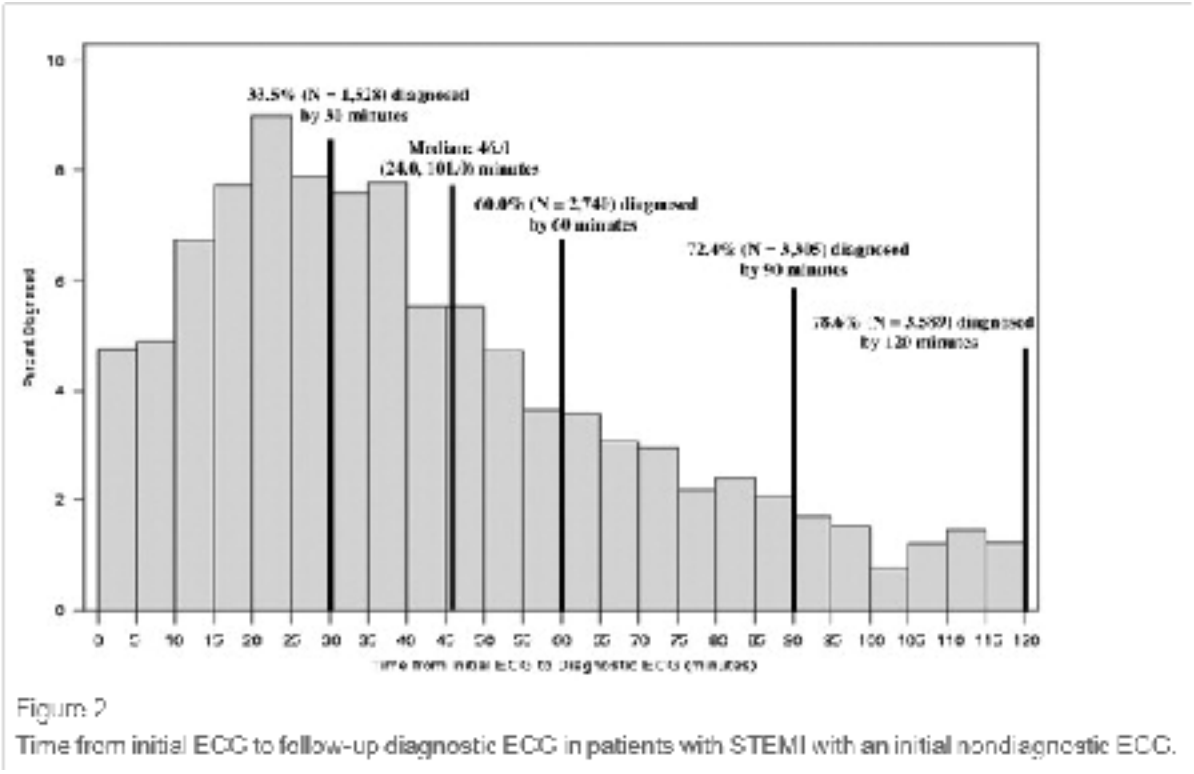


Figure 2

Time from initial ECG to follow-up diagnostic ECG in patients with STEMI with an initial nondiagnostic ECG.

Although there was a delay to development of the ECG changes there did not appear to be significant differences in the administration of guideline-recommended treatments for STEMI, in-hospital major bleeding (*P* = .926), or death (*P* = .475) between these groups.

