Coronary Care Update

23 July 2020

Welcome to the latest copy of the Coronary Care Update. The aim of this publication is to bring together a range of recently published research and guidance that will help you make evidence-based decisions.

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A selection of articles from EMBASE and The British Nursing Index: Jan-Jul 2020

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15. Cardiovascular care of patients with stroke and high risk of stroke: The need for interdisciplinary action: A consensus report from the European Society of Cardiology Cardiovascular Round Table

16. A nationwide causal mediation analysis of survival following ST-elevation myocardial infarction

17. The efficacy and safety of prophylactic corticosteroids for the prevention of adverse outcomes in patients undergoing heart surgery using cardiopulmonary bypass: A systematic review and meta-analysis of randomized controlled trials

18. Peripheral Vein Thrombophlebitis in the Upper Extremity: A Systematic Review of a Frequent and Important Problem

19. Intracerebral Hemorrhage Outcomes in the Very Elderly

20. Prevalence of obstructive sleep apnoea in acute coronary syndrome patients: Systematic review and meta-analysis

21. Low molecular weight heparin for prevention of microvascular occlusion in digital replantation

22. A pragmatic, multi-centered, stepped wedge, cluster randomized controlled trial pilot of the clinical and cost effectiveness of a complex Stroke Oral healthCare intervention pLan Evaluation II (SOCLE II) compared with usual oral healthcare in stroke wards

23. Sustained Inflation vs Standard Resuscitation for Preterm Infants: A Systematic Review and Meta-analysis

24. Yoga-Based Cardiac Rehabilitation After Acute Myocardial Infarction: A Randomized Trial

25. Multicap to improve adherence after acute coronary syndromes: results of a randomized controlled clinical trial

26. The myocardial ischaemia national audit project (MINAP)

27. Using a structured, patient-centred, educational exchange to facilitate a shared conversation about stroke prevention medications

28. Impact of direct oral anticoagulant off-label doses on clinical outcomes of atrial fibrillation patients: A systematic review

29. Venous thromboembolism prophylaxis in thoracic surgery patients: An international survey

30. Impact of hospital volume on patient safety indicators and failure to rescue following open aortic aneurysm repair

31. Catheter ablation of atrial fibrillation reduces heart failure rehospitalization in patients with heart failure with preserved ejection fraction

32. A Systematic Review of Network Meta-Analyses and Real-World Evidence Comparing Apixaban and Rivaroxaban in Nonvalvular Atrial Fibrillation

33. Outcome of pitavastatin versus atorvastatin therapy in patients with hypercholesterolemia at high risk for atherosclerotic cardiovascular disease

34. Imaging in patients with suspected acute heart failure: timeline approach position statement on behalf of the Heart Failure Association of the European Society of Cardiology

35. European Society of Cardiology/Heart Failure Association position paper on the role and safety of new glucose-lowering drugs in patients with heart failure

36. Management of acute ischemic stroke

37. Nutraceuticals in Patients With Heart Failure: A Systematic Review

38. Cost-utility analysis of learning and coping versus standard education in cardiac rehabilitation: A randomised controlled trial with 3 years of follow-up

39. Axillary artery cannulation reduces early embolic stroke and mortality after open arch repair with circulatory arrest

40. Critical appraisal on the impact of preoperative rehabilitation and outcomes after major abdominal and cardiothoracic surgery: A systematic review and meta-analysis

41. Telerehabilitation services for stroke

42. Exposure to guideline-recommended drugs after a first acute myocardial infarction in older adults: does deprivation matter?

43. Efficacy of empagliflozin on heart failure and renal outcomes in patients with atrial fibrillation: data from the EMPA-REG OUTCOME trial

44. Factors associated with in-hospital complications and long-term implications of these complications in elderly patients undergoing endovascular aneurysm repair

45. Alcohol Abstinence in Drinkers with Atrial Fibrillation

46. Motivational Interviewing as a Strategy to Impact Outcomes in Heart Failure Patients: A Systematic Review

47. Cardiac rehabilitation after acute myocardial infarction in Sweden - evaluation of programme characteristics and adherence to European guidelines: The Perfect Cardiac Rehabilitation (Perfect-CR) study

48. Association between prediabetes and risk of all cause mortality and cardiovascular disease: updated meta-analysis

49. Variations between women and men in risk factors, treatments, cardiovascular disease incidence, and death in 27 high-income, middle-income, and low-income countries (PURE): a prospective cohort study

50. Exploration of a nurse practitioner-led phase two cardiac rehabilitation programme on attendance and compliance

51. Interventions supporting long term adherence and decreasing cardiovascular events after myocardial infarction (ISLAND): pragmatic randomised controlled trial

52. Preventative Strategies of Atherosclerotic Cardiovascular Disease

53. Cancer and cardiovascular disease

54. Prevention of premature cardiovascular death worldwide

55. Covid-19: Data show 5000 fewer hospital admissions for acute coronary syndrome during pandemic

56. Follow-up after surgical treatment for intermittent claudication (FASTIC): a study protocol for a multicentre randomised controlled clinical trial

57. Monotherapy with a P2Y 12 inhibitor or aspirin for secondary prevention in patients with established atherosclerosis: a systematic review and meta-analysis

58. Recurrent cardiovascular events in patients with newly diagnosed acute coronary syndrome: Influence of diabetes and its management with medication

59. Use of renin–angiotensin–aldosterone system inhibitors and risk of COVID-19 requiring admission to hospital: a case-population study

60. Review of Current Screening and Diagnostic Tools for Atrial Fibrillation

Full strategy

1. Effect of diuretic infusion clinic in preventing hospitalization for patients with decompensating heart failure

Author(s): Alghalayini K.W.

Source: SAGE Open Medicine; 2020; vol. 8

Publication Date: 2020

Publication Type(s): Article

Available at SAGE Open Medicine - from Europe PubMed Central - Open Access

Available at SAGE Open Medicine - from Unpaywall

Abstract:

Introduction: It is proposed that access to administering intravenous furosemide outside the hospital can contribute to lowering hospital admissions for heart failure. This study aims to evaluate the effect of outpatient furosemide infusion protocol in preventing hospitalization for patients with decompensating heart failure. This constitutes designing a viable clinical pathway in hospitals using a multidisciplinary heart failure program.

Method(s): A prospective interventional study testing the effect of diuretic infusion clinic in preventing hospitalization for patients with decompensating heart failure was conducted on 150 decompensating heart failure patients requiring hospital admission. Only 105 patients met the criteria and subsequently enrolled in the study. Each patient was administered intravenous furosemide infusion one or more times according to the protocol and depending on their symptoms of decompensation. Patients were referred for admission at any point once there is no improvement of their medical condition, or referred to heart failure clinic when clinical picture improved as observed by the treating team.

Result(s): In total, 14 of 105 patients who received intravenous furosemide infusion did not respond to diuretic infusion protocol and required hospital admission while 91 patients responded to same protocol and did not require admission, P value was statistically significant in three laboratory test measures of potassium (<0.001), urea (0.004), and creatinine (0.008). Heart failure with reduced ejection fraction was observed in 70 (76.9%) responders with a mean ejection fraction of 23% and in 9 (64.3%) non-responders with mean ejection fraction of 19.9%.

Conclusion(s): Outpatient intravenous furosemide infusion protocol is effective in preventing hospitalization for decompensating heart failure and a viable clinical pathway for heart failure programs.

Database: EMBASE

2. Clinical outcomes after primary prevention defibrillator implantation are better predicted when the left ventricular ejection fraction is assessed by cardiovascular magnetic resonance

Author(s): Champ-Rigot L.; Milliez P.; Gay P.; Benouda L.; Pellissier A.; Saloux E.; Seita F.; Morello R.; Alexandre J.

Source: Journal of Cardiovascular Magnetic ResonanceJournal of Cardiovascular Magnetic Resonance; Jun 2020; vol. 22 (no. 1)

Publication Date: Jun 2020

Publication Type(s): Article

PubMedID: 32580786

Available at Journal of cardiovascular magnetic resonance : official journal of the Society for Cardiovascular Magnetic Resonance - from BioMed Central

Available at Journal of cardiovascular magnetic resonance : official journal of the Society for Cardiovascular Magnetic Resonance - from Europe PubMed Central - Open Access

Available at Journal of cardiovascular magnetic resonance : official journal of the Society for Cardiovascular Magnetic Resonance - from EBSCO (Biomedical Reference Collection - Comprehensive)

Available at Journal of cardiovascular magnetic resonance : official journal of the Society for Cardiovascular Magnetic Resonance - from ProQuest (Health Research Premium) - NHS Version

Available at Journal of cardiovascular magnetic resonance : official journal of the Society for Cardiovascular Magnetic Resonance - from Unpaywall

Abstract:

Background: The left ventricular ejection fraction (LVEF) is the key selection criterion for an implanted cardioverter defibrillator (ICD) in primary prevention of sudden cardiac death. LVEF is usually assessed by two-dimensional echocardiography, but cardiovascular magnetic resonance (CMR) imaging is increasingly used. The aim of our study was to evaluate whether LVEF assessment using CMR imaging (CMR-LVEF) or two-dimensional echocardiography (2D echo-LVEF) may predict differently the occurrence of clinical outcomes.

Method(s): In this retrospective study, we reviewed patients referred for primary prevention ICD implantation to Caen University Hospital from 2005 to 2014. We included 173 patients with either ischemic (n = 120) or dilated cardiomyopathy (n = 53) and who had undergone pre-ICD CMR imaging. The primary composite end point was the time to death from any cause or first appropriate device therapy.

Result(s): The mean CMR-LVEF was significantly lower than the mean 2D echo-LVEF (24% +/- 6 vs 28% +/- 6, respectively; p < 0.001). CMR-LVEF was a better independent predictive factor for the occurrence of the primary composite endpoint with a cut-off value of 22% (Hazard Ratio [HR] = 2.22; 95% CI [1.34-3.69]; p = 0.002) than 2D echo-LVEF with a cut-off value of 26% (HR = 1.61; 95% CI [0.99-2.61]; p = 0.056). Combination of the presence of scar with CMR-LVEF< 22% improved the predictive value for the occurrence of the primary outcome (HR = 2.58; 95% CI [1.54-4.30]; p < 0.001). The overall survival was higher among patients with CMR-LVEF>=22% than among patients with CMR-LVEF< 22% (p = 0.026), whereas 2D echo-LVEF was not associated with death.

Conclusion(s): CMR-LVEF is better associated with clinical outcomes than 2D echo-LVEF in primary prevention using an ICD. Scar identification further improved the outcome prediction. The combination of CMR imaging and echocardiography should be encouraged in addition to other risk markers to better select patients.Copyright © 2020 The Author(s).

Database: EMBASE

3. Prevention of thrombotic risk in hospitalized patients with COVID-19 and hemostasis monitoring

Author(s): Susen S.; Garrigue D.; Tacquard C.A.; Godon A.; Albaladejo P.; Mansour A.; Nguyen P.; Godier A.; Testa S.; Levy J.H.; Gruel Y.; Blais N.; Bonhomme F.; Borel-Derlon A.; Cohen A.; Collet J.-P.; De Maistre E.; Fontana P.; Lecompte T.; Huet D.G.; Longrois D.; Rosencher N.; Ickx B.; Laporte S.; Mismetti P.; Lasne D.; Dumont B.; Siguret V.; Llau J.; Le Gal G.; Lessire S.; Madi-Jebara S.; Mazighi M.; Morange P.E.; Motte S.; Mullier F.; Nathan N.; Pernod G.; Roullet S.; Roy P.M.; Schlumberger S.; Sie P.; Steib A.; Vincentelli A.; Zufferey P.; Boissier E.; James C.

Source: Critical CareCritical Care; Jun 2020; vol. 24 (no. 1)

Publication Date: Jun 2020

Publication Type(s): Review

PubMedID: 32560658

Available at Critical care (London, England) - from BioMed Central

Available at Critical care (London, England) - from Europe PubMed Central - Open Access

Available at Critical care (London, England) - from EBSCO (MEDLINE Complete)

Available at Critical care (London, England) - from ProQuest (Health Research Premium) - NHS Version

Available at Critical care (London, England) - from Unpaywall

Abstract: COVID-19 is an infection induced by the SARS-CoV-2 coronavirus, and severe forms can lead to acute respiratory distress syndrome (ARDS) requiring intensive care unit (ICU) management. Severe forms are associated with coagulation changes, mainly characterized by an increase in D-dimer and fibrinogen levels, with a higher risk of thrombosis, particularly pulmonary embolism. The impact of obesity in severe COVID-19 has also been highlighted. In this context, standard doses of low molecular weight heparin (LMWH) may be inadequate in ICU patients, with obesity, major inflammation, and hypercoagulability. We therefore urgently developed proposals on the prevention of thromboembolism and monitoring of hemostasis in hospitalized patients with COVID-19. Four levels of

thromboembolic risk were defined according to the severity of COVID-19 reflected by oxygen requirement and treatment, the body mass index, and other risk factors. Monitoring of hemostasis (including fibrinogen and D-dimer levels) every 48 h is proposed. Standard doses of LMWH (e.g., enoxaparin 4000 IU/24 h SC) are proposed in case of intermediate thrombotic risk (BMI < 30 kg/m2, no other risk factors and no ARDS). In all obese patients (high thrombotic risk), adjusted prophylaxis with intermediate doses of LMWH (e.g., enoxaparin 4000 IU/12 h SC or 6000 IU/12 h SC if weight > 120 kg), or unfractionated heparin (UFH) if renal insufficiency (200 IU/kg/24 h, IV), is proposed. The thrombotic risk was defined as very high in obese patients with ARDS and added risk factors for thromboembolism, and also in case of extracorporeal membrane oxygenation (ECMO), unexplained catheter thrombosis, dialysis filter thrombosis, or marked inflammatory syndrome and/or hypercoagulability (e.g., fibrinogen > 8 g/l and/or D-dimers > 3 mug/ml). In ICU patients, it is sometimes difficult to confirm a diagnosis of thrombosis, and curative anticoagulant treatment may also be discussed on a probabilistic basis. In all these situations, therapeutic doses of LMWH, or UFH in case of renal insufficiency with monitoring of anti-Xa activity, are proposed. In conclusion, intensification of heparin treatment should be considered in the context of COVID-19 on the basis of clinical and biological criteria of severity, especially in severely ill ventilated patients, for whom the diagnosis of pulmonary embolism cannot be easily confirmed.

Database: EMBASE

4. Thromboembolism and anticoagulant therapy during the COVID-19 pandemic: interim clinical guidance from the anticoagulation forum

Author(s): Barnes G.D.; Burnett A.; Allen A.; Blumenstein M.; Clark N.P.; Cuker A.; Dager W.E.; Deitelzweig S.B.; Ellsworth S.; Kaatz S.; Garcia D.; Minichiello T.

Source: Journal of Thrombosis and ThrombolysisJournal of Thrombosis and Thrombolysis; Jul 2020; vol. 50 (no. 1); p. 72-81

Publication Date: Jul 2020

Publication Type(s): Article

PubMedID: 32440883

Abstract: Coronavirus disease 2019 (COVID-19) is a viral infection that can, in severe cases, result in cytokine storm, systemic inflammatory response and coagulopathy that is prognostic of poor outcomes. While some, but not all, laboratory findings appear similar to sepsis-associated disseminated intravascular coagulopathy (DIC), COVID-19-induced coagulopathy (CIC) appears to be more prothrombotic than hemorrhagic. It has been postulated that CIC may be an uncontrolled immunothrombotic response to COVID-19, and there is growing evidence of venous and arterial thromboembolic events in these critically ill patients. Clinicians around the globe are challenged with rapidly identifying reasonable diagnostic, monitoring and anticoagulant strategies to safely and effectively manage these patients. Thoughtful use of proven, evidence-based approaches must be carefully balanced with integration of rapidly emerging evidence and growing experience. The goal of this document is to provide guidance from the Anticoagulation Forum, a North American organization of anticoagulation providers, regarding use of anticoagulant therapies in patients with COVID-19. We discuss in-hospital and post-discharge venous thromboembolism (VTE) prevention, treatment of suspected but unconfirmed VTE, laboratory monitoring of COVID-19, associated anticoagulant therapies, and essential elements for optimized transitions of care specific to patients with COVID-19.

Database: EMBASE

5. Outpatient treatment of worsening heart failure with intravenous and subcutaneous diuretics: a systematic review of the literature

Author(s): Wierda E.; Dickhoff C.; Handoko M.L.; Oosterom L.; Kok W.E.; de Rover Y.; de Mol B.A.J.M.; van Heerebeek L.; Schroeder-Tanka J.M.

Source: ESC Heart Failure; Jun 2020; vol. 7 (no. 3); p. 892-902

Publication Date: Jun 2020

Publication Type(s): Review

PubMedID: 32159279

Available at ESC heart failure - from ProQuest (Health Research Premium) - NHS Version

Available at ESC heart failure - from Unpaywall

Abstract:

Aims: In the coming decade, heart failure (HF) represents a major global healthcare challenge due to an ageing population and rising prevalence combined with scarcity of medical resources and increasing healthcare costs. A transitional care strategy within the period of clinical worsening of HF before hospitalization may offer a solution to prevent hospitalization. The outpatient treatment of worsening HF with intravenous or subcutaneous diuretics as an alternative strategy for hospitalization has been described in the literature.

Methods and Results: In this systematic review, the available evidence for the efficacy and safety of outpatient treatment with intravenous or subcutaneous diuretics of patients with worsening HF is analysed. A search was performed in the electronic databases MEDLINE and EMBASE. Of the 11 included studies 10 were single-centre, using non-randomized, observational registries of treatment with intravenous or subcutaneous diuretics for patients with worsening HF with highly variable selection criteria, baseline characteristics, and treatment design. One study was a randomized study comparing subcutaneous furosemide with intravenous furosemide. In a total of 984 unique individual patients treated in the reviewed studies, only a few adverse events were reported. Re-hospitalization rates for HF at 30 and 180 days were 28 and 46%, respectively. All-cause re-hospitalization rates at 30 and 60 days were 18-37 and 22%, respectively. The highest HF re-hospitalization was 52% in 30 days in the subcutaneous diuretic group and 42% in 30 days in the intravenous diuretic group.

Conclusion(s): The reviewed studies present practice-based results of treatment of patients with worsening HF with intravenous or subcutaneous diuretics in an outpatient HF care unit and report that it is effective by relieving symptoms with a low risk of adverse events. The studies do not provide satisfactory evidence for reduction in rates of re-hospitalization or improvement in mortality or quality of life. The conclusions drawn from these studies are limited by the quality of the individual studies. Prospective randomized studies are needed to determine the safety and effectiveness of outpatient intravenous or subcutaneous diuretic treatment for patient with worsening HF.

Database: EMBASE

6. Usefulness of a personalized algorithm-based discharge checklist in patients hospitalized for acute heart failure

Author(s): Allain F.; Loizeau V.; Hallouche M.; Herrou L.; Blanchart K.; Belin A.; Sabatier R.; Chaufourier L.; Hodzic A.; Manrique A.; Milliez P.; Legallois D.

