Coronary Care Update

January 2023

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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Please contact Holly if you would like more information, or further evidence searches: holly.cook3@nhs.net.

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Expected publication date: 09 March 2023
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Published: 23 November 2022
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Published: 24 August 2022
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A selection of papers from Medline and CINAHL Jul 2022 – Jan 2023 (most recent first)

1. Comorbid Heart Disease in Patients with COPD is Associated with Increased Hospitalization and Mortality - A 15-Year Follow-Up

Item Type: Journal Article

Authors: Giezeman, Maaike;Sundh, Josefin;Athlin, Åsa;Lisspers, Karin;Ställberg, Björn;Janson, Christer;Montgomery, Scott;Kisiel, Marta A.;Nager, Anna;Sandelowsky, Hanna and Hasselgren, Mikael

Publication Date: 2023

Journal: International Journal of Chronic Obstructive Pulmonary Disease 18, pp. 11-21

Abstract: Purpose: The aim of this study was to examine the association of comorbid heart disease, defined as chronic heart failure or ischemic heart disease, on all-cause and cause-specific hospitalization and mortality in patients with COPD over a period of nearly 15 years.; Materials and Methods: The cohort study included patients with COPD from primary and secondary care in 2005 with data from questionnaires and medical record reviews. The Swedish Board of Health and Welfare provided hospitalization and mortality data from 2005 through 2019. Cox regression analyses, adjusted for sex, age, educational level, smoking status, BMI, exacerbations, dyspnea score and comorbid diabetes or hypertension, assessed the association of comorbid heart disease with all-cause and cause-specific time to first hospitalization and death. Linear regression analyses, adjusted for the same variables, assessed this association with hospitalization days per year for those patients that had been hospitalized.; Results: Of the 1071 patients, 262 (25%) had heart disease at baseline. Cox regression analysis showed a higher risk of hospitalization for patients with heart disease for all-cause (HR (95% CI) 1.55; 1.32-1.82), cardiovascular (2.14; 1.70-2.70) and other causes (1.27; 1.06-1.52). Patients with heart disease also had an increased risk of all-cause (1.77; 1.48-2.12), cardiovascular (3.40; 2.41-4.78) and other (1.50; 1.09-2.06) mortality. Heart disease was significantly associated with more hospitalization days per year of all-cause (regression coefficient 0.37; 95% CI 0.15-0.59), cardiovascular (0.57; 0.27-0.86) and other (0.37; 0.12-0.62) causes. No significant associations were found between heart disease and respiratory causes of hospitalization and death.; Conclusion: Comorbid heart disease in patients with COPD is associated with an increased risk for all-cause hospitalization and mortality, mainly due to an increase of hospitalization and death of cardiovascular and other causes, but not because of respiratory disease. This finding advocates the need of a strong clinical focus on primary and secondary prevention of cardiovascular disease in patients with COPD.; Competing Interests: Dr Maaike Giezeman reports grants from Bror Hjerpstedt Stiftelsen, grants from Region Örebro County grants from Region Varmland, during the conduct of the study. Dr Karin Lisspers reports personal fees from AstraZeneca, personal fees from Novartis, personal fees from Boehringer Ingelheim, personal fees from GlaxoSmithKline, personal fees from TEVA, outside the submitted work. Dr Björn Ställberg reports personal fees from AstraZeneca, personal fees from Novartis, personal fees from Boehringer Ingelheim, personal fees from Meda/Mylan, personal fees from Teva, personal fees from GlaxoSmithKleine, personal fees from Chiesi, outside the submitted work. Dr Hanna Sandelowsky reports personal fees from Boehringer Ingelheim, personal fees from Chiesi, personal fees from Astra Zeneca, personal fees from Novartis, outside the submitted work. The authors report no conflicts of interest in this work. (© 2023 Giezeman et al.)

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2. Identifying and visualising multimorbidity and comorbidity patterns in patients in the English National Health Service: a population-based study

Item Type: Journal Article

Authors: Kuan, Valerie;Denaxas, Spiros;Patalay, Praveetha;Nitsch, Dorothea;Mathur, Rohini;Gonzalez-Izquierdo, Arturo;Sofat, Reecha;Partridge, Linda;Roberts, Amanda;Wong, Ian C. K.;Hingorani, Melanie;Chaturvedi, Nishi;Hemingway, Harry and Hingorani, Aroon D.

Publication Date: 2023

Journal: The Lancet. Digital Health 5(1), pp. e16-e27

Abstract: Background: Globally, there is a paucity of multimorbidity and comorbidity data, especially for minority ethnic groups and younger people. We estimated the frequency of common disease combinations and identified non-random disease associations for all ages in a multiethnic population.; Methods: In this population-based study, we examined multimorbidity and comorbidity patterns stratified by ethnicity or race, sex, and age for 308 health conditions using electronic health records from individuals included on the Clinical Practice Research Datalink linked with the Hospital Episode Statistics admitted patient care dataset in England. We included individuals who were older than 1 year and who had been registered for at least 1 year in a participating general practice during the study period (between April 1, 2010, and March 31, 2015). We identified the most common combinations of conditions and comorbidities for index conditions. We defined comorbidity as the accumulation of additional conditions to an index condition over an individual's lifetime. We used network analysis to identify conditions that co-occurred more often than expected by chance. We developed online interactive tools to explore multimorbidity and comorbidity patterns overall and by subgroup based on ethnicity, sex, and age.; Findings: We collected data for 3 872 451 eligible patients, of whom 1 955 700 (50·5%) were women and girls, 1 916 751 (49·5%) were men and boys, 2 666 234 (68·9%) were White, 155 435 (4·0%) were south Asian, and 98 815 (2·6%) were Black. We found that a higher proportion of boys aged 1-9 years (132 506 47·8%] of 277 158) had two or more diagnosed conditions than did girls in the same age group (106 982 40·3%] of 265 179), but more women and girls were diagnosed with multimorbidity than were boys aged 10 years and older and men (1 361 232 80·5%] of 1 690 521 vs 1 161 308 70·8%] of 1 639 593). White individuals (2 097 536 78·7%] of 2 666 234) were more likely to be diagnosed with two or more conditions than were Black (59 339 60·1%] of 98 815) or south Asian individuals (93 617 60·2%] of 155 435). Depression commonly co-occurred with anxiety, migraine, obesity, atopic conditions, deafness, soft-tissue disorders, and gastrointestinal disorders across all subgroups. Heart failure often co-occurred with hypertension, atrial fibrillation, osteoarthritis, stable angina, myocardial infarction, chronic kidney disease, type 2 diabetes, and chronic obstructive pulmonary disease. Spinal fractures were most strongly non-randomly associated with malignancy in Black individuals, but with osteoporosis in White individuals. Hypertension was most strongly associated with kidney disorders in those aged 20-29 years, but with dyslipidaemia, obesity, and type 2 diabetes in individuals aged 40 years and older. Breast cancer was associated with different comorbidities in individuals from different ethnic groups. Asthma was associated with different comorbidities between males and females. Bipolar disorder was associated with different comorbidities in younger age groups compared with older age groups.; Interpretation: Our findings and interactive online tools are a resource for: patients and their clinicians, to prevent and detect comorbid conditions; research funders and policy makers, to redesign service provision, training priorities, and guideline development; and biomedical researchers and manufacturers of medicines, to provide leads for research into common or sequential pathways of disease and inform the design of clinical trials.; Funding: UK Research and Innovation, Medical Research Council, National Institute for Health and Care Research, Department of Health and Social Care, Wellcome Trust, British Heart Foundation, and The Alan Turing Institute.; Competing Interests: Declaration of interests DN is the UK Kidney Association Director of Informatics Research based at the UK Renal Registry and is on the steering committee for two GlaxoSmithKline-funded studies looking at kidney function markers in sub-Saharan Africa. ICKW was a member of the ISAC of CPRD and has received funding from Amgen, Bristol-Myers Squibb, Pfizer, Janssen, Bayer, GSK, and Novartis to conduct

pharmacoepidemiological research outside the submitted work. RM has received consulting fees from Amgen. ADH is a co-investigator on a grant from Pfizer to identify potential therapeutic targets for heart failure using human genomics. NC is remunerated for her membership of a data safety and monitoring committee of a trial sponsored by AstraZeneca. All other authors declare no competing interests.

Access or request full text: https://libkey.io/10.1016/S2589-7500(22)00187-X

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36460578&custid=ns023446

3. Post-discharge Thromboembolic Events in COVID-19 Patients: A Review on the Necessity for Prophylaxis

Item Type: Journal Article

Authors: Mehrabi, Forough;Farshbafnadi, Melina and Rezaei, Nima

Publication Date: 2023

Journal: Clinical and Applied Thrombosis/Hemostasis : Official Journal of the International Academy of Clinical and Applied Thrombosis/Hemostasis 29, pp. 10760296221148477

Abstract: Coronavirus disease 2019 (COVID-19) affects the respiratory system of patients and is characterized by pneumonia with hypoxemia. Hospitalized patients and particularly those admitted to intensive care unit (ICU) may encounter a cascade of coagulopathies, which may lead to macrovessel thrombotic events such as pulmonary embolism (PE), deep vein thrombosis (DVT), or arterial thromboembolism (ATE). These events can result in serious life-threatening diseases including cerebrovascular stroke and myocardial infarction. Despite all available information about the incidence, prevention, and treatment of venous thromboembolism (VTE) among hospitalized patients, few data are available on the incidence of both symptomatic and subclinical VTE after discharge. Therefore, there is no precise suggestion or guideline for prophylaxis against VTE in post-discharge period, and some controversies exist over the current guidelines. In the present study, we aimed to review and summarize available literature upon incidence, prevention, diagnosis, and therapeutic approaches for VTE in COVID-19 patients. Also, the pathogenic mechanisms of VTE in infected individuals with COVID-19 were discussed.

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URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36596272&custid=ns023446

4. A review of venous thromboembolism risk assessment models for different patient populations: What we know and don't!

Item Type: Journal Article

Authors: Mehta, Y. and Bhave, A.

Publication Date: 2023

Journal: Medicine 102(2), pp. e32398

Abstract: Venous thromboembolism (VTE) is a common cause of morbidity and mortality in hospitalized patients. Globally, it is also the third leading vascular disease, after myocardial infarction and stroke. The incidence of VTE is reportedly higher in Western countries than in Asian countries. However, recent reports suggest an increasing incidence of VTE in Asian countries, including India. Since VTE is largely a preventable disease, early identification of risk factors can lead to disease prevention or the adoption of appropriate prophylactic measures. To this end, several VTE risk assessment models (RAMs) have been developed and validated for different populations who are at risk of developing VTE, such as hospitalized patients with medical illness/surgical indication, patients with cancer, and pregnant women. Evidence indicates that the systematic use of RAMs improves prophylaxis rates and lowers the burden of VTE. Given the increasing burden of VTE in the Indian population and poor prophylaxis rates, the implementation of systematic RAMs in routine clinical practice might ameliorate the disease burden in the country. We have assessed the evidence-based utilities of available RAMs and have delineated the most common and suitable RAMs for different populations including coronavirus disease 2019 affected patients. This review depicts the current status of implementation and validation of RAMs in the Indian scenario. It also highlights the need for additional validation studies, improved awareness, and implementation of RAMs in clinical practice for lowering the burden of VTE.; Competing Interests: This article is based on previously conducted studies and does not contain any new data collected from human participants or animals.YM has no conflicts of interest to disclose. AB was a speaker in scientific programs conducted by Sanofi, Bayer, and Pfizer and has received honoraria for the same. He was also on the medical advisory board of Boehringer Ingelheim. (Copyright © 2023 the Author(s). Published by Wolters Kluwer Health, Inc.)

Access or request full text: https://libkey.io/10.1097/MD.0000000000032398

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36637948&custid=ns023446

5. Prophylaxis protects infants with congenital heart disease from severe forms of RSV infection: an Italian observational retrospective study : Palivizumab prophylaxis in children with congenital heart disease

Item Type: Journal Article

Authors: Ratti, Chiara;Greca, Anna Della;Bertoncelli, Deborah;Rubini, Monica and Tchana, Bertrand

Publication Date: 2023

Journal: Italian Journal of Pediatrics 49(1), pp. 4

Abstract: Background: In children with congenital heart disease (CHD) respiratory syncytial virus (RSV) infection may have a severe course, with increased risk of morbidity and mortality, requiring hospital admission and intensive care. The aim of the present study was to evaluate the effect of prophylaxis with palivizumab in preventing RSV-associated hospitalization in infants with CHD.; Methods: We carried out an observational, retrospective study in a paediatric cardiology division at a secondary-care centre in Italy, extracting from the database children with CHD who, from November 2004 to March 2022, matched the criteria for palivizumab prophylaxis, to evaluate the hospitalization rate in CHD patients with and without palivizumab prophylaxis and their RSV-related hospitalization characteristics compared with a group of children without CHD and no other underlying clinical conditions (control group, CG), hospitalized for RSV infection.; Results: One hundred twenty-eight children with CHD were enrolled in the study, mainly (71.9%) with increased pulmonary flow, and

received palivizumab prophylaxis. Twenty-seven received hospital care for bronchiolitis. Almost all CHD patients hospitalized for bronchiolitis (26 out of 27) received partial prophylaxis (≤ 3 doses). CHD patients with bronchiolitis stay longer in the hospital than control (14.4 ± 21.7 days vs 6.2 ± 2.3 days) some of which require intensive care (n = 4).; Conclusions: Our study provides evidence of the efficacy of palivizumab in protecting patients with hemodynamically significant CHD under the age of 2 years from RSV disease and its life-threatening complications. Reducing hospitalisation rate, morbidity, and mortality in this category of patients, passive immune prophylaxis with palivizumab may impact healthcare resource availability and utilisation. (© 2023. The Author(s).)

