Coronary Care Update #11 COVID Special

27 May 2021

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.

Accessing Articles

The following abstracts are taken from a selection of recently published articles.
If the article is available electronically, then there will be a blue link in the abstract. [Press CTRL and click to open the link. You will need to be registered for NHS Athens (see below) to be able to access the full text.] If the full text is not available electronically we may be able to obtain the document through our document supply services.

NHS Athens

Athens passwords allow you to download the full text of articles, where the Trust has a subscription. These are noted at the end of an abstract. To register for a free NHS Athens account please log on to:
https://openathens.nice.org.uk/
If you would like help in registering and using NHS Athens accounts, please contact the Library & Knowledge Service.

If you would like to order a copy of the full paper

If we don't have full text access please contact the Library & Knowledge Service, details below. There is sometimes a small charge for using the document supply services, depending where we can source items from.

Library & Knowledge Service

We are located on 2nd floor, New Alderley House and are staffed from 9.00amto 4.30pm Monday to Friday. 24 hour access is available, just swipe in with your Trust ID badge. You can issue and return books using the self -service kiosk, access the PCs and study facilities.

Contact us

General library enquiries: telephone - 01625 66 1362 or email - ecn-tr.StaffLibrary@nhs.net
Holly Cook, Clinical Outreach Librarian: telephone – 01625 66 3398 or email - holly.cook3@nhs.net
Further information on library services and contacts: www.eastcheshirenhslibrary.net

Feedback and requests for additional evidence searches

We welcome your feedback on this update (for example, the format, relevancy, timeliness). Please leave your comments: https://forms.gle/5TN6Ggx6Tw2KUjnR6
We also have other services to help you keep up-to-date: www.eastcheshirenhslibrary.net/keep-up-to-date.html.
Please contact Holly if you would like more information, or further evidence searches: holly.cook3@nhs.net.

Papers selected from Medline (most recent first)

1. Cardiovascular Disease and COVID-19: Insight From Cases With Heart Failure.

2. Cardiac Injury Biomarkers and the Risk of Death in Patients with COVID-19: A Systematic Review and Meta-Analysis.

3. Cardiac Injury in COVID-19: A Systematic Review.

4. Temporal relation between second dose BNT162b2 mRNA Covid-19 vaccine and cardiac involvement in a patient with previous SARS-COV-2 infection.

5. Pharmacotherapy Management for COVID-19 and Cardiac Safety: A Data Mining Approach for Pharmacovigilance Evidence from the FDA Adverse Event Reporting System (FAERS).

6. Impact of COVID-19 on cardiac procedure activity in England and associated 30-day mortality.

7. COVID-19 and cardiac surgery: A perspective from United Kingdom.

8. COVID-19: The rising cost of cardiac surgery and disease.

9. Effect of Intermediate-Dose vs Standard-Dose Prophylactic Anticoagulation on Thrombotic Events, Extracorporeal Membrane Oxygenation Treatment, or Mortality Among Patients With COVID-19 Admitted to the Intensive Care Unit: The INSPIRATION Randomized Clinical Trial.

10. Thrombosis after covid-19 vaccination.

11. Admission High-Sensitive Cardiac Troponin T Level Increase Is Independently Associated with Higher Mortality in Critically Ill Patients with COVID-19: A Multicenter Study.

12. Risk stratification of adults with congenital heart disease during the COVID-19 pandemic: insights from a multinational survey among European experts.

13. Reintroduction of elective cardiac interventions in the era of COVID-19: the Barts experience.

14. Cardiac abnormalities due to multisystem inflammatory syndrome temporally associated with Covid-19 among children: A systematic review and meta-analysis.

15. COVID-19 and changes in activity and treatment of ST elevation MI from a UK cardiac centre.

16. How has technology been used to deliver cardiac rehabilitation during the COVID-19 pandemic? An international cross-sectional survey of healthcare professionals conducted by the BACPR.

17. Incidence of emergency calls and out-of-hospital cardiac arrest deaths during the COVID-19 pandemic: findings from a cross-sectional study in a UK ambulance service.

18. Impact of COVID-19 on inpatient referral of acute heart failure: a single-centre experience from the south-west of the UK.