Source: ESC Heart Failure; Jun 2020; vol. 7 (no. 3); p. 1217-1223

Publication Date: Jun 2020

Publication Type(s): Article

PubMedID: 32320135

Available at ESC heart failure - from ProQuest (Health Research Premium) - NHS Version

Available at ESC heart failure - from Unpaywall

Abstract:

Aims: The aim of this study is to evaluate the usefulness of a personalized discharge checklist (PCL) based on simple baseline characteristics on mortality, readmission for heart failure (HF), and quality of care in patients hospitalized for acute HF. Methods and Results: We designed an algorithm to generate PCL, based on 2016 HF European Society of Cardiology Guidelines and the screening of common comorbidities in elderly HF patients. We prospectively

included 139 patients hospitalized for HF from May 2018 to October 2018. A PCL was fulfilled for each patient at admission and 24 to 48 hours before the planned discharge. A control cohort of 182 consecutive patients was retrospectively included from May 2017 to October 2017. The primary composite endpoint was mortality or readmission for HF at 6 months. The secondary endpoints were mortality, readmission for HF, and quality of care (evidence-based medications, management of HF comorbidities, and planned care plan). There was no difference among baseline characteristics between PCL and control cohorts; mean age was 78.1 +/- 12.2 vs. 79.0 +/- 12.5 years old (P = 0.46) and 61 patients (43.9%) vs. 63 (34.6%) had HF with left ventricular ejection fraction (LVEF) <40% (P = 0.24). During the 6 month follow-up period, 59 patients (42.4%) reached the primary endpoint in the PCL cohort vs. 92 patients (50.5%) in the control cohort [hazard ratio (HR): 0.79, 95% confidence interval (CI) (0.57-1.09), P = 0.15]. Subgroup analysis including only patients with either altered (<40%) or mid-range or preserved (>=40%) LVEF showed no significant difference among groups. There was a non-significant trend toward a reduction in HF readmission rate in the PCL group [38 patients (27.3%) vs. 64 patients (35.2%), HR: 0.73, 95%CI (0.49-1.09), P = 0.13]. There was no difference regarding survival or the use of evidence-based medications. A higher proportion of patients were screened and treated for iron and vitamin D deficiencies (53.2% vs. 35.7%, P < 0.01 and 73.4% vs. 29.7%, P < 0.01, respectively), as well as malnutrition supplemented in the PCL group. There was a higher referral to HF follow-up programme in the PCL group but not to telemedicine or cardiac rehabilitation programs. Conclusion(s): In this preliminary study, the use of a PCL did not improve outcomes at 6 months in patients hospitalized for acute HF. There was a non-significant trend towards a reduction in HF readmission rate in the PCL group. In addition, the management of HF comorbidities was significantly improved by PCL with a better referral to follow-up programme. A multicentre study is warranted to assess the usefulness of a simple costless personalized checklist in a large HF patients' population.

Database: EMBASE

7. Comparison of the preventive efficacy of rosuvastatin versus atorvastatin in post-contrast acute kidney injury in patients with ST-segment elevation myocardial infarction undergoing percutaneous coronary intervention

Author(s): Dai Y.; Huang J.; Shao S.; Chen H.; Xue L.; Chen J.; Tan N.; He P.; Liu Y.; Yu D.; Zeng L.; Huang Z.; Duan C.

Source: Biomedicine and PharmacotherapyBiomedicine and Pharmacotherapy; Aug 2020; vol. 128

Publication Date: Aug 2020

Publication Type(s): Article

PubMedID: 32521452

Available at Biomedicine & pharmacotherapy = Biomedecine & pharmacotherapie - from Unpaywall

Abstract: Statins have been shown to reduce the risk of post-contrast acute kidney injury (PC-AKI) in patients undergoing percutaneous coronary intervention (PCI). However, the preventive effect of rosuvastatin versus atorvastatin on PC-AKI in patients with ST-segment elevation myocardial infarction (STEMI) undergoing PCI remains unclear. Patients with STEMI undergoing PCI between January 2010 and May 2016 were consecutively enrolled. A total of 1300 included patients were divided into two groups according to the statin type (atorvastatin: n = 1040; rosuvastatin: n = 260). The primary endpoint was PC-AKI defined as an absolute increase of >= 0.5 mg/dL in the level of serum creatinine or an increase of >= 25 % over baseline within 48-72 h after contrast media exposure. In total, 245 (18.8 %) patients developed PC-AKI. The atorvastatin and rosuvastatin groups had similar rates of PC-AKI (19.1 % vs. 17.7 %, p = 0.595), in-hospital mortality (4.1 % vs. 3.8 %, p = 0.833), and major adverse clinical events (MACE). Multivariate logistic regression analysis revealed that rosuvastatin treatment had an effect similar to atorvastatin regarding PC-AKI (odds ratio [OR] = 0.97, 95 % confidence interval [CI], 0.66-1.43, p = 0.874). Propensity score analyses and subgroup analysis demonstrated similar results for PC-AKI. Kaplan-Meier survival curves and Cox proportional regression showed that the atorvastatin and rosuvastatin groups had no differences regarding follow-up mortality. Rosuvastatin exerted a similar preventive effect against PC-AKI and showed similar levels of in-hospital and follow-up all-cause mortality and in-hospital MACE compared with atorvastatin in patients with STEMI undergoing PCI.

Database: EMBASE

8. Exercise-based cardiac rehabilitation in patients with reduced left ventricular ejection fraction: The Cardiac Rehabilitation Outcome Study in Heart Failure (CROS-HF): A systematic review and meta-analysis

Author(s): Bjarnason-Wehrens B.; Nebel R.; Jensen K.; Hackbusch M.; Grilli M.; Gielen S.; Schwaab B.; Rauch B.

Source: European Journal of Preventive CardiologyEuropean Journal of Preventive Cardiology; Jun 2020; vol. 27 (no. 9); p. 929-952

Publication Date: Jun 2020

Publication Type(s): Review

PubMedID: 31177833

Available at European journal of preventive cardiology - from Unpaywall

Abstract:

Background: In heart failure with reduced left ventricular ejection fraction (HFrEF) patients the effects of exercise-based cardiac rehabilitation on top of state-of-the-art pharmacological and device therapy on mortality, hospitalization, exercise capacity and quality-of-life are not well established. Design(s): The design of this study involved a structured review and meta-analysis.

Method(s): Evaluation of randomised controlled trials of exercise-based cardiac rehabilitation in HFrEF-patients with left ventricular ejection fraction <=40% of any aetiology with a follow-up of >=6 months published in 1999 or later. Result(s): Out of 12,229 abstracts, 25 randomised controlled trials including 4481 HFrEF-patients were included in the final evaluation. Heterogeneity in study population, study design and exercise-based cardiac rehabilitation-intervention was evident. No significant difference in the effect of exercise-based cardiac rehabilitation on mortality compared to control-group was found (hazard ratio 0.75, 95% confidence interval 0.39-1.41, four studies; 12-months follow-up: relative risk 1.29, 95% confidence interval 0.66-2.49, eight studies; six-months follow-up: relative risk 0.91, 95% confidence interval 0.26-3.16, seven studies). In addition there was no significant difference between the groups with respect to 'hospitalization-for-any-reason' (12-months follow-up: relative risk 0.79, 95% confidence interval 0.41-1.53, four studies), or 'hospitalization-due-to-heart-failure' (12-months follow-up: relative risk 0.59, 95% confidence interval 0.12-2.91, four studies; six-months follow-up: relative risk 0.84, 95% confidence interval 0.07-9.71, three studies). All studies show improvement of exercise capacity. Participation in exercise-based cardiac rehabilitation significantly improved quality-of-life as evaluated with the Kansas City Cardiomyopathy Questionnaire: (six-months follow-up: mean difference 1.94, 95% confidence interval 0.35-3.56, two studies), but no significant results emerged for quality-of-life measured by the Minnesota Living with Heart Failure Questionnaire (nine-months or more follow-up: mean difference -4.19, 95% confidence interval -10.51-2.12, seven studies; six-months follow-up: mean difference -5.97, 95% confidence interval -16.17-4.23, four studies).

Conclusion(s): No association between exercise-based cardiac rehabilitation and mortality or hospitalisation could be observed in HFrEF patients but exercise-based cardiac rehabilitation is likely to improve exercise capacity and quality of life.

Database: EMBASE

9. Trajectory of self-care behaviour in patients with heart failure: the impact on clinical outcomes and influencing factors

Author(s): Liljeroos M.; Kato N.P.; van der Wal M.H.L.; Stromberg A.; Jaarsma T.; van Veldhuisen D.J.; Brons M.; Luttik M.L.

Source: European Journal of Cardiovascular NursingEuropean Journal of Cardiovascular Nursing; Jun 2020; vol. 19 (no. 5); p. 421-432

Publication Date: Jun 2020

Publication Type(s): Article

PubMedID: 31992064

Available at European journal of cardiovascular nursing : journal of the Working Group on Cardiovascular Nursing of the European Society of Cardiology - from Unpaywall

Abstract:

Background: Patients' self-care behaviour is still suboptimal in many heart failure (HF) patients and underlying mechanisms on how to improve self-care need to be studied.

Aim(s): (1) To describe the trajectory of patients' self-care behaviour over 1 year, (2) to clarify the relationship between the trajectory of self-care and clinical outcomes, and (3) to identify factors related to changes in self-care behaviour.

Method(s): In this secondary analysis of the COACH-2 study, 167 HF patients (mean age 73 years) were included. Self-care behaviour was assessed at baseline and after 12 months using the European Heart Failure Self-care Behaviour scale. The threshold score of 70 was used to define good self-care behaviour.

Result(s): Of all patients, 21% had persistent poor self-care behaviour, and 27% decreased from good to poor. Self-care improved from poor to good in 10%; 41% had a good self-care during both measurements. Patients who improved self-care had significantly higher perceived control than those with persistently good self-care at baseline. Patients who decreased their self-care had more all-cause hospitalisations (35%) and cardiovascular hospitalisations (26%) than patients with persistently good self-care (2.9%, $p < 0.05$). The prevalence of depression increased at 12 months in both patients having persistent poor self-care (0% to 21%) and decreasing self-care (4.4% to 22%, both $p < 0.05$).

Conclusion(s): Perceived control is a positive factor to improve self-care, and a decrease in self-care is related to worse outcomes. Interventions to reduce psychological distress combined with self-care support could have a beneficial impact on patients decreasing or persistently poor self-care behaviour.Copyright © The European Society of Cardiology 2020.

Database: EMBASE

10. Effectiveness of Home-based rehabilitation in improving physical function of persons with Stroke and other physical disability: A systematic review of randomized controlled trials

Author(s): Gelaw A.Y.; Janakiraman B.; Gebremeskel B.F.; Ravichandran H.

Source: Journal of Stroke and Cerebrovascular DiseasesJournal of Stroke and Cerebrovascular Diseases; Jun 2020; vol. 29 (no. 6)

Publication Date: Jun 2020

Publication Type(s): Article

PubMedID: 32278534

Abstract:

Background: A significant number of people with physical disabilities in the world, especially in most developing countries face a lot of impediments. There is a dearth of literature describing the consensus of effectiveness of home-based rehabilitation programs designed specifically for people living with different types of physical disabilities resulting from stroke, Parkinson's and other musculoskeletal conditions.

Objective(s): To determine if home-based rehabilitation is effective in improving physical function of people with physical disabilities.

Method(s): A systematic review of randomized controlled trials was done. An electronic search of the literature was done by PubMed, Cochrane Library, the Physiotherapy Evidence Database and Cumulative Index to Nursing and Allied Health Literature from 1990 to March 2018 to identify full text, peer-reviewed randomized controlled trials, Published in English. Selected randomized controlled trials were critically appraised with 11 items Physiotherapy Evidence Database scale scores extracted from the Physiotherapy Evidence Database and studies were included if the cutoff of 5 points was reached on Physiotherapy Evidence Database scale score. Result(s): Nine randomized controlled trials met the preset eligibility criteria. This systematic review found that there is the consistency of

findings among the included studies which showed that home-based rehabilitation is an effective option for people with physical disabilities.

Conclusion(s): Home-based rehabilitation is not superior to hospital-based rehabilitation in improving nearly all patient outcomes assessed. However, home-based exercise programs require patient enthusiasm and regular follow-up to yield positive outcomes.Copyright © 2020 Elsevier Inc.

Database: EMBASE

11. Anti-inflammatory therapy for preventing stroke and other vascular events after ischaemic stroke or transient ischaemic attack

Author(s): Coveney S.; McCabe J.J.; Murphy S.; O'Donnell M.; Kelly P.J.

Source: Cochrane Database of Systematic ReviewsCochrane Database of Systematic Reviews; May 2020; vol. 2020 (no. 5)

Publication Date: May 2020

Publication Type(s): Review

PubMedID: 32392374

Available at The Cochrane database of systematic reviews - from Cochrane Collaboration (Wiley)

Abstract:

Background: An increasing body of evidence suggests that inflammation plays a key role in stroke, in particular stroke of atherosclerotic origin. Anti-inflammatory medications are a widely heterogeneous group of drugs that are used to suppress the innate inflammatory pathway and thus prevent persistent or recurrent inflammation. Anti-inflammatory agents have the potential to stabilise atherosclerotic plaques by impeding the inflammatory pathway. By targeting specific cytokines, the inflammatory pathway may be interrupted at various stages.

Objective(s): To assess the benefits and harms of anti-inflammatory medications plus standard care versus standard care with or without placebo for prevention of vascular events (stroke, myocardial infarction (MI), non-fatal cardiac arrest, unstable angina requiring revascularisation, vascular death) and all-cause mortality in people with a prior history of ischaemic stroke or transient ischaemic attack (TIA).

Search Method(s): We searched the Cochrane Central Register of Controlled Trials (CENTRAL; last searched 29 May 2019); MEDLINE (1948 to 29 May 2019); Embase (1980 to 29 May 2019); the Cumulative Index to Nursing and Allied Health Literature (CINAHL; 1982 to 29 May 2019); and Scopus (1995 to 29 May 2019). In an effort to identify additional published, unpublished, and ongoing trials, we searched several grey literature sources (last searched 30 May 2019). We incorporated all identified studies into the results section. We applied no restrictions with respect to language, date of publication, or study setting.

Selection Criteria: We considered randomised controlled trials (RCTs) and cluster-randomised controlled trials that evaluated anti-inflammatory medications for prevention of major cardiovascular events following ischaemic stroke or TIA.

Data Collection and Analysis: Two review authors independently assessed for inclusion titles and abstracts of studies identified by the search. Two review authors independently reviewed full-text articles for inclusion in this review. We planned to assess risk of bias and to apply the GRADE method.

Main Result(s): We identified no studies that met the inclusion criteria.

Authors' conclusions: There is currently a paucity of evidence on the use of anti-inflammatory medications for prevention of major cardiovascular events following ischaemic stroke or TIA. RCTs are needed to assess whether use of anti-inflammatory medications in this setting is beneficial.Copyright © 2020 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

Database: EMBASE

12. Screening strategies for hypertension

Author(s): Schmidt B.-M.; Durao S.; Hohlfeld A.; Kredo T.; Toews I.; Nury E.; Meerpohl J.J.; Bavuma C.M.

Source: Cochrane Database of Systematic ReviewsCochrane Database of Systematic Reviews; May 2020; vol. 2020 (no. 5)

Publication Date: May 2020

Publication Type(s): Review

PubMedID: 32378196

Available at The Cochrane database of systematic reviews - from Cochrane Collaboration (Wiley)

Abstract:

Background: Hypertension is a major public health challenge affecting more than one billion people worldwide; it disproportionately affects populations in low- and middle-income countries (LMICs), where health systems are generally weak. The increasing prevalence of hypertension is associated with population growth, ageing, genetic factors, and behavioural risk factors, such as excessive salt and fat consumption, physical inactivity, being overweight and obese, harmful alcohol consumption, and poor management of stress. Over the long term, hypertension leads to risk for cardiovascular events, such as heart disease, stroke, kidney failure, disability, and premature mortality. Cardiovascular events can be preventable when high-risk populations are targeted, for example, through population-wide screening strategies. When available resources are limited, taking a total risk approach whereby several risk factors of hypertension are taken into consideration (e.g. age, gender, lifestyle factors, diabetes, blood cholesterol) can enable more accurate targeting of high-risk groups. Targeting of high-risk groups can help reduce costs in that resources are not spent on the entire population. Early detection in the form of screening for hypertension (and associated risk factors) can help identify high-risk groups, which can result in timely treatment and management of risk factors. Ultimately, early detection can help reduce morbidity and mortality linked to it and can help contain health-related costs, for example, those associated with hospitalisation due to severe illness and poorly managed risk factors and comorbidities.

Objective(s): To assess the effectiveness of different screening strategies for hypertension (mass, targeted, or opportunistic) to reduce morbidity and mortality associated with hypertension.

Search Method(s): An Information Specialist searched the Cochrane Register of Studies (CRS-Web), the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, Embase, Latin American Caribbean Health Sciences Literature (LILACS) Bireme, ClinicalTrials.gov, and the World Health Organization International Clinical Trials Registry Platform (WHO ICTRP) without language, publication year, or publication status restrictions. The searches were conducted from inception until 9 April 2020.

Selection Criteria: Randomised controlled trials (RCTs) and non-RCTs (NRCTs), that is, controlled before and after (CBA), interrupted time series (ITS), and prospective analytic cohort studies of healthy adolescents, adults, and elderly people participating in mass, targeted, or opportunistic screening of hypertension.

Data Collection and Analysis: Screening of all retrieved studies was done in Covidence. A team of reviewers, in pairs, independently assessed titles and abstracts of identified studies and acquired full texts for studies that were potentially eligible. Studies were deemed to be eligible for full-text screening if two review authors agreed, or if consensus was reached through discussion with a third review author. It was planned that at least two review authors would independently extract data from included studies, assess risk of bias using pre-specified Cochrane criteria, and conduct a meta-analysis of sufficiently similar studies or present a narrative synthesis of the results. Main Result(s): We screened 9335 titles and abstracts. We identified 54 potentially eligible studies for full-text screening. However, no studies met the eligibility criteria.

Authors' conclusions: There is an implicit assumption that early detection of hypertension through screening can reduce the burden of morbidity and mortality, but this assumption has not been tested in rigorous research studies. High-quality evidence from RCTs or programmatic evidence from NRCTs on the effectiveness and costs or harms of different screening strategies for hypertension (mass, targeted, or opportunistic) to reduce hypertension-related morbidity and mortality is lacking.

Database: EMBASE

13. Implementation of a randomized controlled trial on an inpatient stroke rehabilitation unit: Lessons learned

Author(s): Sheehy L.; Taillon-Hobson A.; Sveistrup H.; Bilodeau M.; Finestone H.

Source: Contemporary Clinical Trials Communications; Jun 2020; vol. 18

Publication Date: Jun 2020

Publication Type(s): Article

Available at Contemporary clinical trials communications - from Unpaywall

Abstract:

Background/Aims: The objective of this manuscript is to present challenges and solutions that arose during a mid-sized single-site RCT of a rehabilitation intervention performed in an inpatient stroke rehabilitation setting. Method(s): Seventy-six participants from an inpatient stroke rehabilitation unit were randomized to experimental and control groups. All participants did 30-45 min of virtual reality (VR) daily for 10-12 sessions. The experimental group did VR targeting sitting balance while the control group did VR with limited arm movement. Challenges during the implementation of the RCT were documented and strategies to mitigate them were applied.

Result(s): Challenges were placed into five categories: 1. Recruitment. Our recruitment procedures required multiple steps prior to initiating direct patient contact; one solution would be to have patients consent to be approached about research upon admission to the inpatient unit. 2. Patient-specific Issues. Fatigue, pain, vision problems and engagement were managed through scheduling, increasing the workload slowly and personalized modifications to the VR. 3./4. Scheduling and Staffing. Recruitment and attendance at VR sessions were maximized through good communication, flexibility and cooperation, between research staff, clinical staff, volunteers, students and participants. 5. Technology. Because hospital internet service was poor, a mobile internet data plan was purchased to ensure the system's reliability.

Conclusion(s): We have identified challenges in delivering a rehabilitation intervention on an inpatient stroke rehabilitation unit and some of the measures taken to surmount these challenges. Through good planning, flexibility and collaboration, almost all of the challenges were successfully addressed. Clinical trial registration number: URL: http://www.clinicaltrials.gov. Unique identifier: NCT02285933.

Database: EMBASE

14. Interventions for sexual dysfunction following stroke

Author(s): Stratton H.; Sansom J.; Anderson P.; Ng L.; Brown-Major A.

Source: Cochrane Database of Systematic ReviewsCochrane Database of Systematic Reviews; May 2020; vol. 2020 (no. 5)

Publication Date: May 2020

Publication Type(s): Review

PubMedID: 32356377

Available at The Cochrane database of systematic reviews - from Cochrane Collaboration (Wiley)

Abstract:

Background: Sexual dysfunction following stroke is common but often is poorly managed. As awareness of sexual dysfunction following stroke increases as an important issue, a clearer evidence base for interventions for sexual dysfunction is needed to optimise management.

Objective(s): To evaluate the effectiveness of interventions to reduce sexual dysfunction following stroke, and to assess adverse events associated with interventions for sexual dysfunction following stroke.

Search Method(s): We conducted the search on 27 November 2019. We searched the Cochrane Central Register of Controlled Trials (CENTRAL; from June 2014), in the Cochrane Library; MEDLINE (from 1950); Embase (from 1980); the Cumulative Index to Nursing and Allied Health Literature (CINAHL; from 1982); the Allied and Complementary

Medicine Database (AMED; from 1985); PsycINFO (from 1806); the Physiotherapy Evidence Database (PEDro; from 1999); and 10 additional bibliographic databases and ongoing trial registers.

