This Current Awareness Bulletin is produced by the Healthcare Library to provide Salisbury NHS Foundation Trust staff with a range of resources to support practice. It includes recently published guidelines and research articles, news, and details of new library resources.

**Athens**
To access journal articles that are available in full text you will need to have a username and password for Athens. To register for an Athens account click [here](mailto:). For further information or support please contact the Healthcare Library, SDH Central, Salisbury District Hospital, Salisbury, Wiltshire SP2 8BJ. 01722 429054 or 01722 336262 ext 4430, Library.office@salisbury.nhs.uk, or visit the library website at [www.library.salisbury.nhs.uk](http://www.library.salisbury.nhs.uk)

### Guidelines

**National Institute for Health and Care Excellence (NICE)**

**Atrial fibrillation and heart valve disease: self-monitoring coagulation status using point-of-care coagulometers (the CoaguChek XS system and the INRatio2 PT/INR monitor)**
NICE diagnostics guidance [DG14] Published date: September 2014

**Transcatheter valve-in-valve implantation for aortic bioprosthetic valve dysfunction**
NICE interventional procedures guidance [IPG504] Published date: September 2014

**Acute coronary syndromes (including myocardial infarction)**
NICE quality standards [QS68] Published date: September 2014

**Myocardial infarction (acute): Early rule out using high-sensitivity troponin tests (Elecsys Troponin T high-sensitive, ARCHITECT STAT High Sensitive Troponin-I and AccuTnI+3 assays)**
NICE diagnostics guidance [DG15] Published date: October 2014

**Acute heart failure**
NICE guidelines [CG187] Published date: October 2014

### Cochrane Systematic Reviews

**New Reviews – August 2014**

- Colchicine for pericarditis
- Exercise for people with high cardiovascular risk

**New Reviews – September 2014**

- Cardiopulmonary resuscitation (CPR) plus delayed defibrillation versus immediate defibrillation for out-of-hospital cardiac arrest
- Pre-hospital versus in-hospital thrombolysis for ST-elevation myocardial infarction
INTRODUCTION —This section highlights selected specific new recommendations and/or updates that we anticipate may change usual clinical practice. Practice Changing UpDates focus on changes that may have significant and broad impact on practice, and therefore do not represent all updates that affect practice.

CARDIOVASCULAR MEDICINE (OCTOBER 2014)
Culprit-only or multivessel PCI in patients with STEMI

- For most patients undergoing primary PCI, we suggest performing non-culprit vessel PCI of significant lesions rather than culprit vessel only PCI (Grade 2B).

The optimal revascularization strategy with percutaneous coronary intervention (PCI) is not known for the 40 to 50 percent of patients with acute ST-elevation myocardial infarction (STEMI) found to have significant lesions (≥50 percent luminal narrowing) in addition to the lesion responsible for the acute MI. A 2014 meta-analysis of three randomized trials found that the risks of subsequent revascularization and nonfatal MI were lower with multivessel compared to culprit only PCI [5]. For many patients with non-culprit lesions, we now proceed with multivessel revascularization at the time of primary PCI. We do not perform immediate non-culprit PCI when patients meet the following criteria: chronic kidney disease; administration of a large contrast volume; less than TIMI III flow in the culprit vessel after optimal PCI; complex non-culprit stenosis; patient, operator, or health care team fatigue; anticipated need for coronary artery bypass graft surgery or valve surgery in the near future; severe comorbidities. (See "Primary percutaneous coronary intervention in acute ST elevation myocardial infarction: Periprocedural management", section on 'Non-culprit PCI'.)

CARDIOVASCULAR MEDICINE (SEPTEMBER 2014)
Routine thrombus aspiration in STEMI not helpful

- We suggest not routinely performing thrombus aspiration in patients undergoing primary PCI (Grade 2B).

Intracoronary thrombus is found in the majority of patients with ST-elevation myocardial infarction (STEMI), and higher burdens of thrombus are associated with worse outcomes. Thrombus aspiration prior to percutaneous intervention (PCI) can reduce the thrombus burden; however, there has been conflicting evidence on whether this improves outcomes. A prior meta-analysis of randomized trials indicated a reduced risk of all-cause mortality with aspiration thrombectomy, although there were some concerns about the analysis and generalizability of the underlying trials. The TASTE trial, not included in the meta-analysis, randomly assigned 7244 patients to routine thrombus aspiration followed by PCI or to PCI only. Previously reported 30-day results found no difference in the primary end point of death from any cause. In a newly published report of outcomes at one year from the TASTE trial, there was similarly no difference in mortality for patients treated with and without thrombectomy (5.3 versus 5.6 percent) [10]. Based on these results, we no longer suggest the routine use of thrombus aspiration prior to PCI in STEMI patients. It is reasonable to continue to use aspiration thrombectomy in patients with a large thrombus burden. (See "Suboptimal reperfusion after primary percutaneous coronary intervention in acute ST elevation myocardial infarction", section on 'Thrombectomy'.)

CARDIOVASCULAR MEDICINE (AUGUST 2014)
Heparin preferred to bivalirudin for primary PCI

- For patients with acute ST-elevation myocardial infarction who are treated with primary percutaneous coronary intervention, we suggest unfractionated heparin in preference to bivalirudin (Grade 2B). This recommendation assumes that patients will receive a potent oral antiplatelet agent (ticagrelor or prasugrel), which we prefer to clopidogrel.
The recommended anticoagulant strategy in patients with ST-elevation myocardial infarction (STEMI) who are treated with primary percutaneous coronary intervention (PCI) continues to evolve. In recent years bivalirudin has been the preferred agent. In the HEAT-PPCI single center trial, unfractionated heparin (UFH) was directly compared to bivalirudin in 1829 such patients [15]. The use of glycoprotein IIb/IIIa inhibitors was about 15 percent in both groups and all patients received a potent oral P2Y\textsubscript{12} platelet receptor blocker (ticagrelor or prasugrel). The primary efficacy outcome, a composite of all-cause mortality, cerebrovascular accident, reinfarction, or additional unplanned target lesion revascularization, occurred significantly more often in the bivalirudin group (8.7 versus 5.7 percent), while the rate of bleeding did not differ significantly. For STEMI patients undergoing primary PCI who receive a potent P2Y\textsubscript{12} receptor blocker, we now prefer UFH rather bivalirudin. Furthermore, glycoprotein IIb/IIIa inhibitors do not appear to be routinely indicated with UFH. (See "Anticoagulant therapy in acute ST elevation myocardial infarction", section on 'UFH compared to bivalirudin'.)

New from UpToDate

What's new in cardiovascular medicine
Additions to UpToDate considered by the editors and authors to be of particular interest.

Journal Articles

Please click on the blue link at the end of the abstract (where available) to access full text. You may need an Athens username and password. To register for an Athens account click here.
If you have any difficulty accessing the full text articles, or if you would like us to obtain any of the articles for you, please contact the Healthcare Library.