19. The impact of COVID-19 on the management of heart failure: a United Kingdom patient questionnaire study.

20. Researchers Investigate What COVID-19 Does to the Heart.

21. Rethinking heart failure care and health technologies from early COVID-19 experiences - A narrative review.

22. Exploring the impact of the COVID-19 pandemic on provision of cardiology services: a scoping review.

23. Vascular Abnormalities Detected with Chest CT in COVID-19: Spectrum, Association with Parenchymal Lesions, Cardiac Changes, and Correlation with Clinical Severity (COVID-CAVA Study).

24. Cardiac Troponin I Levels in Hospitalized COVID-19 Patients as a Predictor of Severity and Outcome: A Retrospective Cohort Study.

25. Cardiac operations and interventions during the COVID-19 pandemic: a nationwide perspective.

26. Cardiac surgery outcome during the COVID-19 pandemic: a retrospective review of the early experience in nine UK centres.

27. Out-of-Hospital Cardiac Arrest in London during the COVID-19 pandemic.

28. Early initiation of prophylactic anticoagulation for prevention of coronavirus disease 2019 mortality in patients admitted to hospital in the United States: cohort study.

29. Autoantibodies May Drive COVID-19 Blood Clots.

30. How the COVID-19 pandemic changed treatment of severe aortic stenosis: a single cardiac center experience.

31. Remote monitoring for heart failure management during COVID-19 pandemic.

32. The assessment of high sensitivity cardiac troponin in patients with COVID-19: A multicenter study.

33. Trajectory of Cardiac Catheterization for Acute Coronary Syndrome and Out-of-Hospital Cardiac Arrest During the COVID-19 Pandemic.

34. A pilot study on right ventricular longitudinal strain as a predictor of outcome in COVID-19 patients with evidence of cardiac involvement.

35. Effect of Discontinuing vs Continuing Angiotensin-Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers on Days Alive and Out of the Hospital in Patients Admitted With COVID-19: A Randomized Clinical Trial.

36. The Novel Perspectives Opened by ST2 in the Pandemic: A Review of Its Role in the Diagnosis and Prognosis of Patients with Heart Failure and COVID-19.

37. Cardiac MRI and Myocardial Injury in COVID-19: Diagnosis, Risk Stratification and Prognosis.

38. Predictors and Prognostic Implications of Cardiac Arrhythmias in Patients Hospitalized for COVID-19.

39. Acute Ischemic Stroke in COVID-19: Putative Mechanisms, Clinical Characteristics, and Management

40. Diagnosis, Management, and Pathophysiology of Arterial and Venous Thrombosis in COVID-19.

41. Cardiac Troponin-I and COVID-19: A Prognostic Tool for In-Hospital Mortality.

42. Managing hyperlipidaemia in patients with COVID-19 and during its pandemic: An expert panel position statement from HEART UK.

43. Registry of Arterial and Venous Thromboembolic Complications in Patients With COVID-19

44. COVID-19 and Heart Failure With Preserved Ejection Fraction.

45. A nationwide survey of UK cardiac surgeons' view on clinical decision making during the coronavirus disease 2019 (COVID-19) pandemic.

46. Prophylactic anticoagulants for people hospitalised with COVID-19

47. In-hospital cardiac arrest in critically ill patients with covid-19: multicenter cohort study.

48. Obesity and Hypertension in the Time of COVID-19.

49. COVID-19 and cardiovascular disease: from basic mechanisms to clinical perspectives

50. COVID-19 pandemic and admission rates for and management of acute coronary syndromes in England.

Full strategy

Results Saved Results
50 of **50 saved results**

1. Cardiovascular Disease and COVID-19: Insight From Cases With Heart Failure.

Author(s): Yi, Yang; Xu, Yanan; Jiang, Haibing; Wang, Jun

Source: Frontiers in cardiovascular medicine; 2021; vol. 8 ; p. 629958

Publication Date: 2021

Publication Type(s): Systematic Review

PubMedID: 33791346

Available at Frontiers in cardiovascular medicine - from Europe PubMed Central - Open Access

Available at Frontiers in cardiovascular medicine - from Unpaywall

Abstract: Recent evidence indicates that a large proportion of deaths from coronavirus disease 2019 (COVID-19) can be attributed to cardiovascular disease, including acute myocardial infarction, arrhythmias and heart failure. Indeed, severe infection increases the risk of heart failure among patients with COVID-19. In most patients, heart failure arises from complex interactions between pre-existing conditions, cardiac injury, renin-angiotensin system activation, and the effects of systemic inflammation on the cardiovascular system. In this review, we summarize current knowledge regarding pathogen-driven heart failure occurring during treatment for COVID-19, the potential effects of commonly used cardiovascular and anti-infective drugs in these patients, and possible directions for establishing a theoretical basis for clinical treatment.