Selection Criteria: We included randomised controlled trials (RCTs) that compared pharmacological treatments, mechanical devices, or complementary medicine interventions versus placebo. We also included other non-pharmacological interventions (such as education or therapy), which were compared against usual care or different forms of intervention (such as different intensities) for treating sexual dysfunction in stroke survivors.

Data Collection and Analysis: Two review authors independently selected eligible studies, extracted data, and assessed study quality. We determined the risk of bias for each study and performed a 'best evidence' synthesis using the GRADE approach. Main Result(s): We identified three RCTs with a total of 212 participants. We noted significant heterogeneity in interventions (one pharmacological, one physiotherapy-based, and one psycho-educational), and all RCTs were small and of 'low' or 'very low' quality. Based on these RCTs, data are insufficient to provide any reliable indication of benefit or risk to guide clinical practice in terms of the use of sertraline, specific pelvic floor muscle training, or individualised sexual rehabilitation.

Authors' conclusions: Use of sertraline to treat premature ejaculation needs to be tested in further RCTs. The lack of benefit with structured sexual rehabilitation and pelvic floor physiotherapy should not be interpreted as proof of ineffectiveness. Well-designed, randomised, double-blinded, placebo-controlled trials of long-term duration are needed to determine the effectiveness of various types of interventions for sexual dysfunction. It should be noted, however, that it may not be possible to double-blind trials of complex interventions.

Database: EMBASE

15. Cardiovascular care of patients with stroke and high risk of stroke: The need for interdisciplinary action: A consensus report from the European Society of Cardiology Cardiovascular Round Table

Author(s): Doehner W.; Endres M.; Mazighi M.; Hofmann B.M.; Lautsch D.; Hindricks G.; Bohula E.A.; Byrne R.A.; Camm A.J.; Casadei B.; Caso V.; Cognard C.; Diener H.-C.; Landmesser U.; Goldstein P.; Halliday A.; Hopewell J.C.; Jovanovic D.R.; Kobayashi A.; Kostrubiec M.; Krajina A.; Markus H.S.; Ntaios G.; Pezzella F.R.; Ribo M.; Rubiera M.; Rosano G.M.C.; Sharma M.; Touyz R.M.; Widimsky P.

Source: European Journal of Preventive CardiologyEuropean Journal of Preventive Cardiology; May 2020; vol. 27 (no. 7); p. 682-692

Publication Date: May 2020

Publication Type(s): Article

PubMedID: 31569966

Available at European journal of preventive cardiology - from Unpaywall

Abstract: Comprehensive stroke care is an interdisciplinary challenge. Close collaboration of cardiologists and stroke physicians is critical to ensure optimum utilisation of short- and long-term care and preventive measures in patients with stroke. Risk factor management is an important strategy that requires cardiologic involvement for primary and secondary stroke prevention. Treatment of stroke generally is led by stroke physicians, yet cardiologists need to be integrated care providers in stroke units to address all cardiovascular aspects of acute stroke care, including arrhythmia management, blood pressure control, elevated levels of cardiac troponins, valvular disease/endocarditis, and the general management of cardiovascular comorbidities. Despite substantial progress in stroke research and clinical care has been achieved, relevant gaps in clinical evidence remain and cause uncertainties in best practice for treatment and prevention of stroke. The Cardiovascular Round Table of the European Society of Cardiology together with the European Society of Cardiology Council on Stroke in cooperation with the European Stroke Organisation and partners from related scientific societies, regulatory authorities and industry conveyed a two-day workshop to discuss current and emerging concepts and apparent gaps in stroke care, including risk factor management, acute diagnostics, treatments and complications, and operational/logistic issues for health care systems and integrated networks. Joint initiatives of cardiologists and stroke physicians are needed in research and clinical care to target

unresolved interdisciplinary problems and to promote the best possible outcomes for patients with stroke.

Database: EMBASE

16. A nationwide causal mediation analysis of survival following ST-elevation myocardial infarction

Author(s): Dondo T.B.; Hall M.; Munyombwe T.; Wilkinson C.; Yadegarfar M.E.; Gale C.P.; Timmis A.; Batin P.D.; Jernberg T.; Fox K.A.A.

Source: HeartHeart; May 2020; vol. 106 (no. 10); p. 765-771

Publication Date: May 2020

Publication Type(s): Article

PubMedID: 31732655

Available at Heart (British Cardiac Society) - from BMJ Journals

Available at Heart (British Cardiac Society) - from Unpaywall

Abstract:

Objective: International studies report a decline in mortality following ST-elevation myocardial infarction (STEMI). The extent to which the observed improvements in STEMI survival are explained by temporal changes in patient characteristics and utilisation of treatments is unknown.

Methods: Cohort study using national registry data from the Myocardial Ischaemia National Audit Project between first January 2004 and 30th June 2013. 232 353 survivors of hospitalisation with STEMI as recorded in 247 hospitals in England and Wales. Flexible parametric survival modelling and causal mediation analysis were used to estimate the relative contribution of temporal changes in treatments and patient characteristics on improved STEMI survival. Results: Over the study period, unadjusted survival at 6 months and 1 year improved by 0.9% and 1.0% on average per year (HR: 0.991, 95% CI: 0.988 to 0.994 and HR: 0.990, 95% CI: 0.987 to 0.993, respectively). The uptake of primary percutaneous coronary intervention (PCI) (HR: 1.025, 95% CI: 1.021 to 1.028) and increased prescription of P2Y 12 inhibitors (HR: 1.035, 95% CI: 1.031 to 1.039) were significantly associated with improvements in 1-year survival. Primary PCI explained 16.8% (95% CI: 10.8% to 31.6%) and 13.2% (9.2% to 21.9%) of the temporal survival improvements at 6 months and 1 year, respectively, whereas P2Y 12 inhibitor prescription explained 5.3% (3.6% to 8.8%) of the temporal improvements at 6 months but not at 1 year.

Conclusions: For STEMI in England and Wales, improvements in survival between 2004 and 2013 were significantly explained by the uptake of primary PCI and increased use of P2Y 12 inhibitors at 6 months and primary PCI only at 1 year. Trial registration number NCT03749694.

Database: EMBASE

17. The efficacy and safety of prophylactic corticosteroids for the prevention of adverse outcomes in patients undergoing heart surgery using cardiopulmonary bypass: A systematic review and meta-analysis of randomized controlled trials

Author(s): Ng K.T.; Van Paassen J.; Arbous M.S.; Langan C.; Sarode D.P.; Alston R.P.; Dekkers O.M.

Source: European Journal of Cardio-thoracic SurgeryEuropean Journal of Cardio-thoracic Surgery; Apr 2020; vol. 57 (no. 4); p. 620-627

Publication Date: Apr 2020

Publication Type(s): Review

PubMedID: 31972000

Abstract: Corticosteroids are often administered prophylactically to attenuate the inflammatory response associated with cardiac surgery using cardiopulmonary bypass (CPB). However, the efficacy and safety profile of corticosteroids

remain uncertain. The primary aim of this systematic review and meta-analysis was to investigate the effect of corticosteroids on mortality in adult cardiac surgery using CPB. Secondary aims were to examine the effect of corticosteroids on myocardial adverse events, pulmonary adverse events, atrial fibrillation, surgical site infection, gastrointestinal bleeding and duration of stay in the intensive care unit and hospital. Randomized controlled trials (RCTs) were systematically searched in electronic databases (MEDLINE, EMBASE, CINAHL, CENTRAL and Web of Science) from their inception until March 2019. Observational studies, case reports, case series and literature reviews were excluded. Sixty-two studies (n = 16 457 patients) were included in this meta-analysis. There was no significant difference in mortality between the corticosteroid and placebo groups [odds ratio (OR) 0.96, 95% confidence interval (CI) 0.81-1.14; P = 0.65, participants = 14 693, studies = 24, evidence of certainty: Moderate]. Compared to those receiving a placebo, patients who were given corticosteroids had a significantly higher incidence of myocardial adverse events (OR 1.17, 95% CI 1.03-1.33; P = 0.01, participants = 14 512, studies = 23) and a lower incidence of pulmonary adverse events (OR 0.86, 95% CI 0.75-0.98; P = 0.02, participants = 13 426, studies = 17). The incidences of atrial fibrillation (OR 0.87, 95% CI 0.81-0.94; P < 0.001, participants = 14 148, studies = 24) and surgical site infection (OR 0.81, 95% CI 0.73-0.90; P < 0.001, participants = 13 946; studies = 22) were all lower in patients who were given corticosteroids. In the present meta-analysis of 62 RCTs (16 457 patients), including the 2 major RCTs (SIRS and DECS trials: 12 001 patients), we found that prophylactic corticosteroids in cardiac surgery did not reduce mortality. The clinical significance of an increase in myocardial adverse events remains unclear as the definition of a relevant myocardial end point following cardiac surgery varied greatly between RCTs.

Database: EMBASE

18. Peripheral Vein Thrombophlebitis in the Upper Extremity: A Systematic Review of a Frequent and Important Problem

Author(s): Heng S.Y.; Yap R.T.-J.; Tie J.; McGrouther D.A.

Source: American Journal of MedicineAmerican Journal of Medicine; Apr 2020; vol. 133 (no. 4); p. 473

Publication Date: Apr 2020

Publication Type(s): Article

PubMedID: 31606488

Abstract:

Background: The acceptable incidence of thrombophlebitis following intravenous cannulation is 5%, as recommended by the Intravenous Nurses Society guidelines, but publications have reported startling figures of 20% to 80%. Given the frequency of intravenous lines, this presents a potential clinical problem. We aimed to determine the predisposing patient, catheter, and health care-related factors of peripheral vein thrombophlebitis in the upper extremity.

Method(s): In this systematic review, we used a comprehensive search strategy to identify risk factors of thrombophlebitis from inception to May 20, 2019. Studies reporting risk factors of peripheral vein thrombophlebitis of adult patients admitted to the hospital and receiving an intravenous cannulation were included. The Quality of Prognostic Studies tool was used in the assessment for risk of bias to determine the study quality.

Result(s): Of the 6910 studies initially identified, 25 were eligible for inclusion. Qualitative syntheses revealed that patient-related factors that confer a higher risk included intercurrent illness, immunocompromised state, comorbidities such as diabetes mellitus, malignancy, previous thrombophlebitis, burns, and higher hemoglobin levels. Catheter-related risk factors included catheter size, duration, and site of insertion. Intravenous antibiotics and potassium chloride predisposed to thrombophlebitis. Cannulation by an intravenous therapy team and more nursing care were associated with a decreased risk. A P-value < .5 was considered to be statistically significant.

Conclusion(s): Recognition of the predisposing factors would allow for targeted strategies to aid in the prevention of this iatrogenic infection, which may include closer monitoring of patients who are identified to be vulnerable. Based on this systematic review, we developed an algorithm to guide clinical management. Further research is warranted to validate this algorithm.

Database: EMBASE

19. Intracerebral Hemorrhage Outcomes in the Very Elderly

Author(s): Forman R.; Slota K.; Ahmad F.; Garg R.; John S.; Da Silva I.; Koffman L.

Source: Journal of Stroke and Cerebrovascular DiseasesJournal of Stroke and Cerebrovascular Diseases; May 2020; vol. 29 (no. 5)

Publication Date: May 2020

Publication Type(s): Article

PubMedID: 32085939

Abstract:

Background: There is a paucity of outcomes data in patients over 80 years presenting with intracerebral hemorrhage (ICH). The primary aim of our study is to describe outcomes in this patient population.

Method(s): Retrospective study of patients admitted with primary ICH from January 2012 to July 2018. Data were obtained from the Rush University Get With The Guidelines database; only patients 80 or above were included. Result(s): A total of 1713 patients were screened and 220 patients met inclusion criteria. About 68.2% were female and mean age was 85.6 years old. Median ICH score on admission was 2 (IQR 1-3). Location of ICH included: deep (48.2%), lobar (40%), and cerebellum (9.5%). ICH etiologies included hypertensive (51.8%), cerebral amyloid angiopathy (26.8%), coagulopathy (5.9%), and the remaining were undetermined. CT angiograms were performed in 34.5% (n = 76) of patients; of these patients one arteriovenous malformation was identified. Patients underwent the following procedures: external ventricular drains (8.6%), decompression (3.6%), and ventriculoperitoneal shunts (1.8%). Tracheostomy and percutaneous gastrostomy placement were performed in 8.2%. About 4.5% had seizures and 1.5% were treated for status epilepticus. Disposition at hospital discharge included: subacute nursing facility ([SNF] 24.1%), acute rehabilitation (23.2%), hospice (18.2%), death (18.2%), home (11.8%), long-term acute care facility ([LTAC] 3.6%), and unknown (1%). Patients with an ICH score >=2 on admission had a roughly 6 times higher chance of experiencing an unfavorable outcome (LTAC, SNF, or death), when compared to patients with lower ICH score.

Conclusion(s): This study shows that a significant proportion (35%) of ICH patients >=80 years old have a good outcome, with discharge to home or to rehabilitation. Our data suggest that older patients with ICH presenting with supratentorial hemorrhages (volume < 30 cc) without intraventricular extension can have good outcomes despite their age.

Database: EMBASE

20. Prevalence of obstructive sleep apnoea in acute coronary syndrome patients: Systematic review and meta-analysis

Author(s): Le Grande M.R.; Beauchamp A.; Jackson A.C.; Driscoll A.

Source: BMC Cardiovascular DisordersBMC Cardiovascular Disorders; Mar 2020; vol. 20 (no. 1)

Publication Date: Mar 2020

Publication Type(s): Article

PubMedID: 32209053

Available at BMC cardiovascular disorders - from BioMed Central

Available at BMC cardiovascular disorders - from Europe PubMed Central - Open Access

Available at BMC cardiovascular disorders - from EBSCO (MEDLINE Complete)

Available at BMC cardiovascular disorders - from ProQuest (Health Research Premium) - NHS Version

Available at BMC cardiovascular disorders - from Unpaywall

Abstract:

Background: Obstructive Sleep Apnoea (OSA) has been recognised as a risk factor for cardiovascular diseases such as hypertension and cardiovascular events such as acute coronary syndrome (ACS). Since it is also known to reduce exercise tolerance, it is important to establish the prevalence of OSA in ACS patients, particularly in those who are commencing cardiac rehabilitation (CR) programs.

Method(s): Using PRISMA guidelines a systematic search was conducted in order to identify studies that objectively measured (using polysomnography or portable monitoring) the prevalence of OSA in ACS patients following hospital admission. A data extraction table was used to summarise study characteristics and the quality of studies were independently assessed using the Joanna Briggs Institute Prevalence Critical Appraisal Tool. Meta-analysis of the selected studies was conducted in order to estimate OSA prevalence as a function of the two main methods of measurement, the severity of OSA, and timing of the OSA assessment following ACS hospital admission.

Result(s): Pooled prevalence estimates of OSA using the "gold standard" polysomnography ranged from 22% for severe OSA to 70% for mild OSA, at any time after hospital admission. Similar prevalence estimates were obtained using portable monitoring, but interpretation of these results are limited by the significant heterogeneity observed among these studies.

Conclusion(s): Prevalence of OSA following ACS is high and likely to be problematic upon patient entry into CR programs. Routine screening for OSA upon program entry may be necessary to optimise effectiveness of CR for these patients.

Database: EMBASE

21. Low molecular weight heparin for prevention of microvascular occlusion in digital replantation

Author(s): Lin P.-T.; Wang S.-H.; Chi C.-C.

Source: Cochrane Database of Systematic ReviewsCochrane Database of Systematic Reviews; Apr 2020; vol. 2020 (no. 4)

Publication Date: Apr 2020

Publication Type(s): Review

PubMedID: 32302004

Available at The Cochrane database of systematic reviews - from Cochrane Collaboration (Wiley)

Abstract:

Background: The success of digital replantation is highly dependent on the patency of the repaired vessels after microvascular anastomosis. Antithrombotic agents are frequently used for preventing vascular occlusion. Low molecular weight heparin (LMWH) has been reported to be as effective as unfractionated heparin (UFH) in peripheral vascular surgery, but with fewer adverse effects. Its benefit in microvascular surgery such as digital replantation is unclear. This is an update of the review first published in 2013. Objective(s): To assess if treatment with subcutaneous LMWH improves the salvage rate of the digits in patients with digital replantation after traumatic amputation.

Search Method(s): The Cochrane Vascular Information Specialist searched the Cochrane Vascular Specialised Register, CENTRAL, MEDLINE, Embase, AMED and CINAHL databases, and the World Health Organization International Clinical Trials Registry Platform and ClinicalTrials.gov trials registers, to 17 March 2020. The authors searched PubMed, China National Knowledge Infrastructure (CNKI) and Chinese Electronic Periodical Services (CEPS) on 17 March 2020 and sought additional trials from reference lists of relevant publications. Selection Criteria: We included randomised or quasi-randomised controlled trials comparing treatment with LMWH versus any other treatment in participants who received digital replantation following traumatic digital amputation.

Data Collection and Analysis: Two review authors (PL, CC) independently extracted data and assessed the risk of bias of the included trials using Cochrane's 'Risk of bias' tool. Disagreements were resolved by discussion. We assessed the certainty of evidence using the GRADE approach. Main Result(s): We included two new randomised trials in this update, bringing the total number of included trials to four. They included a total of 258 participants, with at least

273 digits, from hospitals in China. Three studies compared LMWH versus UFH, and one compared LMWH versus no LMWH. The mean age of participants ranged from 24.5 to 37.6 years. In the studies reporting the sex of participants, there were a total of 145 men and 59 women. The certainty of the evidence was downgraded to low or very low because all studies were at high risk of performance or reporting bias (or both) and there was imprecision in the results due to the small numbers of participants. The three studies comparing LMWH versus UFH reported the success rate of replantation using different units of analysis (participant or digit), so we were unable to combine data from all three studies (one study reported results for both participants and digits). No evidence of a benefit in success of replantation was seen in the LMWH group when compared with UFH, regardless of whether the outcomes were reported by number of participants (risk ratio (RR) 0.98, 95% confidence interval (CI) 0.87 to 1.10; 130 participants, 2 studies; very low-certainty evidence); or by number of digits (RR 0.97, 95% CI 0.90 to 1.04; 200 digits, 2 studies; low-certainty evidence). No studies reported the incidence of compromised microcirculation requiring surgical or non-surgical therapy, or any systemic/other causes of microvascular insufficiency. There was no evidence of a clear difference between the LMWH and UFH groups in occurrence of arterial occlusion (RR 1.08, 95% CI 0.16 to 7.10; 54 participants, 1 study; very low-certainty evidence) or venous occlusion (RR 0.81, 95% CI 0.20 to 3.27; 54 participants, 1 study; very low-certainty evidence). Two studies reported adverse effects. The LMWH and UFH groups showed no evidence of a difference in wound bleeding (RR 0.53, 95% CI 0.23 to 1.23; 130 participants, 2 studies; low-certainty evidence), haematuria (RR 0.43, 95% CI 0.09 to 2.11; 130 participants, 2 studies; very low-certainty evidence), ecchymoses (RR 0.82, 95% CI 0.21 to 3.19; 130 participants, 2 studies; very low-certainty evidence), epistaxis (RR 0.27, 95% CI 0.03 to 2.32; 130 participants, 2 studies; very low-certainty evidence), gingival bleeding (RR 0.18, 95% CI 0.02 to 1.43; 130 participants, 2 studies; very low-certainty evidence), and faecal occult blood (RR 0.27, 95% CI 0.03 to 2.31; 130 participants, 2 studies; very low-certainty evidence). We could not pool data on coagulation abnormalities as varying definitions and tests were used in the three studies. One study compared LMWH versus no LMWH. The success rate of replantation, when analysed by digits, was reported as 91.2% success in the LMWH group and 82.1% in the control group (RR 1.11, 95% CI 0.93 to 1.33; 73 digits, 1 study; very low-certainty evidence). Compromised microcirculation requiring surgical re-exploration, analysed by digits, was 11.8% in the LMWH group and 17.9% in the control group (RR 0.86, 95% CI 0.21 to 3.58; 73 digits, 1 study; very low-certainty evidence). Compromised microcirculation requiring incision occurred in five out of 34 digits (14.7%) in the LMWH group and eight out of 39 digits (20.5%) in the control group (RR 0.72, 95% CI 0.26 to 1.98; 73 digits; very low-certainty evidence). Microvascular insufficiency due to arterial occlusion, analysed by digits, was 11.8% in the LMWH group and 17.9% in the control group (RR 0.66, 95% CI 0.21 to 2.05; 73 digits, 1 study; very low-certainty evidence), and venous occlusion was 14.7% in the LMWH group and 20.5% in the control (RR 0.72, 95% CI 0.26 to 1.98; 73 digits, 1 study; very low-certainty evidence). The study did not report complications or adverse effects. Authors' conclusions: There is currently low to very low-certainty evidence, based on four RCTs, suggesting no evidence of a benefit from LMWH when compared to UFH on the success rates of replantation or affect microvascular insufficiency due to vessel occlusion (analysed by digit or participant). LMWH had similar success rates of replantation; and the incidence rate of venous and arterial microvascular insufficiency showed no evidence of a difference between groups when LMWH was compared to no LMWH (analysed by digit). Similar rates of complications and adverse effects were seen between UFH and LMWH. There was insufficient evidence to draw conclusions on any effect on coagulation when comparing LMWH to UFH or no LMWH. The certainty of the evidence was downgraded due to performance and reporting bias, as well as imprecision in the results. Further adequately powered studies are warranted to provide high-certainty evidence.

