Worksheet for Evidence-Based Review of Science for Emergency Cardiac Care

Worksheet author(s)
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31/1/10

Clinical question.
"In patients with suspected ACS (P), does the use of chest pain observation units (I), compared with not using them (C), increase accuracy of to safely identify patients who require admission or specific management of CAD (O)"

Is this question addressing an intervention/therapy, prognosis or diagnosis?
intervention/therapy

State if this is a proposed new topic or revision of existing worksheet: New

Conflict of interest specific to this question
Do any of the authors listed above have conflict of interest disclosures relevant to this worksheet? Industry Sponsored Research and/or Speaker for Merck , CSL, Sanofi-Aventis, Bristol Meyers, J & J, Bayer.
Clinical trials Medtronic, Abbott, Boston Scientific, GSK, Astra Zenica.
Master of Philosophy Thesis in Optimal Anticoagulation in PCI.

Search strategy (including electronic databases searched).

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Search for: limit 16 to english language
Results: 1-97

Database: Ovid MEDLINE(R) to Present with Daily Update
Search Strategy:
-----------------------------------------------
1 exp Chest Pain/ (40438)
2 exp Hospital Units/ (55501)
3 1 and 2 (401)
4 "chest pain assessment unit".mp. (1)
5 "chest pain unit".mp. (108)
6 "chest pain assessment".mp. (15)
7 exp Treatment Outcome/ (355145)
8 exp Prognosis/ (630730)
9 exp "Outcome Assessment (Health Care)"/ (383240)
10 "chest pain evaluation".mp. (77)
11 ("chest pain centre" or "chest pain center").mp. [mp=title, original title, abstract, name of substance word,
• State inclusion and exclusion criteria
Includes only; Human Subjects, 19+ (adults Only)
Excludes case reports and reviews

• Number of articles/sources meeting criteria for further review:
102 articles for detailed review.
62 final articles included in the review

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### Summary of evidence

#### Evidence Supporting Clinical Question

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*Note: The table includes references to studies supporting the clinical question, categorized as Good or Fair based on criteria.*
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**Level of evidence**

A = Return of spontaneous circulation  
B = Survival of event  
C = Survival to hospital discharge  
D = Intact neurological survival  
E = Other endpoint-cardiac events  
F = Decreased hospitalizations  
G = Cost saving LOS  
H = QOL/Patient satisfaction  
I = Diagnostic accuracy
## Evidence Neutral to Clinical question

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A = Return of spontaneous circulation  
B = Survival of event  
C = Survival to hospital discharge  
D = Intact neurological survival  
E = Other endpoint  
Italics = Animal studies

## Evidence Opposing Clinical Question

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A = Return of spontaneous circulation  
B = Survival of event  
C = Survival to hospital discharge  
D = Intact neurological survival  
E = Other endpoint  
Italics = Animal studies
The chest pain assessment unit (CPU) strategy for managing patients presenting to hospital with acute chest pain is a protocol or pathway based care strategy. The CPU care typically involves using an accelerated risk stratification protocol that usually involves measuring serial biomarkers of acute infarction (e.g. troponin or CK-MB), serial ECG or continuous ECG monitoring, a period of observation (6 hours) coupled with more advanced diagnostic testing (e.g. exercise treadmill stress testing, myocardial perfusion imaging, stress echo, CTCA). A variety of diagnostic techniques have been studied in this setting including treadmill exercise testing, stress echo, nuclear imaging and CT coronary angiography. This worksheet did not seek to evaluate which of these techniques is most effective.

CPUs have been suggested to reduced hospital admissions, health service costs, and patient anxiety and depression, and improved patient-reported health, quality of life and satisfaction with care.


These studies emphasize the safety and feasibility of CPUs in providing accelerated and safe assessment of patients presenting to emergency departments with chest pain. There are a small number of randomized studies that demonstrate the value of CPUs (Farkouh, 1998, 1882; (Good); Bedetti, 2005, 461; Gomez, 1996, 25; Goodacre, 2004, 827; Nucifora, 2009, 592; Ramakrishna, 2005, 322; Roberts, 1997, 1670; Zalenski, 1997, 1085; (Fair).

These show advantages in terms of reduced length of stay, hospital admissions and health care costs.

The ESCAPE study, a large pseudo randomized multi center study conducted in the UK (Goodacre, 2007, 659; LOE2) showed that chest pain unit care did not reduce the proportion of patients with chest pain admitted to hospital and may have increased emergency department attendances. This study compared the effect of implementing chest pain units to continuing routine practice across a large health care system (NHS). There are methodological issues with this study that limit the generalisabilty of the findings.

There is no evidence from these trials that adverse cardiac events or mortality are improved by CPUs compared to other strategies for managing patients presenting with acute chest pain. There is evidence (Nucifora, 2009, 592) that subsequent quality of life measures are improved in patients managed using an accelerated chest pain assessment protocol compared to those not managed in this manner.
Acknowledgements:

This worksheet was developed with the worksheet co-author Chris Gemgemmi.


**Citation List**

Fair;LOE4;Supportive

Fair;LOE4;Supportive

Good;LOE4;Supportive

Fair;LOE4;Supportive

Fair;LOE4;Supportive

Fair;LOE1

Fair;LOE3;Supportive

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No Abstract. Poor; LOE 4; Supportive

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Graff, L. G., J. Dal;(1997)
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Rubinshtein, R., D. A. Halon, et al. (2007). "Impact of 64-slice cardiac computed tomographic angiography on clinical decision-making in emergency department patients with chest pain of possible myocardial ischemic origin." Am J Cardiol 100(10): 1522-6. Fair; LOE 4; Supportive


Udelson, J. E., J. R. Beshansky, et al. (2002). "Myocardial perfusion imaging for evaluation and triage of patients with suspected acute cardiac ischemia: a randomized controlled trial." Jama 288(21): 2693-700. Good; LOE 5; Supportive

Fair;LOE4;Supportive

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