Access or request full text: https://libkey.io/10.1186/s13052-022-01399-z

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36631870&custid=ns023446

6. Causes and Determinants of Heart Failure Readmissions Post Transcutaneous Aortic Valve Replacement: A Systematic Review and Meta-Analysis

Item Type: Journal Article

Authors: Yasmin, Farah;Aamir, Muhammad;Moeed, Abdul;Iqbal, Kinza;Iqbal, Aymen;Asghar, Muhammad Sohaib;Ullah, Waqas;Rajapreyar, Indranee and Brailovsky, Yevgeniy

Publication Date: 2023

Journal: Current Problems in Cardiology 48(1), pp. 101428

Abstract: Transcutaneous aortic valve implantation (TAVI) has transformed the management of aortic stenosis (AS) and is increasingly being used for patients with symptomatic, severe aortic stenosis who are ineligible or at high risk for conventional cardiac surgery. PUBMED, Google Scholar, and SCOPUS databases were searched to identify studies reporting heart failure hospitalization after TAVI. Major factors evaluated for HF hospitalization were age, comorbidities such as hypertension, atrial fibrillation (AF), chronic pulmonary disease including COPD, chronic kidney disease, baseline LVEF before the procedure, NYHA symptom class, and society of thoracic surgeons (STS) score. Hazard ratio (HR) with a 95% confidence interval were computed using random-effects models. A total of eight studies were included comprising 77,745 patients who underwent TAVI for severe aortic stenosis. The presence of diabetes mellitus (HR: 1.39, 95% CI 1.17, 1.66], chronic kidney disease (CKD) (HR: 1.39, 95% CI 1.31, 1.48], atrial fibrillation (HR: 1.69, 95% CI 1.42, 2.01], chronic pulmonary disease (HR: 1.33, 95% CI 1.12, 1.58], and a high STS score (HR: 1.07, 95% CI 1.03, 1.11] were positive predictors of 1-year HF hospitalization after TAVI. Patients with diabetes mellitus, AF, CKD, chronic pulmonary disease, and a high STS score are at an increased risk of heart failure hospitalization at 1-year of TAVI, whereas increasing age, hypertension, LVEF <50%, and NYHA class III/IV symptoms did not predict HF hospitalization. Careful follow-up after TAVI in high-risk patients, with closer surveillance for HF particularly, is key to preventing HF hospitalizations and death. (Copyright © 2022. Published by Elsevier Inc.)

Access or request full text: https://libkey.io/10.1016/j.cpcardiol.2022.101428

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36191693&custid=ns023446

7. Contributions of event rates, pre-hospital deaths, and deaths following hospitalisation to variations in myocardial infarction mortality in 326 districts in England: a spatial analysis of

linked hospitalisation and mortality data

Item Type: Journal Article

Authors: Asaria, Perviz;Bennett, James E.;Elliott, Paul;Rashid, Theo;Iyathooray Daby, Hima;Douglass, Margaret;Francis, Darrel P.;Fecht, Daniela and Ezzati, Majid

Publication Date: 2022

Journal: The Lancet.Public Health 7(10), pp. e813-e824

Abstract: Background: Myocardial infarction mortality varies substantially within high-income countries. There is limited guidance on what interventions-including primary and secondary prevention, or improvement of care pathways and quality-can reduce myocardial infarction mortality. Our aim was to understand the contributions of incidence (event rate), pre-hospital deaths, and hospital case fatality to the variations in myocardial infarction mortality within England.; Methods: We used linked data from national databases on hospitalisations and deaths with acute myocardial infarction (ICD-10 codes I21 and I22) as a primary hospital diagnosis or underlying cause of death, from Jan 1, 2015, to Dec 31, 2018. We used geographical identifiers to estimate myocardial infarction event rate (number of events per 100 000 population), death rate (number of deaths per 100 000 population), total case fatality (proportion of events that resulted in death), pre-hospital fatality (proportion of events that resulted in pre-hospital death), and hospital case fatality (proportion of admissions due to myocardial infarction that resulted in death within 28 days of admission) for men and women aged 45 years and older across 326 districts in England. Data were analysed in a Bayesian spatial model that accounted for similarities and differences in spatial patterns of fatal and non-fatal myocardial infarction. Age-standardised rates were calculated by weighting age-specific rates by the corresponding national share of the appropriate denominator for each measure.; Findings: From 2015 to 2018, national age-standardised death rates were 63 per 100 000 population in women and 126 per 100 000 in men, and event rates were 233 per 100 000 in women and 512 per 100 000 in men. After age-standardisation, 15·0% of events in women and 16·9% in men resulted in death before hospitalisation, and hospital case fatality was 10·8% in women and 10·6% in men. Across districts, the 99th-to-1st percentile ratio of age-standardised myocardial infarction death rates was 2·63 (95% credible interval 2·45-2·83) in women and 2·56 (2·37-2·76) in men, with death rates highest in parts of northern England. The main contributor to this variation was myocardial infarction event rate, with a 99th-to-1st percentile ratio of 2·55 (2·39-2·72) in women and 2·17 (2·08-2·27) in men across districts. Pre-hospital fatality was greater than hospital case fatality in every district. Pre-hospital fatality had a 99th-to-1st percentile ratio of 1·60 (1·50-1·70) in women and 1·75 (1·66-1·86) in men across districts, and made a greater contribution to variation in total case fatality than did hospital case fatality (99th-to-1st percentile ratio 1·39 1·29-1·49] and 1·49 1·39-1·60]). The contribution of case fatality to variation in deaths across districts was largest in women aged 55-64 and 65-74 years and in men aged 55-64, 65-74, and 75-84 years. Pre-hospital fatality was slightly higher in men than in women in most districts and age groups, whereas hospital case fatality was higher in women in virtually all districts at ages up to and including 65-74 years.; Interpretation: Most of the variation in myocardial infarction mortality in England is due to variation in myocardial infarction event rate, with a smaller role for case fatality. Most variation in case fatality occurs before rather than after hospital admission. Reducing subnational variations in myocardial infarction mortality requires interventions that reduce event rate and pre-hospital deaths.; Funding: Wellcome Trust, British Heart Foundation, Medical Research Council (UK Research and Innovation), and National Institute for Health Research (UK).; Competing Interests: Declaration of interests ME reports a charitable grant from the AstraZeneca Young Health Programme, outside the submitted work. All other authors declare no competing interests.

Access or request full text: https://libkey.io/10.1016/S2468-2667(22)00108-6

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35850144&custid=ns

023446

8. Effectiveness of virtual reality in cardiac rehabilitation: A systematic review and meta-analysis of randomized controlled trials

Item Type: Journal Article

Authors: Chen, Yanya;Cao, Li;Xu, Yinuo;Zhu, Mengdie;Guan, Bingsheng and Ming, Wai-Kit

Publication Date: 2022

Journal: International Journal of Nursing Studies 133, pp. 104323

Abstract: Background: Cardiovascular disease has risen sharply and causes more premature deaths than cancer, while it represents a major economic burden for healthcare systems and impacts patients' quality of life negatively. Virtual reality has captured the attention of researchers in the field of cardiac rehabilitation. However, the efficacy of virtual reality among individuals undergoing cardiac rehabilitation remains inconclusive.; Objective: To appraise research evidence on the effects of virtual reality for individuals undergoing cardiac rehabilitation.; Design: Systematic review and meta-analysis.; Methods: A systematic search of publications was conducted using Pubmed, Embase, Web of science, Cumulative Index to Nursing and Allied Health Literature database (CINAHL), Cochrane Central Register of Controlled trials and Physiotherapy Evidence Database (PEDro) from inception to 15 May 2022, without language restriction. The Cochrane Risk of Bias Tool was used to examine the methodological quality of the included randomized controlled studies. When feasible, a meta-analysis was performed to calculate the pooled effects using Review Manager (Version 5.4). Otherwise, narrative summaries were performed. The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) methodology was used to assess the certainty of the evidence.; Results: A total of ten studies were included. Virtual reality probably increases exercise capacity for individuals undergoing cardiac rehabilitation (the pooled mean difference 49.55, 95% confidence interval 30.59 ~ 68.52, P < 0.00001, moderate-certainty evidence) and might result in a reduction in emotional tension (mean difference -6.43, 95% confidence interval -9.02 ~ -3.84, P < 0.00001, low-certainty evidence) and intrapsychic stress (mean difference -4.25, 95% confidence interval -6.83 to -1.67, P = 0.001, low-certainty evidence). It also seemed to have a positive effect on quality of life, although meta-analysis could not be conducted to pool the results. Virtual reality might reduce depression (standardised mean difference -0.48, 95% confidence interval -0.84 ~ -0.12, P = 0.009,very low- certainty evidence), but the evidence was uncertain, with similar results of anxiety, general level of stress, external stress, total cholesterol, and low-density lipoprotein. The evidence was uncertain about the effect of virtual reality on high-density lipoprotein (mean difference -1.79, 95% confidence interval -8.96 ~ 5.38, P = 0.62, very low-certainty evidence), with similar results of triglycerides and BMI.; Conclusions: Individuals undergoing cardiac rehabilitation may benefit from virtual reality since it can improve exercise capacity and psychological outcomes. More large, and well-designed studies with tailored virtual reality intervention are warranted to confirm the effects of virtual reality on individuals undergoing cardiac rehabilitation.; Tweetable Abstract: Virtual reality may benefit individuals undergoing cardiac rehabilitation since it can improve exercise capacity and psychological outcomes.; Competing Interests: Declaration of Competing Interest None.

Access or request full text: https://libkey.io/10.1016/j.ijnurstu.2022.104323

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35870329&custid=ns023446

9. Time-Dependent Risk of Cardiovascular Events Following an Exacerbation in Patients With Chronic Obstructive Pulmonary Disease: Post Hoc Analysis From the IMPACT Trial

Item Type: Journal Article

Authors: Dransfield, Mark T.;Criner, Gerard J.;Halpin, David M. G.;Han, MeiLan K.;Hartley, Benjamin;Kalhan, Ravi;Lange, Peter;Lipson, David A.;Martinez, Fernando J.;Midwinter, Dawn;Singh, Dave;Wise, Robert and Kunisaki, Ken M.

Publication Date: 2022

Journal: Journal of the American Heart Association 11(18), pp. e024350

Abstract: Background The association between chronic obstructive pulmonary disease exacerbations and increased cardiovascular event risk has not been adequately studied in a heterogenous population with both low and high cardiovascular risk. Methods and Results This post hoc analysis of the IMPACT (Informing the Pathway of COPD Treatment) trial (N=10 355 symptomatic patients with chronic obstructive pulmonary disease at risk of exacerbations) evaluated time-dependent risk of cardiovascular adverse events of special interest (CVAESI) following exacerbations and impact of exacerbation history, cardiovascular risk factors, and study treatment on this association. Risk (time-to-first) of CVAESI or CVAESI resulting in hospitalization or death was assessed during and 1 to 30, 31 to 90, and 91 to 365 days after resolution of moderate or severe exacerbations. CVAESI risk was compared between the period before and during/after exacerbation. CVAESI risk increased significantly during a moderate (hazard ratio HR], 2.63 95% CI, 2.08-3.32]) or severe (HR, 21.84 95% CI, 17.71-26.93]) exacerbation and remained elevated for 30 days following an exacerbation (moderate: HR, 1.63 95% CI, 1.28-2.08]; severe: HR, 1.75 95% CI, 0.99-3.11; nonsignificant]) and decreased over time, returning to baseline by 90 days. Risk of CVAESI resulting in hospitalization or death also increased during an exacerbation (moderate: HR, 2.46 95% CI, 1.53-3.97]; severe: HR, 41.29 95% CI, 30.43-56.03]) and decreased in a similar time-dependent pattern. Results were consistent regardless of exacerbation history, cardiovascular risk at screening, or study treatment. Conclusions Overall risk of cardiovascular events was higher during and in the 30 days following chronic obstructive pulmonary disease exacerbations, even among those with low cardiovascular risk, highlighting the need for exacerbation prevention and vigilance for cardiovascular events following exacerbations. Registration URL: https://clinicaltrials.gov/ct2/show/NCT02164513; Unique identifier: NCT02164513.