Table of Contents

1. A systematic review and meta-analysis of 130,000 individuals shows smoking does not modify the association of APOE genotype on risk of coronary heart disease
2. A systematic review on the quality of life benefits after percutaneous coronary intervention in the elderly
3. Adjunct coronary endarterectomy increases myocardial infarction and early mortality after coronary artery bypass grafting: A meta-analysis
4. ApoB gene SpIns/Del, XbaI polymorphisms and myocardial infarction: A meta-analysis of 7169 participants
5. Association of Connexin37 C1019T with myocardial infarction and coronary artery disease: A meta-analysis
6. Bivalirudin versus heparin in patients planned for percutaneous coronary intervention: A meta-analysis of randomised controlled trials
7. Blood pressure-lowering treatment based on cardiovascular risk: A meta-analysis of individual patient data
8. Clinical outcomes with beta-blockers for myocardial infarction: A meta-analysis of randomized trials
9. Dual antiplatelet therapy with or without oral anticoagulation in the postdischarge management of acute coronary syndrome patients with an indication for long term anticoagulation: A systematic review
10. Effect of darapladib on major coronary events after an acute coronary syndrome: the SOLID-TIMI 52 randomized clinical trial
11. Effect on cardiovascular risk of high density lipoprotein targeted drug treatments niacin, fibrates, and CETP inhibitors: Meta-analysis of randomised controlled trials including 117 411 patients
12. Effects of extended-release niacin with laropiprant in high-risk patients
13. Implantable cardioverter defibrillators for the treatment of arrhythmias and cardiac resynchronisation therapy for the treatment of heart failure: Systematic review and economic evaluation
14. Implantable cardioverter-defibrillators for primary prevention of sudden cardiac death in CKD: A meta-analysis of patient-level data from 3 randomized trials
15. Influenza and coronary artery disease: Exploring a clinical association with myocardial infarction and analyzing the utility of vaccination in prevention of myocardial infarction
16. Invasive management of acute coronary syndrome in patients end-stage renal disease: A meta-analysis
17. Is alice still in Wonderland of the 'smoker's paradox'? A meta-analysis of mortality following ACS
18. Leucocyte telomere length and risk of cardiovascular disease: Systematic review and meta- Analysis
19. Non-cardiovascular effects associated with statins
20. Noninducibility in postinfarction ventricular tachycardia as an end point for ventricular tachycardia ablation and its effects on outcomes: a meta-analysis
21. Percutaneous coronary intervention compared with coronary artery bypass graft in coronary artery disease patients with chronic kidney disease: A systematic review and meta-analysis
22. Relationships between PON1 Q192R polymorphism and clinical outcome of antiplatelet treatment after percutaneous coronary intervention: A meta-analysis
23. Role of atrioventricular junction ablation in patients with atrial fibrillation undergoing cardiac resynchronization therapy? - A Meta-analysis
24. Sirolimus-eluting versus paclitaxel-eluting stent in primary angioplasty: A pooled patient-level meta-analysis of randomized trials
25. Stenting strategy for coronary artery bifurcation with drug-eluting stents: A meta-analysis of nine randomised trials and systematic review
26. The effect of hyperoxia on survival following adult cardiac arrest: A systematic review and meta-analysis of observational studies
27. The use of gastrointestinal cocktail for differentiating gastro-oesophageal reflux disease and acute coronary syndrome in the emergency setting: A systematic review
28. Urinary sodium and potassium excretion, mortality, and cardiovascular events

1. Title: A systematic review and meta-analysis of 130,000 individuals shows smoking does not modify the association of APOE genotype on risk of coronary heart disease

Citation: Atherosclerosis, December 2014, vol./is. 237/1(5-12), 0021-9150;1879-1484 (December 01, 2014)
Language: English
Abstract: Background: Conflicting evidence exists on whether smoking acts as an effect modifier of the association between APOE genotype and risk of coronary heart disease (CHD). Methods and results: We searched PubMed and EMBASE to June 11, 2013 for published studies reporting APOE genotype, smoking status and CHD events and added unpublished data from population cohorts. We tested for presence of effect modification by smoking status in the relationship between APOE genotype and risk of CHD using likelihood ratio test. In total 13 studies (including unpublished data from eight cohorts) with 10,134 CHD events in 130,004 individuals of European descent were identified. The odds ratio (OR) for CHD risk from APOE genotype (4 carriers versus non-carriers) was 1.06 (95% confidence interval (CI): 1.01, 1.12) and for smoking (present vs. past/never smokers) was OR 2.05 (95%CI: 1.95, 2.14). When the association between APOE genotype and CHD was stratified by smoking status, compared to non-4 carriers, 4 carriers had an OR of 1.11 (95%CI: 1.02, 1.21) in 28,789 present smokers and an OR of 1.04 (95%CI 0.98, 1.10) in 101,215 previous/never smokers, with no evidence of effect modification. Conclusions: In the largest analysis to date, we identified no evidence for effect modification by smoking status in the association between APOE genotype and risk of CHD.
Publication type: Journal: Article
Source: EMBASE

2. Title: A systematic review on the quality of life benefits after percutaneous coronary intervention in the elderly

Citation: Cardiology (Switzerland), August 2014, vol./is. 129/1(46-54), 0008-6312;1421-9751 (August 2014)
Authors: Shan L., Saxena A., McMahon R.
Language: English
Abstract: Aims: Percutaneous coronary intervention (PCI) is being increasingly performed on elderly patients with acceptable peri-procedural outcomes and long-term survival. We aim to systematically review the health-related quality of life (HRQOL) following PCI in the elderly which is an important measure of procedural success. Methods: A systematic review of clinical studies before September 2012 was performed to identify HRQOL in the elderly after PCI. Strict inclusion and exclusion criteria were applied. Quality appraisal of each study was also performed using pre-defined criteria. HRQOL results were synthesised through a narrative review with full tabulation of results of all included studies. Results: Elderly
patients have significant improvements in cardiovascular well-being. Early HRQOL appears improved from baseline, but recovery in physical health may be slower than in younger patients. HRQOL is comparable to an age-matched general population and younger patients undergoing PCI. Conservative management is not able to offer the same HRQOL benefits. Coronary artery bypass graft surgery may be superior to PCI in the very elderly. Significant heterogeneity and bias exists. Lack of appropriate data precluded meta-analysis. Conclusion: HRQOL after PCI in the elderly can improve for at least 1 year across a broad range of health domains, and is comparable to an age-matched general population and younger patients undergoing PCI. Given a limited number of articles and patients included, more prospective studies are needed to better identify the benefits for elderly patients. 2014 S. Karger AG, Basel.

**Publication type:** Journal: Review

**Source:** EMBASE

3. **Title:** Adjunct coronary endarterectomy increases myocardial infarction and early mortality after coronary artery bypass grafting: A meta-analysis

**Citation:** Interactive Cardiovascular and Thoracic Surgery, September 2014, vol./is. 19/3(462-473), 1569-9293;1569-9285 (September 2014)

**Author(s):** Soylu E., Harling L., Ashrafian H., Casula R., Kokotsakis J., Athanasiou T.

**Language:** English

**Abstract:** Coronary endarterectomy (CE) may provide a useful adjunct to coronary artery bypass grafting (CABG) in patients with extensive, diffuse coronary atheroma. However, concerns regarding its morbidity and mortality have created uncertainty as to the role of CE in the current era. The aim of this study was therefore to quantitatively summarize the short- and long-term outcomes of CE. Twenty observational studies were identified by systematic literature search, incorporating 54,440 patients (7366 CABG + CE; 47,074 CABG only), which were analysed using random-effects modelling. Heterogeneity, subgroup analysis, quality scoring and risk of bias were assessed. Primary end-points were 30-day mortality and perioperative and postoperative myocardial infarction (MI). Secondary end-points were postoperative morbidity, intensive care unit (ITU) stay, hospital stay and long-term graft patency. Adjunctive CE significantly increased 30-day mortality (odds ratios [OR] = 1.69, 95% confidence interval [CI] [1.49-1.92], P <0.00001), perioperative (OR = 2.10, 95% CI [1.82-2.43], P <0.00001) and postoperative MI (OR = 3.34, 95% CI [1.74-6.41], P = 0.0003) when compared with CABG alone. Furthermore, postoperative ventricular arrhythmias, pulmonary complications, renal failure and inotrope use were significantly greater in patients undergoing adjunct CE. CE also increased ITU and hospital stay and reduced angiographic patency at the last follow-up (OR = 0.57, 95% CI [0.36-0.88]). Increased 30-day morbidity and mortality continues to raise concerns over the safety of adjunct CE. Furthermore, the procedure can be associated with worse long-term graft patency. To better determine whether CE should remain a viable adjunct to CABG, novel studies must focus on collecting prospective data with homogeneous inclusion criteria for CE as well as isolating outcomes for different coronary vessels and standardizing postoperative anticoagulation. The Author 2014. Published by Oxford University Press on behalf of the European Association for Cardio-Thoracic Surgery. All rights reserved.

