27. Acute coronary syndromes in the very elderly: Short term prognostic performance of the SYNTAX score.
26. Are acute coronary syndromes an ideal scenario for bioresorbable vascular scaffold implantation?
24. Glutathione peroxidase activity and expression levels are significantly increased in acute coronary syndromes.
22. Influence of Age and Gender on Clinical Outcomes Following Percutaneous Coronary Intervention for Acute Coronary syndromes undergoing percutaneous coronary intervention: the SCOPE registry.
19. Long-Term Outcome of Acute Coronary Syndromes in Young Patients.
18. Predicting the risk of bleeding during dual antiplatelet therapy after acute coronary syndromes.
17. Statins in acute coronary syndromes.
16. Acute coronary syndromes in patients with HIV.
14. Feasibility of the Manchester Acute Coronary Syndromes (MACS) decision rule to safely reduce unnecessary hospital admissions: a pilot randomised controlled trial.
7. High-Sensitivity Cardiac Troponin for the Diagnosis of Patients with Acute Coronary Syndromes.
6. Identifying Emergency Department Patients With Chest Pain who are at Low Risk for Acute Coronary Syndromes.
4. Antithrombotic Therapy to Reduce Ischemic Events in Acute Coronary Syndromes Patients Undergoing Percutaneous Coronary Intervention.
2. Validating the Manchester Acute Coronary Syndromes (MACS) and Troponin-only Manchester Acute Coronary Syndromes (T-MACS) rules for the prediction of acute myocardial infarction in patients presenting to the emergency department with chest pain.
29. Management of Acute Coronary Syndromes in Geriatric Patients................................................................. Page 13
30. Balancing the risk of spontaneous ischemic and major bleeding events in acute coronary syndromes....................... Page 14
31. A Rare Presentation of Fibromuscular Dysplasia: Postpartum Vascular Catastrophe and Brief Literature Review........ Page 14
Full search strategy ................................................................................................................................................. Page 15

**Authors**
Zeymer, Uwe; Becher, Anja; Jennings, Em; Johansson, Saga; Westergaard, Mogens

**Source**
European heart journal. Acute cardiovascular care; Sep 2017; vol. 6 (no. 6); p. 522-531

**Publication Date**
Sep 2017

**Publication Type(s)**
Journal Article

**PubMedID**
27142175

**Database**
Medline

**Abstract**
AIMSThe aim of this systematic literature review was to assess the consequences of dual antiplatelet therapy discontinuation on clinical outcomes after acute coronary syndromes.METHODS AND RESULTSA systematic literature search was conducted in PubMed to identify studies reporting data on patients who discontinued dual antiplatelet therapy (planned or unplanned) following acute coronary syndromes and on the clinical impact of dual antiplatelet therapy discontinuation. To be included, more than 50% of the study population had to have had acute coronary syndrome as their index event or, if less than 50%, outcomes data must have been reported separately for the group with acute coronary syndromes. Thirty publications covering 29 studies were identified for inclusion. There was much heterogeneity across studies regarding the included patient populations, treatment durations and outcome definitions and ascertainment. Dual antiplatelet therapy discontinuation was most commonly based on physician decision. Twenty-six studies reported that clopidogrel was prescribed as part of dual antiplatelet therapy. Dual antiplatelet therapy duration was positively associated with a lower risk of all-cause mortality (seven/eight studies), cardiovascular mortality (two/two studies), non-fatal myocardial infarction (two/three studies) and stent thrombosis (five/five studies) in patients and/or patient subgroups in studies without randomised treatment designs, although such associations were not observed in the one study that randomly assigned patients to treatment (i.e. planned discontinuation).CONCLUSIONSResults from our systematic literature review generally support the benefit of longer-term dual antiplatelet therapy after acute coronary syndromes; however, further research is needed to determine the optimal length of dual antiplatelet therapy in patients after acute coronary syndrome, ideally using prospective studies.

2. Validating the Manchester Acute Coronary Syndromes (MACS) and Troponin-only Manchester Acute Coronary Syndromes (T-MACS) rules for the prediction of acute myocardial infarction in patients presenting to the emergency department with chest pain.

**Authors**
Greenslade, Jaimi H; Nayer, Robert; Parsonage, William; Doig, Shaela; Young, Joanna; Pickering, John W; Than, Martin; Hamnett, Christopher; Cullen, Louise

**Source**
Emergency medicine journal : EMJ; Aug 2017; vol. 34 (no. 8); p. 517-523

**Publication Date**
Aug 2017

**Publication Type(s)**
Journal Article

**PubMedID**
28363994

**Database**
Medline

**Available at** Emergency medicine journal : EMJ from BMJ Journals - NHS

**Abstract**
BACKGROUNDThe Manchester Acute Coronary Syndromes (MACS) rule and the Troponin-only MACS (T-MACS) rule risk stratify patients with suspected acute coronary syndrome (ACS). This observational study sought to validate and compare the MACS and T-MACS rules for assessment of acute myocardial infarction (AMI).METHODSProspectively collected data from two EDs in Australia and New Zealand were analysed. Patients were assigned a probability of ACS based on the MACS and T-MACS rules, incorporating highsensitivity troponin T, heart-type fatty acid-binding protein, ECG results and clinical symptoms. Patients were then deemed very low risk, low risk, intermediate or high risk if their MACS probability was less than 2%, between 2% and 5%, between 5% and 95% and greater than 95%, respectively. The primary endpoint was 30-day diagnosis of AMI. The secondary endpoint was 30-day major adverse cardiac event (MACE) including AMI, revascularisation or coronary stenosis (>70%). Sensitivity, specificity and predictive values were calculated to assess the accuracy of the MACS and T-MACS rules. RESULTSOf the 1244 patients, 114 (9.2%) were diagnosed with AMI and 163 (13.1%) with MACE. The MACS and T-MACS rules categorised 133 (10.7%) and 246 (19.8%) patients, respectively, as very low risk and potentially suitable for early discharge from the ED. There was one false negative case for both rules making sensitivity 99.1% (95.2%-100%). CONCLUSIONS MACS and T-MACS accurately risk stratify very low risk patients. The T-MACS rule would allow for more patients to be discharged early. The potential for missed MACE events means that further outpatient testing for coronary artery disease may be required for patients identified as very low risk.