Access or request full text: https://libkey.io/10.1161/JAHA.121.024350

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36102236&custid=ns023446

10. Awakening the control of the ankle dorsiflexors in the post-stroke hemiplegic subject to improve walking activity and social participation: the WAKE (Walking Ankle isoKinetic Exercise) randomised, controlled trial

Item Type: Journal Article

Authors: Ferry, Béatrice;Compagnat, Maxence;Yonneau, Jules;Bensoussan, Laurent;Moucheboeuf, Geoffroy;Muller, François;Laborde, Bertrand;Jossart, Anne;David, Romain;Magne, Julien;Marais, Loïc and Daviet, Jean-Christophe

Publication Date: 2022

Journal: Trials 23(1), pp. 661

Abstract: Background: Stroke is the leading cause of acquired disability in France. While 90% of patients recover the ability to walk, it is often limited with a steady speed of approximately 0.7 m/s. This limitation of walking activity is partly related to a decrease in strength associated with more or less significant spasticity. In particular, it seems that the strength of the dorsiflexor muscles is directly related to walking speed. We hypothesise that a protocol based on gestural repetition targeted at the ankle during the subacute phase potentiates the recovery of motor control, improving walking activity, and participates in recovering better social participation.; Methods: An estimated total of 60 patients with subacute stroke will be recruited to participate in this multicentre, interventional, prospective, randomised controlled trial. All participants will benefit from conventional rehabilitation. In addition, the experimental group will take part in an ankle isokinetic rehabilitation programme for 6 weeks (at least 25 sessions). The control group will receive the same duration of conventional rehabilitation. The primary outcome measure will be a 10-m walking speed at post-intervention. Secondary outcomes will include social participation, walking spatio-temporal parameters, and dorsiflexor strength. Outcome measurements will be taken at baseline, immediately after treatment (6 weeks), then at 6 months and 1 year of follow-up.; Discussion: This study aims to provide scientific evidence that a protocol based on an early over-solicitation of the ankle dorsiflexor muscles to promote their "awakening" can serve to achieve a more effective walking activity, which in turn encourages social participation following discharge from the hospital. This protocol should also help optimise physical medicine and rehabilitation practices: the more systematic use of the isokinetic dynamometer as a technique associated with, and integrated into the conventional rehabilitation protocol would allow an objective evaluation of the rehabilitation benefits and should increase the rehabilitation gain in central nervous system disorders.; Trial Registration: Limoges University Hospital is the sponsor of this research (Unique Protocol ID: 87RI18_0010) This research is supported by the French Ministry of Health (PHRC 2020-A03328-31) and is conducted with the support of DGOS (PHRC interregional - GIRCI SOHO). The study protocol was approved by the French Human Subjects Protection Review Board (Comité de Protection des Personnes Nord-Ouest III) on February 23, 2021. The trial was registered in the ClinicalTrials.gov registry (NCT04800601) on March 16, 2021. (© 2022. The Author(s).)

Access or request full text: https://libkey.io/10.1186/s13063-022-06545-w

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35974379&custid=ns023446

11. Cardiovascular Rehabilitation for transient ischaemic Attack and Mild Stroke: the CRAMS effectiveness-implementation hybrid study protocol

Item Type: Journal Article

Authors: Freene, Nicole;Wallett, Hannah;Flynn, Allyson;Preston, Elisabeth;Cowans, Shahla;Lueck, Christian;Niyonsenga, Theophile;Mohanty, Itismita and Davey, Rachel

Publication Date: 2022

Journal: BMC Health Services Research 22(1), pp. 1391

Abstract: Background: Internationally, stroke and cardiac rehabilitation clinicians agree that current cardiac rehabilitation models are a suitable secondary prevention program for people following a transient ischaemic attack (TIA) or mild stroke. There is strong evidence for exercise-based cardiac rehabilitation in people with heart disease, however, the evidence for cardiac rehabilitation post-TIA or stroke is limited. Here we will explore the effectiveness and implementation of an integrated (TIA, mild stroke, heart disease) traditional

exercise-based cardiovascular rehabilitation (CVR) program for people with TIA or mild stroke over 6-months.; Methods: This type 1 effectiveness-implementation hybrid study will use a 2-arm single-centre assessor-blind randomised controlled trial design, recruiting 140 participants. Adults who have had a TIA or mild stroke in the last 12-months will be recruited by health professionals from hospital and primary healthcare services. Participants will be assessed and randomly allocated (1:1) to the 6-week CVR program or the usual care 6-month wait-list control group. Distance completed in the 6-min walk test will be the primary effectiveness outcome, with outcomes collected at baseline, 6-weeks (complete CVR) and 6-months in both groups. Other effectiveness outcome measures include unplanned cardiovascular disease-related emergency department and hospital admissions, daily minutes of accelerometer moderate-to-vigorous physical activity, body mass index, waist circumference, blood pressure, quality of life, anxiety and depression. Implementation outcomes will be assessed using the Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework, including a cost-effectiveness analysis. Semi-structured interviews will be conducted with participants and CVR program health professionals, investigating the acceptability, value, and impact of the CVR program. Qualitative analyses will be guided by the Consolidated Framework for Implementation Research.; Discussion: Few studies have assessed the effectiveness of cardiac rehabilitation for people with TIA and mild stroke, and no studies appear to have investigated the cost-effectiveness or implementation determinants of such programs. If successful, the CVR program will improve health outcomes and quality of life of people who have had a TIA or mild stroke, guiding future research, policy, and clinical practice, reducing the risk of repeat heart attacks and strokes for this population.; Trial Registration: Australian New Zealand Clinical Trials Registry (ANZCTR): ACTRN12621001586808 , Registered 19 November 2021. (© 2022. The Author(s).)

Access or request full text: https://libkey.io/10.1186/s12913-022-08797-3

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36419153&custid=ns023446

12. What is the feasibility and patient acceptability of a digital system for arm and hand rehabilitation after stroke? A mixed-methods, single-arm feasibility study of the 'OnTrack' intervention for hospital and home use

Item Type: Journal Article

Authors: Fusari, Gianpaolo;Gibbs, Ella;Hoskin, Lily;Lawrence-Jones, Anna;Dickens, Daniel;Fernandez Crespo, Roberto;Leis, Melanie;Crow, Jennifer;Taylor, Elizabeth;Jones, Fiona and Darzi, Ara

Publication Date: 2022

Journal: BMJ Open 12(9), pp. e062042

Abstract: Objectives: Arm weakness is common after stroke; repetitive activity is critical for recovery but people struggle with knowing what to do, volume, and monitoring progress. We studied the feasibility and acceptability of OnTrack, a digital intervention supporting arm and hand rehabilitation in acute and home settings.; Design: A mixed-method, single-arm study evaluating the feasibility of OnTrack for hospital and home use. An independent process evaluation assessed the intervention's fidelity, dose and reach. Amendments to the protocol were necessary after COVID-19.; Setting: Acute stroke services and home settings in North West London.; Participants: 12 adults with a stroke diagnosis <6 months previously (first or recurrent) requiring arm rehabilitation in hospital and/or home.; Intervention: 12 weeks using the OnTrack system comprising arm tracking and coaching support for self-management.; Primary and Secondary Outcome Measures: Recruitment, retention and completion rates; compliance and adherence to the intervention; reasons for study decline/withdrawal.Intervention fidelity and acceptability, evaluated through an independent process evaluation.Patient measures including activity baseline, healthcare activation, arm function and impairment

collected at baseline, week 7 and week 14 of participation to assess suitability for a randomised controlled trial (RCT).; Results: 181 individuals screened, 37 met eligibility criteria, 24 recruited (65%); of these, 15 (63%) were recruited before COVID-19, and 9 (37%) during. 12 completed the intervention (50%). Despite COVID-19 disruptions, recruitment, retention and completion were in line with prestudy expectations and acceptable for a definitive trial. Participants felt the study requirements were acceptable and the intervention usable. Fidelity of delivery was acceptable according to predetermined fidelity markers. Outcome measures collected helped determine sample size estimates and primary outcomes for an RCT.; Conclusions: The intervention was found to be usable and acceptable by participants; study feasibility objectives were met and demonstrated that a definitive RCT would be viable and acceptable.; Trial Registration Number: NCT03944486.; Competing Interests: Competing interests: None declared. (© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY. Published by BMJ.)

Access or request full text: https://libkey.io/10.1136/bmjopen-2022-062042

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36171046&custid=ns023446

13. Measured and Perceived Effects of Upper Limb Home-Based Exergaming Interventions on Activity after Stroke: A Systematic Review and Meta-Analysis

Item Type: Journal Article

Authors: Gelineau, Axelle;Perrochon, Anaick;Robin, Louise;Daviet, Jean-Christophe and Mandigout, Stéphane

Publication Date: 2022

Journal: International Journal of Environmental Research and Public Health 19(15)

Abstract: After discharge from the hospital to home, stroke patients may experience weakness and reduced movement in their hemiparetic arms that limits their ability to perform daily activities. Therapists can use exercise games (exergames) to maintain functional abilities and daily use of the arm at home. A systematic review and meta-analysis was conducted to determine the efficiency of upper limb home-based rehabilitation, using exergaming on activity abilities in stroke . Randomized controlled trials were reviewed in the CENTRAL, MEDLINE, CINAHL, EMBASE, and SCOPUS online databases. Clinical measures of observation and self-reporting were studied in post-intervention and follow-up. Nine studies were included in this systematic review (535 participants). The Physiotherapy Evidence Database (PEDro) score was 6.6/10 (SD 1.0, range 5-8), indicating good quality. This systematic review and meta-analysis showed that upper limb home-based exergaming interventions were no more effective in terms of activity than conventional therapy after stroke, according to the observational and subjective assessments in post-intervention and follow-up. Using this same approach, future studies should focus on evaluating home-based exergames through subgroup analysis to be able to propose recommendations.

Access or request full text: https://libkey.io/10.3390/ijerph19159112

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35897472&custid=ns023446

14. Returning to Leisure Activity Post-Stroke: Barriers and Facilitators to Engagement

Item Type: Journal Article

Authors: Harrison, Joanna;Thetford, Clare;Reeves, Matthew J.;Brown, Christopher;Joshi, Miland and Watkins, Caroline

Publication Date: 2022

Journal: International Journal of Environmental Research and Public Health 19(21)
Abstract: Objectives: To identify barriers and facilitators to engagement when returning to, or participating in, leisure activity post-stroke or Transient Ischemic Attack (TIA).; Design: Sequential explanatory, mixed methods study.; Setting: 21 hospital sites across England, Wales and Northern Ireland.; Participants: Adults with a clinical diagnosis of first/recurrent stroke or TIA. Patients approaching end of life were excluded. Participants were recruited as in-patients or at first clinic appointment and a baseline questionnaire was completed. A 6-month follow-up questionnaire was sent to participants for self-completion. Open-text questions were asked about barriers and facilitators when returning to, or participating in, leisure activity. Responses were thematically analysed and explored by participant characteristics, including type of leisure activity undertaken. Characteristics also included measures of socioeconomic deprivation, mood, fatigue and disability.; Results: 2000 participants returned a 6-month follow-up questionnaire (78% stroke, 22% TIA); 1045 participants responded to a question on barriers and 820 on facilitators. Twelve themes were identified and the proportion of responses were reported (%). Barriers: physical difficulties (69%), lower energy levels (17%), loss of independence (11%), psychological difficulties (10%), hidden disabilities (7%), and delay or lack of healthcare provision (3%). Facilitators: family support (35%), healthcare support (27%), well-being and fitness (22%), friendship support (20%), self-management (19%), and returning to normality (9%). 'Physical difficulties' was the most reported barrier across all participant characteristics and activity types. Family support was the most reported facilitator except for those with greater disability, where it was healthcare support and those without fatigue where it was well-being and exercise.; Conclusions: Physical difficulties and lack of energy are problematic for stroke and TIA survivors who want to return to or participate in leisure activity. Healthcare support alone cannot overcome all practical and emotional issues related to leisure activity engagement. Family support and improving well-being are important facilitators and future research should explore these mechanisms further.