**Publication type:** Journal: Article

**Source:** EMBASE

**Full text:** Available [Highwire Press](http://highwirepress) at Interactive CardioVascular and Thoracic Surgery

**Full text:** Available [Highwire Press](http://highwirepress) at Interactive CardioVascular and Thoracic Surgery

4. **Title:** ApoB gene SpIns/Del, XbaI polymorphisms and myocardial infarction: A meta-analysis of 7169 participants

**Citation:** Journal of Cardiovascular Medicine, September 2014, vol./is. 15/9(717-726), 1558-2027;1558-2035 (September 2014)

**Author(s):** Li Y.-Y.

**Language:** English

**Abstract:** BACKGROUND: Apolipoprotein B (ApoB) gene signal peptide insertion/deletion (SpIns/Del, I/D) and XbaI polymorphisms have been associated with susceptibility to myocardial infarction (MI). However, the results of studies on this association are still controversial. OBJECTIVE AND METHODS: This study explored reports published from 1986 to 2008 regarding the association of ApoB gene SpIns/Del and XbaI polymorphisms with MI. A meta-analysis including 7169 participants from 19 individual studies was performed. The pooled odds ratios (ORs) and their corresponding 95% confidence intervals (95% CIs) were evaluated by fixed-effect or random-effect models. RESULTS: A significant relationship between ApoB SpIns/Del gene polymorphism and MI was found under allelic (OR: 1.270, 95% CI: 1.090-1.480, P = 0.002), recessive (OR: 1.360, 95% CI: 1.130-1.630, P = 0.0009), dominant (OR: 1.091, 95% CI: 1.037-1.146, P = 0.001), homozygous (OR: 1.610, 95% CI: 1.330-1.950, P <0.00001) and heterozygous (OR: 1.081, 95% CI: 1.020-1.146, P = 0.009) genetic models. A marginal relationship between ApoB XbaI polymorphism and MI was found under a dominant genetic model (OR: 1.083, 95% CI: 1.004-1.168, P = 0.039). No significant association was detected under other genetic models (P >0.05). However, in the non-European subgroup analysis, increased MI risk emerged under all genetic models (P <0.05). CONCLUSION: ApoB SpIns/Del gene polymorphism was positively associated with increased MI risk. D allele and DD genotype carriers might be predisposed to MI susceptibility. The ApoB XbaI gene polymorphism locus had a significant positive association with increased MI risk only in the non-European population. T allele and TT genotype carriers might be susceptible to MI in the
non-European population. On the contrary, the ApoB gene Xbal restriction fragment length polymorphism was not associated with increased MI risk in the entire population, particularly in the European population. Copyright Italian Federation of Cardiology.

**Publication type:** Journal: Article  
**Source:** EMBASE

5. Title: Association of Connexin37 C1019T with myocardial infarction and coronary artery disease: A meta-analysis  
**Citation:** Experimental Gerontology, December 2014, vol./is. 58/(203-207), 0531-5565;1873-6815 (December 01, 2014)  
**Author(s):** Wen D., Du X., Nie S.-P., Dong J.-Z., Ma C.-S.  
**Language:** English  
**Abstract:** Background: Several studies have reported that Connexin37 (Cx37) gene C1019T polymorphism is associated with myocardial infarction (MI) and coronary artery disease (CAD). However, the results remain contradictory. Methods and results: Pubmed, Embase, and Cochrane library databases were systemically searched. Data were extracted by two independent reviewers and pooled odds ratio (OR) with 95% confidence interval (CI) was calculated. A total of 3498 MI cases and 3986 controls, as well as 1808 CAD cases and 1197 controls were enrolled in this meta-analysis. For MI, the overall ORs and 95% CIs of 1019T were 1.04, 0.95-1.15; and 1.02, 0.85-1.22 in dominant and recessive models, respectively. For CAD, the overall ORs and 95% CIs of 1019T were 0.61, 0.51-0.72; and 0.52, 0.43-0.62 in dominant and recessive models, respectively. No publication bias was found in this meta-analysis. Conclusions: This meta-analysis showed that Cx37 C1019T was a risk factor for MI and a protective factor for CAD.  
**Publication type:** Journal: Review  
**Source:** EMBASE  
**Full text:** Available Elsevier at Experimental Gerontology

6. Title: Bivalirudin versus heparin in patients planned for percutaneous coronary intervention: A meta-analysis of randomised controlled trials  
**Citation:** The Lancet, August 2014, vol./is. 384/9943(599-606), 0140-6736;1474-547X (August 16-22, 2014)  
**Author(s):** Cavender M.A., Sabatine M.S.  
**Language:** English  
**Abstract:** Background: Bivalirudin is an alternative to heparin in patients undergoing percutaneous coronary intervention (PCI). We aimed to define the effects of a bivalirudin-based anticoagulation regimen compared with a heparin-based anticoagulation regimen on ischaemic and bleeding outcomes. Methods: We searched Medline, the Cochrane Library, and relevant meeting abstracts (search done on April 9, 2014) for randomised trials that assessed bivalirudin versus heparin in patients planned for PCI. The primary efficacy endpoint was the incidence of major adverse cardiac events (MACE) up to 30 days. Secondary efficacy endpoints were death, myocardial infarction, ischaemia-driven revascularisation, and stent thrombosis. The primary safety endpoint was major bleeding up to 30 days. We calculated pooled risk ratios and 95% CIs using random-effects models. Findings: We included data from 16 trials involving 33 958 patients, of whom 2422 experienced MACE and 1406 had a major bleed. There was an increase in the risk of MACE with bivalirudin-based regimens compared with heparin-based regimens (risk ratio 109, 95% CI 101-117; p=00204), which was largely driven by increases in myocardial infarction (112, 103-123) and seemingly also by ischaemia-driven revascularisation (116, 0997-134) with bivalirudin compared with heparin, with no effect on mortality (099, 082-118). Bivalirudin increased the risk of stent thrombosis (risk ratio 138, 95% CI 109-174; p=00074), which was primarily due to an increase in acute cases in ST-segment elevation myocardial infarction (427, 228-800; p<00001). Overall, bivalirudin-based regimens lowered the risk of major bleeding (risk ratio 062, 95% CI 049-078; p<00001), but the magnitude of this effect varied greatly (p=00001) depending on whether glycoprotein Iib/IIa inhibitors were used predominantly in the heparin arm only (053, 047- 061; p=00001), provisionally in both arms (078, 051-119; p=025), or planned in both arms (107, 087-131; p=053). Interpretation: Compared with a heparin-based regimen, a bivalirudin-based regimen increases the risk of myocardial infarction and stent thrombosis, but decreases the risk of bleeding, with the magnitude of the reduction depending on concomitant glycoprotein Iib/IIa inhibitor use. Physicians should weigh the trade-off between ischaemic and bleeding events when choosing between different anticoagulant regimens. Funding: None. 2014 Elsevier Ltd.  
**Publication type:** Journal: Article  
**Source:** EMBASE  
**Full text:** Available Lancet at Lancet, The  
**Full text:** Available Lancet at Salisbury District Hospital Healthcare Library

7. Title: Blood pressure-lowering treatment based on cardiovascular risk: A meta-analysis of individual patient data  
**Citation:** The Lancet, August 2014, vol./is. 384/9943(591-598), 0140-6736;1474-547X (August 16-22, 2014)  
**Author(s):** Sundstrum J.  
**Language:** English  
**Abstract:** Background We aimed to investigate whether the benefits of blood pressure-lowering drugs are proportional to
baseline cardiovascular risk, to establish whether absolute risk could be used to inform treatment decisions for blood pressure-lowering therapy, as is recommended for lipid-lowering therapy. Methods This meta-analysis included individual participant data from trials that randomly assigned patients to either blood pressure-lowering drugs or placebo, or to more intensive or less intensive blood pressure-lowering regimens. The primary outcome was total major cardiovascular events, consisting of stroke, heart attack, heart failure, or cardiovascular death. Participants were separated into four categories of baseline 5-year major cardiovascular risk using a risk prediction equation developed from the placebo groups of the included trials (<11%, 11-15%, 15-21%, >21%). Findings 11 trials and 26 randomised groups met the inclusion criteria, and included 67 475 individuals, of whom 51 917 had available data for the calculation of the risk equations. 4167 (8%) had a cardiovascular event during a median of 40 years (IQR 34-44) of follow-up. The mean estimated baseline levels of 5-year cardiovascular risk for each of the four risk groups were 60% (SD 20), 121% (15), 177% (17), and 268% (54). In each consecutive higher risk group, blood pressure-lowering treatment reduced the risk of cardiovascular events relatively by 18% (95% CI 7-27), 15% (4-25), 13% (2-22), and 15% (5-24), respectively (p=030 for trend). However, in absolute terms, treating 1000 patients in each group with blood pressure-lowering treatment for 5 years would prevent 14 (95% CI 8-21), 20 (8-31), 24 (8-40), and 38 (16-61) cardiovascular events, respectively (p=004 for trend). Interpretation Lowering blood pressure provides similar relative protection at all levels of baseline cardiovascular risk, but progressively greater absolute risk reductions as baseline risk increases. These results support the use of predicted baseline cardiovascular disease risk equations to inform blood pressure-lowering treatment decisions. Funding None. 2014 Elsevier Ltd.