Database: EMBASE

22. A pragmatic, multi-centered, stepped wedge, cluster randomized controlled trial pilot of the clinical and cost effectiveness of a complex Stroke Oral healthCare intervention pLan Evaluation II (SOCLE II) compared with usual oral healthcare in stroke wards

Author(s): Brady M.C.; Sweeney P.; Barr J.; Pollock A.; Bowers N.; Gray H.; Bain B.J.; Collins M.; Stott D.J.; Langhorne P.; Weir C.J.; Chalmers C.; Keerie C.

Source: International Journal of StrokeInternational Journal of Stroke; Apr 2020; vol. 15 (no. 3); p. 318-323

Publication Date: Apr 2020

Publication Type(s): Article

PubMedID: 31564241

Available at International journal of stroke : official journal of the International Stroke Society - from Unpaywall

Abstract:

Background: Patients with stroke-associated pneumonia experience poorer outcomes (increased hospital stays, costs, discharge dependency, and risk of death). High-quality, organized oral healthcare may reduce the incidence of stroke-associated pneumonia and improve oral health and quality of life.

Aim(s): We piloted a pragmatic, stepped-wedge, cluster randomized controlled trial of clinical and cost effectiveness of enhanced versus usual oral healthcare for people in stroke rehabilitation settings.

Method(s): Scottish stroke rehabilitation wards were randomly allocated to stepped time-points for conversion from usual to enhanced oral healthcare. All admissions and nursing staff were eligible for inclusion. We piloted the viability of randomization, intervention, data collection, record linkage procedures, our sample size, screening, and recruitment estimates. The stepped-wedge trial design prevented full blinding of outcome assessors and staff. Predetermined criteria for progression included the validity of enhanced oral healthcare intervention (training, oral healthcare protocol, assessment, equipment), data collection, and stroke-associated pneumonia event rate and relationship between stroke-associated pneumonia and plaque.

Result(s): We screened 1548/2613 (59%) admissions to four wards, recruiting n = 325 patients and n = 112 nurses. We observed marked between-site diversity in admissions, recruitment populations, stroke-associated pneumonia events (0% to 21%), training, and resource use. No adverse events were reported. Oral healthcare documentation was poor. We found no evidence of a difference in stroke-associated pneumonia between enhanced versus usual oral healthcare (P = 0.62, odds ratio = 0.61, confidence interval: 0.08 to 4.42).

Conclusion(s): Our stepped-wedge cluster randomized control trial accommodated between-site diversity. The stroke-associated pneumonia event rate did not meet our predetermined progression criteria. We did not meet our predefined progression criteria including the SAP event rate and consequently were unable to establish whether there is a relationship between SAP and plaque. A wide confidence interval did not exclude the possibility that enhanced oral healthcare may result in a benefit or detrimental effect. Trial Registration: NCT01954212.Copyright © 2019 World Stroke Organization.

Database: EMBASE

23. Sustained Inflation vs Standard Resuscitation for Preterm Infants: A Systematic Review and Meta-analysis

Author(s): Foglia E.E.; Kirpalani H.; Te Pas A.B.; Davis P.G.; Owen L.S.; Van Kaam A.H.; Onland W.; Keszler M.; Schmolzer G.M.; Hummler H.; Lista G.; Bastrenta P.; Dani C.; Localio R.; Ratcliffe S.J.

Source: JAMA PediatricsJAMA Pediatrics; Apr 2020; vol. 174 (no. 4)

Publication Date: Apr 2020

Publication Type(s): Review

PubMedID: 32011661

Available at JAMA pediatrics - from EBSCO (MEDLINE Complete)

Abstract:

Importance: Most preterm infants require respiratory support to establish lung aeration after birth. Intermittent positive pressure ventilation and continuous positive airway pressure are standard therapies. An initial sustained inflation (inflation time >5 seconds) is a widely practiced alternative strategy.

Objective(s): To conduct a systematic review and meta-analysis of sustained inflation vs intermittent positive pressure ventilation and continuous positive airway pressure for the prevention of hospital mortality and morbidity for preterm infants.

Data Sources: MEDLINE (through PubMed), Embase, the Cumulative Index of Nursing and Allied Health Literature, and the Cochrane Central Register of Controlled Trials were searched through June 24, 2019.

Study Selection: Randomized clinical trials of preterm infants born at less than 37 weeks' gestation that compared sustained inflation (inflation time >5 seconds) vs standard resuscitation with either intermittent positive pressure ventilation or continuous positive airway pressure were included. Studies including other cointerventions were excluded.

Data Extraction and Synthesis: Two reviewers assessed the risk of bias of included studies. Meta-analysis of pooled outcome data used a fixed-effects model specific to rarer events. Subgroups were based on gestational age and study design (rescue vs prophylactic sustained inflation).

Main Outcomes and Measures: Death before hospital discharge.

Result(s): Nine studies recruiting 1406 infants met inclusion criteria. Death before hospital discharge occurred in 85 of 736 infants (11.5%) treated with sustained inflation and 62 of 670 infants (9.3%) who received standard therapy for a risk difference of 3.6% (95% CI, -0.7% to 7.9%). Although analysis of the primary outcome identified important heterogeneity based on gestational age subgroups, the 95% CI for the risk difference included 0 for each individual gestational age subgroup. There was no difference in the primary outcome between subgroups based on study design. Sustained inflation was associated with increased risk of death in the first 2 days after birth (risk difference, 3.1%; 95% CI, 0.9%-5.3%). No differences in the risk of other secondary outcomes were identified. The quality-of-evidence assessment was low owing to risk of bias and imprecision.

Conclusions and Relevance: There was no difference in the risk of the primary outcome of death before hospital discharge, and there was no evidence of efficacy for sustained inflation to prevent secondary outcomes. These findings do not support the routine use of sustained inflation for preterm infants after birth.

Database: EMBASE

24. Yoga-Based Cardiac Rehabilitation After Acute Myocardial Infarction: A Randomized Trial

Author(s): Prabhakaran D.; Chandrasekaran A.M.; Singh K.; Ajay V.S.; Praveen P.A.; Devarajan R.; Kondal D.; Soni D.; Reddy K.S.; Chattopadhyay K.; Mallinson P.; Roberts I.; Ebrahim S.; Pocock S.; Kinra S.; Mohan B.; Chadha D.S.; Negi P.C.; Bhat P.; Sadananda K.S.; Tandon N.; Roy A.; Manchanda S.C.; Madan K.; Hughes A.D.; Chathurvedi N.; Chand Manchanda S.; Vamadevan S A.; Bhatnagar D.; Chaturvedi V.; Perel P.; Poulter N.; Harikrishnan S.; Pandey R.M.; Banerjee A.; Gill P.; Bardoloi N.; Chand Negi P.; Asotra S.; Nanjappa M.C.; Prasad M.R.; Sarma R.; Natrajan K.U.; Swaminathan S.; Tongia R.K.; Natarajan S.; Rao B.; Narasimhan C.; Abdullakutty J.; Mallya S.; Jain A.R.; Naik S.R.; Desai N.; Kumar S.; Patil S.; Chandra S.; Madappa N.U.

Source: Journal of the American College of CardiologyJournal of the American College of Cardiology; Apr 2020; vol. 75 (no. 13); p. 1551-1561

Publication Date: Apr 2020

Publication Type(s): Article

PubMedID: 32241371

Available at Journal of the American College of Cardiology - from Unpaywall

Abstract:

Background: Given the shortage of cardiac rehabilitation (CR) programs in India and poor uptake worldwide, there is an urgent need to find alternative models of CR that are inexpensive and may offer choice to subgroups with poor uptake (e.g., women and elderly).

Objective(s): This study sought to evaluate the effects of yoga-based CR (Yoga-CaRe) on major cardiovascular events and self-rated health in a multicenter randomized controlled trial.

Method(s): The trial was conducted in 24 medical centers across India. This study recruited 3,959 patients with acute myocardial infarction with a median and minimum follow-up of 22 and 6 months. Patients were individually randomized to receive either a Yoga-CaRe program (n = 1,970) or enhanced standard care involving educational

advice (n = 1,989). The co-primary outcomes were: 1) first occurrence of major adverse cardiovascular events (MACE) (composite of all-cause mortality, myocardial infarction, stroke, or emergency cardiovascular hospitalization); and 2) self-rated health on the European Quality of Life-5 Dimensions-5 Level visual analogue scale at 12 weeks.

Result(s): MACE occurred in 131 (6.7%) patients in the Yoga-CaRe group and 146 (7.4%) patients in the enhanced standard care group (hazard ratio with Yoga-CaRe: 0.90; 95% confidence interval [CI]: 0.71 to 1.15; p = 0.41). Self-rated health was 77 in Yoga-CaRe and 75.7 in the enhanced standard care group (baseline-adjusted mean difference in favor of Yoga-CaRe: 1.5; 95% CI: 0.5 to 2.5; p = 0.002). The Yoga-CaRe group had greater return to pre-infarct activities, but there was no difference in tobacco cessation or medication adherence between the treatment groups (secondary outcomes).

Conclusion(s): Yoga-CaRe improved self-rated health and return to pre-infarct activities after acute myocardial infarction, but the trial lacked statistical power to show a difference in MACE. Yoga-CaRe may be an option when conventional CR is unavailable or unacceptable to individuals. (A study on effectiveness of YOGA based cardiac rehabilitation programme in India and United Kingdom; CTRI/2012/02/002408).

Database: EMBASE

25. Multicap to improve adherence after acute coronary syndromes: results of a randomized controlled clinical trial

Author(s): Mariani J.; Rosende A.; De Abreu M.; D'Imperio H.; Antonietti L.; Tajer C.; Gonzalez Villa Monte G.; Lemonnier G.; de Bonis A.

Source: Therapeutic Advances in Cardiovascular DiseaseTherapeutic Advances in Cardiovascular Disease; 2020; vol. 14

Publication Date: 2020

Publication Type(s): Article

PubMedID: 32186246

Available at Therapeutic advances in cardiovascular disease - from Unpaywall

Abstract:

Background: Adherence to treatment after a myocardial infarction (MI) is poor, even in the early postinfarction period. Combining evidence-based drugs into a multicap could improve adherence in this population. No previous randomized trial assessing fixed-dose combination therapy has included patients early after a MI. We aimed to assess if a multicap containing four secondary prevention drugs increases adherence to treatment at 6 months after MI hospitalization. The study was designed as a randomized, parallel, open-label, controlled trial.

Method(s): Patients were randomized within 7 days of a MI to either multicap or control group. The multicap group received a capsule containing aspirin, atenolol, ramipril, and simvastatin. The control group received each drug in separate pills. The primary outcome was adherence at 6 months. We also measured blood pressure, heart rate, serum cholesterol levels, C-reactive protein, and platelet aggregation.

Result(s): The study was stopped prematurely when 100 patients were included for futility. At 6 months, 92 (95.8%) patients were adherent to medical treatment: 98.0% in the multicap group and 93.5% in the control group [relative risk (RR) 1.05; 95% confidence interval (CI) 0.96-1.14; p = 0.347]. There were no differences between groups in systolic blood pressure (p = 0.662), diastolic blood pressure (p = 0.784), heart rate (p = 0.533), total cholesterol (p = 0.760), LDL-c (p = 0.979), C-reactive protein (p = 0.399), or in the proportion of patients with adequate platelet aggregation inhibition (p = 0.600).

Conclusion(s): The study did not find any improvement in the adherence at 6 months after a MI with a multicap-based strategy (Multicap for Increase Adherence After Acute Myocardial Infarction; [ClinicalTrials.gov identifier: NCT02271178]).

Database: EMBASE

26. The myocardial ischaemia national audit project (MINAP)

Author(s): Wilkinson C.; Gale C.P.; Weston C.; Timmis A.; Quinn T.; Keys A.

Source: European Heart Journal - Quality of Care and Clinical Outcomes; Jan 2020; vol. 6 (no. 1); p. 19-22

Publication Date: Jan 2020

Publication Type(s): Article

PubMedID: 31511861

Abstract:

Aims: The Myocardial Ischaemia National Audit Project (MINAP) collects data from admissions in England, Wales, and Northern Ireland with Type 1 myocardial infarction (T1 MI). The project aims to improve clinical care through the audit process and to provide powerful high-resolution data for research.

Methods: MINAP collects data spanning 130 data fields covering the course of patient care, from the moment the patient and results calls for professional help through to hospital discharge and rehabilitation. Data are entered by clinicians and clerical staff within hospitals, and pseudonymized records are uploaded centrally to the National Institute for Cardiovascular Outcomes Research (NICOR), hosted by Barts Health NHS Trust, London, UK. Two hundred and six hospitals submit over 92 000 new cases to MINAP annually. Approximately 1.5 million patient records are currently held in the database. Patient demographics, medical history, clinical assessment, investigations, treatments, drug therapy prior to admission, during hospital stay, and at discharge are collected. Data completeness of three key data fields (age, admission blood pressure, and heart rate) is over 91%. Vital status following hospital discharge is obtained via linkage to data from the United Kingdom Office for National Statistics. An annual report is compiled using these data, with individual hospital summary data included. Datasets are available to researchers by application to NICOR. Conclusion MINAP is the largest single healthcare system heart attack registry, and includes data from hospitalizations with T1 MI in England, Wales, and Northern Ireland. It includes high-resolution data across the patient pathway and is a powerful tool for quality improvement and research.

Database: EMBASE

27. Using a structured, patient-centred, educational exchange to facilitate a shared conversation about stroke prevention medications

Author(s): Coombes J.A.; Rowett D.; Whitty J.A.; Cottrell N.W.

Source: Journal of Evaluation in Clinical PracticeJournal of Evaluation in Clinical Practice; Apr 2020; vol. 26 (no. 2); p. 635-644

Publication Date: Apr 2020

Publication Type(s): Conference Paper

PubMedID: 31418498

Available at Journal of evaluation in clinical practice - from Wiley Online Library

Abstract:

Objective: The aim of this study was to investigate the feasibility of a structured patient-centred educational exchange to facilitate a shared conversation about stroke prevention medications.

Method(s): Participants (18 years or older) with a principal diagnosis of stroke or transient ischaemic attack were purposively sampled from the stroke unit of a 780-bed teaching hospital in Australia and consented to participate in the study. A patient-centred educational exchange was conducted face to face at the bedside before discharge and by telephone post discharge. The structure of these sessions was adapted from academic detailing, an educational strategy, which includes identifying experience, listening to the needs of the audience, and tailoring messages to influence behaviour. To facilitate sharing of needs, three questionnaires, validated as research tools, were used to identify participants' experience, perceptions, and beliefs. The identified perceptions were used to personalize educational messages. The outcomes of the study were to provide descriptions of patients' perceptions necessities

and concerns about their condition and medications, provide examples of personalized responses to these, evaluate acceptability by patients, and determine the time taken to share the information.

Result(s): Sixteen participants completed both the bedside session (average duration 27 minutes) and the telephone follow-up (average duration 23 minutes). The strongest patient concern identified was having another stroke. Personalized responses included emphasizing long-term treatment in response to the perception that stroke will last for a short time, reinforcement of necessity for medications, and further exploration of concerns.

Conclusion(s): The questionnaires engaged the participants, allowing them to share perceptions and beliefs, facilitating a patient-centred educational exchange in a timely manner.

Database: EMBASE

28. Impact of direct oral anticoagulant off-label doses on clinical outcomes of atrial fibrillation patients: A systematic review

Author(s): Santos J.; Fortuna A.; Antonio N.; Rocha M.

Source: British Journal of Clinical PharmacologyBritish Journal of Clinical Pharmacology; Mar 2020; vol. 86 (no. 3); p. 533-547

Publication Date: Mar 2020

Publication Type(s): Review

PubMedID: 31631392

Available at British journal of clinical pharmacology - from Wiley Online Library

Abstract:

Aims: Worldwide observational studies are evidencing discordance between guidelines and real-world practice regarding direct oral anticoagulant drug (DOAC) doses. This systematic review summarizes and evaluate DOACs use in real-world practice.

Method(s): This review was performed following the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines searching PubMed (MEDLINE) and Medscape databases.

Result(s): Data from 75 studies showed that most of the patients treated with DOACs for stroke prevention in atrial fibrillation received doses in accordance to the guidelines. However, a significant number of patients received off-label doses (25-50% in most of the studies evaluated). DOAC overdosing was associated with increased all-cause mortality and worse bleeding events while underdosing was associated with increased cardiovascular hospitalization and, particularly for apixaban, with a nearly 5-fold increased risk of stroke.

Conclusion(s): Patients prescribed with off-label DOAC doses did not receive the full benefit of anticoagulation and presented an increased risk of stroke, bleeding and/or adverse effects.

Database: EMBASE

29. Venous thromboembolism prophylaxis in thoracic surgery patients: An international survey

Author(s): Shargall Y.; Schneider L.; Agzarian J.; Brunelli A.; Murthy S.; Minervini F.; Kestenholz P.; Bertolaccini L.; Solli P.; Linkins L.-A.; Douketis J.; Li H.; Rocco G.; Girard P.; Venuta F.; Samama M.; Scarci M.; Anraku M.; Falcoz P.-E.; Kirk A.; Hofstetter W.; Okumura M.; Litle V.

Source: European Journal of Cardio-thoracic SurgeryEuropean Journal of Cardio-thoracic Surgery; Feb 2020; vol. 57 (no. 2); p. 331-337

Publication Date: Feb 2020

Publication Type(s): Article

PubMedID: 31363740

Abstract:

OBJECTIVES: Venous thromboembolic events (VTE) after thoracic surgery (TS) can be prevented with mechanical and chemical prophylaxis. Unlike other surgical specialties, TS lacks evidence-based guidelines. In the process of developing these guidelines, an understanding of the current prophylaxis methods practiced internationally is necessary and is described in this article.

METHOD(S): A 26-item survey was distributed to members of the European Society of Thoracic Surgeons (ESTS), American Association of Thoracic Surgery (AATS), Japanese Association for Chest Surgery (JACS) and Chinese Society for Thoracic and Cardiovascular Surgery (CSTCS) electronically or in person. Participants were asked to report their current prophylaxis selection, timing of initiation and duration of prophylaxis, perceived risk factors and the presence and adherence to institutional VTE guidelines for patients undergoing TS for malignancies.

RESULT(S): In total, 1613 surgeons anonymously completed the survey with an overall 36% response rate. Respondents were senior surgeons working in large academic hospitals (>=70%, respectively). More than 83.5% of ESTS, AATS and JACS respondents report formal TS thromboprophylaxis protocols in their institutions, but 53% of CSTCS members report not having such a protocol. The regions varied in the approaches utilized for VTE prophylaxis, the timing of initiation perioperatively and the use and type of extended prophylaxis. Respondents reported that multiple risk factors and sources of information impact their VTE prophylaxis decision-making processes, and these factors vastly diverge regionally.

CONCLUSION(S): There is little agreement internationally on the optimal approach to thromboprophylaxis in the TS population, and guidelines will be helpful and vastly welcomed.