Access or request full text: https://libkey.io/10.3390/ijerph192114587

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36361466&custid=ns023446

15. The impact of COVID-19 pandemic on cardiac rehabilitation of patients following acute coronary syndrome

Item Type: Journal Article

Authors: Haskiah, Feras;Jbara, Rana;Minha, Saar;Assali, Abid;Sela, Yaron and Pereg, David

Publication Date: 2022

Journal: PloS One 17(12), pp. e0276106

Abstract: Background: Cardiac rehabilitation improves prognosis and symptoms in cardiac patients. In 2020, due to the COVID-19 pandemic, cardiac rehabilitation services were temporarily suspended between April and August. We aimed to investigate the effect of cardiac rehabilitation suspension during the COVID-19 pandemic on patients' exercise capacity and metabolic parameters.; Methods: Included were patients undergoing cardiac rehabilitation following hospital admission for ACS. Exercise capacity, weight and body fat percentage were compared between baseline, pre- and post-lockdown visits.; Results: A total of 281 patients participated in the

cardiac rehabilitation program prior to its suspension. Of them, only 198 (70%) patients returned to the program on its renewal and were included in the analysis. Exercise capacity improved significantly in the pre-lockdown stress test compared to baseline. However, there was a significant decrease in exercise capacity in the post compared to pre-lockdown test (8.1±6.3 and 7.1±2.1 METs in pre- and post-lockdown measurements, respectively, p<0.001). Of the 99 (50%) of patients that demonstrated at least 10% improvement in exercise capacity in the pre-lockdown test, 48(48.5%) patients returned to their baseline values in the post-lockdown test. Post-lockdown assessment demonstrated a significant weight gain (80.3 and 81.1kg, in pre- and post-lockdown measurements, respectively, p<0.001) as well as an increase in visceral fat level and body fat percentage.; Conclusions: Cardiac rehabilitation suspension for 4 months during COVID-19 pandemic caused a significant reduction in exercise capacity and increased weight and body fat percent. These findings highlight the importance of remote cardiac rehabilitation services that can continue uninterrupted in times of pandemic.; Competing Interests: The authors have declared that no competing interests exist. (Copyright: © 2022 Haskiah et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.)

Access or request full text: https://libkey.io/10.1371/journal.pone.0276106

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36454912&custid=ns023446

16. Effects of telecardiac rehabilitation on coronary heart disease: A PRISMA-compliant systematic review and meta-analysis

Item Type: Journal Article

Authors: Jin Choo, Yoo and Chang, Min Cheol

Publication Date: 2022

Journal: Medicine 101(28), pp. e29459

Abstract: Background: We performed a meta-analysis to investigate the effectiveness of telecardiac rehabilitation compared to center-based rehabilitation on cardiorespiratory fitness, blood pressure, blood lipids, body composition, and quality of life in patients with coronary heart disease.; Methods: We searched the Medical Literature Analysis and Retrieval System Online, Cumulative Index to Nursing and Allied Health Literature, Cochrane, Embase, and Scopus databases and retrieved studies published until October 8, 2021. Randomized controlled trials were included to evaluate cardiorespiratory fitness, blood pressure, blood lipids, body composition, and quality of life after telecardiac rehabilitation and center-based rehabilitation in patients with coronary heart disease. The criteria of the Cochrane Handbook for Systematic Reviews of Interventions were used to evaluate the methodological quality of the studies. Funnel plot analysis and Egger test were performed to confirm the publication bias.; Results: A total of 8 studies, including 750 participants, reported the effectiveness of the telecardiac rehabilitation and center-based rehabilitation included in the analysis. Except for total cholesterol and mental quality of life (P .05).; Conclusion: Telecardiac rehabilitation was similar to the effects of center-based rehabilitation. The overall prognosis of patients with coronary heart disease can be improved by increasing patients' participation in cardiac rehabilitation through telerehabilitation.; Competing Interests: The authors have no conflicts of interest to disclose. (Copyright © 2022 the Author(s). Published by Wolters Kluwer Health, Inc.)

Access or request full text: https://libkey.io/10.1097/MD.0000000000029459

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35839029&custid=ns023446

17. Impact of kinesiophobia on initiation of cardiac rehabilitation: a prospective cohort path analysis

Item Type: Journal Article

Authors: Keessen, Paul;Kan, Kees-Jan;Ter Riet, Gerben;Visser, Bart;Jørstad, Harald;Latour, Corine;van Duijvenbode, Ingrid and Scholte Op Reimer, Wilma

Publication Date: 2022

Journal: BMJ Open 12(11), pp. e066435

Abstract: Objectives: To identify factors associated with kinesiophobia (fear of movement) after cardiac hospitalisation and to assess the impact of kinesiophobia on cardiac rehabilitation (CR) initiation.; Design: Prospective cohort study.; Setting: Academic Medical Centre, Department of Cardiology.; Participants: We performed a prospective cohort study in cardiac patients recruited at hospital discharge. In total, 149 patients (78.5% male) with a median age of 65 years were included, of which 82 (59%) were referred for CR.; Primary and Secondary Outcome Measures: We assessed kinesiophobia with the Tampa Scale for Kinesiophobia (TSK). For this study, the total score was used (range 13-52). We assessed baseline factors (demographics, cardiac disease history, questionnaire data on anxiety, biopsychosocial complexity and self-efficacy) associated with kinesiophobia using linear regression with backward elimination. For linear regression, the standardised beta (β) was reported. Prospectively, the impact of kinesiophobia on probability of CR initiation, in the first 3 months after hospital discharge (subsample referred for CR), was assessed with logistic regression. For logistic regression, the OR was reported.; Results: Moderate and severe levels of kinesiophobia were found in 22.8%. In the total sample, kinesiophobia was associated with cardiac anxiety (β=0.33, 95% CI: 0.19 to 0.48), social complexity (β=0.23, 95% CI: 0.06 to 0.39) and higher education (β=-0.18, 95% CI: -0.34 to -0.02). In those referred for CR, kinesiophobia was negatively associated with self-efficacy (β=-0.29, 95% CI: -0.47 to -0.12) and positively with cardiac anxiety (β=0.43, 95% CI: 0.24 to 0.62). Kinesiophobia decreased the probability of CR initiation (OR Range13-52 points =0.92, 95% CI: 0.85 to 0.99).; Conclusion: In patients hospitalised for cardiovascular disease, kinesiophobia is associated with cardiac anxiety, social complexity, educational level and self-efficacy. Kinesiophobia decreased the likelihood of CR initiation with 8% per point on the TSK.; Competing Interests: Competing interests: None declared. (© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.)

Access or request full text: https://libkey.io/10.1136/bmjopen-2022-066435

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36428018&custid=ns023446

18. Socioeconomic and ethnical disparity in coronary heart disease outcomes in Denmark and the effect of cardiac rehabilitation-A nationwide registry study

Item Type: Journal Article

Authors: Kjesbu, Ingunn;Prescott, Eva;Rasmusen H K, Hanne;Osler, Merete;Larsen, Mogens Lytken;Gustafsson, Ida;Zwisler, Ann Dorthe and Sibilitz, Kirstine Laerum

Publication Date: 2022

Journal: PloS One 17(11), pp. e0276768

Abstract: Aims: Cardiovascular patients with low socioeconomic status and non-western ethnic background have worse prognostic outcomes. The aim of this nationwide study was first to address whether short-term effects of hospital-based outpatient cardiac rehabilitation (CR) are similar across educational level and ethnic background, and secondly to study whether known disparity in long-term prognosis in patients with cardiovascular disese is diminished by CR participation.; Methods: All patients with myocardial infarction and/or coronary revascularization from August 2015 until March 2018 in the Danish national patient registry or the Danish cardiac rehabilitation database (DHRD) were included. We used descriptive statistics to address disparity in achievement of quality indicators in CR, and Cox proportional hazard regression to examine the association between the disparity measures and MACE (cardiovascular hospitalization and all-cause mortality) with adjustment for age, gender, index-diagnose and co-morbidity.; Results: We identified 34,511 patients of whom 19,383 had participated in CR and 9,882 provided information on CR outcomes from the DHRD. We demonstrated a socioeconomic gradient in improvements in VO2peak, and non-western patients were less often screened for depression or receive dietary consulting. We found a strong socioeconomic gradient in MACE irrespective of CR participation, medication, and risk factor control (adjusted HR 0.65 (95% CI 0.56-0.77) for high versus low education). Non-western origin was associated with higher risk of MACE (adjusted HR 1.2 (1.1-1.4)).; Conclusion: We found only minor socioeconomic and ethnic differences in achievement of CR quality indicators but strong differences in CHD prognosis indication that conventional risk factor control and medical treatment following CR do not diminish the socioeconomic and ethnical disparity in CHD prognosis.; Competing Interests: The authors have declared that no competing interests exist. (Copyright: © 2022 Kjesbu et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.)

Access or request full text: https://libkey.io/10.1371/journal.pone.0276768

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36342928&custid=ns023446

19. Mechanocardiography-Based Measurement System Indicating Changes in Heart Failure Patients during Hospital Admission and Discharge

Item Type: Journal Article

Authors: Koivisto, Tero;Lahdenoja, Olli;Hurnanen, Tero;Koskinen, Juho;Jafarian, Kamal;Vasankari, Tuija;Jaakkola, Samuli;Kiviniemi, Tuomas O. and Airaksinen, K. E. J.

Publication Date: 2022

Journal: Sensors (Basel, Switzerland) 22(24)

Abstract: Heart failure (HF) is a disease related to impaired performance of the heart and is a significant cause of mortality and treatment costs in the world. During its progression, HF causes worsening (decompensation) periods which generally require hospital care. In order to reduce the suffering of the patients and the treatment cost, avoiding unnecessary hospital visits is essential, as hospitalization can be prevented by medication. We have developed a data-collection device that includes a high-quality 3-axis accelerometer and 3-axis gyroscope and a single-lead ECG. This allows gathering ECG synchronized data utilizing seismo- and gyrocardiography (SCG, GCG, jointly mechanocardiography, MCG) and comparing the signals of HF patients in acute decompensation state (hospital admission) and compensated condition (hospital discharge). In the MECHANO-

HF study, we gathered data from 20 patients, who each had admission and discharge measurements. In order to avoid overfitting, we used only features developed beforehand and selected features that were not outliers. As a result, we found three important signs indicating the worsening of the disease: an increase in signal RMS (root-mean-square) strength (across SCG and GCG), an increase in the strength of the third heart sound (S3), and a decrease in signal stability around the first heart sound (S1). The best individual feature (S3) alone was able to separate the recordings, giving 85.0% accuracy and 90.9% accuracy regarding all signals and signals with sinus rhythm only, respectively. These observations pave the way to implement solutions for patient self-screening of the HF using serial measurements.

Access or request full text: https://libkey.io/10.3390/s22249781

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36560149&custid=ns023446

20. Recurrence risk prediction of acute coronary syndrome per patient as a personalized ACS recurrence risk: a retrospective study

Item Type: Journal Article

Authors: Kong, Vungsovanreach;Somakhamixay, Oui;Cho, Wan-Sup;Kang, Gilwon;Won, Heesun;Rah, HyungChul and Bang, Heui Je

Publication Date: 2022

Journal: PeerJ 10, pp. e14348

Abstract: Acute coronary syndrome (ACS) has been one of the most important issues in global public health. The high recurrence risk of patients with coronary heart disease (CHD) has led to the importance of post-discharge care and secondary prevention of CHD. Previous studies provided binary results of ACS recurrence risk; however, studies providing the recurrence risk of an individual patient are rare. In this study, we conducted a model which provides the recurrence risk probability for each patient, along with the binary result, with two datasets from the Korea Health Insurance Review and Assessment Service and Chungbuk National University Hospital. The total data of 6,535 patients who had been diagnosed with ACS were used to build a machine learning model by using logistic regression. Data including age, gender, procedure codes, procedure reason, prescription drug codes, and condition codes were used as the model predictors. The model performance showed 0.893, 0.894, 0.851, 0.869, and 0.921 for accuracy, precision, recall, F1-score, and AUC, respectively. Our model provides the ACS recurrence probability of each patient as a personalized ACS recurrence risk, which may help motivate the patient to reduce their own ACS recurrence risk. The model also shows that acute transmural myocardial infarction of an unspecified site, and other sites and acute transmural myocardial infarction of an unspecified site contributed most significantly to ACS recurrence with an odds ratio of 97.908 as a procedure reason code and with an odds ratio of 58.215 as a condition code, respectively.; Competing Interests: The authors declare there are no competing interests. Heesun Won is employed by Electronics and Telecommunications Research Institute (ETRI), a government-funded national research institute. (©2022 Kong et al.)