Publication type: Journal: Article
Source: EMBASE
Full text: Available Lancet at Lancet, The
Full text: Available Lancet at Salisbury District Hospital Healthcare Library
Full text: Available Lancet at Lancet, The

8.Title: Clinical outcomes with beta-blockers for myocardial infarction: A meta-analysis of randomized trials
Citation: American Journal of Medicine, October 2014, vol./is. 127/10(939-953), 0002-9343;1555-7162 (01 Oct 2014)
Language: English
Abstract: Conclusions: In contemporary practice of treatment of myocardial infarction, beta-blockers have no mortality benefit but reduce recurrent myocardial infarction and angina (short-term) at the expense of increase in heart failure, cardiogenic shock, and drug discontinuation. The guideline authors should reconsider the strength of recommendations for beta-blockers post myocardial infarction.
Publication type: Journal: Article
Source: EMBASE

9.Title: Dual antiplatelet therapy with or without oral anticoagulation in the postdischarge management of acute coronary syndrome patients with an indication for long term anticoagulation: A systematic review
Citation: Journal of Thrombosis and Thrombolysis, October 2014, vol./is. 38/3(285-298), 0929-5305;1573-742X (October 2014)
Author(s): Washam J.B., Dolor R.J., Jones W.S., Halim S.A., Hasselblad V., Mayer S.B., Heidenfelder B.L., Melloni C.
Language: English
Abstract: Currently, there is a lack of consensus among guidelines for the postdischarge treatment of patients presenting with acute coronary syndrome (ACS) who have a long-term indication for anticoagulation. We conducted a systematic review comparing the safety and effectiveness of dual antiplatelet therapy (DAPT) and triple therapy (TT; defined as DAPT plus an oral anticoagulant) in patients with ACS and a long-term indication for anticoagulation. We searched for clinical studies in MEDLINE, EMBASE, and the Cochrane Database of Systematic Reviews published between January 1995 and September 2013. Each investigator screened and abstracted data, assessed applicability and quality, and graded the strength of evidence. Meta-analysis of direct comparison was performed when outcomes and follow-up periods were comparable. Fourteen observational studies were identified that contained comparative effectiveness data on DAPT versus TT. No difference in the odds of mortality (OR 1.04, 95 % CI 0.59-1.83) or stroke (OR 1.01, 95 % CI 0.38-2.67) at 1-5 years was found between TT and DAPT. Major bleeding at 1-5 years (OR 1.46, 95 % CI 1.07-2.00) and nonfatal MI at 1-5 years (OR 1.85, 95 % CI 1.13-3.02) occurred more frequently in patients receiving TT. The results of this systematic review demonstrate that treatment with TT was associated with increased rates of nonfatal MI and major bleeding when compared with treatment with DAPT in the postdischarge management of ACS patients with an indication for oral anticoagulation. Until results of ongoing randomized trials assessing antithrombotic therapies define optimal management strategies, the current analysis suggests using caution when prescribing TT to these patients. 2014 Springer Science+Business Media.
Publication type: Journal: Article
Source: EMBASE
10. Title: Effect of darapladib on major coronary events after an acute coronary syndrome: the SOLID-TIMI 52 randomized clinical trial

Citation: JAMA, September 2014, vol./is. 312(10)(0106-1015), 1538-3598 (10 Sep 2014)


Language: English

Abstract: Lipoprotein-associated phospholipase A2 (Lp-PLA2) has been hypothesized to be involved in atherogenesis through pathways related to inflammation. Darapladib is an oral, selective inhibitor of the Lp-PLA2 enzyme. To evaluate the efficacy and safety of darapladib in patients after an acute coronary syndrome (ACS) event. SOLID-TIMI 52 was a multinational, double-blind, placebo-controlled trial that randomized 13,026 participants within 30 days of hospitalization with an ACS (non-ST-elevation or ST-elevation myocardial infarction [MI]) at 868 sites in 36 countries. Patients were randomized to either once-daily darapladib (160 mg) or placebo on a background of guideline-recommended therapy. Patients were followed up for a median of 2.5 years between December 7, 2009, and December 6, 2013. The primary end point (major coronary events) was the composite of coronary heart disease (CHD) death, MI, or urgent coronary revascularization for myocardial ischemia. Kaplan-Meier event rates are reported at 3 years. During a median duration of 2.5 years, the primary end point occurred in 903 patients in the darapladib group and 910 in the placebo group (16.3% vs 15.6% at 3 years; hazard ratio [HR], 1.00 [95% CI, 0.91-1.09]; P= .93). The composite of cardiovascular death, MI, or stroke occurred in 824 in the darapladib group and 838 in the placebo group (15.0% vs 15.0% at 3 years; HR, 0.99 [95% CI, 0.90-1.09]; P=.78). There were no differences between the treatment groups for additional secondary end points, for individual components of the primary end point, or in all-cause mortality (15 events in the darapladib group and 395 in the placebo group [7.3% vs 7.1% at 3 years; HR, 0.94 [95% CI, 0.82-1.08]; P = .40). Patients were more likely to report an odor-related concern in the darapladib group vs the placebo group (11.5% vs 2.5%) and also more likely to report diarrhea (10.6% vs 5.6%). In patients who experienced an ACS event, direct inhibition of Lp-PLA2 with darapladib added to optimal medical therapy and initiated within 30 days of hospitalization did not reduce the risk of major coronary events.

Clinical trials.gov Identifier: NCT01000727.

Publication type: Journal: Article
Source: EMBASE
Full text: Available American Medical Association at JAMA

11. Title: Effect on cardiovascular risk of high density lipoprotein targeted drug treatments niacin, fibrates, and CETP inhibitors: Meta-analysis of randomised controlled trials including 117 411 patients

Citation: BMJ (Online), July 2014, vol./is. 349/, 1756-1833 (18 Jul 2014)

Author(s): Keene D., Price C., Shun-Shin M.J., Francis D.P.

Language: English

Abstract: Objective: To investigate the effects on cardiovascular outcomes of drug interventions that increase high density lipoprotein levels. Design: Meta-analysis. Studies reviewed: Therapeutic benefit of niacin, fibrates, and cholesteryl ester transfer protein (CETP) inhibitors on cardiovascular events (all cause mortality, coronary heart disease mortality, non-fatal myocardial infarction, and stroke). Results: 117 411 patients were randomised in a total of 39 trials. All interventions increased the levels of high density lipoprotein cholesterol. No significant effect was seen on all cause mortality for niacin (odds ratio 1.03, 95% confidence interval 0.92 to 1.15, P=0.59), fibrates (0.98, 0.89 to 1.08, P=0.66), or CETP inhibitors (1.16, 0.93 to 1.44, P=0.19); on coronary heart disease mortality for niacin (0.93, 0.76 to 1.12, P=0.44), fibrates (0.92, 0.81 to 1.04, P=0.19), or CETP inhibitors (1.00, 0.80 to 1.24, P=0.99); or on stroke outcomes for niacin (0.96, 0.75 to 1.22, P=0.472), fibrates (1.01, 0.90 to 1.13, P=0.84), or CETP inhibitors (1.14, 0.90 to 1.45, P=0.29). In studies with patients not receiving statins (before the statin era), niacin was associated with a significant reduction in non-fatal myocardial infarction (0.69, 0.56 to 0.85, P=0.0004). However, in studies where statins were already being taken, niacin showed no significant effect (0.96, 0.85 to 1.09, P=0.52). A significant difference was seen between these subgroups (P=0.007). A similar trend relating to non-fatal myocardial infarction was seen with fibrates: without statin treatment (0.78, 0.71 to 0.86, P=0.001) and with all or some patients taking statins (0.83, 0.69 to 1.01, P=0.07); P=0.58 for difference. Conclusions Neither niacin, fibrates, nor CETP inhibitors, three highly effective agents for increasing high density lipoprotein levels, reduced all cause mortality, coronary heart disease mortality, myocardial infarction, or stroke in patients treated with statins. Although observational studies might suggest a simplistic hypothesis for high density lipoprotein cholesterol, that increasing the levels pharmacologically would generally reduce cardiovascular events, in the current era of widespread use of statins in dyslipidaemia, substantial trials of these three agents do not support this concept.

