



ACS-risk
stratification in the
ED

ACS in your department

- 5-7% of ED patients- Chest pain
- 15-20% ACS
- (Nelson 17% STEMI/NSTEMI)

Acceptable miss rate AMI?

- 0
- <1%
- 1-2%
- >2%

Risk stratification is our friend

- Headache
- Back pain
- Chest pain
- Abdominal-flank pain
- Suicide
- Sepsis
- NAI
- Family violence....

Clinical decision tools-trauma

- Trauma rules for ankle, knee, neck, CT head

Acceptable miss rate for ankle#?

- 0
- <1%
- 1-2%
- 5%
- 5-10%
- 10-20%

Decision rules- life threats

- PE/DVT- PERC, Wells, Geneva etc - CTPA Y/N
- Syncope rules (SFSR) –CHESS 12% 7 day risk
- ACS

Decision instruments – yeah/nah

- Scoring systems dumb us down
- Defensive medical practice
- External validity
- Poor specificity
- Cost

Decision tools in chest pain

- Goldman (1982) miss rate 2%
- Grace
- TIMI
- Vancouver

- Low risk 10-15%
- Intermediate risk ???30-40%
- High risk up to 50%

ANZCS/AHA Guidelines

- Recommend decision tools
- Re-stratify with
- Provocative test < 72 hrs

Provocative testing in the intermediate group

- Khare et al (n= 1194) 9% positive or indeterminate, 70% of whom had subsequent normal angiogram
- Culprit lesion?

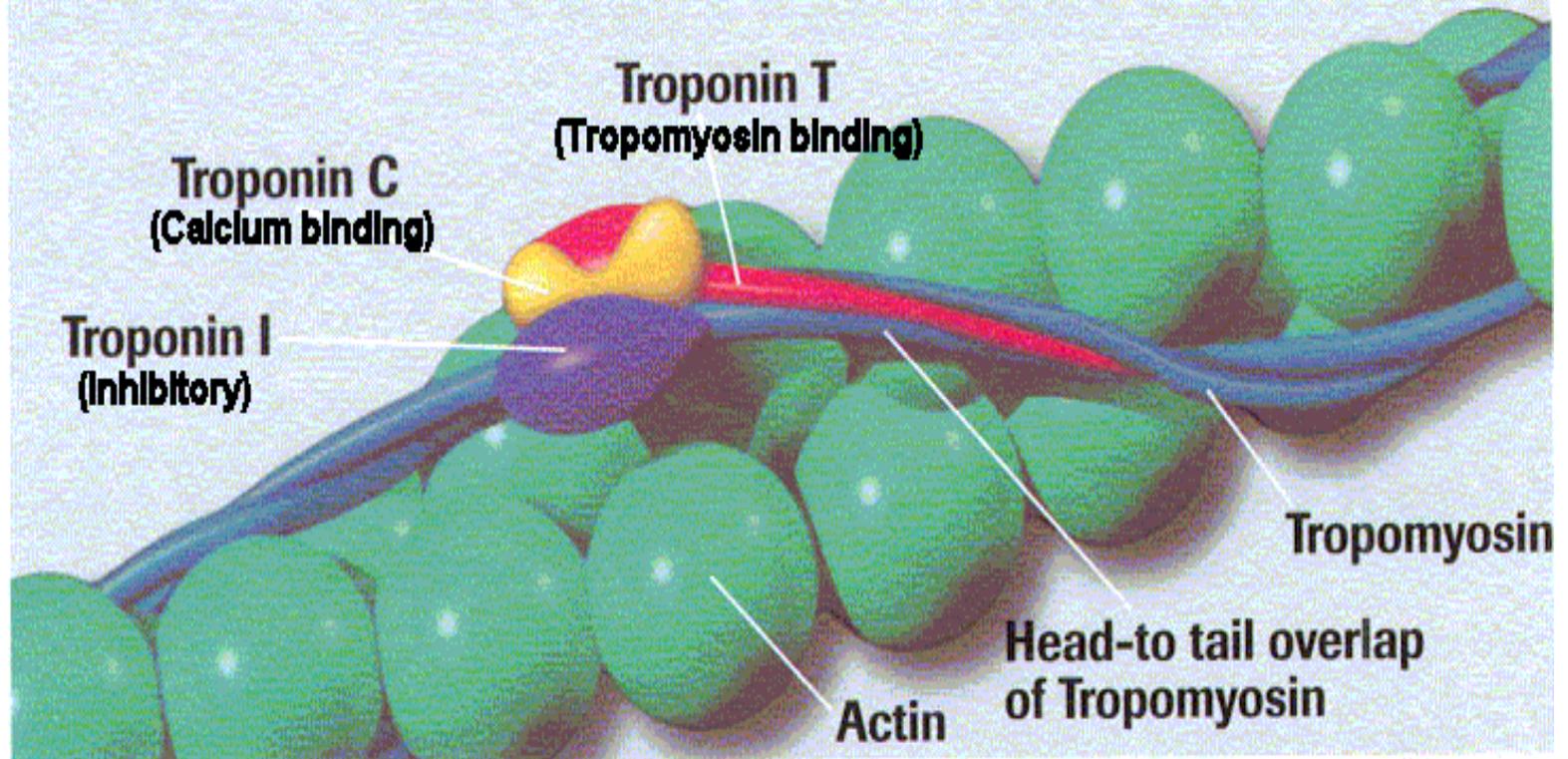
Diagnostic uncertainty and costs associated with current Emergency Department evaluation of low risk chest pain. Critical Pathways in Cardiology Volume 7 3 Sept 2008 190-96 (ref16)