Access or request full text: https://libkey.io/10.7717/peerj.14348

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36405028&custid=ns023446

21. Nurse-led Telehealth Intervention for Rehabilitation (Telerehabilitation) Among Community-Dwelling Patients With Chronic Diseases: Systematic Review and Meta-analysis

Item Type: Journal Article

Authors: Lee, Athena Yin Lam;Wong, Arkers Kwan Ching;Hung, Tommy Tsz Man;Yan, Jing and Yang, Shulan

Publication Date: 2022

Journal: Journal of Medical Internet Research 24(11), pp. e40364

Abstract: Background: Chronic diseases are putting huge pressure on health care systems. Nurses are widely recognized as one of the competent health care providers who offer comprehensive care to patients during rehabilitation after hospitalization. In recent years, telerehabilitation has opened a new pathway for nurses to manage chronic diseases at a distance; however, it remains unclear which chronic disease patients benefit the most from this innovative delivery mode.; Objective: This study aims to summarize current components of community-based, nurse-led telerehabilitation programs using the chronic care model; evaluate the effectiveness of nurse-led telerehabilitation programs compared with traditional face-to-face rehabilitation programs; and compare the effects of telerehabilitation on patients with different chronic diseases.; Methods: A systematic review and meta-analysis were performed using 6 databases for articles published from 2015 to 2021. Studies comparing the effectiveness of telehealth rehabilitation with face-to-face rehabilitation for people with hypertension, cardiac diseases, chronic respiratory diseases, diabetes, cancer, or stroke were included. Quality of life was the primary outcome. Secondary outcomes included physical indicators, self-care, psychological impacts, and health-resource use. The revised Cochrane risk of bias tool for randomized trials was employed to assess the methodological quality of the included studies. A meta-analysis was conducted using a random-effects model and illustrated with forest plots.; Results: A total of 26 studies were included in the meta-analysis. Telephone follow-ups were the most commonly used telerehabilitation delivery approach. Chronic care model components, such as nurses-patient communication, self-management support, and regular follow-up, were involved in all telerehabilitation programs. Compared with traditional face-to-face rehabilitation groups, statistically significant improvements in quality of life (cardiac diseases: standard mean difference SMD] 0.45; 95% CI 0.09 to 0.81; P=.01; heterogeneity: X 2 1 =1.9; I 2 =48%; P=.16; chronic respiratory diseases: SMD 0.18; 95% CI 0.05 to 0.31; P=.007; heterogeneity: X 2 2 =1.7; I 2 =0%; P=.43) and self-care (cardiac diseases: MD 5.49; 95% CI 2.95 to 8.03; P<.001; heterogeneity: X 2 5 =6.5; I 2 =23%; P=.26; diabetes: SMD 1.20; 95% CI 0.55 to 1.84; P<.001; heterogeneity: X 2 4 =46.3; I 2 =91%; P<.001) were observed in the groups that used telerehabilitation. For patients with any of the 6 targeted chronic diseases, those with hypertension and diabetes experienced significant improvements in their blood pressure (systolic blood pressure: MD 10.48; 95% CI 2.68 to 18.28; P=.008; heterogeneity: X 2 1 =2.2; I 2 =54%; P=0.14; diastolic blood pressure: MD 1.52; 95% CI -10.08 to 13.11, P=.80; heterogeneity: X 2 1=11.5; I 2 =91%; P<.001), and hemoglobin A1c (MD 0.19; 95% CI -0.19 to 0.57 P=.32; heterogeneity: X 2 4 =12.4; I 2 =68%; P=.01) levels. Despite these positive findings, telerehabilitation was found to have no statistically significant effect on improving patients' anxiety level, depression level, or hospital admission rate.; Conclusions: This review showed that telerehabilitation programs could be beneficial to patients with chronic disease in the community. However, better designed nurse-led telerehabilitation programs are needed, such as those involving the transfer of nurse-patient clinical data. The heterogeneity between studies was moderate to high. Future research could integrate the chronic care model with telerehabilitation to maximize its benefits for community-dwelling patients with chronic diseases.; Trial Registration: International Prospective Register of Systematic Reviews CRD42022324676; https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=324676. (©Athena Yin Lam Lee, Arkers Kwan Ching Wong, Tommy Tsz Man Hung, Jing Yan, Shulan Yang. Originally published in the Journal of Medical Internet Research (https://www.jmir.org), 02.11.2022.)

Access or request full text: https://libkey.io/10.2196/40364

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36322107&custid=ns023446

22. The association between macrovascular complications and intensive care admission, invasive mechanical ventilation, and mortality in people with diabetes hospitalized for coronavirus disease-2019 (COVID-19)

Item Type: Journal Article

Authors: Llauradó, Gemma;Vlacho, Bogdan;Wargny, Matthieu;Ruan, Yue;Franch-Nadal, Josep;Domingo, Pere;Gourdy, Pierre;Saulnier, Pierre-Jean;Hadjadj, Samy;Wild, Sarah H.;Rea, Rustam;Cariou, Bertrand;Khunti, Kamlesh and Mauricio, Dídac

Publication Date: 2022

Journal: Cardiovascular Diabetology 21(1), pp. 216

Abstract: Background: It is not clear whether pre-existing macrovascular complications (ischemic heart disease, stroke or peripheral artery disease) are associated with health outcomes in people with diabetes mellitus hospitalized for COVID-19.; Methods: We conducted cohort studies of adults with pre-existing diabetes hospitalized for COVID-19 infection in the UK, France, and Spain during the early phase of the pandemic (between March 2020-October 2020). Logistic regression models adjusted for demographic factors and other comorbidities were used to determine associations between previous macrovascular disease and relevant clinical outcomes: mortality, intensive care unit (ICU) admission and use of invasive mechanical ventilation (IMV) during the hospitalization. Output from individual logistic regression models for each cohort was combined in a meta-analysis.; Results: Complete data were available for 4,106 (60.4%) individuals. Of these, 1,652 (40.2%) had any prior macrovascular disease of whom 28.5% of patients died. Mortality was higher for people with compared to those without previous macrovascular disease (37.7% vs 22.4%). The combined crude odds ratio (OR) for previous macrovascular disease and mortality for all four cohorts was 2.12 (95% CI 1.83-2.45 with an I 2 of 60%, reduced after adjustments for age, sex, type of diabetes, hypertension, microvascular disease, ethnicity, and BMI to adjusted OR 1.53 95% CI 1.29-1.81]) for the three cohorts. Further analysis revealed that ischemic heart disease and cerebrovascular disease were the main contributors of adverse outcomes. However, proportions of people admitted to ICU (adjOR 0.48 95% CI 0.31-0.75], I 2 60%) and the use of IMV during hospitalization (adjOR 0.52 95% CI 0.40-0.68], I 2 37%) were significantly lower for people with previous macrovascular disease.; Conclusions: This large multinational study of people with diabetes mellitus hospitalized for COVID-19 demonstrates that previous macrovascular disease is associated with higher mortality and lower proportions admitted to ICU and treated with IMV during hospitalization suggesting selective admission criteria. Our findings highlight the importance correctly assess the prognosis and intensive monitoring in this high-risk group of patients and emphasize the need to design specific public health programs aimed to prevent SARS-CoV-2 infection in this subgroup. (© 2022. The Author(s).)

Access or request full text: https://libkey.io/10.1186/s12933-022-01657-8

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36261811&custid=ns023446

23. Impact of Socioeconomic Status on Mortality and Readmission in Patients With Heart Failure With Reduced Ejection Fraction: The ARIC Study

Item Type: Journal Article

Authors: Mathews, Lena;Ding, Ning;Mok, Yejin;Shin, Jung-Im;Crews, Deidra C.;Rosamond, Wayne D.;Newton, Anna-Kucharska;Chang, Patricia P.;Ndumele, Chiadi E.;Coresh, Josef and Matsushita, Kunihiro

Publication Date: 2022

Journal: Journal of the American Heart Association 11(18), pp. e024057

Abstract: Background Low socioeconomic status (SES) is associated with a higher risk of heart failure (HF). The contribution of individual and neighborhood SES to the prognosis and quality of care for HF with reduced ejection fraction is not clear yet has important implications. Methods and Results We examined 728 participants of the ARIC (Atherosclerosis Risk in Communities) study (mean age, 78.2 years; 34% Black participants; 46% women) hospitalized with HF with reduced ejection fraction (ejection fraction <50%) between 2005 and 2018. We assessed associations between education, income, and area deprivation index with mortality and HF readmission using multivariable Cox models. We also evaluated the use of guideline-directed medical therapy (optimal: ≥3 of ß-blockers, mineralocorticoid receptor antagonist, angiotensin-converting enzyme inhibitors, or angiotensin receptor blockers; acceptable: at least 2) at discharge. During a median follow-up of 3.2 years, 58.7% were readmitted with HF, and 74.0% died. Low income was associated with higher mortality (hazard ratio HR], 1.52 95% CI, 1.14-2.04]) and readmission (HR, 1.45 95% CI, 1.04-2.03]). Similarly, low education was associated with mortality (HR, 1.27 95% CI, 1.01-1.59]) and readmission (HR, 1.62 95% CI, 1.24-2.12]). The highest versus lowest area deprivation index quartile was associated with readmission (HR, 1.69 95% CI, 1.11-2.58]) but not necessarily with mortality. The prevalence of optimal guideline-directed medical therapy and acceptable guideline-directed medical therapy was 5.5% and 54.4%, respectively, but did not significantly differ by SES. Conclusions Among patients hospitalized with HF with reduced ejection fraction, low SES was independently associated with mortality and HF readmission. A targeted secondary prevention approach that focuses intensive efforts on patients with low SES will be necessary to improve outcomes of those with HF with reduced ejection fraction.

Access or request full text: https://libkey.io/10.1161/JAHA.121.024057

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36102228&custid=ns023446

24. The Potential of Cardiac Telerehabilitation as Delivery Rehabilitation Care Model in Heart Failure during COVID-19 and Transmissible Disease Outbreak: A Systematic Scoping Review of the Latest RCTs

Item Type: Journal Article

Authors: Maulana, Sidik;Trisyani, Yanny;Mirwanti, Ristina;Amirah, Shakira;Kohar, Kelvin;Priyatmoko Putri, Aprilia Inggritika and Novianti, Evi

Publication Date: 2022

Journal: Medicina (Kaunas, Lithuania) 58(10)
Abstract: Background and objective: Patients with heart failure are a high-risk group who may have a higher mortality rate if infected during the COVID-19 pandemic. The problem of a patient's non-adherence to cardiac rehabilitation programs is still a challenge, resulting in disappointing long-term benefits of cardiac rehabilitation. Telehealth, including telerehabilitation, has grown in popularity to improve access to quality healthcare. It is more valuable and safer compared to usual rehabilitation care, especially during the current COVID-19 pandemic, to cut down unnecessary hospital visits and reduce the risk of cluster infections. This study

aims to identify the efficacy of relevant randomized control trials (RCTs) using telerehabilitation in managing heart failure. The model, delivery care, safety, and efficacy were assessed. Material and Methods : This study was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-analysis for Scoping Reviews (PRISMA-ScR). The authors included relevant records published in the last ten years from three databases: PubMed/MEDLINE, ProQuest, and EBSCO. Each included study was further assessed using Cochrane's Risk of Bias (Rob 2) tool. Results : The telerehabilitation models consisted of cellphones, instant messaging, or online videoconferencing software. Some also included tool sets to monitor patients' vital signs regularly or during exercise. Most patients adhered to and completed all provided programs. Cardiac telerehabilitation successfully improved patients' physical fitness, quality of life, and mental health. No major adverse outcomes or significant complications were associated with the program. Conclusion: Cardiac telerehabilitation has the potential to deliver rehabilitation for heart failure patients, evidenced by its feasibility, efficacy, and safety. As a future perspective, this delivery care type can be applied throughout transmissible disease outbreaks or even globally.

Access or request full text: https://libkey.io/10.3390/medicina58101321

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36295482&custid=ns023446

25. Inter-arm blood pressure difference and cardiovascular risk estimation in primary care: a pilot study

Item Type: Journal Article

Authors: McDonagh, Sinead T. J.;Norris, Ben;Fordham, A. J.;Greenwood, Maria R.;Richards, Suzanne H.;Campbell, John L. and Clark, Christopher E.

Publication Date: 2022

Journal: BJGP Open 6(3), pp. 1-11

Abstract: Background: Systolic inter-arm differences (IAD) in blood pressure (BP) contribute independently to cardiovascular risk estimates. This can be used to refine predicted risk and guide personalised interventions. Aim: To model the effect of accounting for IAD in cardiovascular risk estimation in a primary care population free of pre-existing cardiovascular disease. Design & setting: A cross-sectional analysis of people aged 40-75 years attending NHS Health Checks in one general practice in England. Method: Simultaneous bilateral BP measurements were made during health checks. QRISK2, atherosclerotic cardiovascular disease (ASCVD), and Framingham cardiovascular risk scores were calculated before and after adjustment for IAD using previously published hazard ratios. Reclassification across guideline-recommended intervention thresholds was analysed. Results: Data for 334 participants were analysed. Mean (standard deviation) QRISK2, ASCVD, and Framingham scores were 8.0 (6.9), 6.9 (6.5), and 10.7 (8.1), respectively, rising to 8.9 (7.7), 7.1 (6.7), and 11.2 (8.5) after adjustment for IAD. Thirteen (3.9%) participants were reclassified from below to above the 10% QRISK2 threshold, three (0.9%) for the ASCVD 10% threshold, and nine (2.7%) for the Framingham 15% threshold. Conclusion: Knowledge of IAD can be used to refine cardiovascular risk estimates in primary care. By accounting for IAD, recommendations of interventions for primary prevention of cardiovascular disease can be personalised and treatment offered to those at greater than average risk. When assessing elevated clinic BP readings, both arms should be measured to allow fuller estimation of cardiovascular risk.