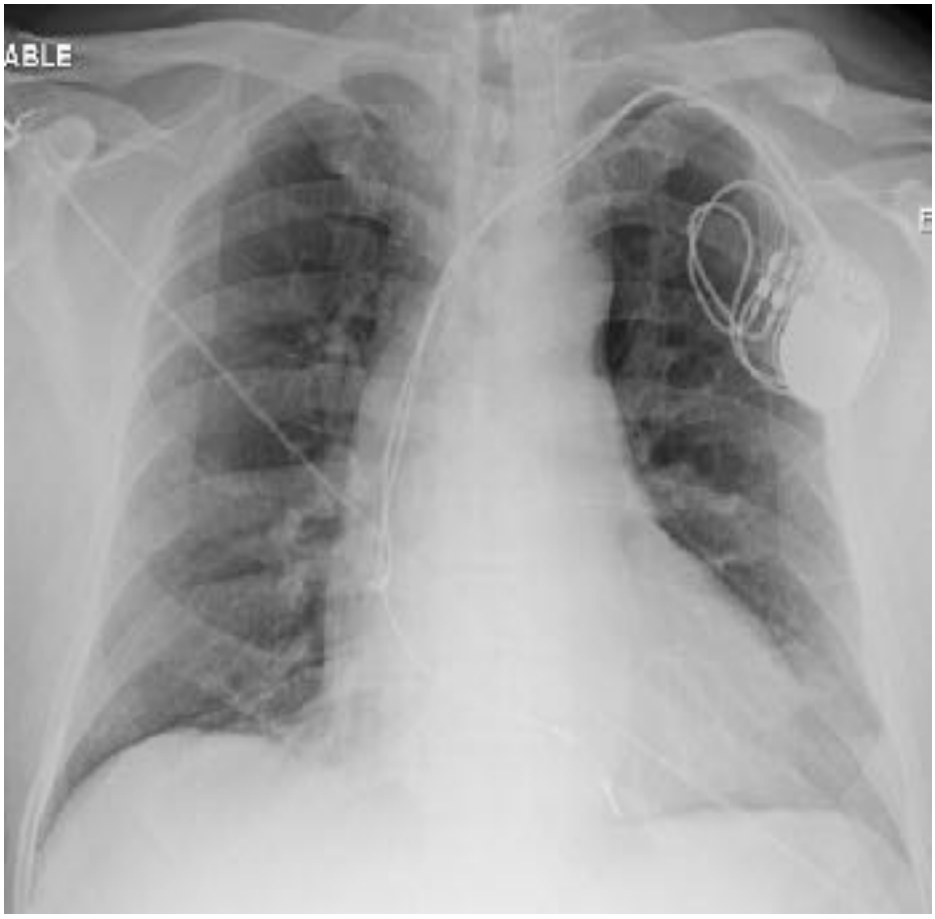
Take Home Point – There are a significant number of patients who develop ECG changes c/w ST elevation MI after an initially non-diagnostic ECG. Consider repeating the ECGs at 15- to 30-minute intervals if there are ongoing symptoms potentially indicative of ACS.

Editor: Peter Wyllie

Ref: Riley RF et al, Diagnostic time course, treatment, and in-hospital outcomes for patients with ST-segment elevation myocardial infarction presenting with nondiagnostic initial electrocardiogram: A report from the American Heart Association Mission: Lifeline program *Am Heart J* Jan 2013 165 (1): 50–56

NEXT WEEK'S CASE

60yo man with a Hx of PPM for complete heart block presented with a pre-syncopal event. On exam and his blood investigation no abnormalities were noted . ECG – paced rhythm –CXR below



What's going on?

JOKE / QUOTE OF THE WEEK

An old man walks into the barbershop for a shave and a haircut, but he tells the barber he can't get all his whiskers off because his cheeks are wrinkled from age.

The barber gets a little wooden ball from a cup on the shelf and tells him to put it inside his cheek to spread out the skin.

When he's finished, the old man tells the barber that was the cleanest shave he's had in years. But he wanted to know what would have happened if he had swallowed that little ball.

The barber replied: "Just bring it back tomorrow like everyone else does".

Editor: Peter Wyllie

Some get their fashion inspiration from different sources!

Please forward any funny and litigious quotes you may hear on the floor (happy to publish names if you want)

THE WEEK AHEAD
Tuesdays - 14:30 – 15:30 Intern & JMO teaching -Thomas & Rachel Moore
Wednesday- 0800-0900 Critical Care Journal Club. ICU Conf Room / 14:30 – 15:30 Intern & JMO teaching -Thomas & Rachel Moore
Thursday 0730-0800 Trauma Audit. Education Centre / 0800-0830 MET Review Education centre / 1300-1400 Medical Grand Rounds. Auditorium.

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