Publication type: Journal: Article
Source: EMBASE
Full text: Available BMJ (Clinical research ed.) at The BMJ

12. Title: Effects of extended-release niacin with laropiprant in high-risk patients

Citation: New England Journal of Medicine, 2014, vol./is. 371/3(203-212), 0028-4793;1533-4406 (2014)
Abstract: BACKGROUND: Patients with evidence of vascular disease are at increased risk for subsequent vascular events despite effective use of statins to lower the low-density lipoprotein (LDL) cholesterol level. Niacin lowers the LDL cholesterol level and raises the high-density lipoprotein (HDL) cholesterol level, but its clinical efficacy and safety are uncertain. METHODS: After a prerandomization run-in phase to standardize the background statin-based LDL cholesterol-lowering therapy and to establish participants' ability to take extended-release niacin without clinically significant adverse effects, we randomly assigned 25,673 adults with vascular disease to receive 2 g of extended-release niacin and 40 mg of laropiprant or a matching placebo daily. The primary outcome was the first major vascular event (nonfatal myocardial infarction, death from coronary causes, stroke, or arterial revascularization). RESULTS: During a median follow-up period of 3.9 years, participants who were assigned to extended-release niacin-laropiprant had an LDL cholesterol level that was an average of 10 mg per deciliter (0.25 mmol per liter as measured in the central laboratory) lower and an HDL cholesterol level that was an average of 6 mg per deciliter (0.16 mmol per liter) higher than the levels in those assigned to placebo. Assignment to niacin-laropiprant, as compared with assignment to placebo, had no significant effect on the incidence of major vascular events (13.2% and 13.7% of participants with an event, respectively; rate ratio, 0.96; 95% confidence interval [CI], 0.90 to 1.03; P = 0.29). Niacin-laropiprant was associated with an increased incidence of disturbances in diabetes control that were considered to be serious (absolute excess as compared with placebo, 3.7 percentage points; P=0.001) and with an increased incidence of diabetes diagnoses (absolute excess, 1.3 percentage points; P=0.001), as well as increases in serious adverse events associated with the gastrointestinal system (absolute excess, 1.0 percentage point; P=0.001), musculoskeletal system (absolute excess, 0.7 percentage points; P<0.001), skin (absolute excess, 0.3 percentage points; P = 0.003), and unexpectedly, infection (absolute excess, 1.4 percentage points; P<0.001) and bleeding (absolute excess, 0.7 percentage points; P<0.001). CONCLUSIONS: Among participants with atherosclerotic vascular disease, the addition of extended-release niacin-laropiprant to statin-based LDL cholesterol-lowering therapy did not significantly reduce the risk of major vascular events but did increase the risk of serious adverse events. (Funded by Merck and others; HPS2-THRIVE ClinicalTrials.gov number, NCT00461630.) Copyright 2014 Massachusetts Medical Society. All rights reserved.
outcomes, in people with HF as a result of LVSD and cardiac dyssynchrony when compared with OPT. The rate of SCD was lower with CRT-D than with CRT-P but other outcomes were similar. CRT-P and CRT-D compared with OPT produced ICERs of 27,584 per QALY and 27,899 per QALY respectively. The ICER for CRT-D compared with CRT-P was 28,420 per QALY. In people with both conditions, CRT-D reduced the risk of all-cause mortality and HF hospitalisation, and improved other outcomes, compared with ICDs. Complications were more common with CRT-D. Initial management with OPT alone was most cost-effective (ICER 2824 per QALY compared with ICD) when health-related quality of life was kept constant over time. Costs and QALYs for CRT-D and CRT-P were similar. The ICER for CRT-D compared with ICD was 27,195 per QALY and that for CRT-D compared with OPT was 35,193 per QALY. Limitations: Limitations of the model include the structural assumptions made about disease progression and treatment provision, the extrapolation of trial survival estimates over time and the assumptions made around parameter values when evidence was not available for specific patient groups. Conclusions: In people at risk of SCD as a result of ventricular arrhythmias and in those with HF as a result of LVSD and cardiac dyssynchrony, the interventions modelled produced ICERs of < 30,000 per QALY gained. In people with both conditions, the ICER for CRT-D compared with ICD, but not CRT-D compared with OPT, was < 30,000 per QALY, and the costs and QALYs for CRT-D and CRT-P were similar. A RCT comparing CRT-D and CRT-P in people with HF as a result of LVSD and cardiac dyssynchrony is required, for both those with and those without an ICD indication. A RCT is also needed into the benefits of ICD in non-ischaeamic cardiomyopathy in the absence of dyssynchrony. Study registration: This study is registered as PROSPERO number CRD42012002062. Funding: The National Institute for Health Research Health Technology Assessment programme. Queen's Printer and Controller of HMSO 2014.

**Publication type:** Journal: Article

**Source:** EMBASE

---

**14.** Title: Implantable cardioverter-defibrillators for primary prevention of sudden cardiac death in CKD: A meta-analysis of patient-level data from 3 randomized trials

**Citation:** American Journal of Kidney Diseases, July 2014, vol./is. 64/1(32-39), 0272-6386;1523-6838 (July 2014)


**Language:** English

**Abstract:** Background The benefit of a primary prevention implantable cardioverter-defibrillator (ICD) among patients with chronic kidney disease is uncertain. Study Design Meta-analysis of patient-level data from randomized controlled trials. Setting & Population Patients with symptomatic heart failure and left ventricular ejection fraction < 35%. Selection Criteria for Studies From 7 available randomized controlled studies with patient-level data, we selected studies with available data for important covariates. Studies without patient-level data for baseline estimated glomerular filtration rate (eGFR) were excluded. Intervention Primary prevention ICD versus usual care effect modification by eGFR. Outcomes Mortality, rehospitalizations, and effect modification by eGFR. Results We included data from the Multicenter Automatic Defibrillator Implantation Trial I (MADIT-I), MADIT-II, and the Sudden Cardiac Death in Heart Failure Trial (SCD-HeFT). 2,867 patients were included; 36.3% had eGFR < 60 mL/min/1.73 m²<sup>2</sup> and 36.3% had eGFR < 50 mL/min/1.73 m²<sup>2</sup>. Kaplan-Meier estimate of the probability of death during follow-up was 43.3% for 1,334 patients receiving usual care and 35.8% for 1,533 ICD recipients. After adjustment for baseline differences, there was evidence that the survival benefit of ICDs in comparison to usual care depends on eGFR (posterior probability for null interaction P < 0.001). The ICD was associated with survival benefit for patients with eGFR > 60 mL/min/1.73 m²<sup>2</sup> (adjusted HR, 0.49; 95% posterior credible interval, 0.24-0.95), but not for patients with eGFR < 60 mL/min/1.73 m²<sup>2</sup> (adjusted HR, 0.80; 95% posterior credible interval, 0.40-1.53). eGFR did not modify the association between the ICD and rehospitalizations. Limitations Few patients with eGFR < 30 mL/min/1.73 m²<sup>2</sup> were available. Differences in trial-to-trial measurement techniques may lead to residual confounding. Conclusions Reductions in baseline eGFR decrease the survival benefit associated with the ICD. These findings should be confirmed by additional studies specifically targeting patients with varying eGFRs. 2014 by the National Kidney Foundation, Inc.

**Publication type:** Journal: Article

**Source:** EMBASE

---

**15.** Title: Influenza and coronary artery disease: Exploring a clinical association with myocardial infarction and analyzing the utility of vaccination in prevention of myocardial infarction

**Citation:** Reviews in Cardiovascular Medicine, 2014, vol./is. 15/2(168-175), 1530-6550 (2014)

**Author(s):** Hebsur S., Vakil E., Oetgen W.J., Kumar P.N., Lazarous D.F.

**Language:** English

**Abstract:** Both coronary artery disease and influenza outbreaks contribute significantly to worldwide morbidity and mortality. An increasing number of epidemiologic studies have concluded that a temporal association exists between acute viral illnesses and myocardial infarction. Viral illnesses such as influenza can cause or exacerbate coronary atherosclerosis by activating inflammatory pathways. Data from a large case-controlled trial and two randomized controlled trials suggest that influenza vaccination in patients with coronary artery disease may lead to a decrease in incidence, morbidity, and mortality from acute myocardial infarction. A meta-analysis of the two randomized controlled
16. Title: Invasive management of acute coronary syndrome in patients end-stage renal disease: A meta-analysis
Citation: Experimental and Clinical Cardiology, 2014, vol./is. 20/6(145-159), 1205-6626 (2014)
Language: English
Abstract: The objective was to obtain evidence on the effectiveness of invasive management by comparing mortality rates between patients with end-stage renal disease (ESRD; Stage V CKD) who received invasive vs non-invasive management of ACS. Medline, The Cochrane Library, EMBASE, and Google Scholar were searched to identify studies involving patients with ACS and ESRD (Stage V CKD) that compared outcomes for invasive (percutaneous coronary intervention or coronary artery bypass grafting) vs non-invasive (pharmaceutical) management of ACS. The outcomes of interest were the short-term (<1 month) and 1-year mortality rates. A total of 3 studies, involving 593 patients who received invasive management and 2698 patients who received non-invasive management, were included in the meta-analysis. It revealed that the short-term mortality rate was significantly lower for patients who received invasive management compared with patients who received non-invasive management (OR: 0.69; 95% CI: 0.53 to 0.90; P = 0.006). Likewise, the 1-year mortality rate was significantly lower for patients who received invasive management compared with patients who received non-invasive management (OR: 0.61; 95% CI: 0.42 to 0.88; P = 0.008). The results of our meta-analysis suggest that patients of ACS comorbidity with ESRD may benefit from invasive rather than non-invasive management.
Publication type: Journal: Article
Source: EMBASE