Authors: Gudnadottir, Gudny Stella; Andersen, Karl; Thrainsdottir, Inga Sigurros; James, Stefan Karl; Lagerqvist, Bo; Gudnason, Thorarin

Source: American heart journal; Sep 2017; vol. 191; p. 65-74

Publication Date: Sep 2017

Publication Type(s): Multicenter Study Journal Article

PubMedID: 28888272

Database: Medline

Abstract: BACKGROUND The objective was to investigate whether gender disparities are found in referrals of patients with acute coronary syndromes to percutaneous coronary interventions (PCIs) or coronary artery bypass grafting (CABG) and, furthermore, to study gender differences in complications and mortality.

METHODS All consecutive coronary angiographies (CAs) and PCIs performed in Sweden and Iceland are prospectively registered in the Swedish Coronary Angiography and Angioplasty Registry. For the present analysis, data of patients with acute coronary syndromes, enrolled in 2007-2011, were used to analyze gender differences in revascularization, in-hospital complications, and 30-day mortality.

RESULTS A total of 106,881 CAs were performed during the study period. In patients with significant coronary artery disease, the adjusted odds ratio (OR) for women to undergo PCI compared with men was 0.95 (95% CI 0.92-0.99) and 0.81 (0.76-0.87) for referrals to CABG. In patients with 1-vessel disease, women were less likely to undergo PCI than men, but women with 2- or 3-vessel or left main stem disease were more likely to undergo PCI. All in-hospital complications after CA followed by PCI were more frequent among women (adjusted OR 1.58 [1.47-1.70]). There was no gender difference in adjusted 30-day mortality after PCI (1.02 [0.92-1.12]) and after CABG (0.97 [0.72-1.31]).

CONCLUSIONS After CA showing 1-vessel disease, women as compared with men were less likely to undergo PCI. In the group with 2- or 3-vessel disease or left main stem stenosis, women were more likely to undergo PCI but less likely to undergo CABG. However, there was no gender difference in 30-day mortality.

4. Antithrombotic Therapy to Reduce Ischemic Events in Acute Coronary Syndromes Patients Undergoing Percutaneous Coronary Intervention.

Authors: Verheugt, Freek W A

Source: Interventional cardiology clinics; Jan 2017; vol. 6 (no. 1); p. 131-140

Publication Date: Jan 2017

Publication Type(s): Journal Article Review

PubMedID: 27886817

Database: Medline

Abstract: Antithrombotic therapy is essential in the prevention of periprocedural death and myocardial infarction during and after percutaneous coronary intervention. In the pathogenesis of acute coronary syndromes (ACS), both platelets and the coagulation cascade play an important role. Therefore, periprocedural antithrombotic therapy is even more important in ACS than in elective PCI. The most used agents are aspirin, platelet P2Y12 blockers, platelet glycoprotein IIb/IIIa blockers, and parenteral anticoagulants. The P2Y12 blockers must be continued at least 12 months. High-risk patients should be treated with glycoprotein IIb/IIIa receptor antagonists, especially those undergoing primary angioplasty for ST-elevation acute coronary syndrome.


Authors: Leonardi, Sergio; Bhatt, Deepak L

Source: European heart journal. Acute cardiovascular care; Jun 2017; p. 204872617707960

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 28574274

Database: Medline

Abstract: Cangrelor, the first and currently only available intravenous P2Y12 receptor antagonist, has been approved and is now being used in patients with coronary artery disease requiring percutaneous coronary intervention. The rationale for cangrelor use is most robust in patients requiring an immediate, profound, and predictable level of P2Y12 inhibition - especially in patients with acute coronary syndromes. Herein we summarize the drug development program and reflect on practical considerations for clinicians on cangrelor use in the acute setting surrounding percutaneous coronary intervention, including selection of patients, concomitant administration of glycoprotein IIb/IIIa inhibitors and transition strategies from intravenous to oral P2Y12 receptor antagonists.

6. Identifying Emergency Department Patients With Chest Pain who are at Low Risk for Acute Coronary Syndromes

Authors: Markel, David

Source: Emergency medicine practice; Jul 2017; vol. 19 (no. 7); p. 1-24

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28665102
Though a minority of patients presenting to the emergency department with chest pain have acute coronary syndromes, identifying the patients who may be safely discharged and determining whether further testing is needed remains challenging. From the prehospital care setting to disposition and follow-up, this systematic review addresses the fundamentals of the emergency department evaluation of patients determined to be at low risk for acute coronary syndromes or adverse outcomes. Clinical risk scores are discussed, as well as the evidence and indications for confirmatory testing. The emerging role of new technologies, such as high-sensitivity troponin assays and advanced imaging techniques, are also presented.

7. High-Sensitivity Cardiac Troponin for the Diagnosis of Patients with Acute Coronary Syndromes.

Authors
Vasile, Vlad C; Jaffe, Allan S

Source
Current cardiology reports; Aug 2017; vol. 19 (no. 10); p. 92

Publication Date
Aug 2017

Publication Type(s)
Journal Article Review

PubMedID
28840515

Database
Medline

Abstract
PURPOSE OF REVIEWHigh-sensitivity cardiac troponin (hscTn) assays are replacing the older-generation assays used to detect myocardial injury because they have improved analytical sensitivity and lead to a more rapid diagnosis of acute myocardial infarction (AMI) and enhanced risk stratification in patients with non-ST elevation acute coronary syndromes (NSTEMI). This review focuses on advantages and difficulties of using hscTn as diagnostic and prognostic tools in acute coronary syndromes (ACS).

RECENT FINDINGS
The newer assays have a lower specificity for AMI as compared to conventional assays, potentially leading to an increased number of unwarranted hospitalizations and amplified cost unless how to use these assays appropriately is appreciated. Several approaches can increase the specificity of the high sensitivity assays. This review will present the current literature data regarding the use of hscTn assays and will focus on modalities used to increase the specificity, as well as the advantages and pitfalls of using the high sensitivity approach in clinical practice.