Database: Medline

2. Cardiac Injury Biomarkers and the Risk of Death in Patients with COVID-19: A Systematic Review and Meta-Analysis.

Author(s): Alzahrani, Sami H; Al-Rabia, Mohammed W

Source: Cardiology research and practice; 2021; vol. 2021 ; p. 9363569

Publication Date: 2021

Publication Type(s): Journal Article Review

PubMedID: 33815838

Available at Cardiology research and practice - from Europe PubMed Central - Open Access

Available at Cardiology research and practice - from Hindawi Open Access Journals

Available at Cardiology research and practice - from Unpaywall

Abstract:

Background: Cardiac complications may develop in a proportion of patients with the novel coronavirus disease (COVID-19), which may influence their prognosis.

Objectives: To assess the role of cardiac injury biomarkers measured on admission and during hospitalization as risk factors for subsequent death in COVID-19 patients.

Methods: A systematic review and meta-analysis was carried out involving cohort studies that compared the levels of cardiac injury biomarkers in surviving and dead COVID-19 patients. Cardiac injury is defined as an elevation of the definitive markers (cardiac troponin (cTnI and cTnT) and N-terminal pro-B-type natriuretic peptide (NT-proBNP)) above the 99th percentile upper reference limit. Secondary markers included creatine kinase-myocardial bound (CK-MB), myoglobin, interleukin-6 (IL-6), and C-reactive protein (CRP). The risk of death and the differences in marker concentrations were analyzed using risk ratios (RRs) and standardized mean differences (SMDs), respectively.

Results: Nine studies met the inclusion criteria (1799 patients, 53.36% males, 20.62% with cardiac injury). The risk of death was significantly higher in patients with elevated cTn than those with normal biomarker levels (RR = 5.28, P < 0.0001). Compared to survivors, dead patients had higher levels of cTn (SMD = 2.15, P=0.001), IL-6 (SMD = 3.13,

P=0.03), hs-CRP (SMD = 2.78, P < 0.0001), and CK-MB (SMD = 0.97, P < 0.0001) on admission and a significant rise of plasma cTnT during hospitalization.

Conclusion: COVID-19 patients with elevated cTn on admission, possibly due to immune-mediated myocardial injury, are at increased risk for mortality. This requires further radiographic investigations, close monitoring, and aggressive care to reduce the risk of severe complications and death.

Database: Medline

3. Cardiac Injury in COVID-19: A Systematic Review.

Author(s): Moayed, Malihe Sadat; Rahimi-Bashar, Farshid; Vahedian-Azimi, Amir; Sathyapalan, Thozhukat; Guest, Paul C; Jamialahmadi, Tannaz; Sahebkar, Amirhossein

Source: Advances in experimental medicine and biology; 2021; vol. 1321 ; p. 325-333