Access or request full text: https://libkey.io/10.3399/BJGPO.2021.0242

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=159491100&custid=ns

023446

26. Biomarker prognostication across Universal Definition of Heart Failure stages

Item Type: Journal Article

Authors: Mohebi, Reza;Murphy, Sean;Jackson, Laurel;McCarthy, Cian;Abboud, Andrew;Murtagh, Gillian;Gawel, Susan;Miksenas, Hannah;Gaggin, Hanna and Januzzi,James L.,,Jr

Publication Date: 2022

Journal: ESC Heart Failure 9(6), pp. 3876-3887

Abstract: Aim: The Universal Definition of Heart Failure (UDHF) provides a framework for staging risk for HF events. It is not clear whether prognostic biomarkers have different meaning across UDHF stages. We sought to evaluate performance of biomarkers to predict HF events among high-risk patients undergoing coronary and/or peripheral angiography categorized into UDHF stages.; Methods: One thousand two hundred thirty-five individuals underwent coronary and/or peripheral angiography were enrolled. Study participants were categorized into UDHF Stage A (at risk), Stage B (pre-HF), and Stage C or D (HF, including end stage) and grouped into Stage A/B and C/D. Biomarkers and clinical variables were used to develop prognostic models. Other measures examined included total HF hospitalizations.; Results: Over a median of 3.67 years of follow-up, 155 cardiovascular (CV) deaths occurred, and 299 patients were hospitalized with acute HF. In patients with Stage A/B, galectin-3 (HR = 1.52, P = 0.03), endothelin-1 (HR = 2.16, P = 0.001), and N-terminal pro-B-type natriuretic peptide (NT-proBNP; HR = 1.43, P < 0.001) were associated with incident CV death/HF hospitalization. In Stage C/D, NT-proBNP (HR = 1.26, P = 0.006), soluble urokinase-type plasminogen activator receptor (suPAR; HR = 1.57, P = 0.007) and high-sensitivity C-reactive protein (hs-CRP; HR = 1.15, P = 0.01) were associated with these outcomes. Higher biomarker concentrations were associated with greater total burden of HF events in Stages A/B and C/D.; Conclusions: Among higher risk individuals undergoing angiographic procedures, different biomarkers improve risk stratification in different UDHF stages of HF. More precise prognostication may offer a window of opportunity to initiate targeted preventive measures. (© 2022 The Authors. ESC Heart Failure published by John Wiley & Sons Ltd on behalf of European Society of Cardiology.)

Access or request full text: https://libkey.io/10.1002/ehf2.14071

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35942508&custid=ns023446

27. Comparison of Home-Based vs Center-Based Cardiac Rehabilitation in Hospitalization, Medication Adherence, and Risk Factor Control Among Patients With Cardiovascular Disease

Item Type: Journal Article

Authors: Nkonde-Price, Chileshe;Reynolds, Kristi;Najem, Michael;Yang, Su-Jau;Batiste, Columbus;Cotter, Timothy;Lahti, Debora;Gin, Nancy and Funahashi, Tadashi

Publication Date: 2022

Journal: JAMA Network Open 5(8), pp. e2228720

Abstract: Importance: Prior studies have suggested that participation in home-based cardiac rehabilitation

(HBCR) vs center-based cardiac rehabilitation (CBCR) results in similar clinical outcomes in patients with low to moderate risk; however, outcome data from demographically diverse populations and patients who are medically complex are lacking.; Objective: To compare hospitalizations, medication adherence, and cardiovascular risk factor control between participants in HBCR vs CBCR.; Design, Setting, and Participants: This retrospective cohort study was conducted among patients in Kaiser Permanente Southern California (KPSC), an integrated health care system serving approximately 4.7 million patients, who participated in CR between April 1, 2018, and April 30, 2019, and with follow-up through April 30, 2020. Data were analyzed from January 2021 to January 2022.; Exposures: Participation in 1 or more HBCR or CBCR sessions.; Main Outcomes and Measures: The primary outcome was 12-month all-cause hospitalization. Secondary outcomes included all-cause hospitalizations at 30 and 90 days; 30-day, 90-day, and 12-month cardiovascular hospitalizations; and medication adherence and cardiovascular risk factor control at 12 months. Logistic regression was used to compare hospitalization, medication adherence, and cardiovascular risk factor control, with inverse probability treatment weighting (IPTW) to adjust for demographic and clinical characteristics.; Results: Of 2556 patients who participated in CR (mean SD] age, 66.7 11.2] years; 754 29.5%] women; 1196 participants 46.8%] with Charlson Comorbidity Index ≥4), there were 289 Asian or Pacific Islander patients (11.3%), 193 Black patients (7.6%), 611 Hispanic patients (23.9%), and 1419 White patients (55.5%). A total of 1241 participants (48.5%) received HBCR and 1315 participants (51.5%) received CBCR. After IPTW, patients who received HBCR had lower odds of hospitalization at 12 months (odds ratio OR], 0.79; 95% CI, 0.64-0.97) but similar odds of adherence to β-blockers (OR, 1.18; 95% CI, 0.98-1.42) and statins (OR, 1.02; 95% CI, 0.84-1.25) and of control of blood pressure (OR, 0.98; 95% CI, 0.81-1.17), low-density lipoprotein cholesterol (OR, 0.98; 95% CI, 0.81-1.20), and hemoglobin A1c (OR, 0.98; 95% CI, 0.82-1.18) at 12 months compared with patients who received CBCR.; Conclusions and Relevance: These findings suggest that HBCR in a demographically diverse population, including patients with high risk who are medically complex, was associated with fewer hospitalizations at 12 months compared with patients who participated in CBCR. This study strengthens the evidence supporting HBCR in previously understudied patient populations.

Access or request full text: https://libkey.io/10.1001/jamanetworkopen.2022.28720

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36006642&custid=ns023446

28. Predictors of heart failure in children with congenital heart disease

Item Type: Journal Article

Authors: Nora, Meily Elven;Murni, Indah K.;Nugroho, Sasmito and Noormanto

Publication Date: 2022

Journal: Paediatrica Indonesiana 62(6), pp. 390-395

Abstract: Background Heart failure continues to be a significant contributor to morbidity and mortality in children with congenital heart disease (CHD). Little is known about heart failure in children. Identifying predictors of heart failure in children with CHD can serve to guide preventive strategies to heart failure. Objective To understand the predictors of heart failure of children with congenital heart disease. Methods A nested, case-control study was performed using secondary data based on a prospective study previously conducted in Dr. Sardjito Tertiary Hospital in Yogyakarta, Central Java, in years 2011-2013. We included children aged 1 month-18 years who had been diagnosed with CHD by echocardiography. Age, sex, type of CHD, CHD complexity, as well as presence of syndrome, no pulmonary obstruction, pneumonia, and malnutrition were analyzed as potential predictors of heart failure. Results were presented as odds ratios (OR) with 95% confidence intervals (95%CI). Results A total of 2,646 children were hospitalized in Dr. Sardjito Tertiary Hospital,

Yogyakarta, Central Java, during the study period. Congenital heart disease was noted in 216 children (8.16%), 200 (7.5%) of whom met the inclusion criteria. The 100 children with heart failure had median age of 1.5 years and 15% died during hospitalization. Multivariate analysis revealed that acyanotic CHD (OR 2.69; 95%CI 1.45 to 5.00), no pulmonary obstruction (OR 3.05; 95%CI 1.33 to 6.99) and the presence of pneumonia (OR 2.04; 95%CI 1.03 to 4.06) were statistically significant as independent predictors of heart failure in children with CHD. However, sex, age, CHD complexity, as well as presence of a syndrome, and malnutrition were not significantly associated with heart failure in children with CHD. Conclusion The predictors of heart failure in children with CHD are acyanotic CHD, no pulmonary obstruction, and presence of pneumonia.

Access or request full text: https://libkey.io/10.14238/pi62.6.2022.390-5

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=161042567&custid=ns023446

29. Effectiveness of interventions to support the transition home after acute stroke: a systematic review and meta-analysis

Item Type: Journal Article

Authors: O'Callaghan, Geraldine;Fahy, Martin;Murphy, Paul;Langhorne, Peter;Galvin, Rose and Horgan, Frances

Publication Date: 2022

Journal: BMC Health Services Research 22(1), pp. 1095

Abstract: Background: Effective support interventions to manage the transition to home after stroke are still mostly unknown.; Aim: The purpose of this systematic review was to investigate the effectiveness of support interventions at transition from organised stroke services to independent living at home.; Methods: The Cochrane Central Register of Controlled Trials, six databases including MEDLINE and Embase, trial registries, grey literature, and Google Scholar were all searched, up to June 2021. We included randomised controlled trials enrolling people with stroke to receive either standard care or any type of support intervention from organised stroke services to home. The primary outcome was functional status. Two authors determined eligibility, extracted data, evaluated risk of bias (ROB2), and verified the evidence (GRADE). Where possible we performed meta-analyses using Risk Ratios (RR) or Mean Differences (MD).; Results: We included 17 studies. Support interventions led to important improvements in functional status, as determined by the Barthel Index up, to 3-months (MD 7.87 points, 95%CI:6.84 to 19.16; 620 participants; five studies; I 2 = 77%). Results showed modest but significant functional gains in the medium to long-term (6-12 month follow up, MD 2.91 points, 95%CI:0.03 to 5.81; 1207 participants; six studies; I 2 = 84%). Certainty of evidence was low. Support interventions may enhance quality of life for up to 3-months (MD 1.3,95% CI:0.84 to 1.76), and reduce depression (SMD -0.1,95% CI:-0.29 to - 0.05) and anxiety (MD -1.18,95% CI:-1.84 to - 0.52) at 6-12 months. Effects on further secondary outcomes are still unclear.; Conclusions: Incorporating support interventions as people who have experienced a stroke transition from hospital to home can improve functional status and other outcomes. Due to study heterogeneity, the essential components of effective transition of care interventions are still unknown. Adoption of core outcome sets in stroke research would allow for greater comparison across studies. Application of a development and evaluation framework engaging stakeholders would increase understanding of priorities for stroke survivors, and inform the key components of an intervention at transition from hospital-to-home.; Trial Registration: CRD42021237397 - https://www.crd.york.ac.uk/prospero. (© 2022. The Author(s).)

Access or request full text: https://libkey.io/10.1186/s12913-022-08473-6

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36031608&custid=ns023446

30. What promotes or prevents greater use of appropriate compression in people with venous leg ulcers? A qualitative interview study with nurses in the north of England using the Theoretical Domains Framework

Item Type: Journal Article

Authors: Perry, Catherine;Atkinson, Ross A.;Griffiths, Jane;Wilson, Paul M.;Lavallée, Jacqueline,F.;Mullings, Julie;Cullum, Nicky and Dumville, Jo C.

Publication Date: 2022

Journal: BMJ Open 12(8), pp. e061834

Abstract: Objectives: To investigate factors that promote and prevent the use of compression therapy in people with venous leg ulcers.; Design: Qualitative interview study with nurses using the Theoretical Domains Framework (TDF).; Setting: Three National Health Service Trusts in England.; Participants: Purposive sample of 15 nurses delivering wound care.; Results: Nurses described factors which made provision of compression therapy challenging. Organisational barriers (TDF domains environmental context and resources/knowledge, skills/behavioural regulation) included heavy/increasing caseloads; lack of knowledge/skills and the provision of training; and prescribing issues (variations in bandaging systems/whether nurses could prescribe). Absence of specialist leg ulcer services to refer patients into was perceived as a barrier to providing optimal care by some community-based nurses. Compression use was perceived to be facilitated by clinics for timely initial assessment; continuity of staff and good liaison between vascular/leg ulcer clinics and community teams; clear local policies and care pathways; and opportunities for training such as 'shadowing' in vascular/leg ulcer clinics. Patient engagement barriers (TDF domains goals/beliefs about consequences) focused on getting patients 'on board' with compression, and supporting them in using it. Clear explanations were seen as key in promoting compression use.; Conclusions: Rising workload pressures present significant challenges to enhancing leg ulcer services. There may be opportunities to develop facilitated approaches to enable community nursing teams to make changes to practice, enhancing quality of patient care. The majority of venous leg ulcers could be managed in the community without referral to specialist community services if issues relating to workloads/skills/training are addressed. Barriers to promoting compression use could also be targeted, for example, through the development of clear patient information leaflets. While the patient engagement barriers may be easier/quicker to address than organisational barriers, unless organisational barriers are addressed it seems unlikely that all people who would benefit from compression therapy will receive it.; Competing Interests: Competing interests: None declared. (© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY. Published by BMJ.)