Nelson shifting the paradigm

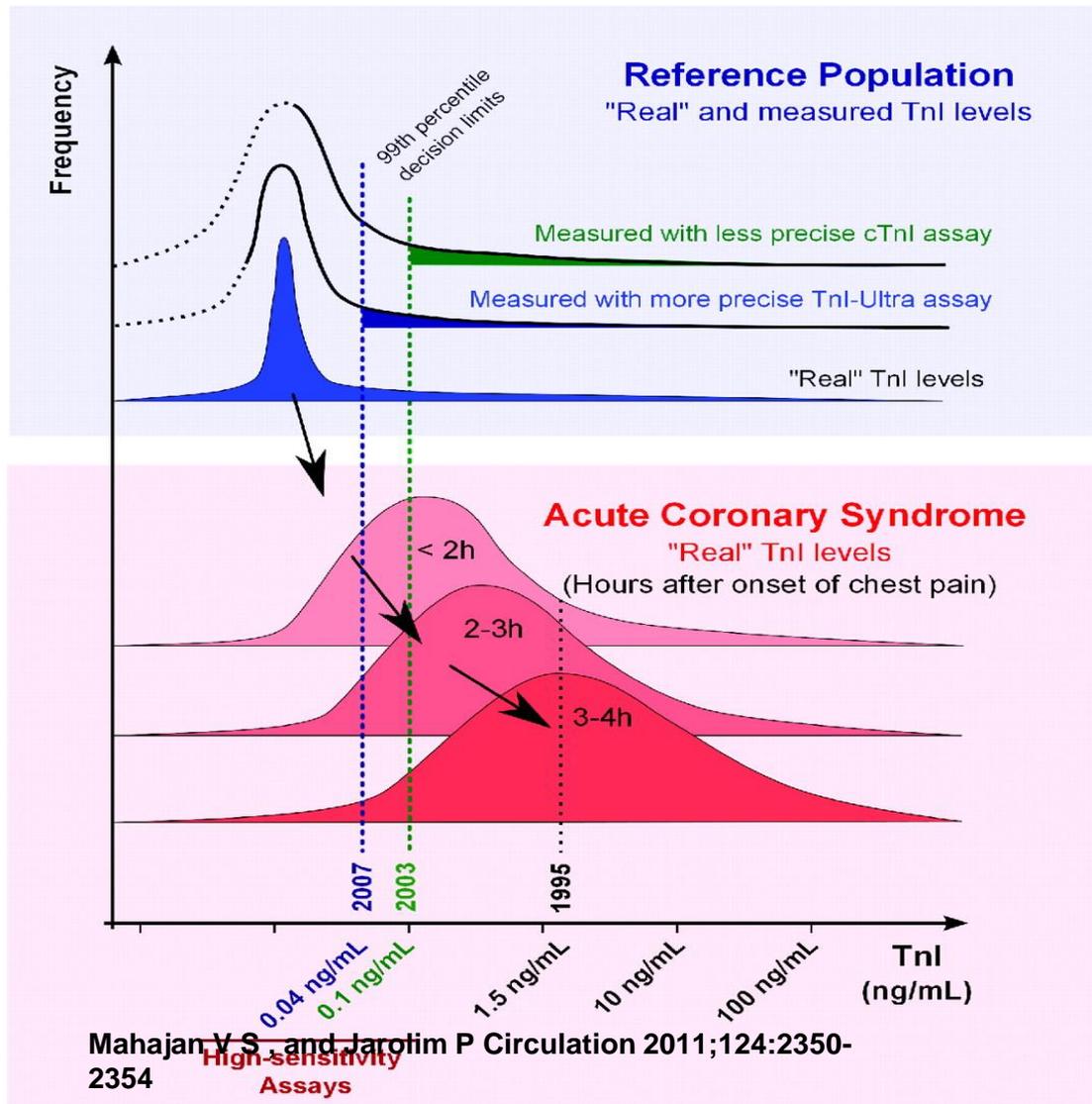
- Dichotomise high risk vs non- high risk
- Short term risk (30 days)
- Focus on patient centred outcome- death/AMI
- Accelerated pathways without score
- ED package of care

TROPONIN T

A regulatory protein released when cardiac cell necrosis occurs.