Authors
Pavasini, Rita; Cirillo, Chiara; Campo, Gianluca; Nobre Menezes, Miguel; Biscaglia, Simone; Tonet, Elisabetta; Ferrari, Roberto; Patel, Brijesh V; Price, Susanna

Source
Critical care medicine; Aug 2017

Publication Date
Aug 2017

Publication Type(s)
Journal Article

PubMedID
28841633

Database
Medline

Abstract
OBJECTIVES
Extracorporeal circulatory support is a life-saving technique, and its use is increasing in acute coronary syndromes. A meta-analysis on pooled event rate of short-term mortality and complications of acute coronary syndrome patients treated with extracorporeal circulatory support was performed.

DATA SOURCES
Articles were searched in MEDLINE, Cochrane Library, Google Scholar, and Biomed Central.

STUDY SELECTION
Inclusion criteria were observational studies on acute coronary syndrome patients treated with extracorporeal circulatory support. Primary outcome was short-term mortality. Secondary outcomes were extracorporeal circulatory support-related complications, causes of death, long-term mortality, and bridge therapy.

DATA EXTRACTION
Sixteen articles were selected. Data about clinical characteristics, acute coronary syndrome diagnosis and treatment, extracorporeal circulatory support setting, outcome definitions, and event rate were retrieved from the articles. Random effect meta-analytic pooling was performed reporting results as a summary point estimate and 95% CI. DATA SYNTHESIS
A total of 739 patients were included (mean age, 59.8 ± 2.9). The event rate of short-term mortality was 58% (95% CI, 51-64%), 6-month mortality was affecting 24% (95% CI, 5-63%) of 1-month survivors, and 1-year mortality 17% (95% CI, 6-40%) of 6-month survivors. The event rates of extracorporeal circulatory support-related complications were acute renal failure 41%, bleeding 25%, neurologic damage in survivors 21%, sepsis/infections 21%, and leg ischemia 12%. Between causes of death, multiple organ failure and brain death affected respectively 40% and 27% of patients. Bridge to ventricular assistance device was offered to 14% of patients, and 7% received a transplant.

CONCLUSION
There is still a high rate of short-term mortality and complications in acute coronary syndrome patients treated with extracorporeal circulatory support. New studies are needed to optimize and standardize extracorporeal circulatory support.


Authors
Niccoli, Giampaolo; Borovac, Josip Andelo; Vetruigno, Vincenzo; Camici, Paolo G; Crea, Filippo

Source
International journal of cardiology; Jun 2017; vol. 236 ; p. 107-112

Publication Date
Jun 2017

Publication Type(s)
Journal Article

PubMedID
28256323

<table>
<thead>
<tr>
<th>Authors</th>
<th>Niccoli, Giampaolo; Indolfi, Ciro; Davies, Justin E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Open heart; 2017; vol. 4 (no. 2); p. e000431</td>
</tr>
<tr>
<td>Publication Date</td>
<td>2017</td>
</tr>
<tr>
<td>Publication Type(s)</td>
<td>Journal Article Review</td>
</tr>
<tr>
<td>PubMedID</td>
<td>28761673</td>
</tr>
<tr>
<td>Database</td>
<td>Medline</td>
</tr>
</tbody>
</table>

Abstract
Fractional flow reserve (FFR) is increasingly used to guide myocardial revascularisation. However, supporting evidence regarding its use originates from studies that have enrolled mainly patients with stable angina, while patients with acute coronary syndromes (ACS) have not been included. Notably, multifactorial microvascular dysfunction and an increased sympathetic tone in patients with ACS may lead to a blunted response to adenosine and false-negative results of FFR due to submaximal hyperaemia. This may raise the possibility of deferring treatment of stenosis that instead would have needed dilatation, thus leaving a residual risk of preventable cardiac events. In this literature review, we aim at summarising laboratory and clinical investigations concerning the use of FFR in culprit and non-culprit lesions in ACS. Furthermore, we will report recent data on instantaneous wave-free ratio, an adenosine-free index of functional stenosis severity, in stable coronary artery disease and in patients with ACS.


<table>
<thead>
<tr>
<th>Authors</th>
<th>Babuin, Luciano; Scarpia, Daniele; Jaffe, Allan S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Current cardiology reports; Aug 2017; vol. 19 (no. 10); p. 91</td>
</tr>
<tr>
<td>Publication Date</td>
<td>Aug 2017</td>
</tr>
<tr>
<td>Publication Type(s)</td>
<td>Journal Article Review</td>
</tr>
<tr>
<td>PubMedID</td>
<td>28840463</td>
</tr>
<tr>
<td>Database</td>
<td>Medline</td>
</tr>
</tbody>
</table>

Abstract
PURPOSE OF REVIEWReduction of kidney function and heart disease frequently coexisted in the same patient. The relation between renal and heart function is quite complex and brings up some unresolved questions about diagnosis (mostly related to the biomarkers levels interpretation), pharmacological therapy (mostly related to drugs kinetics and efficacy), and non-pharmacological therapy. RECENT FINDINGS Patients with kidney dysfunction (KD) are frequently excluded and underrepresented in the large trials. It is well-known that coronary revascularization reduces mortality also in KD patients presenting with acute coronary syndrome. However, acute kidney injury (AKI), primarily related at contrast medium administration, is worse prognosis. For this reason, prevention, early diagnosis, and effective therapy of AKI are key elements in assistance of these patients. In this context, recently, some new biomarkers of renal function have been proposed. Frequently, patients with acute coronary syndromes and kidney disease are undertreated, worsening their prognosis. Undertreatment and comorbidities associated with renal dysfunction explain the higher mortality of these patients.