Publication Date: 2021

Publication Type(s): Journal Article Systematic Review

PubMedID: 33656737

Abstract: Coronavirus 2019 (COVID-19) is responsible for the current pandemic which has already resulted in considerable mortality worldwide. This systematic review was conducted to summarize the results of the published articles assessing the incidence of heart diseases in patients infected with COVID-19. The electronic databases Scopus, Web of Science, Pubmed, Science Direct, and ProQuest were used to search for potentially relevant articles. Articles published from Dec 2019 to April 2020 were included. All cross-sectional, retrospective or prospective observational cohort and case-control studies were selected which reported the incidence or prevalence of myocardial injury, myocardial infarction, or cardiovascular disease in patients with confirmed COVID-19 infection. Based on the inclusion criteria, 12 articles were selected. The incidence of cardiac injury was reported in 8 articles and 8 articles focused on the cardiovascular outcomes of COVID-19 infection. The incidence of new cardiac injury was reported to be 7.2-77% in live and dead patients, respectively. The results showed that patients with cardiac injury had worse outcomes including higher mortality than those without cardiac injury. The most common cardiac injury outcomes were shock and malignant arrhythmias. The most common radiographic findings in patients with cardiac injury were multiple mottling and ground-glass opacities in the lungs (64.6%). A significant number of patients with cardiac injury required noninvasive mechanical ventilation (46.3%) or invasive mechanical ventilation (22.0%). Acute respiratory distress syndrome was seen in 58.5%, acute kidney injury in 8.5%, electrolyte disturbances in 15.9%, hypoproteinemia in 13.4%, and coagulation disorders in 7.3% of patients with cardiac injuries. In addition, survival days were negatively correlated with cardiac troponin I levels (r = -0.42, 95%, p = 0.005). The results of this review showed that myocardial injury in patients with COVID 19 has a poor prognosis. Hence, cardiac investigation and management in these patients are crucial.

Database: Medline

4. Temporal relation between second dose BNT162b2 mRNA Covid-19 vaccine and cardiac involvement in a patient with previous SARS-COV-2 infection.

Author(s): Ammirati, Enrico; Cavalotti, Cristina; Milazzo, Angela; Pedrotti, Patrizia; Soriano, Francesco; Schroeder, Jan W; Morici, Nuccia; Giannattasio, Cristina; Frigerio, Maria; Metra, Marco; Camici, Paolo G; Oliva, Fabrizio

Source: International journal of cardiology. Heart & vasculature; Jun 2021; vol. 34 ; p. 100774

Publication Date: Jun 2021

Publication Type(s): Journal Article

PubMedID: 33821210

Available at International journal of cardiology. Heart & vasculature - from Europe PubMed Central - Open Access

Available at International journal of cardiology. Heart & vasculature - from Unpaywall

Database: Medline

5. Pharmacotherapy Management for COVID-19 and Cardiac Safety: A Data Mining Approach for Pharmacovigilance Evidence from the FDA Adverse Event Reporting System (FAERS).

Author(s): Yuan, Jing; Li, Minghui; Yu, Yiqun; Lee, Tai-Ying; Lv, Gang; Han, Bing; Xiang, Xiaoqiang; Lu, Z Kevin

Source: Drugs - real world outcomes; Jun 2021; vol. 8 (no. 2); p. 131-140

Publication Date: Jun 2021

Publication Type(s): Journal Article

PubMedID: 33569736

Available at Drugs - real world outcomes - from Europe PubMed Central - Open Access

Available at Drugs - real world outcomes - from Unpaywall

Abstract:

BACKGROUND: Several pharmacological agents, such as chloroquine/hydroxychloroquine, have been promoted for COVID-19 treatment or pre-exposure prophylaxis. However, no comprehensive evaluation of the safety of these possible agents is available, and is urgently needed.

OBJECTIVE: The purpose of this study was to investigate the risks of cardiac adverse events associated with the possible pharmacotherapies for COVID-19, including certain antimalarial, antiviral, and antibiotic drugs.

PATIENTS AND METHODS: We conduced retrospective pharmacovigilance analyses of the US Food and Drug Administration Adverse Event Reporting System database. The reporting odds ratio (ROR), a data mining algorithm commonly used in pharmacovigilance assessment, was generated to quantify the detection signal of adverse events.

RESULTS: Among individuals without coronavirus infection from 2015 Q1 to 2020 Q1, increased risks for cardiac disorders were found for antiviral agents such as chloroquine/hydroxychloroquine (ROR: 1.68; 95% confidence interval [CI] 1.66-1.70), lopinavir/ritonavir (ROR: 1.52; 95% CI 1.39-1.66), and antibiotics such as azithromycin (ROR: 1.37; 95% CI 1.30-1.44) and ceftriaxone (ROR: 1.92; 95% CI 1.80-2.05). Increased serious cardiac adverse events, including myocardial infarction, arrhythmia, and cardiac arrest, were also reported for these drugs. Further analyses of individuals with coronavirus infections revealed that 40% of individuals receiving chloroquine/hydroxychloroquine reported serious cardiac adverse events. Two cases resulted in QT prolongations and one case resulted in cardiac arrest. Chloroquine/hydroxychloroquine and azithromycin contributed to all the QT prolongation and cardiac arrest cases.