Access or request full text: https://libkey.io/10.1136/bmjopen-2022-061834

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35914912&custid=ns023446

31. Modes of Failure in Venous Thromboembolism Prophylaxis

Item Type: Journal Article

Authors: Richie, Cheryl D.;Castle, Jennifer T.;Davis, George A.;Bobadilla, Joseph L.;He, Qiang;Moore, Mary

B.;Kellenbarger, Tricia A. and Xenos, Eleftherios S.

Publication Date: 2022

Journal: Angiology 73(8), pp. 712-715

Abstract: Venous thromboembolism (VTE) is associated with potentially preventable in-hospital morbidity and mortality. Although evidence-based guidelines are widely available, their application in clinical practice varies markedly. VTE prophylaxis involves a multistep dynamic process that can fail at various points during hospital stay. Our aim was to identify defects in VTE prophylaxis. Upon admission, our patients undergo VTE risk stratification and orders for prophylaxis are entered. All patients that fulfill the criteria for the Patient Safety Indicator (PSI)-12, as defined by the Agency for Healthcare Research and Quality, are prospectively entered in a database. From a review of 138 PSI-12 patients, only 21 had correct risk stratification and appropriate chemoprophylaxis during their hospital stay; 70 had been incorrectly stratified, with 28 of these patients receiving incorrect prophylaxis due to incorrect stratification, thus delaying the correct administration of chemoprophylaxis for >24 h. Inadequate application of mechanical prophylaxis was noted in 114 patients. VTE prophylaxis relies on correct risk stratification, ordering appropriate pharmacomechanical measures and, finally, the delivery of this treatment throughout the hospital stay. A large percentage of patients who had a thromboembolic complication received inadequate prophylaxis. This study identifies potential areas for intervention to improve VTE prophylaxis.

Access or request full text: https://libkey.io/10.1177/00033197221083724

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35220773&custid=ns023446

32. Coronavirus Disease 2019-Related Extensive Thrombosis in a Patient Receiving Therapeutic Anticoagulation With Dabigatran

Item Type: Journal Article

Authors: Ross, Robert C.;Hendrickson, Andrew L.;Boraas, Miranda P.;Rosen, Abbie N. and Franck, Andrew J.

Publication Date: 2022

Journal: Hospital Pharmacy 57(6), pp. 774-778

Abstract: Introduction and Objective: Coronavirus disease 2019 (COVID-19) is associated with respiratory failure and a hypercoagulable state. Studies have shown the use of oral anticoagulants, specifically dabigatran, can significantly decrease mortality from COVID-19. Dabigatran is an oral direct thrombin inhibitor commonly used for nonvalvular atrial fibrillation and for the treatment or prevention of venous thromboembolism. The association of COVID-19-related extensive thrombosis while receiving full therapeutic anticoagulation with dabigatran has not been well-established in current literature. Case Report: We present a 73-year-old male patient with a history of persistent atrial fibrillation anticoagulated with dabigatran presenting with an active COVID-19 infection admitted to the intensive care unit. On hospital day 7, he developed extensive arterial and venous thromboembolisms. To our knowledge, this is the first published case of COVID-19-related extensive thrombosis while receiving full therapeutic anticoagulation with dabigatran. Discussion: Guidelines recommend prophylactic or therapeutic-dose anticoagulation with unfractionated heparin or low-molecular weight heparin for all patients if no contraindications exist; however, recommendations for the use of therapeutic oral anticoagulants have not been well established. Further studies are warranted to establish appropriate use of oral anticoagulants in the setting of COVID-19. Conclusion: Evidence from this report suggests clinicians should

closely monitor patients at risk for hypercoagulability regardless of the anticoagulation therapy the patient may be receiving. Additionally, evidence from this case suggests a possible inferiority in the anticoagulation ability of dabigatran in patients with active COVID-19.

Access or request full text: https://libkey.io/10.1177/00185787221108715

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=159997571&custid=ns023446

33. High-dose influenza vaccines for the prevention of hospitalization due to cardiovascular events in older adults in the nursing home: Post-hoc analysis of a cluster-randomized trial

Item Type: Journal Article

Authors: Saade, Elie A.;Abul, Yasin;McConeghy, Kevin;Edward Davidson, H.;Han, Lisa;Joyce, Nina;Canaday, David H.;Hsueh, Leon;Bosco, Elliott and Gravenstein, Stefan

Publication Date: 2022

Journal: Vaccine 40(47), pp. 6700-6705

Abstract: Older adults are at high risk of major acute cardiovascular events (MACE) linked to influenza illness andpreventable by influenza vaccination. It is unknown whether high-dose vaccine might incrementally reduce the risk of MACE.We conducted a post-hoc analysis of data collected from a pragmatic cluster randomized study of 823 nursing homes (NH) randomized to standard-dose (SD) or high-dose (HD) influenza vaccine in the 2013-14 season. Adults age 65 year or older who are Medicare-enrolled long-stay residents were included in the analysis.There were no statistically significant differences in hospitalization for MACE, acute coronary syndromes (ACS), stroke or heart failure between the HD and SD arms. However, in the fee-for-service group, participants in the HD arm had significantly decreased risk of hospitalization for respiratory problems, which was not observed in the Medicare Advantage group.High-dose influenza vaccine was not shown to be incrementally protective against MACE relative to standard-dose vaccine.; Competing Interests: Declaration of Competing Interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Elie A. Saade reports financial support was provided by Sanofi Pasteur, Swiftwater, PA, USA. Stefan Gravenstein reports financial support was provided by Sanofi Pasteur, Swiftwater, PA, USA. Kevin McConoghy reports financial support was provided by Sanofi Pasteur, Swiftwater, PA, USA. H. Edward Davidson reports financial support was provided by Sanofi Pasteur, Swiftwater, PA, USA. Lisa Han reports financial support was provided by Sanofi Pasteur, Swiftwater, PA, USA. David H. Canaday reports financial support was provided by Sanofi Pasteur, Swiftwater, PA, USA. Elie A. Saade reports a relationship with Janssen Pharmaceuticals Inc that includes: consulting or advisory and funding grants. Elie A. Saade reports a relationship with Pfizer Inc that includes: consulting or advisory and travel reimbursement. Elie A. Saade reports a relationship with Sanofi Pasteur Inc that includes: speaking and lecture fees and travel reimbursement. Elie A. Saade reports a relationship with Seqirus Inc. that includes: funding grants. Kevin McConeghy reports a relationship with Seqirus Inc. that includes: funding grants. Kevin McConeghy reports a relationship with Genentech that includes: funding grants. Kevin McConoghy reports a relationship with Pfizer that includes: funding grants. H. Edward Davidson reports a relationship with Seqirus Inc. that includes: funding grants. H. Edward Davidson reports a relationship with Genentech that includes: funding grants. Lisa Han reports a relationship with Seqirus Inc. that includes: funding grants. Lisa Han reports a relationship with Genentech that includes: funding grants. David H. Canaday reports a relationship with Pfizer that includes: funding grants. David H. Canaday reports a relationship with Genentech Inc that includes: funding grants. David H. Canaday reports a relationship with Seqirus Inc. that includes: consulting or advisory and funding grants. Stefan Gravenstein reports a relationship with Genentech Inc that includes: funding grants. Stefan Gravenstein

reports a relationship with Janssen Pharmaceuticals Inc that includes: consulting or advisory, funding grants, and speaking and lecture fees. Stefan Gravenstein reports a relationship with Pfizer that includes: funding grants. Stefan Gravenstein reports a relationship with Sanofi Pasteur Inc that includes: consulting or advisory, funding grants, and speaking and lecture fees. Stefan Gravenstein reports a relationship with Seqirus Inc. that includes: funding grants and speaking and lecture fees. Stefan Gravenstein reports a relationship with Novavax Inc that includes: speaking and lecture fees. Stefan Gravenstein reports a relationship with Moderna Therapeutics Inc that includes: consulting or advisory. Stefan Gravenstein reports a relationship with Vaxart Inc that includes: consulting or advisory .

Access or request full text: https://libkey.io/10.1016/j.vaccine.2022.09.085

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36244879&custid=ns023446

34. Evaluation of Speech and Pause Alterations in Patients With Acute and Chronic Heart Failure

Item Type: Journal Article

Authors: Schöbi, Dario;Zhang, Yan-Ping;Kehl, Joelle;Aissani, Meriam;Pfister, Otmar;Strahm, Martin;van Haelst, Paul and Zhou, Qian

Publication Date: 2022

Journal: Journal of the American Heart Association 11(21), pp. e027023

Abstract: Background Acute heart failure is the most frequent cause of unplanned hospital admission in elderly patients. Various biomarkers have been evaluated to better assess the status of these patients and prevent decompensation. Recently, voice has been suggested as a cost-effective and noninvasive way to monitor disease progression. This study evaluates speech and pause alterations in patients with acute decompensated and stable heart failure. Specifically, we aim to identify a vocal biomarker that could be used to monitor patients with heart failure and to prevent decompensation. Methods and Results Speech and pause patterns were evaluated in 68 patients with acute and 36 patients with stable heart failure. Voice recordings were performed using a web-browser based application that consisted of 5 tasks. Speech and pause patterns were automatically extracted and compared between acute and stable patients and with clinical markers. Compared with stable patients, pause ratio was up to 14.9% increased in patients with acute heart failure. This increase was largely independent of sex, age, and ejection fraction and persisted in patients with lower degrees of edema or dyspnea. Furthermore, pause ratio was positively correlated with NT-proBNP (N-terminal pro-B-type natriuretic peptide) after controlling for acute versus stable heart failure. Collectively, our findings indicate that the pause ratio could be useful in identifying acute heart failure, particularly in patients who do not display traditional indicators of decompensation. Conclusions Speech and pause patterns are altered in patients with acute heart failure. Particularly, we identified pause ratio as an easily interpretable vocal biomarker to support the monitoring of heart failure decompensation.

Access or request full text: https://libkey.io/10.1161/JAHA.122.027023

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36314494&custid=ns023446

35. Emergency department returns and early follow-up visits after heart failure hospitalization: Cohort study examining the role of race

Item Type: Journal Article

Authors: Solnick, Rachel E.;Vijayasiri, Ganga;Li, Yiting;Kocher, Keith E.;Jenq, Grace and Bozaan, David

Publication Date: 2022

Journal: PloS One 17(12), pp. e0279394

Abstract: Health disparities in heart failure (HF) show that Black patients face greater ED utilization and worse clinical outcomes. Transitional care post-HF hospitalization, such as 7-day early follow-up visits, may prevent ED returns. We examine whether early follow-up is associated with lower ED returns visits within 30 days and whether Black race is associated with receiving early follow-up after HF hospitalization. This was a retrospective cohort analysis of all Black and White adult patients at 13 hospitals in Michigan hospitalized for HF from October 1, 2017, to September 30, 2020. Adjusted risk ratios (aRR) were estimated from multivariable logistic regressions. The analytic sample comprised 6,493 patients (mean age = 71 years (SD 15), 50% female, 37% Black, 9% Medicaid). Ten percent had an ED return within 30 days and almost half (43%) of patients had 7-day early follow-up. Patients with early follow-up had lower risk of ED returns (aRR 0.85 95%CI, 0.71-0.98]). Regarding rates of early follow-up, there was no overall adjusted association with Black race, but the following variables were related to lower follow-up: Medicaid insurance (aRR 0.90 95%CI, 0.80-1.00]), dialysis (aRR 0.86 95%CI, 0.77-0.96]), depression (aRR 0.92 95%CI, 0.86-0.98]), and discharged with opioids (aRR 0.94 95%CI, 0.88-1.00]). When considering a hospital-level interaction, three of the 13 sites with the lowest percentage of Black patients had lower rates of early follow-up in Black patients (ranging from 15% to 55% reduced likelihood). Early follow-up visits were associated with a lower likelihood of ED returns for HF patients. Despite this potentially protective association, certain patient factors were associated with being less likely to receive scheduled follow-up visits. Hospitals with lower percentages of Black patients had lower rates of early follow-up for Black patients. Together, these may represent missed opportunities to intervene in high-risk groups to prevent ED returns in patients with HF.; Competing Interests: The authors have declared that no competing interests exist.