Cardiac troponin I (cTnI) levels in a healthy reference population and in an acute coronary syndrome (ACS) population.



“When troponin was a lousy assay it was a great test, but now that it's becoming a great assay, it's getting to be a lousy test.”

Jesse RL

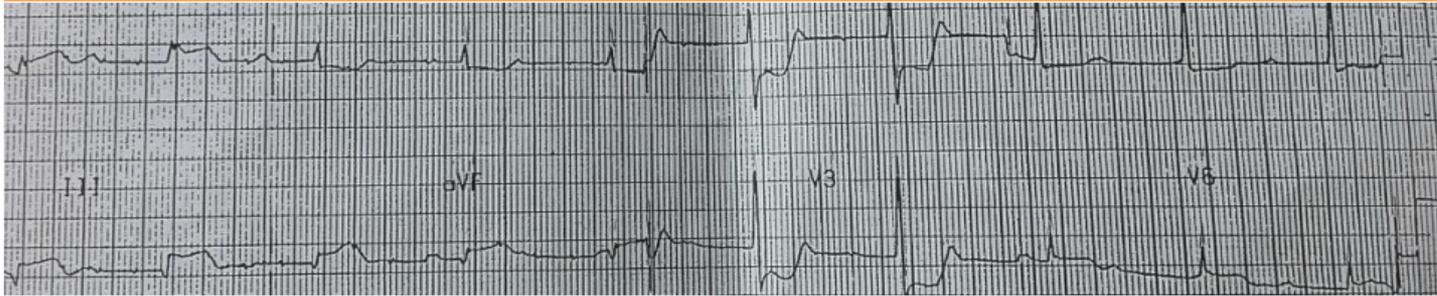
. *On the relative value of an assay versus that of a test: a history of troponin for the diagnosis of myocardial infarction.* J Am Coll Cardiol. 2010;55:2125–2128.

Pre-test probability

- Interpretation of a test is dependant on the pathway leading to it...

CHEST PAIN STUDY

A STUDY DESIGN BLOG /WEBSITE FOR THE NELSON CHEST PAIN STUDY

search

[HOME](#) » [PRAGMATIC EMERGENCY DEPARTMENT EVALUATION OF CHEST PAIN INCREASES NUMBERS OF 'SAFE FOR DISCHARGE' PATIENTS.](#)

Pragmatic Emergency Department evaluation of chest pain increases numbers of 'safe for discharge' patients.

Preamble

More than 80% of non-traumatic chest pain patients who present to the Emergency Department (ED) will ultimately have a non-Acute Coronary Syndrome (ACS) diagnosis.¹⁻²