Database: EMBASE

30. Impact of hospital volume on patient safety indicators and failure to rescue following open aortic aneurysm repair

Author(s): Scali S.T.; Giles K.A.; Kubilis P.; Huber T.S.; Upchurch G.R.; Beck A.W.; Crippen C.J.; Hughes S.J.; Stone D.H.

Source: Journal of Vascular SurgeryJournal of Vascular Surgery; Apr 2020; vol. 71 (no. 4); p. 1135

Publication Date: Apr 2020

Publication Type(s): Conference Paper

PubMedID: 31515178

Available at Journal of vascular surgery - from Unpaywall

Abstract:

Objective: Failure to rescue (FTR), a patient safety indicator (PSI) defined, codified, and adjudicated by the Agency for Healthcare Research and Quality, is classified as a preventable inpatient death following major complications. FTR has been reported to be a significant driver of postoperative mortality after open abdominal aortic aneurysm (OAAA) repair. The association between hospital volume (HV) and mortality is well known; however, the mechanisms responsible for these improved outcomes and relative contribution to observed interhospital variation is poorly understood. Similarly, HV influence on specific complications predictive of FTR is unknown; therefore, we sought to determine how HV influences risk and contributes to interhospital variation in PSI events leading to FTR and/or in-hospital mortality after OAAA repair.

Method(s): The Vizient database (174 academic/nonacademic hospitals) was queried for all OAAA repairs (elective, n = 2827; nonelective, n = 1622) completed from 2012 to 2014. The primary endpoint was combined FTR and/or in-hospital 30-day mortality. Risk-adjusted rates of complications, Agency for Healthcare Research and Quality-designated PSIs, and FTR were determined. Additional modeling identified PSIs associated with FTR, whereas HV effects on PSIs and FTR were evaluated using mixed-effect models accounting for interhospital variation. Proportion of variation attributable to HV was estimated by contrasting hospital random effect variances in the presence/absence of volume effects.

Result(s): The combined overall FTR/in-hospital 30-day mortality rate was 9.3% (n = 414). For elective and nonelective cases, the overall FTR and 30-day mortality rates were: FTR, 1.6%, 4.9%; and 30-day in-hospital

mortality, 3.4%, 17.5%, respectively. HV significantly influenced FTR/30-day in-hospital mortality (P < .0001). FTR/30-day mortality odds for hospitals with 3-year volumes of 50, 100, 150, and 200 cases were 1.4, 2.0, 2.7, and 3.0 times lower, respectively, than hospitals performing <=25 cases/3 years. The proportion of interhospital variation attributed to HV was greatest for FTR/30-day mortality (62%). Procedural volume accounted for 41% and 38% of interhospital variation in postoperative bleeding and myocardial infarction, respectively. Preoperative predictors of FTR included coagulopathy, arrhythmia (nonelective cases); congestive heart failure, obesity (elective cases); and age, neurological disease, hypertension, and valvular disease (all cases).

Conclusion(s): OAAA FTR/30-day in-hospital mortality strongly correlated with annual case volume with higher volume centers having the lowest risk. Notably, HV accounted for a significant proportion of the observed variation in FTR and specific complications providing direct evidence for how the volume-outcome relationship may influence perioperative mortality. These findings can inform stakeholders to strategically enable them to implement processes of care directed at the most vulnerable patients that are designed to reduce the likelihood of preventable adverse events and death after OAAA repair. Furthermore, these results underscore the need to regionalize OAAA repair and potentially other complex operations, to HV centers because of their improved ability to rescue patients experiencing complications associated with postoperative mortality.

Database: EMBASE

31. Catheter ablation of atrial fibrillation reduces heart failure rehospitalization in patients with heart failure with preserved ejection fraction

Author(s): Fukui A.; Tanino T.; Hirota K.; Saito S.; Okada N.; Akioka H.; Shinohara T.; Yufu K.; Takahashi N.; Yamaguchi T.

Source: Journal of Cardiovascular ElectrophysiologyJournal of Cardiovascular Electrophysiology; Mar 2020; vol. 31 (no. 3); p. 682-688

Publication Date: Mar 2020

Publication Type(s): Article

PubMedID: 31985099

Abstract:

Background: Atrial fibrillation (AF) is associated with heart failure (HF) rehospitalization in patients with heart failure with preserved ejection fraction (HFpEF). Objective(s): We tested the hypothesis that catheter ablation of AF could reduce HF rehospitalization compared with conventional pharmacotherapy in patients with HFpEF.

Method(s): Eighty-five consecutive HFpEF (EF >= 50% and a history of HF hospitalization) patients diagnosed as AF by 12-lead electrocardiogram were retrospectively analyzed. Thirty-five patients who received catheter ablation (ABL group) were compared with 50 patients treated by antiarrhythmic drugs and/or beta-blockers (CNT group). The primary endpoint was rehospitalization due to HF.

Result(s): The patients characteristics did not differ between the two groups including, age (71 +/- 8 vs 71 +/- 13 years; P =.637), female sex (34% vs 36%; P =.870), mean plasma brain natriuretic peptide (145 +/- 112 vs 195 +/- 153 pg/mL; P =.111), mean left ventricular ejection fraction (62% +/- 8% vs 61% +/- 9%; P =.624), and type of AF (nonparoxysmal AF 60% vs 62%; P =.852). Amiodarone was continued 40% (14 out of 35) and 40% (20 out of 70) in ABL and CNT groups, respectively (P = 1.000). Neither major complication nor major side effect was observed during the follow-up period. During a mean follow-up period of 792 +/- 485 days, Kaplan-Meier curve analysis showed that significantly more patients in the ABL group were free from HF rehospitalization (log-rank P =.0039). Additionally, multivariate analysis revealed that catheter ablation of AF was the only preventive factor of HF rehospitalization (OR = 0.15; 95% CI: 0.04-0.46; P <.001).

Conclusion(s): Catheter ablation of AF reduced HF rehospitalization compared with conventional pharmacotherapy in patients with HFpEF in our institute. Multicenter randomized study is warranted to confirm the result.

Database: EMBASE

32. A Systematic Review of Network Meta-Analyses and Real-World Evidence Comparing Apixaban and Rivaroxaban in Nonvalvular Atrial Fibrillation

Author(s): Hill N.R.; Sandler B.; Farooqui U.; Bergrath E.; Milenkovic D.; Ashaye A.O.; Cohen A.T.

Source: Clinical and Applied Thrombosis/HemostasisClinical and Applied Thrombosis/Hemostasis; 2020; vol. 26

Publication Date: 2020

Publication Type(s): Article

PubMedID: 31918558

Available at Clinical and applied thrombosis/hemostasis : official journal of the International Academy of Clinical and Applied Thrombosis/Hemostasis - from EBSCO (MEDLINE Complete)

Available at Clinical and applied thrombosis/hemostasis : official journal of the International Academy of Clinical and Applied Thrombosis/Hemostasis - from Unpaywall

Abstract:

There is no direct evidence comparing the 2 most commonly prescribed direct oral anticoagulants, apixaban and rivaroxaban, used for stroke prevention in nonvalvular atrial fibrillation (NVAF). A number of network meta-analyses (NMAs) of randomized control trials and real-world evidence (RWE) studies comparing the efficacy, effectiveness, and safety of apixaban and rivaroxaban have been published; however, a comprehensive evidence review across the available body of evidence is lacking. In this study, we aimed to systematically review and evaluate the clinical outcomes of apixaban and rivaroxaban using a combination of data gleaned from both NMAs and RWE studies. The review identified 21 NMAs and 5 RWE studies. The data demonstrated that apixaban was associated with fewer major bleeding events compared to rivaroxaban. There was no difference in the efficacy/effectiveness profiles between these treatments. Bleeding is a serious complication of anticoagulation therapy for the management of NVAF, and is associated with increased rates of hospitalization, morbidity, mortality, and health-care expenditure. The majority of studies in this comprehensive evidence review suggests that apixaban has a lower risk of major bleeding events compared to rivaroxaban in patients with NVAF.Copyright © The Author(s) 2020.

Database: EMBASE

33. Outcome of pitavastatin versus atorvastatin therapy in patients with hypercholesterolemia at high risk for atherosclerotic cardiovascular disease

Author(s): Moroi M.; Sugi K.; Nagayama D.; Hara F.; Yamasaki J.; Saiki A.; Tatsuno I.; Shirai K.; Shimizu K.; Takahashi M.; Sato N.; Shiba T.; Sugimoto H.; Fujioka T.; Chiba T.; Nishizawa K.; Usui S.; Iwasaki Y.; Yamamura S.

Source: International Journal of CardiologyInternational Journal of Cardiology; Apr 2020; vol. 305 ; p. 139-146

Publication Date: Apr 2020

Publication Type(s): Article

PubMedID: 31987664

Available at International journal of cardiology - from Unpaywall

Abstract:

Background: There has been no report about outcome of pitavastatin versus atorvastatin therapy in high-risk patients with hypercholesterolemia.

Method(s): Hypercholesterolemic patients with one or more risk factors for atherosclerotic diseases (n = 664, age = 65, male = 54%, diabetes = 76%, primary prevention = 74%) were randomized to receive pitavastatin 2 mg/day (n = 332) or atorvastatin 10 mg/day (n = 332). Follow-up period was 240 weeks. The primary end point was a composite of cardiovascular death, sudden death of unknown origin, nonfatal myocardial infarction, nonfatal stroke, transient

ischemic attack, or heart failure requiring hospitalization. The secondary end point was a composite of the primary end point plus clinically indicated coronary revascularization for stable angina.

Result(s): The mean low-density lipoprotein cholesterol (LDL-C) level at baseline was 149 mg/dL. The mean LDL-C levels at 1 year were 95 mg/dL in the pitavastatin group and 94 mg/dL in the atorvastatin group. There were no differences in LDL-C levels between both groups, however, pitavastatin significantly reduced the risk of the primary end point, compared to atorvastatin (pitavastatin = 2.9% and atorvastatin = 8.1%, HR, 0.366; 95% CI 0.170-0.787; P = 0.01 by multivariate Cox regression) as well as the risk of the secondary end point (pitavastatin = 4.5% and atorvastatin = 12.9%, HR = 0.350; 95%CI = 0.189-0.645, P = 0.001). The results for the primary and secondary end points were consistent across several prespecified subgroups. There were no differences in incidence of adverse events between the statins.

Conclusion(s): Pitavastatin therapy compared with atorvastatin more may prevent cardiovascular events in hypercholesterolemic patients with one or more risk factors for atherosclerotic diseases despite similar effects on LDL-C levels.

Database: EMBASE

34. Imaging in patients with suspected acute heart failure: timeline approach position statement on behalf of the Heart Failure Association of the European Society of Cardiology

Author(s): Celutkiene J.; Lainscak M.; Anderson L.; Gayat E.; Mebazaa A.; Grapsa J.; Harjola V.-P.; Manka R.; Nihoyannopoulos P.; Filardi P.P.; Vrettou R.; Filippatos G.; Anker S.D.; Metra M.; Piepoli M.; Ruschitzka F.; Zamorano J.L.; Rosano G.; Seferovic P.

Source: European Journal of Heart FailureEuropean Journal of Heart Failure; Feb 2020; vol. 22 (no. 2); p. 181-195

Publication Date: Feb 2020

Publication Type(s): Article

PubMedID: 31815347

Abstract: Acute heart failure is one of the main diagnostic and therapeutic challenges in clinical practice due to a non-specific clinical manifestation and the urgent need for timely and tailored management at the same time. In this position statement, the Heart Failure Association aims to systematize the use of various imaging methods in accordance with the timeline of acute heart failure care proposed in the recent guidelines of the European Society of Cardiology. During the first hours of admission the point-of-care focused cardiac and lung ultrasound examination is an invaluable tool for rapid differential diagnosis of acute dyspnoea, which is highly feasible and relatively easy to learn. Several portable and stationary imaging modalities are being increasingly used for the evaluation of cardiac structure and function, haemodynamic and volume status, precipitating myocardial ischaemia or valvular abnormalities, and systemic and pulmonary congestion. This paper emphasizes the central role of the full echocardiographic examination in the identification of heart failure aetiology, severity of cardiac dysfunction, indications for specific heart failure therapy, and risk stratification. Correct evaluation of cardiac filling pressures and accurate prognostication may help to prevent unscheduled short-term readmission. Alternative advanced imaging modalities should be considered to assist patient management in the pre- and post-discharge phase, including cardiac magnetic resonance, computed tomography, nuclear studies, and coronary angiography. The Heart Failure Association addresses this paper to the wide spectrum of acute care and heart failure specialists, highlighting the value of all available imaging techniques at specific stages and in common clinical scenarios of acute heart failure.

Database: EMBASE

35. European Society of Cardiology/Heart Failure Association position paper on the role and safety of new glucose-lowering drugs in patients with heart failure

Author(s): Seferovic P.M.; Polovina M.M.; Seferovic J.; Coats A.J.S.; Ponikowski P.; Filippatos G.; Huelsmann M.; Jhund P.S.; Komajda M.; Sari I.; Cosentino F.; Ambrosio G.; Metra M.; Piepoli M.; Chioncel O.; Lund L.H.; Thum T.; De Boer R.A.; Mullens W.; Lopatin Y.; Volterrani M.; Hill L.; Bauersachs J.; Lyon A.; Petrie M.C.; Anker S.; Rosano G.M.C.

Source: European Journal of Heart FailureEuropean Journal of Heart Failure; Feb 2020; vol. 22 (no. 2); p. 196-213

Publication Date: Feb 2020

Publication Type(s): Article

PubMedID: 31816162

Available at European journal of heart failure - from Wiley Online Library

Available at European journal of heart failure - from Unpaywall

Abstract: Type 2 diabetes mellitus (T2DM) is common in patients with heart failure (HF) and associated with considerable morbidity and mortality. Significant advances have recently occurred in the treatment of T2DM, with evidence of several new glucose-lowering medications showing either neutral or beneficial cardiovascular effects. However, some of these agents have safety characteristics with strong practical implications in HF [i.e. dipeptidyl peptidase-4 (DPP-4) inhibitors, glucagon-like peptide-1 receptor agonists (GLP-1 RA), and sodium-glucose co-transporter type 2 (SGLT-2) inhibitors]. Regarding safety of DPP-4 inhibitors, saxagliptin is not recommended in HF because of a greater risk of HF hospitalisation. There is no compelling evidence of excess HF risk with the other DPP-4 inhibitors. GLP-1 RAs have an overall neutral effect on HF outcomes. However, a signal of harm suggested in two small trials of liraglutide in patients with reduced ejection fraction indicates that their role remains to be defined in established HF. SGLT-2 inhibitors (empagliflozin, canagliflozin and dapagliflozin) have shown a consistent reduction in the risk of HF hospitalisation regardless of baseline cardiovascular risk or history of HF. Accordingly, SGLT-2 inhibitors could be recommended to prevent HF hospitalisation in patients with T2DM and established cardiovascular disease or with multiple risk factors. The recently completed trial with dapagliflozin has shown a significant reduction in cardiovascular mortality and HF events in patients with HF and reduced ejection fraction, with or without T2DM. Several ongoing trials will assess whether the results observed with dapagliflozin could be extended to other SGLT-2 inhibitors in the treatment of HF, with either preserved or reduced ejection fraction, regardless of the presence of T2DM. This position paper aims to summarise relevant clinical trial evidence concerning the role and safety of new glucose-lowering therapies in patients with HF.

Database: EMBASE

36. Management of acute ischemic stroke

Author(s): Phipps M.S.; Cronin C.A.

Source: The BMJBMJ; 2020; vol. 368

Publication Date: 2020

Publication Type(s): Review

PubMedID: 32054610

Available at BMJ (Clinical research ed.) - from BMJ Journals

Available at BMJ (Clinical research ed.) - from Unpaywall

Abstract: Stroke is the leading cause of long term disability in developed countries and one of the top causes of mortality worldwide. The past decade has seen substantial advances in the diagnostic and treatment options available to minimize the impact of acute ischemic stroke. The key first step in stroke care is early identification of patients with stroke and triage to centers capable of delivering the appropriate treatment, as fast as possible. Here, we review the data supporting pre-hospital and emergency stroke care, including use of emergency medical services protocols for identification of patients with stroke, intravenous thrombolysis in acute ischemic stroke including updates to recommended patient eligibility criteria and treatment time windows, and advanced imaging techniques with automated interpretation to identify patients with large areas of brain at risk but without large completed infarcts who are likely to benefit from endovascular thrombectomy in extended time windows from symptom onset.

We also review protocols for management of patient physiologic parameters to minimize infarct volumes and recent updates in secondary prevention recommendations including short term use of dual antiplatelet therapy to prevent recurrent stroke in the high risk period immediately after stroke. Finally, we discuss emerging therapies and questions for future research.Copyright © Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to.

Database: EMBASE

37. Nutraceuticals in Patients With Heart Failure: A Systematic Review

Author(s): Hopper I.; Connell C.; Briffa T.; De Pasquale C.G.; Driscoll A.; Kistler P.M.; Macdonald P.S.; Sindone A.; Thomas L.; Atherton J.J.

Source: Journal of Cardiac FailureJournal of Cardiac Failure; Feb 2020; vol. 26 (no. 2); p. 166-179

Publication Date: Feb 2020

Publication Type(s): Review

PubMedID: 31704198

Available at Journal of cardiac failure - from Unpaywall

Abstract:

Background: Nutraceuticals are pharmacologically active substances extracted from vegetable or animal food and administered to produce health benefits. We recently reviewed the current evidence for nutraceuticals in patients diagnosed with heart failure as part of the writing of the Australian Guidelines for the prevention, diagnosis, and management of heart failure.

Method(s): A systematic search for studies that compared nutraceuticals to standard care in adult patients with heart failure was performed. Studies were included if >50 patients were enrolled, with >=6 months follow-up. If no studies met criteria then studies <50 patients and <6 months follow-up were included. The primary outcomes included mortality/survival, hospitalization, quality of life, and/or exercise tolerance. Iron was not included in this review as its role in heart failure is already well established.

Result(s): Forty studies met the inclusion criteria. The strongest evidence came from studies of polyunsaturated fatty acids, which modestly decreased mortality and cardiovascular hospitalizations in patients with mostly New York Heart Association class II and III heart failure across a range of left ventricular ejection fraction. Coenzyme Q10 may decrease mortality and hospitalization, but definite conclusions cannot be drawn. Studies that examined nitrate-rich beetroot juice, micronutrient supplementation, hawthorn extract, magnesium, thiamine, vitamin E, vitamin D, L-arginine, L-carnosine, and L-carnitine were too small or underpowered to properly appraise clinical outcomes. Conclusion(s): Only one nutraceutical, omega-3 polyunsaturated fatty acid, received a positive recommendation in the Australian heart failure guidelines. Although occasionally showing some promise, all other nutraceuticals are inadequately studied to allow any conclusion on efficacy. Clinicians should favor other treatments that have been clearly shown to decrease mortality.Copyright © 2019 Elsevier Inc.

Database: EMBASE

38. Cost-utility analysis of learning and coping versus standard education in cardiac rehabilitation: A randomised controlled trial with 3 years of follow-up

Author(s): Tayyari Dehbarez N.; Palmhoj Nielsen C.; Risor B.W.; Vinther Nielsen C.; Lynggaard V.

Source: Open Heart; Jan 2020; vol. 7 (no. 1)

Publication Date: Jan 2020

Publication Type(s): Article

Available at Open Heart - from Europe PubMed Central - Open Access

Available at Open Heart - from HighWire - Free Full Text

Available at Open Heart - from ProQuest (Health Research Premium) - NHS Version

Available at Open Heart - from Unpaywall

Abstract:

Objectives: To enhance adherence to cardiac rehabilitation (CR), a patient education programme called a learning and coping' (LC-programme) was implemented in three hospitals in Denmark. The aim of this study was to investigate the cost-utility of the LC-programme compared with the standard CR-programme.

Methods: 825 patients with ischaemic heart disease or heart failure were randomised to the LC-programme or the standard CR-programme and were followed for 3 years. A societal cost perspective was applied and quality-adjusted life years (QALY) were based on SF-6D measurements. Multiple imputation technique was used to handle missing data on the SF-6D. The statistical analyses were based on means and bootstrapped SEs. Regression framework was employed to estimate the net benefit and to illustrate cost-effectiveness acceptability curves.

