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Small ED Quality & Safety Teleconference June 2017

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Case 1- triage.....

- 55 year old male, NESB
- Referred by GP with pleuritic chest pain for several days
- PMHx – T2DM, HT, non smoker
- Triage – observations on arrival
 - BP 140/85, HR 75, temp 36.8, RR 17, O2 sats 97% RA
 - BSL 16
- Triaged as category 4

Case 1 - ED assessment

- Further hx
 - Chest / epigastric discomfort, worse with eating
 - Reduced oral intake for last few days due to pain
 - Medications - metformin, olmesartan
- On examination
 - Epigastric tenderness
 - No peripheral oedema

Case 1 - ED treatment

- Pantoprazole 40mg IV
- Gastrogel & xylocaine viscous orally
- IVF (N/Saline 2L over 2 hours)

Progress

- Blood tests showed WCC 24
- Remaining bloods “normal” - no troponin sent
- Tolerated oral intake and appeared pain free
- Discharged home several hours later in the afternoon

Case 1 – post discharge

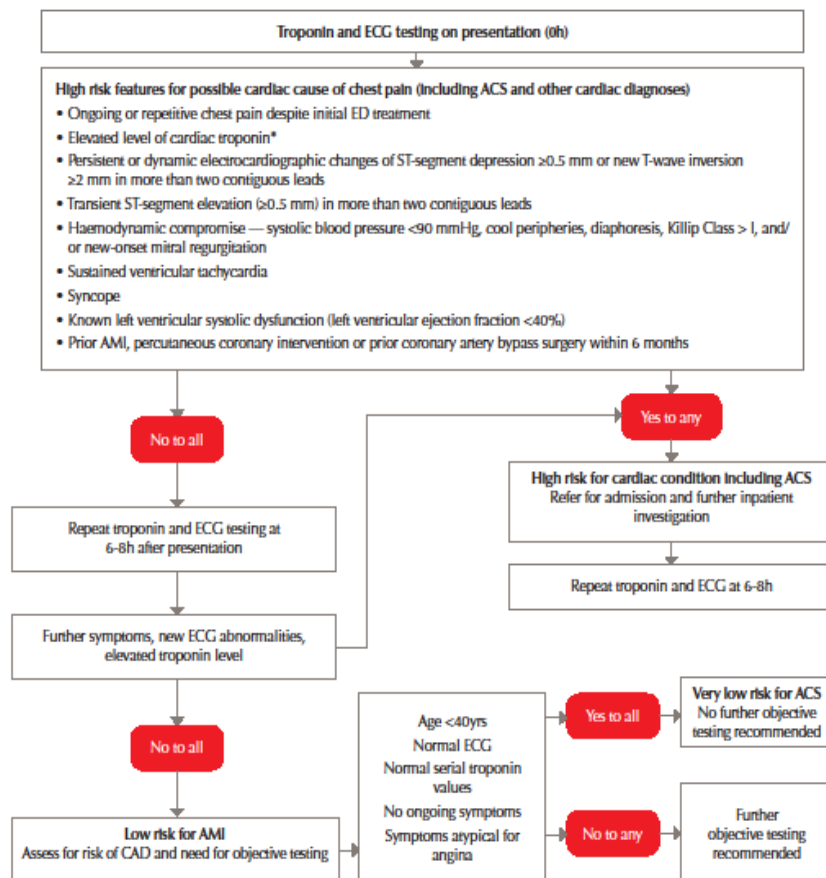
- After discharge from ED, patient saw his GP the following day at which time he was still pain free
- Found to be very unwell the following morning by his family – CDA was called and CPR commenced on CDA arrival
- Pt was unable to be resuscitated
- Referred to coroner – likely ischaemic heart disease

Points for discussion

- Triage process
- What should prompt a patient to be commenced on the chest pain pathway?
- Do you agree with this management plan?