Access or request full text: https://libkey.io/10.1371/journal.pone.0279394

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36548344&custid=ns023446

36. Influenza vaccination reduced myocardial infarctions in United Kingdom older adults: a prior event rate ratio study

Item Type: Journal Article

Authors: Streeter, Adam J.;Rodgers, Lauren R.;Hamilton, Fergus;Masoli, Jane A. H.;Blé, Alessandro;Hamilton, William T. and Henley, William E.

Publication Date: 2022

Journal: Journal of Clinical Epidemiology 151, pp. 122-131

Abstract: Objectives: We aimed to estimate the real-world effectiveness of the influenza vaccine against myocardial infarction (MI) and influenza in the decade since adults aged ≥ 65 years were first recommended the

vaccine.; Study Design and Setting: We identified annual cohorts, 1997 to 2011, of adults aged ≥ 65 years, without previous influenza vaccination, from UK general practices, registered with the Clinical Practice Research Datalink. Using a quasi-experimental study design to control for confounding bias, we estimated influenza vaccine effectiveness on hospitalization for MI, influenza, and antibiotic prescriptions for lower respiratory tract infections.; Results: Vaccination was moderately effective against influenza, the prior event rate ratio-adjusted hazard ratios ranging from 0.70 in 1999 to 0.99 in 2001. Prior event rate ratio-adjusted hazard ratios demonstrated a protective effect against MIs, varying between 0.40 in 2010 and 0.89 in 2001. Aggregated across the cohorts, influenza vaccination reduced the risk of MIs by 39% (95% confidence interval: 34%, 44%).; Conclusion: Effectiveness of the flu vaccine in preventing MIs in older UK adults is consistent with the limited evidence from clinical trials. Similar trends in effectiveness against influenza and against MIs suggest the risk of influenza mediates the effectiveness against MIs, although divergence in some years implies the mechanism may be complex. (Copyright © 2022 The Authors. Published by Elsevier Inc. All rights reserved.)

Access or request full text: https://libkey.io/10.1016/j.jclinepi.2022.06.018

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35817230&custid=ns023446

37. Outcomes in Hospitalization in Patients with Heart Failure Undergoing Remote Pulmonary Artery Pressure Monitoring: A Systematic Review and Meta-Analysis of Major Trials

Item Type: Journal Article

Authors: Thakker, Ravi A.;Abu-Jazar, Deaa;Cabello, Rafael;Pham, Christine;Hong, Jimmy;Abdelmaseih, Ramy;Elbadawi, Ayman;Albaeni, Aiham;Hasan, Syed Mustajab;Almustafa, Ahmed;Murrieta, Jose Iturrizaga;Modi, Shreyas;Berbarie, Rafic F.;Khalife, Wissam and Chatila, Khaled F.

Publication Date: 2022

Journal: Current Problems in Cardiology 47(10), pp. 100980

Abstract: Heart failure is a leading global pandemic and a cause of economic burden. Although, treatments exist to help symptomatic alleviation, patient compliance and monitoring is the basis of ensuring efficacy. With devices that allow for remote wireless PA pressure monitoring such as CardioMEMS, the inconsistency in patient reporting and factors such as symptoms and hospitalizations can be reduced. A systematic review and meta-analysis utilizing the MEDLINE, Cochrane, and Scopus database was performed to identify randomized and non-randomized clinical trials evaluating baseline characteristics and hospitalizations. Five trials for the systematic review and 2 trials for the meta-analysis meeting the inclusion and exclusion criteria were included. Baseline characteristics included an average age of 64.6 years, male predominance, mean BMI of 29.6, predominance of HFrEF, hypertension the most prevalent comorbidity, and a mean PA pressure of 27.2 mm Hg. The follow-up periods ranged from 90 days to 12 months. There was a total of 64 adverse events, mostly non-serious. Patients who underwent remote PA monitoring were less likely to be hospitalized compared with patients who did not (Odds Ratio: 0.52; 95% Confidence Interval 0.39, 0.69). Remote PA pressure monitoring allows for reduced hospitalizations. With the recent and now resurging SARS-CoV-2 pandemic, devices such as CardioMEMS can allow for heart failure patients to be managed from home to not only reduce hospitalizations but for symptom prevention and management. (Copyright © 2021 Elsevier Inc. All rights reserved.)

Access or request full text: https://libkey.io/10.1016/j.cpcardiol.2021.100980

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=34547344&custid=ns

023446

38. Post-intensive care syndrome in out-of-hospital cardiac arrest patients: A prospective observational cohort study

Item Type: Journal Article

Authors: Vincent, Alessia;Beck, Katharina;Thommen, Emanuel;Widmer, Madlaina;Becker, Christoph;Loretz, Nina;Gross, Sebastian;Mueller, Jonas;Amacher, Simon A.;Bohren, Chantal;Schaefert, Rainer;Gaab, Jens;Marsch, Stephan;Emsden, Christian;Tisljar, Kai;Sutter, Raoul and Hunziker, Sabina

Publication Date: 2022

Journal: PloS One 17(10), pp. e0276011

Abstract: Introduction: Intensive care unit patients are at risk for post-intensive care syndrome (PICS), which includes psychological, physical and/or cognitive sequelae after their hospital stay. Our aim was to investigate PICS in adult patients with out-of-hospital cardiac arrest (OHCA).; Methods: In this prospective observational cohort study, we assessed risks for PICS at 3 and 12-month follow-up within the following domains: a) physical impairment (EuroQol EQ-5D-3L]), b) cognitive functioning (Cerebral Performance Category CPC] score >1, modified Rankin Scale mRS] >2) and c) psychological burden (Hospital Anxiety and Depression Scale HADS], Impact of Event Scale-Revised IES-R]).; Results: At 3 months, 69/139 patients (50%) met the definition of PICS including 37% in the physical domain, 25% in the cognitive domain and 13% in the psychological domain. Intubation (OR 2.3, 95%CI 1.1 to 5,0 p = 0.03), sedatives (OR 3.4, 95%CI 1 to 11, p = 0.045), mRS at discharge (OR 4.3, 95%CI 1.70 to 11.01, p = 0.002), CPC at discharge (OR 3.3, 95%CI 1.4 to 7.6, p = 0.005) and post-discharge work loss (OR 13.4, 95%CI 1.7 to 107.5, p = 0.014) were significantly associated with PICS. At 12 months, 52/110 (47%) patients had PICS, which was associated with prolonged duration of rehabilitation, higher APACHE scores, and higher mRS and CPC scores at hospital discharge.; Conclusions: Nearly half of long-term OHCA survivors show PICS after 3 and 12 months. These high numbers call for more emphasis on appropriate screening and treatment in this patient population. Future studies should evaluate whether early identification of these patients enables preventive strategies and treatment options.; Competing Interests: The authors have declared that no competing interests exist.

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URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36240252&custid=ns023446

39. Optimising acute stroke pathways through flexible use of bed capacity: a computer modelling study

Item Type: Journal Article

Authors: Wood, Richard M.;Moss, Simon J.;Murch, Ben J.;Vasilakis, Christos and Clatworthy, Philip L.

Publication Date: 2022

Journal: BMC Health Services Research 22(1), pp. 1-10

Abstract: Background: Optimising capacity along clinical pathways is essential to avoid severe hospital pressure

and help ensure best patient outcomes and financial sustainability. Yet, typical approaches, using only average arrival rate and average lengths of stay, are known to underestimate the number of beds required. This study investigates the extent to which averages-based estimates can be complemented by a robust assessment of additional 'flex capacity' requirements, to be used at times of peak demand. Methods: The setting was a major one million resident healthcare system in England, moving towards a centralised stroke pathway. A computer simulation was developed for modelling patient flow along the proposed stroke pathway, accounting for variability in patient arrivals, lengths of stay, and the time taken for transfer processes. The primary outcome measure was flex capacity utilisation over the simulation period. Results: For the hyper-acute, acute, and rehabilitation units respectively, flex capacities of 45%, 45%, and 36% above the averages-based calculation would be required to ensure that only 1% of stroke presentations find the hyper-acute unit full and have to wait. For each unit some amount of flex capacity would be required approximately 30%, 20%, and 18% of the time respectively. Conclusions: This study demonstrates the importance of appropriately capturing variability within capacity plans, and provides a practical and economical approach which can complement commonly-used averages-based methods. Results of this study have directly informed the healthcare system's new configuration of stroke services.

Access or request full text: https://libkey.io/10.1186/s12913-022-08433-0

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=158651182&custid=ns023446

40. Trends, Predictors, and Outcomes of Cardiovascular Complications at Delivery Associated With Gestational Diabetes: A National Inpatient Sample Analysis (2004-2019)

Item Type: Journal Article

Authors: Zahid, Salman;Hashem, Anas;Minhas, Anum S.;Bennett, Wendy L.;Honigberg, Michael C.;Lewey, Jennifer;Davis, Melinda B. and Michos, Erin D.

Publication Date: 2022

Journal: Journal of the American Heart Association 11(21), pp. e026786

Abstract: Background Gestational diabetes (GD) is associated with increased risk of long-term cardiovascular complications. However, data on acute peripartum cardiovascular complications are not well established. Hence, we aimed to investigate the association of GD with acute cardiovascular outcomes at the time of delivery admission. Methods and Results We used data from the National Inpatient Sample (2004-2019). International Classification of Diseases, Ninth Revision (ICD-9) or Tenth Revision (ICD-10) codes were used to identify delivery hospitalizations and GD diagnosis. A total of 63 115 002 weighted hospitalizations for deliveries were identified, of which 3.9% were among individuals with GD (n=2 435 301). The prevalence of both GD and obesity increased during the study period (P trends<0.01). Individuals with GD versus those without GD had a higher prevalence of obesity, hypertension, and dyslipidemia. After adjustment for age, race or ethnicity, comorbidities, insurance, and income, GD remained independently associated with cardiovascular complications including preeclampsia (adjusted odds ratio aOR], 1.97 95% CI, 1.96-1.98]), peripartum cardiomyopathy (aOR, 1.15 1.08-1.22]), acute kidney injury (aOR, 1.16 1.11-1.21]), stroke (aOR, 1.15 1.09-1.23]), and arrhythmias (aOR, 1.48 1.46-1.50]), compared with no GD. Moreover, delivery hospitalizations among individuals with GD were associated with increased length (3 versus 2 days, P <0.01) and cost of hospitalization ($4909 versus $3682, P <0.01). Even in the absence of preeclampsia, GD was associated with elevated cardiovascular risk. Conclusions Individuals with GD had a higher risk of preeclampsia, peripartum cardiomyopathy, acute kidney injury, stroke, and arrhythmias during delivery hospitalizations. As rates of GD are increasing globally, efforts to improve preconception cardiometabolic health and prevent GD may represent

important strategies to improve peripartum maternal outcomes and mitigate long-term cardiovascular risk.

Access or request full text: https://libkey.io/10.1161/JAHA.122.026786

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36300664&custid=ns023446

41. Analysis of the Influence of Network Continuous Care on the Quality of Life of Patients with Coronary Artery Disease (CAD) after PIC

Item Type: Journal Article

Authors: Zhang, Weixin;Zhang, Beiyu;Zhang, Hongyan;Zhang, Yingyan;Sun, Jingmei;Gao, Liyan and Yang, Taotao

Publication Date: 2022

Journal: BioMed Research International 2022, pp. 3046554

Abstract: Studies have shown that most patients after PCI cannot adhere to the cardiac rehabilitation program. The survey found that due to the lack of secondary prevention of cardiac rehabilitation, the phenomenon of drug reduction and withdrawal after PCI is very common after discharge, leading to recurrence of the patient's disease or worsen and repeated hospitalizations, so continuity of care is very important. In this paper, in addition to proposing a network care continuum with artificial intelligence handler in order to improve the healthcare system and provide new ideas for improving the postoperative recovery of CHD patients, we analyze the impact of PCI on the coronary heart disease patients' PCI postoperative quality of life. In the method part, this article introduces the concepts of continuation care and PCI after surgery, introduces the marker delivery algorithm in the field of artificial intelligence, and introduces the SF-36 scale for patient quality of life analysis. This article designs an experiment combining artificial intelligence processors to carry out network continuity care for patients and divides 100 eligible patients into an experimental group and a control group. In the analysis part, the two groups of patients were analyzed in terms of general data comparison, physical function, biochemical indicators, quality of life, and dependence. It can be seen from the experimental analysis that the anxiety and depression of the two groups of subjects have different degrees of decline. The HAMA value of the experimental group is 9.06 ± 0.77, and the HAMD value is 9.18 ± 1.20, which is significantly lower than that of the control group, $P < 0.05$. It can be seen that the use of network continuation care can reduce the negative emotions of patients more than general care. Through psychological counseling and postoperative follow-up, it can improve the optimism and positive emotions of the patients, reduce the negative emotions of the patients, and improve it to a certain extent.; Competing Interests: There are no potential competing interests in our paper. (Copyright © 2022 Weixin Zhang et al.)

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