Results: No statistically significant differences were found between the two programmes in total societal costs (4353 Euros; 95% CI -3828 to 12 533) or in QALY (-0.006; 95% CI -0.053 to 0.042). At a threshold of 40 000 Euros, the LC-programme was found to be cost-effective at 15% probability; however, for patients with heart failure, due to increased cost savings, the probability of cost-effectiveness increased to 91%.

Conclusions: While the LC-programme did not appear to be cost-effective in CR, important heterogeneity was noted for subgroups of patients. The LC-programme was demonstrated to increase adherence to the rehabilitation programme and to be cost-effective among patients with heart failure. However, further research is needed to study the dynamic value of heterogeneity due to the small sample size in this subgroup.

Database: EMBASE

39. Axillary artery cannulation reduces early embolic stroke and mortality after open arch repair with circulatory arrest

Author(s): Kim J.-H.; Lee S.H.; Lee S.; Youn Y.-N.; Yoo K.-J.; Joo H.-C.

Source: Journal of Thoracic and Cardiovascular SurgeryJournal of Thoracic and Cardiovascular Surgery; Mar 2020; vol. 159 (no. 3); p. 772

Publication Date: Mar 2020

Publication Type(s): Article

PubMedID: 30992210

Available at The Journal of thoracic and cardiovascular surgery - from Unpaywall

Abstract:

Objective: To evaluate the efficacy of axillary artery cannulation for early embolic stroke and operative mortality, we retrospectively compared the outcomes between patients with or without axillary artery cannulation during open aortic arch repair with circulatory arrest.

Method(s): Between January 2004 and December 2017, 468 patients underwent open aortic arch repair with circulatory arrest using antegrade cerebral perfusion and were divided into 2 groups according to the site of arterial cannulation: the axillary artery (axillary group, n = 352) or another site (nonaxillary group, n = 116) groups. Embolic stroke was defined as a physician-diagnosed new postoperative neurologic deficit lasting more than 72 hours, generally confirmed by computed tomography or magnetic resonance imaging.

Result(s): After propensity score matching, the patients' characteristics were comparable between the groups (n = 116 in each). The incidences of acute type A dissection, aortic rupture, shock, or emergency operation were similar between groups. The incidence of early embolic stroke was significantly lower in axillary group (n = 3 [2.6%] vs n = 10 [8.6%]; P = .046). Also, 30-day mortality (n = 3 [2.6%] vs n = 10 [8.6%]; P = .046) and in-hospital mortality (n = 3 [2.6%] vs n = 11 [9.5%]; P = .027) occurred significantly lower in the axillary group.

Conclusion(s): Axillary artery cannulation reduced the early embolic stroke and early mortality after open arch repair with circulatory arrest. Axillary artery cannulation as the arterial cannulation site during open arch repair with circulatory arrest may be helpful in preventing embolic stroke and reducing early mortality.Copyright © 2019 The American Association for Thoracic Surgery

Database: EMBASE

40. Critical appraisal on the impact of preoperative rehabilitation and outcomes after major abdominal and cardiothoracic surgery: A systematic review and meta-analysis

Author(s): Kamarajah S.K.; Bundred J.; Weblin J.; Tan B.H.L.

Source: Surgery (United States)Surgery; Mar 2020; vol. 167 (no. 3); p. 540-549

Publication Date: Mar 2020

Publication Type(s): Article

PubMedID: 31548095

Abstract:

Background: There has been increasing interest in the prehabilitation of patients undergoing major abdominal surgery to improve perioperative outcomes. This systematic review and meta-analysis aims to evaluate and compare the current literature on prehabilitation in major abdominal surgery and cardiothoracic surgery

Methods: A systematic literature search was conducted for studies reporting prehabilitation in patients undergoing major abdominal and cardiothoracic surgery. Meta-analysis of postoperative outcomes (overall and major complications, pulmonary and cardiac complications, postoperative pneumonia, and length of hospital stay) was performed using random effects models.

Result(s): Five thousand nine hundred and twenty-one patients underwent prehabilitation in 61 studies, of which 35 studies (n = 3,402) were in major abdominal surgery and 26 studies were in cardiothoracic surgery (n = 2,519). Only 45 studies compared the impact of prehabilitation versus no prehabilitation on postoperative outcomes (abdominal, n = 26; cardiothoracic, n = 19). Quality of evidence for prehabilitation in major abdominal and cardiothoracic surgery appear equivalent. Patients receiving prehabilitation for major abdominal surgery have significantly lower rates of overall (n = 10, odds ratio: 0.61, confidence interval 95%: 0.43-0.86, P = .005), pulmonary (n = 15, odds ratio: 0.41, confidence interval 95%: 0.25-0.67, P < .001), and cardiac complications (n = 4, odds ratio: 0.46, confidence interval 95%: 0.22-0.96, P = .044). Sensitivity analysis including randomized controlled trials only did not alter the findings of this study.

Conclusion(s): Prehabilitation has the potential to improve surgical outcomes in patients undergoing major abdominal and cardiothoracic surgery. However, current evidence from randomized studies remains weak owing to variation in prehabilitation regimes, limiting the assessment of current postoperative outcomes.Copyright © 2019 Elsevier Inc.

Database: EMBASE

41. Telerehabilitation services for stroke

Author(s): Laver K.E.; Crotty M.; George S.; Adey-Wakeling Z.; Lannin N.A.; Sherrington C.

Source: Cochrane Database of Systematic ReviewsCochrane Database of Systematic Reviews; Jan 2020; vol. 2020 (no. 1)

Publication Date: Jan 2020

Publication Type(s): Review

PubMedID: 32002991

Available at The Cochrane database of systematic reviews - from Cochrane Collaboration (Wiley)

Abstract:

Background: Telerehabilitation offers an alternate way of delivering rehabilitation services. Information and communication technologies are used to facilitate communication between the healthcare professional and the patient in a remote location. The use of telerehabilitation is becoming more viable as the speed and sophistication of communication technologies improve. However, it is currently unclear how effective this model of delivery is relative to rehabilitation delivered face-to-face or when added to usual care. Objective(s): To determine whether the use of telerehabilitation leads to improved ability to perform activities of daily living amongst stroke survivors when compared with (1) in-person rehabilitation (when the clinician and the patient are at the same physical location and rehabilitation is provided face-to-face); or (2) no rehabilitation or usual care. Secondary objectives were to determine whether use of telerehabilitation leads to greater independence in self-care and domestic life and improved mobility, balance, health-related quality of life, depression, upper limb function, cognitive function or functional communication when compared with in-person rehabilitation and no rehabilitation. Additionally, we aimed to report on the presence of adverse events, cost-effectiveness, feasibility and levels of user satisfaction associated with telerehabilitation interventions.

Search Method(s): We searched the Cochrane Stroke Group Trials Register (June 2019), the Cochrane Central Register of Controlled Trials (the Cochrane Library, Issue 6, 2019), MEDLINE (Ovid, 1946 to June 2019), Embase (1974 to June 2019), and eight additional databases. We searched trial registries and reference lists. Selection Criteria: Randomised controlled trials (RCTs) of telerehabilitation in stroke. We included studies that compared telerehabilitation with in-person rehabilitation or no rehabilitation. In addition, we synthesised and described the results of RCTs that compared two different methods of delivering telerehabilitation services without an alternative group. We included rehabilitation programmes that used a combination of telerehabilitation and in-person rehabilitation provided that the greater proportion of intervention was provided via telerehabilitation.

Data Collection and Analysis: Two review authors independently identified trials on the basis of prespecified inclusion criteria, extracted data and assessed risk of bias. A third review author moderated any disagreements. The review authors contacted investigators to ask for missing information. We used GRADE to assess the quality of the evidence and interpret findings.

Main Result(s): We included 22 trials in the review involving a total of 1937 participants. The studies ranged in size from the inclusion of 10 participants to 536 participants, and reporting quality was often inadequate, particularly in relation to random sequence generation and allocation concealment. Selective outcome reporting and incomplete outcome data were apparent in several studies. Study interventions and comparisons varied, meaning that, in many cases, it was inappropriate to pool studies. Intervention approaches included post-hospital discharge support programs, upper limb training, lower limb and mobility retraining and communication therapy for people with post-stroke language disorders. Studies were either conducted upon discharge from hospital or with people in the subacute or chronic phases following stroke. Primary Outcome: we found moderate-quality evidence that there was no difference in activities of daily living between people who received a post-hospital discharge telerehabilitation intervention and those who received usual care (based on 2 studies with 661 participants (standardised mean difference (SMD) -0.00, 95% confidence interval (CI) -0.15 to 0.15)). We found low-quality evidence of no difference in effects on activities of daily living between telerehabilitation and in-person physical therapy programmes (based on 2 studies with 75 participants: SMD 0.03, 95% CI -0.43 to 0.48). Secondary Outcomes: we found a low quality of evidence that there was no difference between telerehabilitation and in-person rehabilitation for balance outcomes (based on 3 studies with 106 participants: SMD 0.08, 95%CI -0.30 to 0.46). Pooling of three studies with 569 participants showed moderate-quality evidence that there was no difference between those who received post-discharge support interventions and those who received usual care on health-related quality of life (SMD 0.03, 95% CI -0.14 to 0.20). Similarly, pooling of six studies (with 1145 participants) found moderate-quality evidence that there was no difference in depressive symptoms when comparing post-discharge tele-support programs with usual care (SMD -0.04, 95% CI -0.19 to 0.11). We found no difference between groups for upper limb function (based on 3 studies with 170 participants: mean difference (MD) 1.23, 95% CI -2.17 to 4.64, low-quality evidence) when a computer program was used to remotely retrain upper limb function in comparison to in-person therapy. Evidence was insufficient to draw conclusions on the effects of telerehabilitation on mobility or participant satisfaction with the intervention. No studies evaluated the cost-effectiveness of telerehabilitation; however, five of the studies reported health service utilisation outcomes or costs of the interventions provided within the study. Two studies reported on adverse events, although no serious trial-related adverse events were reported.

Authors' conclusions: While there is now an increasing number of RCTs testing the efficacy of telerehabilitation, it is hard to draw conclusions about the effects as interventions and comparators varied greatly across studies. In addition, there were few adequately powered studies and several studies included in this review were at risk of bias. At this point, there is only low or moderate-level evidence testing whether telerehabilitation is a more effective or similarly effective way to provide rehabilitation. Short-term post-hospital discharge telerehabilitation programmes have not been shown to reduce depressive symptoms, improve quality of life, or improve independence in activities of daily living when compared with usual care. Studies comparing telerehabilitation and in-person therapy have also not found significantly different outcomes between groups, suggesting that telerehabilitation is not inferior. Some studies reported that telerehabilitation was less expensive to provide but information was lacking about cost-effectiveness. Only two trials reported on whether or not any adverse events had occurred; these trials found no serious adverse events were related to telerehabilitation. The field is still emerging and more studies are needed to draw more definitive conclusions. In addition, while this review examined the efficacy of telerehabilitation when tested in randomised trials, studies that use mixed methods to evaluate the acceptability and feasibility of telehealth interventions are incredibly valuable in measuring outcomes.

Database: EMBASE

42. Exposure to guideline-recommended drugs after a first acute myocardial infarction in older adults: does deprivation matter?

Author(s): Akator A.E.; Blais C.; Lunghi C.; Guenette L.; Gamache P.

Source: Pharmacoepidemiology and Drug SafetyPharmacoepidemiology and Drug Safety; Feb 2020; vol. 29 (no. 2); p. 141-149

Publication Date: Feb 2020

Publication Type(s): Article

PubMedID: 31797484

Available at Pharmacoepidemiology and drug safety - from Wiley Online Library

Abstract:

Background: Inequities between guideline-recommended drugs (GRD) exposure and socioeconomic status might exist. The objective was to assess the association between a material and a social deprivation index and GRD exposure following a first acute myocardial infarction (AMI) in older adults in the province of Quebec.

Method(s): We conducted a retrospective cohort study using the Quebec Integrated Chronic Disease Surveillance System. Elderly >=66 years, hospitalized for a first AMI between January 1, 2006, and December 31, 2011 and covered by the public drug plan were identified. Exposure to GRD (i.e. simultaneous use of 1) antiplatelet, 2) beta-blocker, 3) lipid-lowering and 4) angiotensin-converting enzyme inhibitor or angiotensin II receptor blocker drugs) was assessed 30 and 365 days following hospital discharge. Associations between deprivation index and GRD exposure were estimated with log-binomial regressions adjusting for potential confounders.

Result(s): Exposure to GRD was 52.2% and 48.0%, 30 and 365 days after hospital discharge, respectively. No statistically significant association was observed in multivariate analysis for both time points. Thirty days post hospital discharge, adjusted prevalence ratio of non-exposure to GRD was 0.98 (95% confidence interval [CI]: 0.95-1.02) for most materially deprived vs. least deprived and 1.04 (95% CI: 0.99-1.08) for most socially deprived vs. least deprived. Similar results were observed for 365 days.

Conclusion(s): Exposure to GRD after a first urgent AMI among older adults insured by the public drug plan in the province of Quebec is relatively low. Reasons and risk groups for this low exposure should be studied to improve secondary prevention. However, results suggest equitable access to GRD, regardless of deprivation.

Database: EMBASE

43. Efficacy of empagliflozin on heart failure and renal outcomes in patients with atrial fibrillation: data from the EMPA-REG OUTCOME trial

Author(s): Bohm M.; Slawik J.; Brueckmann M.; George J.T.; Mattheus M.; Ofstad A.P.; Inzucchi S.E.; Fitchett D.; Anker S.D.; Marx N.; Wanner C.; Zinman B.; Verma S.

Source: European Journal of Heart FailureEuropean Journal of Heart Failure; Jan 2020; vol. 22 (no. 1); p. 126-135

Publication Date: Jan 2020

Publication Type(s): Article

PubMedID: 31820559

Available at European journal of heart failure - from Wiley Online Library

Abstract:

Aims: Atrial fibrillation (AF) is common in patients with diabetes and heart failure (HF) and increases the future risk of adverse cardiovascular (CV) outcomes. This analysis from the EMPA-REG OUTCOME trial explores CV and renal outcomes in patients with vs. without AF at baseline and assesses the benefits of empagliflozin.

Methods and Results: Analyses were conducted on patients distinguished by the presence (n = 389) or absence (n = 6631) of AF at baseline. Outcome events were more frequent in patients with AF than those without AF. Empagliflozin compared to placebo reduced CV death or HF hospitalisation consistently in patients with AF [hazard ratio (HR) 0.58, 95% confidence interval (CI) 0.36-0.92] and without AF (HR 0.67, 95% CI 0.55-0.82, Pinteraction = 0.56). Similar results were observed for the components of this endpoint, all-cause mortality, new or worsening nephropathy, first introduction of loop diuretics, or occurrence of oedema. The absolute number of prevented events was higher in patients with AF, resulting in larger absolute treatment effects of empagliflozin. New loop diuretics or oedema were associated with increased rates of subsequent events, and rates appeared lower in those randomised to empagliflozin.

Conclusion(s): In patients with type 2 diabetes mellitus and established CV disease, those with AF at baseline had higher rates of adverse HF outcomes than those without AF. Irrespective of the presence of AF, empagliflozin reduced HF-related and renal events. The absolute number of prevented events is higher in patients with AF than without AF. Patients with diabetes, CV disease and AF may especially benefit from use of empagliflozin.Copyright © 2019 The Authors. European Journal of Heart Failure © 2019 European Society of Cardiology

Database: EMBASE

44. Factors associated with in-hospital complications and long-term implications of these complications in elderly patients undergoing endovascular aneurysm repair

Author(s): Varkevisser R.R.B.; O'Donnell T.F.X.; Swerdlow N.J.; Liang P.; Li C.; Schermerhorn M.L.; Ultee K.H.J.; Verhagen H.J.M.; Patel V.I.; Scali S.T.

Source: Journal of Vascular SurgeryJournal of Vascular Surgery; Feb 2020; vol. 71 (no. 2); p. 470

Publication Date: Feb 2020

Publication Type(s): Conference Paper

PubMedID: 31248757

Available at Journal of vascular surgery - from Unpaywall

Abstract:

Objective: Perioperative complications in elderly patients undergoing endovascular aneurysm repair (EVAR) occur frequently. Although perioperative mortality has been well-described in the elderly patient population, factors associated with in-hospital complications and their impact on long-term survival remain poorly characterized. Method(s): We identified all patients undergoing elective EVAR for infrarenal AAA within the Vascular Quality Initiative registry (2003-2018) and compared in-hospital complication rates between elderly (age >=75) and nonelderly patients (<75). We used logistic regression to identify independent factors associated with in-hospital complications, whereas Kaplan-Meier analysis and Cox proportional hazards models were used to determine

associations between complications and long-term survival. To assess the effect of complications on early and late survival, we stratified survival periods into the first 30 days after discharge, and between 1 and 6 months, 7 and 12 months, and 1 and 8 years after the index procedure. To investigate the implications of in-hospital morbidity on long-term outcomes, we estimated the adjusted population-attributable fractions of individual complications on both perioperative and long-term survival.

Result(s): We identified 17,156 elderly patients and 19,922 nonelderly patients. Elderly patients experienced higher complication rates compared with nonelderly patients (17% vs 10%; P <. 001). The factors with the strongest associations with morbidity in elderly patients were anemia (odds ratio [OR], 2.4; 95% confidence interval [CI], 2.2-2.6), female gender (OR, 1.9; 95% CI, 1.7-2.1), and large AAA diameter (OR, 1.7; 95% CI, 1.6-1.9). Patients with any in-hospital complication had lower unadjusted survival estimates than patients without complications at 1 year (83% vs 95%; P <. 001), 5 years (66% vs 80%; P <. 001), and 8 years (60% vs 72%; P <. 001). After risk adjustment, in-hospital complications were independently associated with higher mortality, although the association attenuated over time (first month after discharge: hazard ratio [HR], 5.9; 95% CI, 3.9-9.1; 1-6 months after the procedure: HR, 2.1; 95% CI, 1.7-2.7; P <. 001; 7-12 months after the procedure: HR, 1.5; 95% CI, 1.1-1.9; 1-8 years after the procedure: HR, 1.2; 95% CI, 1.01-1.3). Of all deaths occurring within 8 years after procedure, 9.5% were independently associated with in-hospital complications. Complications with the greatest impact on long-term mortality were renal dysfunction (2.4%), blood transfusion (3.4%), and reintubations (2.4%).

Conclusion(s): Elderly patients are at higher risk for in-hospital complications after EVAR. These in-hospital complications have a significant impact on both short- and long-term survival. To further improve the delivery of EVAR care nationally, quality improvement efforts should be focused on preventing postoperative morbidity in elderly patients, as well as refining out of hospital surveillance strategies for subjects who experience in-hospital complications to improve overall survival.

Database: EMBASE

45. Alcohol Abstinence in Drinkers with Atrial Fibrillation

Author(s): Voskoboinik A.; Nicholls T.; Costello B.; Nanayakkara S.; Prabhu S.; Stub D.; Azzopardi S.; Vizi D.; Sugumar H.; Kaye D.; Taylor A.J.; Kistler P.M.; Kalman J.M.; Wong G.; Nalliah C.; Silva A.D.; Wong M.; Kotschet E.

Source: New England Journal of MedicineNew England Journal of Medicine; Jan 2020; vol. 382 (no. 1); p. 20-28

Publication Date: Jan 2020

Publication Type(s): Article

PubMedID: 31875494

Abstract:

BACKGROUND: Excessive alcohol consumption is associated with incident atrial fibrillation and adverse atrial remodeling; however, the effect of abstinence from alcohol on secondary prevention of atrial fibrillation is unclear. METHODS: We conducted a multicenter, prospective, open-label, randomized, controlled trial at six hospitals in Australia. Adults who consumed 10 or more standard drinks (with 1 standard drink containing approximately 12 g of pure alcohol) per week and who had paroxysmal or persistent atrial fibrillation in sinus rhythm at baseline were randomly assigned in a 1:1 ratio to either abstain from alcohol or continue their usual alcohol consumption. The two primary end points were freedom from recurrence of atrial fibrillation (after a 2-week "blanking period") and total atrial fibrillation burden (proportion of time in atrial fibrillation) during 6 months of follow-up.