Assessment protocol for suspected ACS using point-of-care assays

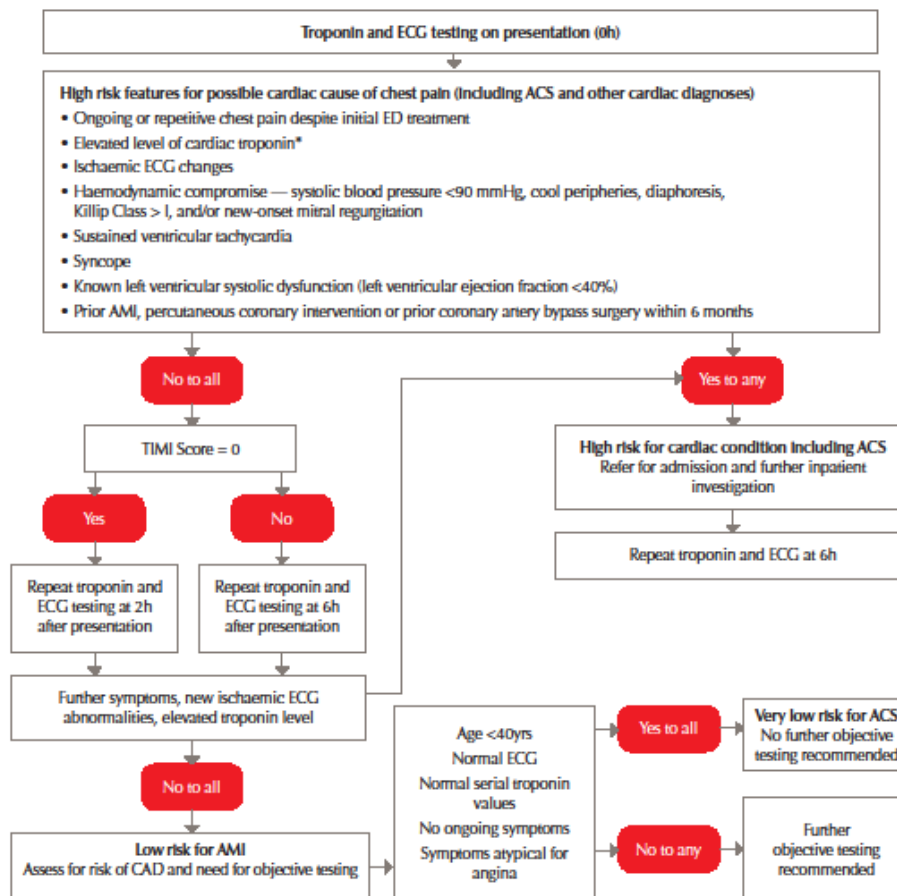
IMPORTANT NOTICE: Management protocols never replace clinical judgement. The care outlined in this protocol must be altered if it is not clinically appropriate for the individual patient.



Note: It is important to validate the local Suspected ACS assessment protocol (Suspected ACS-AP). We recommend evaluating three components: Routinely monitor and assess patients receiving the local Suspected ACS-AP; continuously evaluate adherence to the Suspected ACS-AP; conduct ongoing assessment of the 30-day outcome associated with the application of the Suspected ACS-AP. *Elevated troponin defined as > 99 th percentile of a normal reference population. AMI, acute myocardial infarction; CAD, coronary artery disease; ECG, electrocardiogram; ED, emergency department

Assessment protocol for suspected ACS using a sensitive lab-based assay

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Atypical presentations of ACS

- Well recognised “atypical presentations”
 - Diabetics
 - Elderly
 - Females
 - Chronic renal failure
 - ATSI
- “Common atypical symptoms”
 - Epigastric pain / indigestion
 - Shortness of breath
 - Nausea and/or vomiting
 - Diaphoresis
 - Dizziness or lightheadedness

Epigastric pain and ACS

- Epigastric pain is a common presentation of ACS
- Response to antacids and nitrates are not reliable predictors of ACS
 - Around 1/3 of pts with ACS will respond to antacids
 - Around 40% of pts without ACS will respond to SL nitrates

Case 2 - triage

- 65 year old male BIBA with chest tightness for 5 days
- CDA report
 - Intermittent chest pain, worse on inspiration
 - Flulike symptoms with fevers and cough
 - Given aspirin en route
 - ECG in CDA – reported as “abnormal”
 - SR, incomplete BBB, possible anteroseptal infarct
- Triage - category 2
 - Chest tightness, worse on inspiration, flulike symptoms, cough
 - BP 140/90, HR 80, RR 16, O2 sats 96%RA; BSL 24

Case 2 - ED assessment

- Further history
 - Unwell for 5 days with flulike symptoms
 - Left sided chest pain, sore throat, productive cough, myalgias
 - No PMHx, no medications
- Examination
 - BP 140/90, HR 80, RR 16, O2 sats 96%RA; BSL 24
 - Lungs – left basal creps
- Investigations
 - FBC, UEC, CXR, viral swabs
 - ECG taken according to nursing notes; not documented by MO
- Management
 - Paracetamol, ibuprofen