<table>
<thead>
<tr>
<th>Authors</th>
<th>Tofler, Geoffrey H; Kopel, Eran; Klempfner, Robert; Eldar, Michael; Buckley, Thomas; Goldenberg, Ilan; National Israel Survey of Acute Coronary Syndrome Investigators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>The American journal of cardiology; May 2017; vol. 119 (no. 10); p. 1560-1565</td>
</tr>
<tr>
<td>Publication Date</td>
<td>May 2017</td>
</tr>
<tr>
<td>Publication Type(s)</td>
<td>Multicenter Study Journal Article</td>
</tr>
<tr>
<td>PubMedID</td>
<td>28377021</td>
</tr>
<tr>
<td>Database</td>
<td>Medline</td>
</tr>
</tbody>
</table>

Available at The American journal of cardiology from ProQuest (Hospital Premium Collection) - NHS Version
Previous studies have shown that an acute coronary syndrome (ACS) may be triggered by external activities; however, their frequency, predictors, and significance are uncertain. We evaluated data from the National Israel Survey of Acute Coronary Syndromes, which was conducted in 2004 (February to March) in all 25 coronary care units and cardiac wards in Israel. Demographic and clinical data were recorded for consecutive participants, including potential triggers and time of symptom onset of ACS. Among the 1,849 patients who completed the trigger question, 1/4 (25.9%) reported a possible trigger, comprising heavy physical exertion (15.2%), emotional stress (8.3%), anger (1.1%), heavy meal (1.3%), and sexual activity (0.5%). Predictors of a triggered ACS were age <65 years, previous angina, no previous angiotensin-converting enzyme inhibitors/angiotensin 2 receptor blockers, impaired functional class, not having typical chest pain on admission, and a final diagnosis of unstable angina. The highest proportion of triggered ACS was between noon and 6 p.m. Physical exertion as a trigger was associated with reduced in-hospital mortality (0.4% vs 2.8%, p <0.05) and 1-year mortality. Emotional stress as a trigger did not influence in-hospital or 1-year mortality; however among those discharged from hospital, it was associated with increased 30-day rehospitalization (27.6% vs 19.3%, p <0.05) and a trend toward increased mortality (4.1% vs 2.0%, p = 0.10).


Authors: Lamprou, Vasileios; Varvarousis, Dimitrios; Polytarchou, Kali; Varvarousi, Golianda; Xanthos, Theodoros
Source: Clinical cardiology; Aug 2017; vol. 40 (no. 8); p. 528-533
Abstract: The prognosis of acute coronary syndromes (ACS) is affected by many factors. Normal thyroid homeostasis is known to alter during various critical illnesses, a condition that has been shown to correlate with the severity of the disease and increased mortality. The purpose of this article is to review literature to emphasize the considerable association of thyroid function with the cardiovascular system and summarize all existing evidence with regard to the role of thyroid hormones alterations during ACS. The electronic databases of PubMed, Medline, Scopus, and Cochrane were searched for relevant literature and studies. Alterations in thyroid hormone plasma concentrations, especially low triiodothyronine (T3) levels, represent a hormonal imbalance that is not uncommon among patients suffering an acute coronary event. Many studies have identified this abnormal thyroid hormonal status to be related to worse prognosis. Although further large-scale clinical trials are needed, the low T3 syndrome manifesting in patients during ACS might be useful in prognostic stratification.

14. Feasibility of the Manchester Acute Coronary Syndromes (MACS) decision rule to safely reduce unnecessary hospital admissions: a pilot randomised controlled trial.

Authors: Body, Richard; Boachie, Charles; McConnachie, Alex; Carley, Simon; Van Den Berg, Patricia; Lecky, Fiona E
Source: Emergency medicine journal: EMJ; Sep 2017; vol. 34 (no. 9); p. 586-592
Abstract: The feasibility of the Manchester Acute Coronary Syndromes (MACS) decision rule to safely reduce unnecessary hospital admissions: a pilot randomised controlled trial.

Authors: Body, Richard; Boachie, Charles; McConnachie, Alex; Carley, Simon; Van Den Berg, Patricia; Lecky, Fiona E
Source: Emergency medicine journal: EMJ; Sep 2017; vol. 34 (no. 9); p. 586-592
Abstract: The feasibility of the Manchester Acute Coronary Syndromes (MACS) decision rule to safely reduce unnecessary hospital admissions: a pilot randomised controlled trial.
Abstract

BACKGROUND
Observational studies suggest that the Manchester Acute Coronary Syndromes (MACS) decision rule can effectively ‘rule out’ and ‘rule in’ acute coronary syndromes (ACS) following a single blood test. In a pilot randomised controlled trial, we aimed to determine whether a large trial is feasible.

METHODS
Patients presenting to two EDs with suspected cardiac chest pain were randomised to receive care guided by the MACS decision rule (intervention group) or standard care (controls). The primary efficacy outcome was a successful discharge from the ED, defined as a decision to discharge within 4 hours of arrival providing that the patient did not have a missed acute myocardial infarction (AMI) or develop a major adverse cardiac event (MACE: death, AMI or coronary revascularisation) within 30 days. Feasibility outcomes included recruitment and attrition rates.

RESULTS
In total, 138 patients were included between October 2013 and October 2014, of whom 131 (95%) were randomised (66 to intervention and 65 controls). Nine (7%) patients had prevalent AMI and six (5%) had incident MACE within 30 days. All 131 patients completed 30-day follow-up and were included in the final analysis with no missing data for the primary analyses. Compared with standard care, a significantly greater proportion of patients whose care was guided by the MACS rule were successfully discharged within 4 hours (26% vs 8%, adjusted OR 5.45, 95% CI 1.73 to 17.11, p=0.004). No patients in either group who were discharged within 4 hours had a diagnosis of AMI or incident MACE within 30 days (0.0%, 95% CI 0% to 20.0% in the intervention group).

CONCLUSIONS
In this pilot trial, use of the MACS rule led to a significant increase in safe discharges from the ED but a larger, fully powered trial remains necessary. Our findings seem to support the feasibility of that trial.

TRIAL REGISTRATION NUMBER
ISRCTN 86818215.

RESEARCH ETHICS COMMITTEE REFERENCE
13/NW/0081.

UKCRN REGISTRATION ID
14334.


Authors
Crea, Filippo; Libby, Peter

Source
Circulation; Sep 2017; vol. 136 (no. 12); p. 1155-1166

Abstract
Well into the 21st century, we still triage acute myocardial infarction on the basis of the presence or absence of ST-segment elevation, a century-old technology. Meanwhile, we have learned a great deal about the pathophysiology and mechanisms of acute coronary syndromes (ACS) at the clinical, pathological, cellular, and molecular levels. Contemporary imaging studies have shed new light on the mechanisms of ACS. This review discusses these advances and their implications for clinical management of the ACS for the future. Plaque rupture has dominated our thinking about ACS pathophysiology for decades. However, current evidence suggests that a sole focus on plaque rupture vastly oversimplifies this complex collection of diseases and obscures other mechanisms that may mandate different management strategies. We propose segmenting coronary artery thrombosis caused by plaque rupture into cases with or without signs of concomitant inflammation. This distinction may have substantial therapeutic implications as direct anti-inflammatory interventions for atherosclerosis emerge. Coronary artery thrombosis caused by plaque erosion may be on the rise in an era of intense lipid lowering. Identification of patients with of ACS resulting from erosion may permit a less invasive approach to management than the current standard of care. We also now recognize ACS that occur without apparent epicardial coronary artery thrombus or stenosis. Such events may arise from spasm, microvascular disease, or other pathways. Emerging management strategies may likewise apply selectively to this category of ACS. We advocate this more mechanistic approach to the categorization of ACS to provide a framework for future tailoring, triage, and therapy for patients in a more personalized and precise manner.