RESULTS: Of 140 patients who underwent randomization (85% men; mean [+/-SD] age, 62+/-9 years), 70 were assigned to the abstinence group and 70 to the control group. Patients in the abstinence group reduced their alcohol intake from 16.8+/-7.7 to 2.1+/-3.7 standard drinks per week (a reduction of 87.5%), and patients in the control group reduced their alcohol intake from 16.4+/-6.9 to 13.2+/-6.5 drinks per week (a reduction of 19.5%). After a 2-week blanking period, atrial fibrillation recurred in 37 of 70 patients (53%) in the abstinence group and in 51 of 70 patients (73%) in the control group. The abstinence group had a longer period before recurrence of atrial fibrillation than the control group (hazard ratio, 0.55; 95% confidence interval, 0.36 to 0.84; P = 0.005). The atrial fibrillation

burden over 6 months of follow-up was significantly lower in the abstinence group than in the control group (median percentage of time in atrial fibrillation, 0.5% [interquartile range, 0.0 to 3.0] vs. 1.2% [interquartile range, 0.0 to 10.3]; P = 0.01).

CONCLUSIONS: Abstinence from alcohol reduced arrhythmia recurrences in regular drinkers with atrial fibrillation. (Funded by the Government of Victoria Operational Infrastructure Support Program and others; Australian New Zealand Clinical Trials Registry number, ACTRN12616000256471.).Copyright © 2020 Massachusetts Medical Society.

Database: EMBASE

46. Motivational Interviewing as a Strategy to Impact Outcomes in Heart Failure Patients: A Systematic Review

Author(s): Poudel N.; Kavookjian J.; Scalese M.J.

Source: PatientPatient; Feb 2020; vol. 13 (no. 1); p. 43-55

Publication Date: Feb 2020

Publication Type(s): Review

PubMedID: 31502239

Abstract:

Background: Heart failure (HF) hospitalization is an expensive healthcare utilization event. Motivational interviewing (MI) has been studied for effects on HF self-management behaviors.

Objective(s): The objective of this systematic review was to conduct an exploration and report of evidence and gaps in the literature regarding the impact of MI on HF outcomes.

Data Sources: A modified Cochrane systematic review was conducted via a literature search in the MEDLINE, CINAHL, Cochrane Collaborative Systematic Reviews, PsycINFO, Health Source: Nursing/Academic Edition, and Google Scholar databases. Study Eligibility Criteria, Participants, and Interventions: Randomized controlled trials (RCTs) or controlled experimental studies published in English from January 1990 to February 2019 that included adults (18 years and older) diagnosed with HF New York Heart Association (NYHA) class I, II, II, or IV were eligible for inclusion. Interventions evaluated were an MI-based face-to-face communication or telephone-based conversation provided by any healthcare provider type.

Study Appraisal and Synthesis Methods: The Cochrane method for assessing risk of bias was used to analyze the methodological quality of retained studies.

Result(s): Of 167 initial articles, nine were retained, describing eight unique studies (758 total patients, range 30-241; age range 58-79 years; attrition range 13-36%). The impact of MI was examined for general self-care behaviors (SCBs) (physical activity specifically), quality of life (QoL), and/or hospital readmission prevention. Eight of nine articles reported a positive impact of MI over advice-giving, seven being statistically significant. MI interventions used an initial face-to-face encounter with three to five follow-up telephone encounters. Limitation(s): This systematic review had the following limitations: most retained studies included intervention activities conducted in hospital/clinic settings, which limits generalizability of the intervention in other care settings; intervention fidelity, blinding, selection, interventionist training, and random assignment were not clear in all studies; retained studies did not include potential covariates such as health literacy, patient age, and perception of disease/health risks; and some retained studies relied on patient self-report of outcomes, which may introduce recall or social desirability bias.

Conclusions and Implications of Key Findings: MI demonstrated a positive effect on the SCB hospital readmission prevention factor and on QoL. MI delivered with greater frequency and over a longer duration may improve the immediate risk of hospital readmission as well as long-term outcomes through better medication adherence and SCBs. However, heterogeneity in the methods, design, intervention type, and structure challenged comparisons across studies and further research is warranted.Copyright © 2019, Springer Nature Switzerland AG.

Database: EMBASE

47. Cardiac rehabilitation after acute myocardial infarction in Sweden - evaluation of programme characteristics and adherence to European guidelines: The Perfect Cardiac Rehabilitation (Perfect-CR) study

Author(s): Ogmundsdottir Michelsen H.; Sjolin I.; Schlyter M.; Schiopu A.; Leosdottir M.; Hagstrom E.; Held C.; Kiessling A.; Henriksson P.; Hag E.; Nilsson L.; Back M.; Zaman M.J.

Source: European Journal of Preventive CardiologyEuropean Journal of Preventive Cardiology; Jan 2020; vol. 27 (no. 1); p. 18-27

Publication Date: Jan 2020

Publication Type(s): Article

PubMedID: 31349776

Abstract:

Background: While patient performance after participating in cardiac rehabilitation programmes after acute myocardial infarction is regularly reported through registry and survey data, information on cardiac rehabilitation programme characteristics is less well described.

Aim(s): The aim of this study was to evaluate Swedish cardiac rehabilitation programme characteristics and adherence to European Guidelines on Cardiovascular Disease Prevention.

Method(s): Cardiac rehabilitation programme characteristics at all 78 cardiac rehabilitation centres in Sweden in 2016 were surveyed using a web-based questionnaire (100% response rate). The questions were based on core components of cardiac rehabilitation as recommended by European Guidelines.

Result(s): There was a wide variation in programme duration (2-14 months). All programmes reported offering an individual post-discharge visit with a nurse, and 90% (n = 70) did so within three weeks from discharge. Most programmes offered centre-based exercise training (n = 76, 97%) and group educational sessions (n = 61, 78%). All programmes reported to the national audit, SWEDEHEART, and 60% (n = 47) reported that performance was regularly assessed using audit data, to improve quality of care. Ninety-six per cent (n = 75) had a core team consisting of a cardiologist, a physiotherapist and a nurse and 76% (n = 59) reported having a medical director. Having other allied healthcare professionals included in the cardiac rehabilitation team varied. Forty per cent (n = 31) reported having regular team meetings where nurses, physiotherapists and cardiologist could discuss patient cases. Conclusion(s): The overall quality of cardiac rehabilitation programmes provided in Sweden is high. Still, there are several areas of potential improvement. Monitoring programme characteristics as well as patient outcomes might improve programme quality and patient outcomes both at a local and a national level.

Database: EMBASE

48. Association between prediabetes and risk of all cause mortality and cardiovascular disease: updated meta-analysis

Author(s): Cai, Xiaoyan; Zhang, Yunlong; Li, Meijun; Wu, Jason HY; Mai, Linlin; Li, Jun; Yang, Yu; Hu, Yunzhao; Huang, Yuli

Source: BMJ : British Medical Journal (Online); Jul 2020; vol. 370

Publication Date: Jul 2020

Publication Type(s): Journal Article

Available at BMJ - from BMJ Journals

Available at BMJ - from Unpaywall

Abstract:

Objective: To evaluate the associations between prediabetes and the risk of all cause mortality and incident cardiovascular disease in the general population and in patients with a history of atherosclerotic cardiovascular disease.

Design: Updated meta-analysis.

Data sources: Electronic databases (PubMed, Embase, and Google Scholar) up to 25 April 2020.

Review methods: Prospective cohort studies or post hoc analysis of clinical trials were included for analysis if they reported adjusted relative risks, odds ratios, or hazard ratios of all cause mortality or cardiovascular disease for prediabetes compared with normoglycaemia. Data were extracted independently by two investigators. Random effects models were used to calculate the relative risks and 95% confidence intervals. The primary outcomes were all cause mortality and composite cardiovascular disease. The secondary outcomes were the risk of coronary heart disease and stroke.

Results: A total of 129 studies were included, involving 10 069 955 individuals for analysis. In the general population, prediabetes was associated with an increased risk of all cause mortality (relative risk 1.13, 95% confidence interval 1.10 to 1.17), composite cardiovascular disease (1.15, 1.11 to 1.18), coronary heart disease (1.16, 1.11 to 1.21), and stroke (1.14, 1.08 to 1.20) in a median follow-up time of 9.8 years. Compared with normoglycaemia, the absolute risk difference in prediabetes for all cause mortality, composite cardiovascular disease, coronary heart disease, and stroke was 7.36 (95% confidence interval 9.59 to 12.51), 8.75 (6.41 to 10.49), 6.59 (4.53 to 8.65), and 3.68 (2.10 to 5.26) per 10 000 person years, respectively. Impaired glucose tolerance carried a higher risk of all cause mortality, coronary heart disease, and stroke than impaired fasting glucose. In patients with atherosclerotic cardiovascular disease, prediabetes was associated with an increased risk of all cause mortality (relative risk 1.36, 95% confidence interval 1.21 to 1.54), composite cardiovascular disease (1.37, 1.23 to 1.53), and coronary heart disease (1.15, 1.02 to 1.29) in a median follow-up time of 3.2 years, but no difference was seen for the risk of stroke (1.05, 0.81 to 1.36). Compared with normoglycaemia, in patients with atherosclerotic cardiovascular disease, the absolute risk difference in prediabetes for all cause mortality, composite cardiovascular disease, coronary heart disease, and stroke was 66.19 (95% confidence interval 38.60 to 99.25), 189.77 (117.97 to 271.84), 40.62 (5.42 to 78.53), and 8.54 (32.43 to 61.45) per 10 000 person years, respectively. No significant heterogeneity was found for the risk of all outcomes seen for the different definitions of prediabetes in patients with atherosclerotic cardiovascular disease (all P>0.10).

Conclusions: Results indicated that prediabetes was associated with an increased risk of all cause mortality and cardiovascular disease in the general population and in patients with atherosclerotic cardiovascular disease. Screening and appropriate management of prediabetes might contribute to primary and secondary prevention of cardiovascular disease.

Database: BNI

49. Variations between women and men in risk factors, treatments, cardiovascular disease incidence, and death in 27 high-income, middle-income, and low-income countries (PURE): a prospective cohort study

Author(s): Walli-Attaei, Marjan; Joseph, Philip; Rosengren, Annika; Chow, Clara K; Rangarajan, Sumathy; Lear, Scott A; AlHabib, Khalid F; Davletov, Kairat; Dans, Antonio; Lanas, Fernando; Yeates, Karen; Poirier, Paul; Teo, Koon K; Bahonar, Ahmad; Camilo, Felix; Chifamba, Jephat; Diaz, Rafael; Didkowska, Joanna A; Irazola, Vilma; Ismail, Rosnah; Kaur, Manmeet; Khatib, Rasha; Liu, Xiaoyun; Mańczuk, Marta; J Jaime Miranda; Aytekin Oguz; Perez-Mayorga, Maritza; Szuba, Andrzej; Tsolekile, Lungiswa P; Ravi Prasad Varma; Yusufali, Afzalhussein; Yusuf, Rita; Li, Wei; Anand, Sonia S; Salim Yusuf

Source: The Lancet; Jul 2020; vol. 396 (no. 10244); p. 97

Publication Date: Jul 2020

Publication Type(s): Journal Article

Abstract:

Summary Background: Some studies, mainly from high-income countries (HICs), report that women receive less care (investigations and treatments) for cardiovascular disease than do men and might have a higher risk of death. However, very few studies systematically report risk factors, use of primary or secondary prevention medications, incidence of cardiovascular disease, or death in populations drawn from the community. Given that most cardiovascular disease occurs in low-income and middle-income countries (LMICs), there is a need for comprehensive information comparing treatments and outcomes between women and men in HICs, middle-income countries, and low-income countries from community-based population studies. Methods In the Prospective Urban Rural Epidemiological study (PURE), individuals aged 35–70 years from urban and rural communities in 27 countries

were considered for inclusion. We recorded information on participants' sociodemographic characteristics, risk factors, medication use, cardiac investigations, and interventions. 168 490 participants who enrolled in the first two of the three phases of PURE were followed up prospectively for incident cardiovascular disease and death. Findings From Jan 6, 2005 to May 6, 2019, 202 072 individuals were recruited to the study. The mean age of women included in the study was 50·8 (SD 9·9) years compared with 51·7 (10) years for men. Participants were followed up for a median of 9·5 (IQR 8·5–10·9) years. Women had a lower cardiovascular disease risk factor burden using two different risk scores (INTERHEART and Framingham). Primary prevention strategies, such as adoption of several healthy lifestyle behaviours and use of proven medicines, were more frequent in women than men. Incidence of cardiovascular disease (4·1 [95% CI 4·0–4·2] for women vs 6·4 [6·2–6·6] for men per 1000 person-years; adjusted hazard ratio [aHR] 0·75 [95% CI 0·72–0·79]) and all-cause death (4·5 [95% CI 4·4–4·7] for women vs 7·4 [7·2–7·7] for men per 1000 person-years; aHR 0·62 [95% CI 0·60–0·65]) were also lower in women. By contrast, secondary prevention treatments, cardiac investigations, and coronary revascularisation were less frequent in women than men with coronary artery disease in all groups of countries. Despite this, women had lower risk of recurrent cardiovascular disease events (20·0 [95% CI 18·2–21·7] versus 27·7 [95% CI 25·6–29·8] per 1000 person-years in men, adjusted hazard ratio 0·73 [95% CI 0·64-0·83]) and women had lower 30-day mortality after a new cardiovascular disease event compared with men (22% in women versus 28% in men; p<0·0001). Differences between women and men in treatments and outcomes were more marked in LMICs with little differences in HICs in those with or without previous cardiovascular disease. Interpretation Treatments for cardiovascular disease are more common in women than men in primary prevention, but the reverse is seen in secondary prevention. However, consistently better outcomes are observed in women than in men, both in those with and without previous cardiovascular disease. Improving cardiovascular disease prevention and treatment, especially in LMICs, should be vigorously pursued in both women and men. Funding Full funding sources are listed at the end of the paper (see Acknowledgments).

Database: BNI

50. Exploration of a nurse practitioner-led phase two cardiac rehabilitation programme on attendance and compliance

Author(s): Kathryn O'Toole; Chamberlain, Diane; Giles, Tracey

Source: Journal of Clinical Nursing; Mar 2020; vol. 29 (no. 5-6); p. 785

Publication Date: Mar 2020

Publication Type(s): Journal Article

Available at Journal of Clinical Nursing - from Wiley Online Library

Abstract:

Aims and Objectives: To evaluate the impact of a nurse practitioner-led phase two cardiac rehabilitation and secondary prevention programme on attendance and compliance.

Background: Despite strong evidence for the benefits of cardiac rehabilitation, attendance/completion rates remain low. Nurse practitioner-led services have been reported as more effective than physician-led services at increasing patient adherence to evidence-based recommendations. However, nurse practitioner-led programmes are uncommon and there appears to be no current evidence examining the impact of these programmes on attendance/completion rates.

Methods: A retrospective audit of the Country Access to Cardiac Health (CATCH) database was undertaken to identify patients who attended a nurse practitioner-led cardiac rehabilitation programme between April 2014 and May 2016. Data from key performance indicators were exported to Stata/SE 15.0. The study utilised the Strengthening the Reporting of OBservational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies to ensure quality reporting during this study (See Data S1).

Results: Seventy-seven per cent (n = 199) of participants were men, and participants had a mean age of 67 years. Half (52.5%) of participants completed all CR sessions. Male participants (78%) were more likely to complete the CR programme as compared with women (67%).Participants with a family history of cardiovascular disease and a higher

number of risk factors at baseline were more likely to commence and complete the programme. Attendance and completion had a positive impact on smoking cessation.

Conclusions: The nurse practitioner-led programme evaluated in this study demonstrated high levels of attendance and completion rates compared to standard programmes. This high attendance/completion rate could in turn decrease the rate of subsequent cardiac events and improve mortality and morbidity rates. Relevance to clinical practice provides valuable insights into the effectiveness of nurse practitioner-led cardiac rehabilitation and secondary prevention on attendance/complete rates. These findings could guide future research and clinical practice development.

Database: BNI

51. Interventions supporting long term adherence and decreasing cardiovascular events after myocardial infarction (ISLAND): pragmatic randomised controlled trial

Author(s): Ivers, Noah M; Jon-David Schwalm; Bouck, Zachary; McCready, Tara; Taljaard, Monica; Grace, Sherry L; Cunningham, Jennifer; Bosiak, Beth; Presseau, Justin; Witteman, Holly O; Suskin, Neville; Wijeysundera, Harindra C; Atzema, Clare; R Sacha Bhatia; Natarajan, Madhu; Grimshaw, Jeremy M

Source: BMJ : British Medical Journal (Online); Jun 2020; vol. 369

Publication Date: Jun 2020

Publication Type(s): Evidence Based Healthcare Journal Article

Available at BMJ (Clinical research ed.) - from BMJ Journals

Available at BMJ (Clinical research ed.) - from Unpaywall

Abstract:

Objective: To test a scalable health system intervention to improve long term adherence to secondary prevention treatments among patients who have had a recent myocardial infarction.

Design: Three arm, pragmatic randomised controlled trial with blinded outcome assessment.

Setting: Nine cardiac centres in Ontario, Canada.Participants2632 patients with obstructive coronary artery disease after a myocardial infarction, identified from a centralised cardiac registry.

Interventions: Participants were randomised 1:1:1 to receive usual care, five mail-outs developed through a user centred design process, or mail-outs plus phone calls. The phone calls were delivered first by an interactive automated system to screen for non-adherence to treatment. Trained lay health workers followed up as necessary. Interventions were coordinated centrally but delivered from each patient's hospital site.

Main outcome measures: Co-primary outcomes were completion of cardiac rehabilitation and adherence to recommended medication. Data were collected by blinded assessors through patient report and from administrative health databases at 12 months.

Results: 2632 patients (mean age 66, 71% male) were randomised: 878 to the full intervention (mail plus phone calls), 878 to mail only, and 876 to usual care. Of the respondents, 174 (27%) of 643 in the usual care group, 200 (32%) of 628 in the mail only group, and 196 (37%) of 531 allocated to the full intervention completed cardiac rehabilitation (adjusted odds ratio 1.55, 95% confidence interval 1.18 to 2.03). In the mail plus phone group, 11.7%, 6.0%, 14.4%, 32.9%, and 35.0% reported adherence to 0, 1, 2, 3, and 4 drug classes after one year, respectively, in comparison with 12.5%, 6.8%, 13.6%, 30.2%, and 36.8% in the mail only group, and 12.2%, 8.4%, 13.1%, 30.3%, and 36.1% in the usual care group, respectively (mail only v usual care, odds ratio 0.98, 95% confidence interval 0.81 to 1.19; full intervention v usual care, 0.99, 0.82 to 1.20).

Conclusions: Scalable interventions delivered by mail plus phone can increase completion of cardiac rehabilitation after myocardial infarction but not adherence to medication. More intensive interventions should be tested to improve adherence to medication and to evaluate the association between attendance at cardiac rehabilitation and adherence to medication.Trial registrationClinicalTrials.gov NCT02382731, registered 9 March 2015 before any patient enrolment.

Database: BNI

52. Preventative Strategies of Atherosclerotic Cardiovascular Disease

Author(s):

Source: The Journal for Nurse Practitioners; Apr 2020; vol. 16 (no. 4); p. 253

Publication Date: Apr 2020

Publication Type(s): Journal Article

Available at The Journal for Nurse Practitioners - from ProQuest (Health Research Premium) - NHS Version

Available at The Journal for Nurse Practitioners - from Unpaywall

Abstract: Preventative strategies of atherosclerotic cardiovascular disease are discussed based on the recent guidelines for the assessment and treatment of cardiovascular risks and the implications for nurse practitioners. This article uses a clinical approach to enhance the discussion on ways to use primary, secondary, and tertiary preventative strategies of lifestyle and pharmacologic interventions for atherosclerotic cardiovascular disease.

Database: BNI

53. Cancer and cardiovascular disease

Author(s): Alam, Nasra; Wright, Alison K; Ashcroft, Darren M; Renehan, Andrew G

Source: The Lancet; Jun 2020; vol. 395 (no. 10241); p. 1903

Publication Date: Jun 2020

Publication Type(s): Letter

Available at Lancet (London, England) - from Unpaywall

Abstract:T he accompanying Comment2 argued that there should be further research into whether cancer should be included in cardiovascular risk prediction tools and refers to cardiovascular models such as Framingham3 and the Pooled Cohort Equations.4 Cardiovascular death is an important component of cardiovascular disease burden. Using primary care data from the Clinical Practice Research Datalink (CPRD) linked with cancer registrations from the National Cancer Registration and Analysis Service and death registrations from the Office for National Statistics (ONS) database, we analysed 167 360 patients (aged 30–85 years) who had cancer between 1998 and 2015, and matched them with 762 172 individuals without cancer from the general population. With the aim of identifying and intervening in high-risk individuals, the addition of cancer to a cardiovascular disease risk prediction tool will undoubtedly identify extra at-risk patients, but the absolute gain for preventing cardiovascular death will be modest.