17. Title: Is alice still in Wonderland of the ‘smoker’s paradox’? A meta-analysis of mortality following ACS
Citation: British Journal of Cardiology, July 2014, vol./is. 21/3(117), 0969-6113 (01 Jul 2014)
Author(s): Takagi H., Umemoto T.
Language: English
Abstract: To determine whether the ‘smoker’s paradox’ exists in the acute coronary syndrome (ACS) population, we performed the first meta-analysis of adjusted risk estimates separately for early and late mortality. Eligible studies were comparative studies of smokers versus non-smokers enrolling patients hospitalised for ACS and reporting adjusted risk estimates for all-cause mortality. Twenty-six risk-adjusted studies of smokers versus non-smokers enrolling >700,000 patients with ACS were identified and included. Pooled analysis suggested that smoking was associated with a statistically significant reduction in early (in-hospital or 30-day) mortality for the comparison of current versus never smokers (odds ratio [OR] 0.85; 95% confidence interval [CI] 0.75 to 0.96), any comparisons (current vs. never, former vs. never, current vs. former/never, and current/former vs. never smokers; OR 0.89; 95% CI 0.84 to 0.94), and patients with exclusive ST-segment elevation myocardial infarction (OR 0.80; 95% CI 0.73 to 0.87) and acute myocardial infarction (OR 0.87; 95% CI 0.82 to 0.92). Smoking was associated with a statistically non-significant increase in late mortality for any comparisons (hazard ratio 1.07; 95% CI 0.95 to 1.21). In conclusion, the ‘smoker’s paradox’ for mortality may exist in the early phase following ACS but it may vanish in the late phase.
Publication type: Journal: Article
Source: EMBASE

18. Title: Leucocyte telomere length and risk of cardiovascular disease: Systematic review and meta-Analysis
Citation: BMJ (Online), July 2014, vol./is. 349/, 1756-1833 (08 Jul 2014)
Author(s): Haycock P.C., Heydon E.E., Kaptoge S., Butterworth A.S., Thompson A., Willeit P.
Language: English
Abstract: Objective To assess the association between leucocyte telomere length and risk of cardiovascular disease. Design Systematic review and meta-Analysis. Data sources Studies published up to March 2014 identified through searches of Medline, Web of Science, and Embase. Eligibility criteria Prospective and retrospective studies that reported on associations between leucocyte telomere length and coronary heart disease (defined as non-fatal myocardial infarction, coronary heart disease death, or coronary revascularisation) or cerebrovascular disease (defined as non-fatal stroke or death from cerebrovascular disease) and were broadly representative of general populations- That is, they did not select cohort or control participants on the basis of pre-existing cardiovascular disease or diabetes. Results Twenty four studies involving 43 725 participants and 8400 patients with cardiovascular disease (5566 with coronary heart disease and 2834 with cerebrovascular disease) were found to be eligible. In a comparison of the shortest versus longest third of leucocyte telomere length, the pooled relative risk for coronary heart disease was 1.54 (95% confidence interval 1.30 to 1.83) in all studies, 1.40 (1.15 to 1.70) in prospective studies, and 1.80 (1.32 to 2.44) in retrospective studies. Heterogeneity between studies was moderate (I²=64%, 41% to 77%, P<sub>het</sub>=<0.001) and was not significantly explained by mean age of participants (P=0.23), the proportion of male participants (P=0.45), or distinction between retrospective
versus prospective studies (P=0.32). Findings for coronary heart disease were similar in meta-Analyses restricted to studies that adjusted for conventional vascular risk factors (relative risk 1.42, 95% confidence interval 1.17 to 1.73); studies with >200 cases (1.44, 1.20 to 1.74); studies with a high quality score (1.53, 1.22 to 1.92); and in analyses that corrected for publication bias (1.34, 1.12 to 1.60). The pooled relative risk for cerebrovascular disease was 1.42 (1.11 to 1.81), with no significant heterogeneity between studies (I²=41%, 0% to 72%, P <sub>het</sub>=0.08). Shorter telomeres were not significantly associated with cerebrovascular disease risk in prospective studies (1.14, 0.85 to 1.54) or in studies with a high quality score (1.21, 0.83 to 1.76). Conclusion Available observational data show an inverse association between leucocyte telomere length and risk of coronary heart disease independent of conventional vascular risk factors. The association with cerebrovascular disease is less certain.

**Publication type:** Journal: Article  
**Source:** EMBASE  
**Full text:** Available BMJ (Clinical research ed.) at The BMJ

**19.Title:** Non-cardiovascular effects associated with statins  
**Citation:** BMJ (Online), July 2014, vol./is. 349/, 1756-1833 (17 Jul 2014)  
**Author(s):** Desai C.S., Martin S.S., Blumenthal R.S.  
**Language:** English  
**Abstract:** Statins form the pharmacologic cornerstone of the primary and secondary prevention of atherosclerotic cardiovascular disease. In addition to beneficial cardiovascular effects, statins seem to have multiple non-cardiovascular effects. Although early concerns about statin induced hepatotoxicity and cancer have subsided owing to reassuring evidence, two of the most common concerns that clinicians have are myopathy and diabetes. Randomized controlled trials suggest that statins are associated with a modest increase in the risk of myositis but not the risk of myalgia. Severe myopathy (rhabdomyolysis) is rare and often linked to a statin regimen that is no longer recommended (simvastatin 80 mg). Randomized controlled trials and meta-analyses suggest an increase in the risk of diabetes with statins, particularly with higher intensity regimens in people with two or more components of the metabolic syndrome. Other non-cardiovascular effects covered in this review are contrast induced nephropathy, cognition, cataracts, erectile dysfunction, and venous thromboembolism. Currently, systematic reviews and clinical practice guidelines indicate that the cardiovascular benefits of statins generally outweigh non-cardiovascular harms in patients above a certain threshold of cardiovascular risk. Literature is also accumulating on the potential non-cardiovascular benefits of statins, which could lead to novel applications of this class of drug in the future.  
**Publication type:** Journal: Review  
**Source:** EMBASE  
**Full text:** Available BMJ (Clinical research ed.) at The BMJ

**20.Title:** Noninducibility in postinfarction ventricular tachycardia as an end point for ventricular tachycardia ablation and its effects on outcomes: a meta-analysis  
**Citation:** Circulation. Arrhythmia and electrophysiology, August 2014, vol./is. 7/4(677-683), 1941-3084 (Aug 2014)  
**Author(s):** Ghanbari H., Baser K., Yokokawa M., Stevenson W., Del Mar, C., Blumenthal R., Desai C.S., Martin S.S., Blumenthal R.S., Ghanbari H., Baser K., Yokokawa M., Stevenson W., Del Mar, C., Blumenthal R., Desai C.S., Martin S.S., Blumenthal R.S.,  
**Language:** English  
**Abstract:** Although ventricular tachycardia (VT) ablation is a widely used therapy for patients with VT, the ideal end points for this procedure are not well defined. We performed a meta-analysis of the published literature to assess the predictive value of noninducibility of postinfarction VT for long-term outcomes after VT ablation. We performed a systematic review of MEDLINE (1950-2013), EMBASE (1988-2013), the Cochrane Controlled Trials Register (Fourth Quarter, 2012), and reports presented at scientific meetings (1994-2013). Randomized controlled trials, case-control, and cohort studies of VT ablation were included. Outcomes reported in eligible studies were freedom from VT/ventricular fibrillation and all-cause mortality. Of the 3895 studies evaluated, we identified 8 cohort studies enrolling 928 patients for the meta-analysis. Noninducibility after VT ablation was associated with a significant increase in arrhythmia-free survival compared with partial success (odds ratio, 0.49; 95% confidence interval, 0.29-0.84; P=0.009) or failed ablation procedure (odds ratio, 0.10; 95% confidence interval, 0.06-0.18; P<0.001). There was also a significant reduction in all-cause mortality if patients were noninducible after VT ablation compared with patients with partial success (odds ratio, 0.59; 95% confidence interval, 0.36-0.98; P=0.04) or failed ablation (odds ratio, 0.32; 95% confidence interval, 0.10-0.99; P=0.049). Noninducibility of VT after VT ablation is associated with improved arrhythmia-free survival and all-cause mortality.  
**Publication type:** Journal: Review  
**Source:** EMBASE