16. Acute coronary syndromes in patients with HIV.

Authors
Seecheran, Valmiki K; Giddings, Stanley L; Seecheran, Naveen A

Source
Coronary artery disease; Mar 2017; vol. 28 (no. 2); p. 166-172

Abstract
Highly active antiretroviral treatment (HAART) has considerably increased the life expectancy of patients infected with HIV. Coronary artery disease is a leading cause of mortality in patients infected with HIV. This is primarily attributed to their increased survival, HAART-induced metabolic derangements, and to HIV itself. The pathophysiology of atherosclerosis in HIV is both multifactorial and complex - involving direct endothelial injury and dysfunction, hypercoagulability, and a significant contribution from traditional cardiac risk factors. The advent of HAART has since heralded a remarkable improvement in outcomes, but at the expense of other unforeseen issues. It is thus of paramount importance to swiftly recognize and manage acute coronary syndromes in HIV-infected patients to attenuate adverse complications, which should translate into improved clinical outcomes.

17. Statins in acute coronary syndromes.
### 18. Predicting the risk of bleeding during dual antiplatelet therapy after acute coronary syndromes.

| Authors | Alfredsson, Joakim; Neely, Benjamin; Neely, Megan L; Bhatt, Deepak L; Goodman, Shaun G; Tricoci, Pierluigi; Mahaffey, Kenneth W; Cornel, Jan H; White, Harvey D; Fox, Keith A; Prabhakaran, Dorairaj; Winters, Kenneth J; Armstrong, Paul W; Ohman, E Magnus; Roe, Matthew T; TRILOGY ACS Investigators |
| Source | Heart (British Cardiac Society); Aug 2017; vol. 103 (no. 15); p. 1168-1176 |
| PubMedID | 28814233 |
| Database | Medline |

**Abstract**

Patients with acute coronary syndrome (ACS) frequently experience recurrent adverse events from the cardiovascular system comparing to either healthy individuals or individuals with stable coronary artery disease. This is attributed to the inflammatory cascade that is activated during ACS resulting in increased risk for rupture of vulnerable plaques. OBJECTIVE Therefore, it is of great importance to avoid recurrent events with treatment aiming at secondary prevention which includes the management of lipid profile besides alteration in the lifestyle and habits. METHODS This review will present current data concerning present status of treatment with statins, and refer to non-statin strategies as well as novel and promising agents for the secondary prevention therapy after ACS. A thorough search of PubMed and the Cochrane Database was conducted in order to identify the majority of trials, studies, current guidelines and novel articles related to the subject. RESULTS Statins have been proved to play very large important role in the part of secondary prevention since they decrease the burden of atherosclerotic plaques, the risk of adverse events and the need for revascularization in symptomatic patients with CAD. Therefore, they were established and suggested by both European and American guidelines as first-line treatment option for lipid-lowering management. Several clinical trials, meta-analyses and randomized trials strongly recommended the application of early and intensive treatment with statins in patients with ACS. Nevertheless, a vast majority of individuals neither tolerated statins nor achieved the optimal value for LDL-C with the highest tolerated dose of statins resulting in poor clinical outcome. Furthermore, recent clinical trials indicated further benefit of combined treatment of statins with non-statin drugson the decrease of cardiovascular events as well as progress of coronary artery plaque. Finally, novel agents that are still evaluated with ongoing clinical trials have been turned into a very promising treatment option. CONCLUSION In conclusion, statins are established as the first-line treatment for the secondary prevention after acute coronary syndromes in order to avoid the recurrence of thrombotic events. However, the research field on the field of lipid-lowering therapies is still ongoing and very promising for the future.
19. Long-Term Outcome of Acute Coronary Syndromes in Young Patients.

**Authors**
Tini, Giacomo; Proietti, Giulia; Casenghi, Matteo; Colopi, Marzia; Bontempi, Katia; Autore, Camillo; Volpe, Massimo; Musumeci, Beatrice

**Source**
High blood pressure & cardiovascular prevention : the official journal of the Italian Society of Hypertension; Mar 2017; vol. 24 (no. 1); p. 77-84

**Publication Date**
Mar 2017

**Publication Type(s)**
Comparative Study Journal Article

**PubMedID**
28181202

**Database**
Medline

**Abstract**
INTRODUCTION Acute coronary syndromes (ACS) in young patients are uncommon and their influence on morbidity and mortality in this population is still debated. AIM We investigated clinical and angiographic characteristics, risk factors and outcome in young patients diagnosed with ACS, compared with those of older patients, evaluating survival free from death and/or nonfatal myocardial infarction (MI) and/or coronary revascularization (primary endpoint), and then with respect to each component of the primary endpoint. METHODS We retrospectively analyzed 1696 patients diagnosed with ACS between 2007 and 2013. 116 were aged ≤45 years (young adults), 1116 were >45 and <75 years (older adults) and 464 were ≥75 years. RESULTS Young adults were mostly male, with a prevalent diagnosis of STEMI, had less frequently typical cardiovascular risk factors and lower prevalence of extensive coronary artery disease. Over a median 3 years follow up, survival free from composite endpoint was better in young than in older adult patients (11.2 vs. 24.2%; \( p = 0.001 \)), mainly due to a lower rate of death while the occurrence of non fatal MI and of coronary revascularization was similar (7.8 vs. 8.7%, \( p = 0.86 \); 8.7 vs. 12.9%, \( p = 0.23 \) respectively). Diabetes was the strongest independent risk factor of worse prognosis in the young cohort (OR 3.47; 95% CI 1.01-11.9; \( p = 0.04 \)). CONCLUSIONS Young adults showed peculiar clinical features and lower mortality compared with older adults. Morbidity was not different between the two populations, with diabetes independently associated with a worse prognosis.