Database: BNI

54. Prevention of premature cardiovascular death worldwide

Author(s): Read, Stephanie H; Wild, Sarah H

Source: The Lancet; Mar 2020; vol. 395 (no. 10226); p. 758

Publication Date: Mar 2020

Publication Type(s): Commentary

Available at Lancet (London, England) - from ProQuest (Health Research Premium) - NHS Version

Available at Lancet (London, England) - from Unpaywall

Abstract: Life expectancy is increasing in some countries and declining in others.1 Age-standardised cardiovascular disease incidence and mortality are declining in many populations, with more marked declines in more developed countries.2 However, more people die each year from cardiovascular disease than any other cause, with 31% of global deaths attributed to cardiovascular disease, partly as a consequence of increasing population size and ageing.3 Risk factor prevalence and the strength of associations between risk factors and cardiovascular disease and

mortality are reasonably well described in high-income countries (HICs), but data for middle-income countries (MICs) and low-income countries (LICs) are more scarce. The WHO "STEPwise approach to surveillance" facilitates collection of comparable information on risk factor prevalence across countries but does not investigate associations with outcomes.4 The Global Burden of Disease Study provides national, regional, and global estimates of the burden of cardiovascular disease by modelling available data from heterogeneous sources over a wide time frame.1,2 It uses extensive extrapolation to cover countries for which data are not available, and most of these countries are LICs and MICs. The findings from the PURE study5 that indicate a large proportion of cardiovascular disease events and mortality can be attributed to a small number of modifiable risk factors are consistent with and extend the findings from several other large studies, including the Global Burden of Disease,2 INTERSTROKE,6 and INTERHEART studies.7 Taken together, the findings highlight the potential for further improvements in prevention of cardiovascular disease and premature mortality across the globe, through reductions in modifiable risk factors.

Database: BNI

55. Covid-19: Data show 5000 fewer hospital admissions for acute coronary syndrome during pandemic

Author(s): Griffin, Shaun

Source: BMJ : British Medical Journal (Online); Jul 2020; vol. 370

Publication Date: Jul 2020

Publication Type(s): News

Available at BMJ (Clinical research ed.) - from BMJ Journals

Available at BMJ (Clinical research ed.) - from Unpaywall

Abstract: Among patients admitted to hospital with acute myocardial infarction there was a "sustained increase in the proportion . . . receiving [a percutaneous coronary intervention (PCI) for acute myocardial infarction] on the day of admission and a continued reduction in the median length of stay," they added. "The reduced number of admissions … is likely to have resulted in increases in out-of-hospital deaths and long-term complications of myocardial infarction and missed opportunities to offer secondary prevention treatment for patients with coronary heart disease," they concluded. An NHS England spokesperson also pointed that Public Health England's weekly emergency department syndromic surveillance report seemed to show that, after dropping in March, cardiac presentations in emergency departments have been above baseline levels since early May.2 When asked about the apparent discrepancy, the lead author of the Lancet report, Marion Mafham, from Oxford University's Nuffield Department of Population Health, said, "The PHE report is based on the emergency care dataset, which records the provisional diagnosis made in A&E. The data used in our paper are based on the coded diagnosis recorded by the hospital at the end of an inpatient episode of care so may be more accurate in terms of identifying people who suffered a heart attack."

Database: BNI

56. Follow-up after surgical treatment for intermittent claudication (FASTIC): a study protocol for a multicentre randomised controlled clinical trial

Author(s): Haile, Sara; Linné, Anneli; Unn-Britt Johansson; Joelsson-Alm, Eva

Source: BMC Nursing; 2020; vol. 19 ; p. 1

Publication Date: 2020

Publication Type(s): Journal Article Evidence Based Healthcare

Available at BMC Nursing - from BioMed Central

Available at BMC Nursing - from Europe PubMed Central - Open Access

Available at BMC Nursing - from ProQuest (Health Research Premium) - NHS Version

Available at BMC Nursing - from Unpaywall

Abstract:

Background: Intermittent claudication (IC) is a classic symptom of peripheral arterial disease, and strongly associated with coronary heart disease and cerebrovascular disease. Treatment of IC and secondary prevention of vascular events include best medical treatment (BMT), changes in lifestyle, most importantly smoking cessation and increased physical exercise, and in appropriate cases surgery. A person-centred and health promotion approach might facilitate breaking barriers to lifestyle changes and increasing adherence to secondary prevention therapy. The FASTIC study aims to evaluate a nurse-led, person-centred, health-promoting follow-up programme compared with standard follow-up by a vascular surgeon after surgical treatment for IC.

Methods: The FASTIC-study is a multicentre randomised controlled clinical trial. Patients will be recruited from two hospitals in Stockholm, Sweden after surgical treatment of IC through open and/or endovascular revascularisation and will be randomly assigned into two groups. The intervention group is offered a nurse-led, person-centred, health-promoting programme, which includes two telephone calls and three visits to a vascular nurse the first year after surgical treatment. The control group is offered standard care, which consists of a visit to a vascular surgeon 4–8 weeks after surgery and a visit to the outpatient clinic 1 year after surgical treatment. The primary outcome is adherence to BMT 1 year after surgical treatment and will be measured using The Swedish Prescribed Drug Registry. Clinical assessments, biomarkers, and questionnaires will be used to evaluate several secondary outcomes, such as predicted 10-year risk of cardiovascular and cerebrovascular events, health-related quality of life, and patients' perceptions of care quality.

Discussion: The FASTIC study will provide important information about interventions aimed at improving adherence to medication, which is an unexplored field among patients with IC. The study will also contribute to knowledge on how to implement person-centred care in a clinical context. Trial registration ClinicalTrials.govNCT03283358, registration date 06/13/2016.

Database: BNI

57. Monotherapy with a P2Y 12 inhibitor or aspirin for secondary prevention in patients with established atherosclerosis: a systematic review and meta-analysis

Author(s): Chiarito, Mauro; Sanz-Sánchez, Jorge; Cannata, Francesco; Cao, Davide; Sturla, Matteo; Panico, Cristina; Godino, Cosmo; Regazzoli, Damiano; Reimers, Bernhard; De Caterina, Raffaele; Condorelli, Gianluigi; Ferrante, Giuseppe; Stefanini, Giulio G

Source: The Lancet; May 2020; vol. 395 (no. 10235); p. 1487

Publication Date: May 2020

Publication Type(s): Journal Article

Abstract:

Summary Background: Antiplatelet therapy is recommended among patients with established atherosclerosis. We compared monotherapy with a P2Y12 inhibitor versus aspirin for secondary prevention.

Methods: In this systematic review and meta-analysis, all randomised trials comparing P2Y12 inhibitor with aspirin monotherapy for secondary prevention in patients with cerebrovascular, coronary, or peripheral artery disease were evaluated for inclusion. On Dec 18, 2019, we searched PubMed, Embase, BioMedCentral, Google Scholar, and the Cochrane Central Register of Controlled Trials. Additionally, we reviewed references from identified articles and searched abstracts from 2017 to 2019 presented at relevant scientific meetings. Data about year of publication, inclusion and exclusion criteria, sample size, baseline patients' features including the baseline condition determining study inclusion (ie, cerebrovascular, coronary, or peripheral artery disease), P2Y12 inhibitor type and dosage, aspirin dosage, endpoint definitions, effect estimates, follow-up duration, and percentage of patients lost to follow-up were collected. Odds ratios (ORs) and 95% CIs were used as metric of choice for treatment effects with random-effects models. Co-primary endpoints were myocardial infarction and stroke. Key secondary endpoints were all-cause death and vascular death. Heterogeneity was assessed with the I2 index. This study is registered with PROSPERO (CRD42018115037).

Findings: A total of nine randomised trials were identified and included in this study, and 42 108 patients randomly allocated to a P2Y12 inhibitor (n=21 043) or aspirin (n=21 065) were included in our analyses. Patients who received a P2Y12 inhibitor had a borderline reduction for the risk of myocardial infarction compared with those who received aspirin (OR 0·81 [95% CI 0·66–0·99]; I2=10·9%). Risks of stroke (OR 0·93 [0·82–1·06]; I2=34·5%), all-cause death (OR 0·98 [0·89–1·08]; I2=0%), and vascular death (OR 0·97 [0·86–1·09]; I2=0%) did not differ between patients who received a P2Y12 inhibitor and those who received aspirin. Similarly, the risk of major bleeding (OR 0·90 [0·74–1·10]; I2=3·9%) did not differ between patients who received a P2Y12 inhibitor and those who received aspirin. The number needed to treat to prevent one myocardial infarction with P2Y12 inhibitor monotherapy was 244 patients. Findings were consistent regardless of the type of P2Y12 inhibitor used. Interpretation Compared with aspirin monotherapy, P2Y12 inhibitor monotherapy is associated with a risk reduction for myocardial infarction and a comparable risk of stroke in the setting of secondary prevention. The benefit of P2Y12 inhibitor monotherapy is of debatable clinical relevance, in view of the high number needed to treat to prevent a myocardial infarction and the absence of any effect on all-cause and vascular mortality. Funding Italian Ministry of Education.

Database: BNI

58. Recurrent cardiovascular events in patients with newly diagnosed acute coronary syndrome: Influence of diabetes and its management with medication

Author(s): Komaru, Yohei; Takeuchi, Tadashi; Suzuki, Luka; Asano, Taku; Urayama, Kevin Y

Source: Journal of Diabetes and its Complications; Mar 2020; vol. 34 (no. 3)

Publication Date: Mar 2020

Publication Type(s): Journal Article

Available at Journal of Diabetes and its Complications - from ProQuest (Health Research Premium) - NHS Version

Abstract:

Aims: The effects of type 2 diabetes mellitus (T2DM) medications on secondary prevention after acute coronary syndrome (ACS) remain unclear. We evaluated recurrent cardiovascular disease (CVD) after primary diagnosis of ACS in T2DM patients.

Methods: This retrospective cohort study included 569 patients with newly diagnosed ACS from 2007 to 2012. The endpoint was recurrent CVD up to a five-year maximum follow-up until 2016. Kaplan–Meier analysis and Cox proportional hazard regressions were performed to examine the association between T2DM diagnosis, different antidiabetic drugs, and recurrent CVD.

Results: Among 569 patients, 198 had T2DM. The mean follow-up was 1540 (interquartile range, 864–2157) days. Patients with diabetes showed higher risk of recurrent cardiovascular event compared with those without (P = 0.004). Patients with diabetes treated with metformin (65 patients) showed longer event-free survival, compared with those on other antidiabetic medications (P = 0.005). Multivariable analysis confirmed a reduced risk of recurrent CVD associated with metformin (hazard ratio, 0.33; 95% confidence interval, 0.12–0.91), while lower hemoglobin A1c levels on admission were not associated with better CVD outcomes.

Conclusions: T2DM increases risk of recurrent CVD after first ACS episode regardless of glycemic control on admission, while use of metformin may reduce recurrence.

Database: BNI

59. Use of renin–angiotensin–aldosterone system inhibitors and risk of COVID-19 requiring admission to hospital: a case-population study

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Santos-Molina, E; Pintos-Sánchez, E; Navares-Gómez, M; Aparicio, R M; García-Rosado, V; Gutiérrez-Ortega, C; Pérez, C; Ascaso, A; Elvira, C

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Publication Date: May 2020

Publication Type(s): Journal Article

Available at The Lancet - from Unpaywall

Abstract: Summary

Background: Concerns have been raised about the possibility that inhibitors of the renin–angiotensin–aldosterone system (RAAS) could predispose individuals to severe COVID-19; however, epidemiological evidence is lacking. We report the results of a case-population study done in Madrid, Spain, since the outbreak of COVID-19.

Methods: In this case-population study, we consecutively selected patients aged 18 years or older with a PCR-confirmed diagnosis of COVID-19 requiring admission to hospital from seven hospitals in Madrid, who had been admitted between March 1 and March 24, 2020. As a reference group, we randomly sampled ten patients per case, individually matched for age, sex, region (ie, Madrid), and date of admission to hospital (month and day; index date), from Base de datos para la Investigación Farmacoepidemiológica en Atención Primaria (BIFAP), a Spanish primary health-care database, in its last available year (2018). We extracted information on comorbidities and prescriptions up to the month before index date (ie, current use) from electronic clinical records of both cases and controls. The outcome of interest was admission to hospital of patients with COVID-19. To minimise confounding by indication, the main analysis focused on assessing the association between COVID-19 requiring admission to hospital and use of RAAS inhibitors compared with use of other antihypertensive drugs. We calculated odds ratios (ORs) and 95% CIs, adjusted for age, sex, and cardiovascular comorbidities and risk factors, using conditional logistic regression. The protocol of the study was registered in the EU electronic Register of Post-Authorisation Studies, EUPAS34437.
Findings: We collected data for 1139 cases and 11 390 population controls. Among cases, 444 (39·0%) were female and the mean age was 69·1 years (SD 15·4), and despite being matched on sex and age, a significantly higher proportion of cases had pre-existing cardiovascular disease (OR 1·98, 95% CI 1·62–2·41) and risk factors (1·46, 1·23–1·73) than did controls. Compared with users of other antihypertensive drugs, users of RAAS inhibitors had an adjusted OR for COVID-19 requiring admission to hospital of 0·94 (95% CI 0·77–1·15). No increased risk was observed with either angiotensin-converting enzyme inhibitors (adjusted OR 0·80, 0·64–1·00) or angiotensin-receptor blockers (1·10, 0·88–1·37). Sex, age, and background cardiovascular risk did not modify the adjusted OR between use of RAAS inhibitors and COVID-19 requiring admission to hospital, whereas a decreased risk of COVID-19 requiring admission to hospital was found among patients with diabetes who were users of RAAS inhibitors (adjusted OR 0·53, 95% CI 0·34–0·80). The adjusted ORs were similar across severity degrees of COVID-19. Interpretation RAAS inhibitors do not increase the risk of COVID-19 requiring admission to hospital, including fatal cases and those admitted to intensive care units, and should not be discontinued to prevent a severe case of COVID-19. Funding Instituto de Salud Carlos III.

Database: BNI

60. Review of Current Screening and Diagnostic Tools for Atrial Fibrillation

Author(s): Zapata, James, PA-C; Zimmer, Drew, PA-C; Rinard, Benjamin, PA-C; Abdou, Amir, PA-C; Paamoni, Arielle, PA-C; Letherer, Catherine Chang, PA-C

Source: The Clinical Advisor : For Nurse Practitioners; 2020; vol. 23 (no. 1); p. 16

Publication Date: 2020

Publication Type(s): General Information

Available at The Clinical Advisor : For Nurse Practitioners - from ProQuest (Health Research Premium) - NHS Version

Abstract: A trial fibrillation (AF) is the most common sustained arrhythmia and is associated with cardiovascular complications, thrombosis, and stroke.1 An estimated 5 million Americans 65 years of age and older experience atrial fibrillation, with the number predicted to double in 25 years.1,2 One in 5 patients diagnosed with AF initially presents with a cerebrovascular accident, and approximately 20% ofAF cases are undiagnosed.1 With the projected

increase in prevalence, it is important that clinicians have access to the most current screening and diagnostic tools for AF to prevent thromboembolic complications. Men typically have less frequent or milder symptoms, whereas women may be more apt to seek treatment.3,5 An irregularly irregular rhythm, an inconsistent first heart sound (S1), and palpitations make up the triad ofAF findings.6,7 Some patients may present with abnormal variants of AF, such as decreased heart rate and chest pain.7 However, a decreased heart rate is rare in AF because the arrhythmia originates above the atrioventricular node of the heart. Patients who are older than 65 years, female, or who have a history of congestive heart failure, hypertension, transient ischemic attacks, vascular disease, or previous stroke are at increased risk for stroke according to the CHA2DS2-VASc criteria.9'10 Additional risk factors associated with stroke in patients with AF include excessive alcohol use, European ancestry, and left atrial enlargement.6 The CHADS2 and CHA2DS2-VASc scores have historically been used to guide anticoagulation therapy. 9 Although both are helpful tools, the CHA2DS2-VASc is considered superior and is more widely recognized.11 The recognized highest risk factors (older age, history of congestive heart failure, and hypertension) contribute to the self-propagating nature of AF development by inflammation, and structural and electrical remodeling. The presence of a J wave in the QTc interval has been associated with AF development.1 Molecular biomarkers such as brain natriuretic peptide, troponin T, C-reactive protein, von Willebrand factor, fibrinogen, and various collagen peptides are associated with newly diagnosed paroxysmal AF.

Database: BNI

Strategy 882244

#	Database	Search term	Results
1	EMBASE	(cardiac rehabilitation).ti,ab	10696
2	EMBASE	exp "HEART REHABILITATION"/	11576
3	EMBASE	(prevent*).ti,ab	1831631
4	EMBASE	exp "HEART INFARCTION PREVENTION"/	3465
5	EMBASE	(rehab*).ti,ab	235101
6	EMBASE	(1 OR 2 OR 3 OR 4 OR 5)	2049163
7	EMBASE	("cardiovascular disease").ti,ab	182932
8	EMBASE	exp "CARDIOVASCULAR DISEASE"/	4040356
9	EMBASE	("coronary heart disease").ti,ab	65917
10	EMBASE	exp "ISCHEMIC HEART DISEASE"/	661048
11	EMBASE	exp "CORONARY ARTERY DISEASE"/	322079
12	EMBASE	(7 OR 8 OR 9 OR 10 OR 11)	4074356
13	EMBASE	exp "DISEASE MANAGEMENT"/	2888553
14	EMBASE	(patient care).ti,ab	88530
15	EMBASE	exp "PATIENT CARE"/	816405
16	EMBASE	(13 OR 14 OR 15)	3497573
17	EMBASE	(hospital* OR (acute ADJ2 care) OR nurs*).ti,ab	2334315
18	EMBASE	(6 AND 12 AND 16 AND 17)	19938
19	EMBASE	(6 AND 12 AND 16 AND 18) [DT 2020-2020]	822
21	EMBASE	(6 AND 12 AND 16 AND 17) [DT 2020-	822

		2020]	
22	EMBASE	(6 AND 12 AND 16 AND 17) [DT 2020-2020] [Priority journals] [Publication types Article OR Journal OR Report OR Review]	224
23	BNI	(cardiac rehabilitation OR heart rehabilitation).ti,ab	1283
24	BNI	(prevent*).ti,ab	59675
25	BNI	(rehab*).ti,ab	212
26	BNI	(23 OR 24 OR 25)	60961
27	BNI	("cardiovascular disease").ti,ab	5629
28	BNI	("coronary heart disease").ti,ab	2946
29	BNI	(ISCHEMIC HEART DISEASE).ti,ab	235
30	BNI	(CORONARY ARTERY DISEASE).ti,ab	1869
31	BNI	(27 OR 28 OR 29 OR 30)	9887
32	BNI	(patient care).ti,ab	58349
33	BNI	(26 AND 31) [DT 2020-2020]	54

Round up of guidance and advice (I've included those due to be published before the next Update in July but not thereafter)

For the full range of Guidance please see https://www.nice.org.uk/guidance/conditions-anddiseases/cardiovascular-conditions

Intravascular lithotripsy for calcified coronary arteries during percutaneous coronary intervention
Interventional procedures guidance [IPG673]
Published date: 24 June 2020
https://www.nice.org.uk/guidance/ipg673

Abdominal aortic aneurysm: diagnosis and management
NICE guideline [NG156]
Published date: 19 March 2020
https://www.nice.org.uk/guidance/ng156

Venous thromboembolic diseases: diagnosis, management and thrombophilia testing
NICE guideline [NG158]
Published date: 26 March 2020
https://www.nice.org.uk/guidance/ng158

Patiromer for treating hyperkalaemia
Technology appraisal guidance [TA623]
Published date: 13 February 2020
https://www.nice.org.uk/guidance/ta623

Cyanoacrylate glue occlusion for varicose veins
Interventional procedures guidance [IPG670]
Published date: 04 March 2020
https://www.nice.org.uk/guidance/ipg670