**21.Title:** Percutaneous coronary intervention compared with coronary artery bypass graft in coronary artery disease patients with chronic kidney disease: A systematic review and meta-analysis  
**Citation:** Renal Failure, September 2014, vol./is. 36/8(1177-1186), 0886-022X;1525-6049 (September 2014)
Mean difference 0.53, 95% CI 0.61 to 1.67, p=0.36) compared to people who underwent CRT + rate lowering drugs. There
received AVJA had a similar risk for hospitalizations (OR 0.64, 95% CI 0.13 to 3.08, p=0.57) and improvement in EF (Std.
3.08, p=0.57) and improvement in EF (Std.

22. Title: Relationships between PON1 Q192R polymorphism and clinical outcome of antiplatelet treatment after percutaneous coronary intervention: A meta-analysis

Citation: Molecular Biology Reports, September 2014, vol./is. 41/9(6263-6273), 0301-4851:1573-4978 (September 2014)

Author(s): Li P., Bu S.-H., Lu X.-T., Li L.-X., Xu A.-J., Tang Y.-N., Zhang J.

Language: English

Abstract: This meta-analysis was performed to assess the relationships between the PON1 Q192R (rs662 T>C) polymorphism and the clinical outcome of antiplatelet treatment after percutaneous coronary intervention (PCI). A range of electronic databases were searched: Web of Science (1945-2013), the Cochrane Library Database (Issue 12, 2013), PubMed (1966-2013), EMBASE (1980-2013), CINAHL (1982-2013) and the Chinese Biomedical Database (CBM) (1982-2013) without language restrictions. Meta-analysis was conducted using the STATA 12.0 software. The crude odds ratio (OR) with their 95 % confidence interval (CI) were calculated. Six clinical cohort studies with a total number of 5,189 patients undergoing PCI for coronary heart disease were included. Our meta-analysis revealed that the PON1 Q192R polymorphism was correlated with an increased risk of major adverse cardiovascular events (MACE) in patients receiving antiplatelet treatment after PCI (C allele vs. T allele: OR = 1.22, 95 % CI 1.04-1.43, P = 0.014; CT+CC vs. TT: OR = 1.38, 95 % CI 1.03-1.86, P = 0.029; CC vs. TT: OR = 1.45, 95 % CI 1.05-1.99, P = 0.024; respectively), especially among Asians. Furthermore, we found significantly positive correlations between the PON1 Q192R polymorphism and the incidence of stent thrombosis in patients receiving antiplatelet treatment after PCI (C allele vs. T allele: OR = 1.42, 95 % CI 1.08-1.87, P = 0.011; CT+CC vs. TT: OR = 1.93, 95 % CI 1.01-3.67, P = 0.046; CC vs. TT: OR = 2.18, 95 % CI 1.09-4.35, P = 0.027; respectively). Our meta-analysis of clinical cohort studies provides evidence that the PON1 Q192R polymorphism may increase the risk of MACE and stent thrombosis in patients receiving antiplatelet treatment after PCI. 2014 Springer Science+Business Media.

Publication type: Journal: Article
Source: EMBASE

23. Title: Role of atrioventricular junction ablation in patients with atrial fibrillation undergoing cardiac resynchronization therapy? - A Meta-analysis

Citation: Journal of Cardiac Failure, August 2014, vol./is. 20/8 SUPPL. 1(S91), 1071-9164 (August 2014)

Author(s): Vallakati A., Sengodan P., Dunlap M.

Language: English

Abstract: Introduction: Current guidelines from the American College of Cardiology/American Heart Association/Heart Rhythm Society and the European Society of Cardiology (Class IIa, Level ofEvidence:B) recommend the use of cardiac resynchronization therapy (CRT) in atrial fibrillation (AF) patients with LVEF <35% and ventricular dyssynchrony. However, both guidelines suggest that atrioventricular junction ablation (AVJA) may be required to ensure complete biventricular capture in patients with AF. We performed a meta-analysis to assess if AVJA is better than rate lowering drugs in this subset of population. Methods: We searched PubMed, Cochrane library and Embase for all published studies comparing AVJA with rate lowering drugs in patients undergoing CRT for the treatment of HF with AF. Mantel-Haenszel method was used to pool data of mortality, hospitalizations and improvement in ejection fraction (EF) in this population. Results: We identified 6 studies (n=1747) which compared CRT + AVJA (n=565) with CRT + rate lowering drugs (n=1182). Patients who received AVJA had a similar risk for hospitalizations (OR 0.64, 95% CI 0.13 - 3.08, p=0.57) and improvement in EF (Std. Mean difference 0.53, 95% CI 0.61 to 1.67, p=0.36) compared to people who underwent CRT + rate lowering drugs. There
was no difference in total mortality (OR 0.51, 95% CI 0.22 - 1.22, p=0.13) between the two groups. However, cardiac
mortality was lower (OR 0.73, 95% CI 0.53 - 0.99, p=0.04). Conclusion: CRT with AVJA did not significantly decrease the
mortality or hospitalizations compared to CRT with medical therapy alone. Furthermore improvement in EF was similar in
both groups. However there was decreased cardiac mortality with AVJA in patients undergoing CRT. (Figure presented).

**Publication type:** Journal: Conference Abstract

**Source:** EMBASE

24. **Title:** Sirolimus-eluting versus paclitaxel-eluting stent in primary angioplasty: A pooled patient-level meta-analysis of randomized trials

**Citation:** Journal of Thrombosis and Thrombolysis, October 2014, vol./is. 38/3(355-363), 0929-5305;1573-742X (October 2014)

**Author(s):** De Luca G., Wirianta J., Lee J.-H., Kaiser C., Di Lorenzo E., Suryapranata H.

**Language:** English

**Abstract:** Large interests have been focused on the role of drug-eluting stents in the setting of ST-segment elevation myocardial infarction (STEMI) and concerns have emerged regarding an higher risk of stent thrombosis. Aim of the current study was to perform a meta-analysis using individual patient data to evaluate the long-term safety and effectiveness of sirolimus-eluting stent (SES) as compared to paclitaxel-eluting stent (PES) in patients undergoing primary percutaneous coronary intervention (PCI) for STEMI. The literature was scanned by formal searches of electronic databases (MEDLINE and CENTRAL). We examined all completed randomized trials of SES versus PES for STEMI. No language restriction was applied. Primary study endpoint was the occurrence of major adverse cardiac events (MACE). Secondary endpoints were the occurrence of death, reinfarction, stent thrombosis, target-vessel revascularization (TVR). Individual patient data were obtained from 4 out of 5 trials identified, including a total of 1,000 patients, 504 (50.4 %) randomized to SES and 496 (49.6 %) randomized to PES. At long-term follow-up (1,021 [372-1,351] days), no difference was observed between SES and PES in terms of TVR (10 vs 11.6 %, HR [95 % CI 0.73 [0.45-1.16], p = 0.18, p heterogeneity = 0.92]) (primary endpoint) or death (9.4 vs 10.4 %, HR [95 % CI 0.95 [0.58-1.54], p = 0.82, p heterogeneity = 0.89]), reinfarction (8.2 vs 10.4 %, HR [95 % CI 0.91 [0.53-1.57], p = 0.73, p heterogeneity = 0.83]), stent thrombosis (7.4 vs 4.6 %, HR [95 % CI 1.04 [0.55-2.05], p = 0.92, p heterogeneity = 0.65]), and MACE (10 vs 13.6 %, HR [95 % CI 0.86 [0.63-1.18], p = 0.36, p heterogeneity = 0.84]) (secondary endpoints). The present pooled patient-level meta-analysis demonstrates that, among STEMI patients undergoing primary PCI, SES and PES are associated with a similar outcome at long-term follow-up, in terms of death, reinfarction, stent thrombosis, TVR and MACE. 2014 Springer Science+Business Media.