**Authors**
Kelly, Christopher R; Kirtane, Ajay J; Stant, Jennifer; Stone, Gregg W; Minutello, Robert M; Wong, S Chiu; Manuzon, Honeyleen; Gerow-Smith, Roxanne; Kelley, Nancy; Rabbani, LeRoy E

**Source**
Critical pathways in cardiology; Mar 2017; vol. 16 (no. 1); p. 7-14

**Publication Date**
Mar 2017

**Publication Type(s)**
Journal Article

**PubMedID**
28195937

**Database**
Medline

**Abstract**
Clinical pathways can optimize care both across and within institutions, but regular updates to these pathways based on new clinical trials, professional guidelines, and Food and Drug Administration approvals are essential. Herein we describe the most recent revisions to the New York-Presbyterian Hospital (Columbia University Medical Center and Weill Cornell Medical Center) clinical pathway for acute coronary syndromes and chest pain, which incorporates novel data regarding the timing and administration of P2Y12 inhibition (including the intravenous P2Y12 inhibitor cangrelor) and the appropriateness of prolonged (>1 year) dual antiplatelet therapy for the secondary prevention of ischemic events.


**Authors**
De Luca, Leonardo; D'Ascenzo, Fabrizio; Musumeci, Giuseppe; Saia, Francesco; Parodi, Guido; Varbella, Ferdinando; Marchese, Alfredo; De Servi, Stefano; Berti, Sergio; Bolognese, Leonardo

**Source**
EuroIntervention : journal of EuroPCR in collaboration with the Working Group on Interventional Cardiology of the European Society of Cardiology; Jul 2017; vol. 13 (no. 4); p. 459-466

**Publication Date**
Jul 2017

**Publication Type(s)**
Journal Article

**PubMedID**
28374678

**Database**
Medline
22. Influence of Age and Gender on Clinical Outcomes Following Percutaneous Coronary Intervention for Acute Coronary Syndromes.

**Authors**: Idris, Hanan; French, John K; Shugman, Ibrahim M; Hopkins, Andrew P; Juergens, Craig P; Thomas, Liza

**Source**: Heart, lung & circulation; Jun 2017; vol. 26 (no. 6); p. 554-565

**PubMedID**: 28034708

**Database**: Medline

**Abstract**: Gender and age are non-modifiable factors influencing clinical outcomes in acute coronary syndromes (ACS). There is evidence that coronary artery disease pathophysiology varies in women. We therefore evaluated the effect of age and gender on clinical outcomes in patients with ACS undergoing percutaneous coronary interventions (PCI). METHODS Among 3178 (25% female) consecutive ACS patients who underwent PCI at Liverpool Hospital, Sydney from 2003 to 2010, using femoral access in 98% of cases, we determined late events including mortality, myocardial infarction and bleeding according to Bleeding Academic Research Consortium (BARC) criteria. RESULTS Females compared with males were older (median 68 vs. 60 years; p<0.001), and were more likely to have diabetes (30% vs. 22%; p<0.001), hypertension (62% vs. 49%, p<0.001), anaemia (26% vs. 15%, p<0.001), and renal impairment (43% vs. 20%, p<0.001); they were more likely to be non-smokers (19% vs. 30%, p<0.001). Females had less class B2/C lesions (64% vs. 68%, p=0.048), but had more calcified lesions (20% vs. 11%, p<0.001), and smaller stent diameters (2.75 [2.5-3.0] vs. 3.0 [2.75-3.5] mm, p<0.001). Females had higher three-year mortality rates (11% vs. 7%, p=0.001), and more type 2-5 BARC bleeding post-PCI (22% vs. 16%, p=0.003). Among patients under 55 years (n=988), mortality and bleeding were higher in females (6.0% vs. 3.0%, p=0.028) and (26% vs. 14%, p=0.001) respectively. There was no effect of gender on mortality or bleeding in patients 55 years and over. However, on multivariable stepwise regression analysis, female gender was not an independent predictor of mortality, but was a significant predictor of bleeding (OR=1.84 [95% CI:1.38-2.45], p<0.001). CONCLUSIONS Switching of oral antithrombotic therapies is not uncommon among ACS patients undergoing PCI. Notably, switching from clopidogrel to novel P2Y12 receptor inhibitors appears safe, while a downgrade switching in early phases of ACS is associated with adverse clinical events.


**Authors**: Davis, Elizabeth; Gorog, Diana A; Rinaldi, Charanjit; Prasad, Abhiram; Srinivasan, Manivannan

**Source**: International journal of cardiology; Jan 2017; vol. 227 ; p. 840-849

**PubMedID**: 27829528

**Database**: Medline

**Abstract**: The incidence and prevalence of coronary artery disease in women has exceeded that in men over the past four decades, and although a significant decline in mortality has occurred in the past two decades, there is a growing body of evidence suggesting that there are gender differences between the clinical manifestations and course of coronary artery disease, as well as differences in treatment and treatment response. This review article considers the current literature regarding the gender-specific manifestation of acute coronary syndromes. Through the review of basic science articles, subsets of trial data, and meta-analyses, the gender-specific differences in within acute coronary syndromes are considered in terms of diagnostic dilemmas, pathophysiology, and treatment options (including pharmacological, percutaneous and surgical methods). Finally, acute coronary syndromes and their management in the special circumstance of pregnancy are also reviewed.