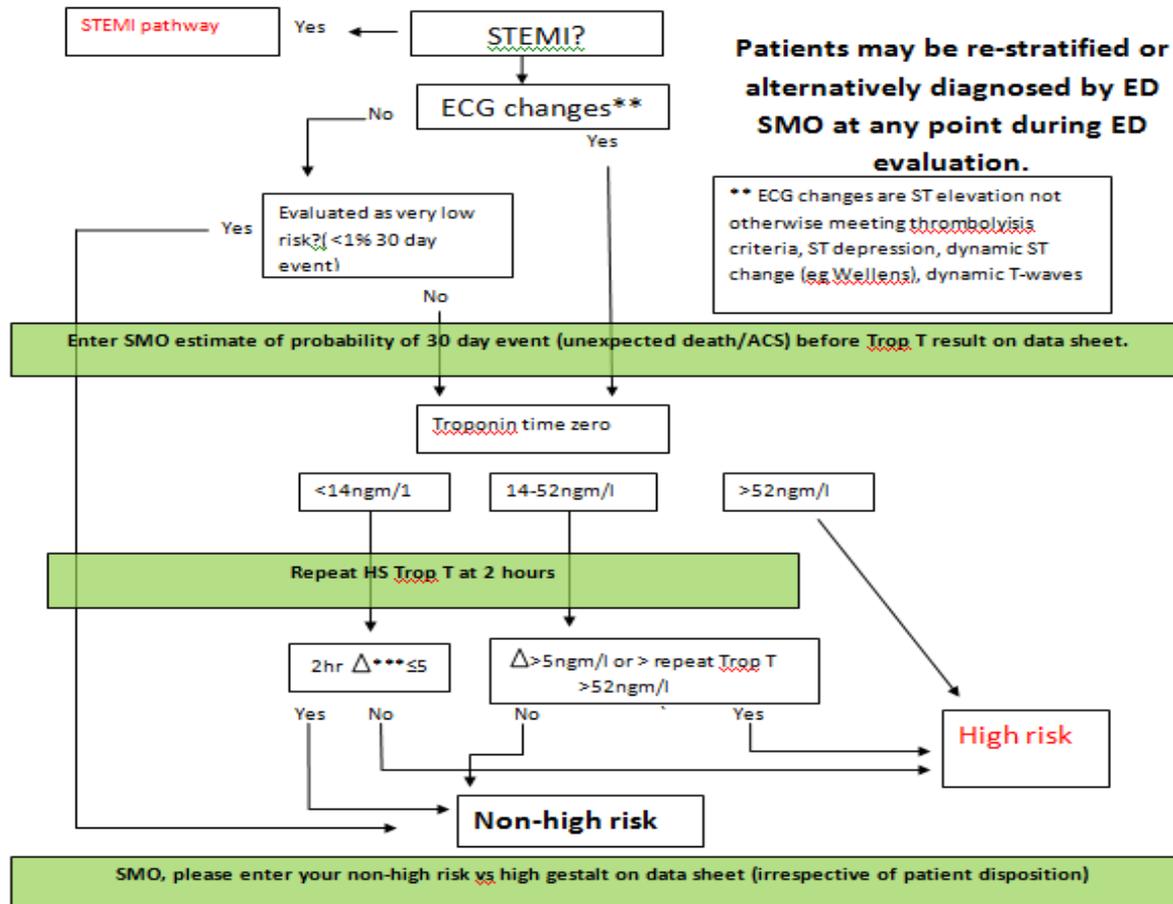
A generally accepted standard of care for low risk patients has not been established.

The National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand collaborative guidelines addendum of 2011, states that patients with low risk features should have serial cardiac biomarker troponin testing at 3 hours following presentation with one at greater than 6 hours after onset of pain. Furthermore patients with negative HS cardiac biomarkers should undergo further non-invasive testing according to 'local availability'.³

The American Heart Association for example, recommends early (<72 hours) further assessment, including early provocative testing, CT coronary angiography or nuclear medical scanning in this group of patients. Subsequent PCA is recommended if these tests are positive.⁴

Chest pain pathway for Nelson ED

All chest pain patients get immediate ECG interpretation and focused history and offered consent for 30 day follow-up *



*Exclusion criteria

Age < 25yrs

Unable to consent (dementia, psychiatric/behavioural disturbance)

Previously enrolled to this study

***Δ delta value ie positive or negative difference

Enter SMO estimate of probability of 30 day event (unexpected death/ACS) before Trop T result on data sheet.

Repeat HS Trop T at 2 hours

**SMO, please enter your non-high risk vs high gestalt on data sheet
(irrespective of patient disposition)**

Data Sheet

Patient details

SMO

CA AB CG KJ TJ TM AM MR

Date of presentation

History of documented IHD? Y N

Tick box SMO statistical impression of 30 day adverse event (death and or AMI) before you have a troponin result

<1% 1-5% 5-20% >20%

(Acceptable risk) (Moderate risk) (High risk) (Very high risk)

Abnormal ECG? Y/N ST elevation ST depression Dynamic ST change

Dynamic T waves Other

Time for first HS Troponin T

First Troponin T result

Time for second HS Troponin T

Second Troponin T result

Patient disposition

Discharged

Admitted

Thrombolysed

Cath lab via ED

Overall SMO gestalt

High risk? (30 day risk AMI or death) Y/N

Definitive alternate diagnosis (specify)

Comments

30 day follow-up date

All cause representation Y/N

Chest pain related?

30 day AMI Y/N

Death Y/N

Revascularisation Y/N

Thrombolysis Y/N

PCI Y/N CABG Y/N

Consented for 12 month follow-up? Y/N

12 month follow-up

All cause representation Y/N

Chest pain related? Y/N

AMI Y/N

Death Y/N

n=243

Combined endpoint death /AMI at 30 days is 0

Pragmatic

- Prospective **R**apid **A**ssessment, **G**estalt and **M**arkers **A**ccelerated **T**rial In **C**hestpain

- MAGIC **M**arkers **A**nd **G**estalt **I**n **C**hestpain
- CRAPPER **C**hestpain **R**apid **A**ssesement of **P**rospective **P**atients in the **ER**