**Publication type:** Journal: Article

**Source:** EMBASE

25. **Title:** Stenting strategy for coronary artery bifurcation with drug-eluting stents: A meta-analysis of nine randomised trials and systematic review

**Citation:** EuroIntervention, September 2014, vol./is. 10/5(561-569), 1774-024X;1969-6213 (01 Sep 2014)


**Language:** English

**Abstract:** Conclusions: A complex strategy remains an optional treatment for patients with coronary bifurcation lesions without severe safety concerns. A complex strategy may be an optimal treatment for true bifurcation lesions with large side branches. Europa Digital & Publishing 2014. All rights reserved.

**Publication type:** Book: Article

26. **Title:** The effect of hyperoxia on survival following adult cardiac arrest: A systematic review and meta-analysis of observational studies

**Citation:** Resuscitation, September 2014, vol./is. 85/9(1142-1148), 0300-9572;1873-1570 (September 2014)

**Author(s):** Wang C.-H., Chang W.-T., Huang C.-H., Tsai M.-S., Yu P.-H., Wang A.-Y., Chen N.-C., Chen W.-J.

**Language:** English

**Abstract:** Objective: Studies have shown the detrimental effect of hyperoxia in animals with return of spontaneous circulation (ROSC) after cardiac arrest. To maximize the value of existing clinical studies, we performed the systemic review and meta-analysis of human observational studies to examine the effect of hyperoxia on outcomes of post-ROSC patients. Methods: We searched PubMed and Embase from the inception to October 2013. We selected adult observational studies that compared different levels of partial pressure of arterial oxygen (PaO$_2$) in post-ROSC patients with mortality or neurological status at hospital discharge as outcome. Studies comparing hyperoxia with normoxia only were excluded. Results: Fourteen studies were identified from 2982 references. Odds ratio (OR) was used as effect estimate. OR was reconstructed if not provided in original articles. Hyperoxia was defined as a PaO$_2$ >300mmHg. Meta-analysis indicated that hyperoxia appeared to be correlated with increased in-hospital mortality (OR, 1.40; 95% CI, 1.02-1.93; I$^2$=69.27%; 8 studies) but not worsened neurological outcome (OR, 1.62; 95% CI, 0.87-3.02;
l<sup>2</sup>, 55.61%; 2 studies). However, the results were inconsistent in subgroup and sensitivity analyses.

Conclusions: Hyperoxia appears to be correlated with increased in-hospital mortality of post-ROSC patients. This result should be interpreted cautiously because of the significant heterogeneity and limited number of studies analyzed. However, because exposure to hyperoxia had no obvious benefits, clinicians should monitor PaO<sub>2</sub> closely and titrate oxygen administration cautiously. 2014 Elsevier Ireland Ltd.

**Publication type:** Journal: Review  
**Source:** EMBASE

27. **Title:** The use of gastrointestinal cocktail for differentiating gastro-oesophageal reflux disease and acute coronary syndrome in the emergency setting: A systematic review  
**Citation:** Heart Lung and Circulation, October 2014, vol./is. 23/10(913-923), 1443-9506;1444-2892 (01 Oct 2014)  
**Author(s):** Chan S., Maurice A.P., Davies S.R., Walters D.L.  
**Language:** English  
**Abstract:** Background: Differentiating acute chest pain caused by myocardial ischaemia from other, potentially more benign causes of chest pain is a frequent diagnostic challenge faced by Emergency Department (ED) clinicians. Only 30% of patients presenting with chest pain will have a cardiac origin for the pain, and gastro-oesophageal disorders are one of the common sources of non-cardiac chest pain, yet remain clinically difficult to differentiate from cardiac pain. Aim: A systematic review of the literature was conducted to locate and evaluate clinical trials comparing the use of an oral gastrointestinal (GI) cocktail (oral viscous lidocaine/ antacid + anticholinergic) to standard diagnostic protocols (serial electrocardiograms (ECGs), serial biomarkers, imaging and/or provocative testing) to differentiate emergency patients presenting with acute chest pain caused by gastro-oesophageal disease from those with other aetiologies. Methods: Studies were identified by searching electronic databases, scanning reference lists of articles, and searching clinical trial databases for relevantly currently registered trials. The search included PubMed (1966 - present), Embase (1980 - present) and Cochrane Central Register of Controlled Trials (CENTRAL). The identified studies were evaluated with a modified QUADAS tool. Results: A total of four studies were identified for inclusion in the review. Studies were of low methodological quality with heterogeneous results. There were no adequately powered and appropriately designed studies identified. Discussion: Current diagnostic protocols for Acute Coronary Syndrome (ACS) revolve around early and serial ECG monitoring and cardiac biomarker testing, imaging and careful clinical examination. In patients with chest pain and suspected ACS, the use of a GI cocktail compared with standard diagnostic protocols (serial ECG and biomarkers and provocative testing or imaging) is not proven to improve accuracy of diagnosis, and cannot reliably exclude myocardial ischaemia.

**Publication type:** Journal: Review  
**Source:** EMBASE

28. **Title:** Urinary sodium and potassium excretion, mortality, and cardiovascular events  
**Citation:** New England Journal of Medicine, August 2014, vol./is. 371/7(612-623), 0028-4793;1533-4406 (14 Aug 2014)  
**Language:** English  
**Abstract:** BACKGROUND: The optimal range of sodium intake for cardiovascular health is controversial. METHODS: We obtained morning fasting urine samples from 101,945 persons in 17 countries and estimated 24-hour sodium and potassium excretion (used as a surrogate for intake). We examined the association between estimated urinary sodium and potassium excretion and the composite outcome of death and major cardiovascular events. RESULTS: The mean estimated sodium and potassium excretion was 4.93 g per day and 2.12 g per day, respectively. With a mean follow-up of 3.7 years, the composite outcome occurred in 3317 participants (3.3%). As compared with an estimated sodium excretion of 4.00 to 5.99 g per day (reference range), a higher estimated sodium excretion (>7.00 g per day) was associated with an increased risk of the composite outcome (odds ratio, 1.15; 95% confidence interval [CI], 1.02 to 1.30), as well as increased risks of death and major cardiovascular events considered separately. The association between a high estimated sodium excretion and the composite outcome was strongest among participants with hypertension (P=0.02 for interaction), with an increased risk at an estimated sodium excretion of 6.00 g or more per day. As compared with the reference range, an estimated sodium excretion that was below 3.00 g per day was also associated with an increased risk of the composite outcome (odds ratio, 1.27; 95% CI, 1.12 to 1.44). As compared with an estimated potassium excretion that was less than 1.50 g per day, higher potassium excretion was associated with a reduced risk of the composite outcome. CONCLUSIONS: In this study in which sodium intake was estimated on the basis of measured urinary excretion, an estimated sodium intake between 3 g per day and 6 g per day was associated with a lower risk of death and cardiovascular events than was either a higher or lower estimated level of intake. As compared with an estimated potassium excretion that was less than 1.50 g per day, higher potassium excretion was associated with a lower risk of death and cardiovascular events. Copyright 2014 Massachusetts Medical Society.

**Publication type:** Journal: Article
News

NHS Choices

Viagra could double up as heart failure drug
Monday Oct 20 2014
"Sex pill Viagra could help men suffering from heart disease," reports the Mirror. This headline follows a new review into the potential heart benefits of the active ingredient in erectile dysfunction drugs such as sildenafil (Viagra)...

Benefits of statins 'outweigh diabetes risk'
Wednesday Sep 24 2014
"Statins increase risk of diabetes but benefits are still worth it, say experts,” The Guardian reports. A large study found the medication lead to a modest increase in weight and subsequent diabetes risk...

Heart failure drug could 'cut deaths by a fifth'
Monday Sep 1 2014
“A new drug believed to cause a 20 per cent reduction in heart failure deaths could present a 'major advance' in treatment,” The Independent reports. The drug, LCZ696, helps improve blood flow in heart failure patients...

Disclaimer and Feedback

This current awareness bulletin contains a selection of information which is not intended to be exhaustive, and although library staff have made every effort to link only to reputable and reliable websites, the information contained in this bulletin has not been critically appraised by library staff. It is therefore the responsibility of the reader to appraise this information for accuracy and relevance.

This bulletin was produced by Caroline Thomas, Librarian, Salisbury NHS Foundation Trust Healthcare Library. If you have any comments to make about this bulletin please contact Caroline.Thomas@salisbury.nhs.uk