24. Glutathione peroxidase activity and expression levels are significantly increased in acute coronary syndromes.

**Authors**: Holley, Ana; Pitman, Janet; Miller, John; Harding, Scott; Larsen, Peter
High levels of the antioxidant enzyme, glutathione peroxidase (GPx), have been associated with improved outcomes following acute coronary syndromes (ACS), suggesting a protective role. How GPx levels are altered with coronary disease is not clearly established. This study examined GPx activity, protein, and mRNA levels in healthy controls, patients with stable coronary artery disease (CAD), and patients with ACS. We studied 20 individuals from each of the healthy control, stable CAD, and ACS groups. GPx activity and protein levels, along with oxidized low-density lipoprotein (oxLDL) were assayed in plasma. GPx mRNA levels from whole blood were quantified using real-time PCR. Levels of GPx activity in the plasma were higher in ACS (109±7.7 U/mL) compared with patients with stable CAD (95.2±16.4 U/mL, p<0.01) and healthy controls (87.6±8.3 U/mL, p<0.001). Plasma GPx protein levels were also elevated in ACS (21.6±9.5 µg/mL) compared with patients with stable CAD (16.5±2.8 µg/mL, p<0.05) and healthy controls (16.3±5.3 µg/mL, p<0.05). Levels of GPX1, GPX3, and GPX4 mRNA were significantly higher in the patients with ACS. Levels of oxLDL were also significantly higher in patients with ACS (61.9±22.2 U/L) than in patients with stable CAD (47.8±10.4 U/L, p<0.05) and healthy controls (48.9±11.9 U/L, p<0.05). Levels of oxLDL, GPx activity, protein, and mRNA are all significantly higher in patients with ACS compared with patients with stable CAD and healthy controls. These findings suggest that GPx may be upregulated in response to a change in oxidative stress during an ACS.


Authors Meeusen, Jeffrey W; Donato, Leslie J; Jaffe, Allan S
Source Current cardiology reports; Jun 2017; vol. 19 (no. 6); p. 48
Abstract PURPOSE OF REVIEWThe objective of this review was to summarize evidence gathered for the prognostic value of routine and novel blood lipids and lipoproteins measured in patients with acute coronary syndromes (ACS).RECENT FINDINGSData supports clear association with risk and actionable value for non-high-density lipoprotein (Non-HDL) cholesterol and plasma ceramides in a setting of ACS. The prognostic value and clinical actionability of apolipoprotein B (apoB) and lipoprotein(a) [Lp(a)] in ACS have not been thoroughly tested, while the data for omega-3 fatty acids and oxidized low-density lipoprotein (Ox-LDL) are either untested or more varied. Measuring basic lipids, which should include Non-HDL cholesterol, at the time of presentation for ACS is guideline mandated. Plasma ceramides also provide useful information to guide both treatment decisions and follow-up. Additional studies targeting ACS patients are necessary for apoB, Lp(a), omega-3 fatty acids, and Ox-LDL.

26. Are acute coronary syndromes an ideal scenario for bioresorbable vascular scaffold implantation?

Authors Moscarella, Elisabetta; Ielasi, Alfonso; De Angelis, Maria Carmen; di Uccio, Fortunato Scotto; Cerrato, Enrico; De Rosa, Roberta; Campo, Gianluca; Varricchio, Attilio
Source Journal of thoracic disease; Aug 2017; vol. 9 ; p. S969
Abstract Bioresorbable vascular scaffolds (BRS) represent the latest innovation in the field of interventional cardiology. BRS have recently been introduced in routine clinical practice and their use has progressively extended in everyday clinical practice. The BRS use appears theoretically attractive in patients presenting with acute coronary syndromes (ACS) as they are generally young with long life expectancy, thus possibly benefiting more of the so-called vascular reparative therapy. Furthermore, "culprit" lesions are usually softer and more easily expandable by current BRS compared to stable chronic lesions. However an increased risk of BRS thrombosis has been reported in clinical trials excluding ACS patients. Therefore, concerns have been raised on the safety of BRS implantation in the ACS setting in which the risk of thrombotic recurrences is definitely higher (compared to stable lesions) independently by the device implanted. Aim of this review is to provide an overview of the available data on the BRS performance in ACS patients.

27. Acute coronary syndromes in the very elderly: Short term prognostic performance of the SYNTAX score.

Authors Faroux, Laurent; Tassan-Mangina, Sophie; Herce, Benoit; Nazeyrollas, Pierre; Bauley, Karine; Metz, Damien
Source International journal of cardiology; Sep 2017; vol. 243 ; p. 497-501
Acute coronary syndromes (ACS) frequently occur in elderly subjects. The high mortality associated with ACS in this population justifies the identification of factors related to poor prognosis. We aimed to evaluate the short-term prognostic performance of the SYNTAX score in a population of patients aged 85 years or more presenting ACS and undergoing coronary angiography. Secondary objectives were to identify factors related to length of stay and potential markers of in-hospital death. We performed a retrospective, single-centre prognostic study including patients aged 85 years or more who underwent coronary angiography for ACS over a 4-year period. The primary endpoint was length of stay, and the secondary endpoint was in-hospital mortality. In total, 70 patients were included (37 men), average age 87.0±2.5 years. Average SYNTAX score was 19.0±14.9. Average length of stay was 13.1±7.8 days. By multivariate analysis, SYNTAX score was correlated with length of stay (p=0.008). Seven (10%) patients died in-hospital. Patients who died had a higher SYNTAX score (p=0.013) (threshold value of 25) and a lower left ventricular ejection fraction (p=0.001). They more frequently had signs of heart failure at admission (p=0.002), ST segment elevation ACS (p=0.046) and left main stem involvement (p=0.041) than survivors. In our study, SYNTAX score was associated with length of stay and in-hospital mortality. A SYNTAX score of 25 or more seems to be an indicator of poor short-term prognosis in very elderly patients with ACS.


Authors Wright, Eric A; Steinhubl, Steven R; Jones, J B; Barua, Pinky; Yan, Xiaowei; Van Loan, Ryan; Frederick, Glenda; Bhandary, Durgesh; Cobden, David
Source The American journal of managed care; Apr 2017; vol. 23 (no. 4); p. e106

OBJECTIVES Cardioprotective medications improve outcomes following acute coronary syndromes (ACS) but add to medication complexity. We set out to describe the use of these medications and quantify medication changes in patients admitted and discharged for ACS.

STUDY DESIGN Retrospective cohort study.

METHODS Using archived data from the electronic health record (EHR), we evaluated patients with ACS admitted to 1 of 2 hospitals between January 2008 and December 2012. Patients aged 18 to 89 years who were discharged with a principal diagnosis of ACS were included in the study. Descriptive statistics were compiled and medication use was compared at 3 time points: admission, discharge, and within 90 days post discharge.

RESULTS This study included 4767 patients. The mean number of total medications increased from 8.6 ± 6.5 to 11.4 ± 5.4 from admission to discharge, dropping slightly within 90 days post discharge (11.1 ± 5.2). Patients taking medications at least twice daily increased from 6.4 of 10 at admission to 9 of 10 at discharge. Cardioprotective medication use increased by a relative 76% for aspirin, 72% for statins, 85% for beta-blockers, and 29% for angiotensin-converting enzyme inhibitors/angiotensin II receptor blockers from admission to discharge, whereas P2Y12 receptor inhibitor use increased 4-fold.