Case 2 - ED progress

- CXR
 - Patchy changes at left base, consistent with LLL pneumonia
- Developed further chest pain whilst in ED, radiating down both arms
 - Reported pain as 6/10
 - Analgesia given (endone 5mg and further aspirin)
 - No ECG or troponin ordered at this time

Case 2 – ED discharge

- Diagnosed with pneumonia – left lower lobe
- Discharged home later in the afternoon with oral antibiotics
 - Pain score 5/10 at discharge
- Returned to ED the following evening via CDA
 - VT on arrival, pulseless, peripherally cyanosed
 - CPR commenced – unable to be resuscitated

Lessons to learn

- Importance of ECG / trop / chest pain pathway
- “Absence of risk factors” may not be accurate
 - May be present but undiagnosed (e.g. BSL 24 in this pt)
 - Especially relevant in rural areas
- “Red flags” in this case
 - Persistent pain
 - Nature of the pain changed
 - Likely abnormal ECG

Cardiovascular disease in rural areas

- Australians living in rural and remote areas have
 - More cardiovascular risk factors
 - Higher rates of hospitalisation for CVS disease
 - Higher mortality rates from CVS disease
- Some reasons for this
 - Fewer health professionals, less health infrastructure, less GP visits
 - Relative under-treatment of cardiovascular disease and risk factors
- ATSI - higher rates of cardiovascular disease

Cognitive bias

Did a form of cognitive bias play a role in the assessment?

How can we reduce this?

The Joint Commission
Cognitive Biases in Health Care
Issue 28 – October 2016

Examples of Cognitive Bias

Anchoring bias

Giving weight and reliance on initial information/impressions, and not adjusting from this (anchor) despite availability of new information. "Jumping to conclusions" can lead to missed/delayed diagnoses.

Ascertainment bias

Shaping decision-making based on prior expectations (e.g., stereotyping, gender bias). "Frequent flyers" with recurrent complaints can affect decision-making or, in the case of falls, a patient who "always uses the call bell" may predispose staff to expect that behavior.

Availability bias

Judging likelihood of a diagnosis based on the ease with which examples can be retrieved (more familiar, common, recent, memorable) (e.g., diagnosing a patient based on frequently seen conditions such as the flu, or not considering less common diagnoses).

Confirmation bias

Selectively noticing/seeking information that confirms opinion/impression versus seeking information that disconfirms. Evidence in support of beliefs is given more weight; evidence that refutes may not be noticed (e.g., not noticing a warning label on medication or performing procedure on incorrect site).

Diagnostic momentum (bandwagon effect)

Once a label (diagnosis) has been assigned, momentum takes hold and reduces ability to consider other alternatives. Can affect future work-up of patient and how handoffs are "framed."

Framing effect

How information is presented, and how a question is framed can impact future decisions (e.g., framing in probabilities as to whether patient might "die" or "live"). Source of information (e.g., superior, trusted source); and context can influence framing.

Search satiation/premature closure

Cease looking for findings/signals (e.g., disease processes, fracture, retained object) once something has been identified. Accepting a diagnosis before considering all information and verifying diagnosis.

Latest evidence...

- Traditional cardiac risk factors are poor predictors of risk for AMI / ACS for symptomatic patients in the ED
- Trials of medications are not able to rule in or rule out ACS
 - Studies have shown response to GTN or GI cocktails are not reliable
- Role of exercise stress testing
 - Previously normal EST should not affect decision making in the ED
 - Pts with a normal EST are at the same risk of 30 day adverse CVS events as those who have not undergone EST - 5% event rate at 30 days
- Recent angiography
 - Prior coronary angiography results are useful for risk stratification of pts
 - Pts with no or minimal stenosis have an excellent long term prognosis
 - 90% free from single vessel disease, > 98% free from AMI after 10 yrs

Further resources

Hollander JE, Than M, Mueller C, State of the Art Evaluation of Emergency Department Patients present with potential Acute Coronary Syndromes *Circulation* 2016; 134:547-564

Fanaroff AC, Rymer JA et al Does this patient with Chest Pain have Acute Coronary Syndrome? The Rational Clinical Examination Systematic Review. *JAMA* 2015; 314(18): 1955-1965.

National Rural Health Alliance. *Cardiovascular disease in Rural Australia* factsheet May 2015 – available at

<http://ruralhealth.org.au/sites/default/files/publications/cardiovascular-disease-fact-sheet-may-2015.pdf>

NHFA/CSANZ Guidelines for the Management of Acute Coronary Syndrome 2016

https://www.heartfoundation.org.au/images/uploads/publications/PRO-174_ACS_guidelines_2016-WEB.pdf