CONCLUSIONS Medication complexity among patients with ACS are high, with notable changes from admission to discharge. Awareness of the extent of medication burden provides clinicians and policy makers with insight to help address medication use during the ACS peri-hospitalization period.

29. Management of Acute Coronary Syndromes in Geriatric Patients.

Authors Montilla Padilla, Isabel; Martin-Asenjo, Roberto; Bueno, Hector
Source Heart, lung & circulation; Feb 2017; vol. 26 (no. 2); p. 107-113

OBJECTIVES Cardioprotective medications improve outcomes following acute coronary syndromes (ACS) but add to medication complexity. We set out to describe the use of these medications and quantify medication changes in patients admitted and discharged for ACS.
Abstract
The mean age of patients presenting with acute coronary syndrome (ACS) has been increasing steadily in the last decades, so managing very old patients has become common practice. The oldest patients are underrepresented in clinical trials, so specific evidence is scarce. Still, antithrombotic therapy and invasive strategy are the pillars of appropriate treatment even in the oldest patients. However, the elderly population is a heterogeneous group showing important divergences between chronological and biological age, which needs specific evaluation. Physical, and social function, geriatric syndromes, such as frailty or cognitive decline, and comorbidities must be taken into consideration for clinical decision-making but this requires evaluation beyond the traditional cardiologic approach. In general, elderly patients with ACS who are functional and independent should be treated with the same methods as younger patients although more cautiously. However, specific measures should be put in place to prevent functional decline and delirium, two of the most frequent and devastating specific complications in older patients. Multidisciplinary approaches are needed for that. In general, a new paradigm for the management of very old patients with ACS is warranted, in which evaluation of outcomes traditionally ignored by cardiologists should be considered.

30. Balancing the risk of spontaneous ischemic and major bleeding events in acute coronary syndromes.

Authors
Ducrocq, Gregory; Schulte, Phillip J; Budaj, Andrzej; Cornel, Jan H; Held, Claes; Himmelmann, Anders; Husted, Steen; Storey, Robert F; Cannon, Christopher P; Becker, Richard C; James, Stefan K; Katus, Hugo A; Lopes, Renato D; Sorbets, Emmanuel; Wallentin, Lars; Steg, Philippe Gabriel

Source
American heart journal; Apr 2017; vol. 186 ; p. 91-99

Publication Date
Apr 2017

Publication Type(s)
Journal Article

PubMedID
28454837

Abstract
Evaluation of antithrombotic treatments for acute coronary syndromes (ACS) requires balancing ischemic and bleeding risks to assess net benefit. We sought to compare the relative effects of ischemic and bleeding events on mortality.METHODSIn the PLATElet inhibition and patient Outcomes (PLATO) trial, we compared spontaneous ischemic events (myocardial infarction or stroke) with spontaneous major bleeding events (PLATO major, Thrombolysis In Myocardial Infarction [TIMI] major, Global Utilization of Streptokinase and Tissue Plasminogen Activator for Occluded Coronary Arteries [GUSTO] severe) with respect to risk of mortality using time-dependent Cox proportional hazards models. The comparison was performed using ratio of hazard ratios for mortality increase after ischemic vs bleeding events.RESULTSA total of 822 patients (4.4%) had ≥1 spontaneous ischemic event; 485 patients (2.6%), ≥1 spontaneous PLATO major bleed, 282 (1.5%), ≥1 spontaneous TIMI major bleed; and 207 (1.1%), ≥1 spontaneous severe GUSTO bleed. In patients who had both events, bleeding occurred first in most patients. Regardless of classification, major bleeding events were associated with increased short- and long-term mortality that were not significantly different from the increase associated with spontaneous ischemic events: ratio of hazard ratios (95% CIs) for short- and long-term mortality after spontaneous ischemic vs bleeding events: 1.46 (0.98-2.19) and 0.92 (0.52-1.62) (PLATO major); 1.26 (0.80-1.96) and 1.19 (0.58-2.24) (TIMI major), 0.72 (0.47-1.10) and 0.83 (0.38-1.79) (GUSTO severe) (all P>0.05) CONCLUSIONS: In patients with ACS on dual antiplatelet therapy, spontaneous major bleeding events seem "prognostically equivalent" to spontaneous ischemic complications. This result allows quantitative comparisons between both actual and predicted bleeding and ischemic risks. Our findings help to better define net clinical benefit of antithrombotic treatments and more accurately estimate mortality after ischemic and bleeding events in patients with ACS.

31. A Rare Presentation of Fibromuscular Dysplasia: Postpartum Vascular Catastrophe and Brief Literature Review.

Authors
Khan, Fatima; Ghanl, Ali Raza; Mackenzie, Larami; Matthew, Ashwin; Sarwar, Usman; Klugherz, Bruce

Source
Journal of investigative medicine high impact case reports; 2017; vol. 5 (no. 3); p. 2324709617719917

Publication Date
2017

Publication Type(s)
Journal Article

PubMedID
28815187

Abstract
Spontaneous coronary artery dissection is a very rare cause of acute coronary syndromes and can be life threatening given the rarity of the condition. It should be part of differentials in young females presenting with acute coronary syndromes without routine risk factors for coronary artery disease, especially before, during, and after pregnancy. It is closely associated with fibromuscular dysplasia and management can be very challenging at times. We present a case of spontaneous coronary artery dissection presenting with recurrent ST segment elevation myocardial infarction in association with fibromuscular dysplasia.
## Search Strategy

**cardiology: acute coronary syndromes LIBGUIDE OCT 17**

### Strategy 294228

<table>
<thead>
<tr>
<th>#</th>
<th>Database</th>
<th>Search term</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Medline</td>
<td>(acute coronary syndromes).ti,ab [DT 2017-2017]</td>
<td>453</td>
</tr>
<tr>
<td>2</td>
<td>Medline</td>
<td>(acute coronary syndromes).ti,ab [DT 2017-2017] [Languages English]</td>
<td>439</td>
</tr>
</tbody>
</table>