CONCLUSIONS: The current pharmacotherapies for COVID-19 are associated with increased risks of cardiac adverse events. Variations in the cardiac safety profiles of these pharmacotherapies were also observed. Clinicians should closely monitor patients with COVID-19, especially those at high risk, using chloroquine/hydroxychloroquine and azithromycin.

Database: Medline

6. Impact of COVID-19 on cardiac procedure activity in England and associated 30-day mortality.

Author(s): Mohamed, Mohamed O; Banerjee, Amitava; Clarke, Sarah; de Belder, Mark; Patwala, Ashish; Goodwin, Andrew T; Kwok, Chun Shing; Rashid, Muhammad; Gale, Chris P; Curzen, Nick; Mamas, Mamas A

Source: European heart journal. Quality of care & clinical outcomes; May 2021; vol. 7 (no. 3); p. 247-256

Publication Date: May 2021

Publication Type(s): Journal Article

PubMedID: 33079204

Available at European heart journal. Quality of care & clinical outcomes - from Unpaywall

Abstract:

AIMS: Limited data exist on the impact of COVID-19 on national changes in cardiac procedure activity, including patient characteristics and clinical outcomes before and during the COVID-19 pandemic.

METHODS AND RESULTS: All major cardiac procedures (n = 374 899) performed between 1 January and 31 May for the years 2018, 2019, and 2020 were analysed, stratified by procedure type and time-period (pre-COVID: January-May 2018 and 2019 and January-February 2020 and COVID: March-May 2020). Multivariable logistic regression was performed to examine the odds ratio (OR) of 30-day mortality for procedures performed in the COVID period. Overall, there was a deficit of 45 501 procedures during the COVID period compared to the monthly averages (March-May) in 2018-2019. Cardiac catheterization and device implantations were the most affected in terms of numbers (n = 19 637 and n = 10 453), whereas surgical procedures such as mitral valve replacement, other valve replacement/repair, atrioseptal defect/ventriculoseptal defect repair, and coronary artery bypass grafting were the most affected as a relative percentage difference (Δ) to previous years' averages. Transcatheter aortic valve replacement was the least affected (Δ -10.6%). No difference in 30-day mortality was observed between pre-COVID and COVID time-periods for all cardiac procedures except cardiac catheterization [OR 1.25 95% confidence interval (CI) 1.07-1.47, P = 0.006] and cardiac device implantation (OR 1.35 95% CI 1.15-1.58, P < 0.001).

CONCLUSION: Cardiac procedural activity has significantly declined across England during the COVID-19 pandemic, with a deficit in excess of 45 000 procedures, without an increase in risk of mortality for most cardiac procedures performed during the pandemic. Major restructuring of cardiac services is necessary to deal with this deficit, which would inevitably impact long-term morbidity and mortality.

Database: Medline

7. COVID-19 and cardiac surgery: A perspective from United Kingdom.

Author(s): Harky, Amer; Harrington, Deborah; Nawaytou, Omar; Othman, Ahmed; Fowler, Catherine; Owens, Gareth; Torella, Francesco; Kuduvalli, Manoj; Field, Mark

Source: Journal of cardiac surgery; May 2021; vol. 36 (no. 5); p. 1649-1658

Publication Date: May 2021

Publication Type(s): Journal Article Review

PubMedID: 32981073

Available at Journal of cardiac surgery - from Wiley Online Library

Available at Journal of cardiac surgery - from Unpaywall

Abstract: The emergence of severe acute respiratory syndrome coronavirus 2 in December 2019, presumed from the city of Wuhan, Hubei province in China, and the subsequent declaration of the disease as a pandemic by the World Health Organization as coronavirus disease 2019 (COVID-19) in March 2020, had a significant impact on health care systems globally. Each country responded to this disease in different ways, however this was done broadly by fortifying and prioritizing health care provision as well as introducing social lockdown aiming to contain the infection and minimizing the risk of transmission. In the United Kingdom, a lockdown was introduced by the government on March 23, 2020 and all health care services were focussed to challenge the impact of COVID-19. To do so, the United Kingdom National Health Service had to undergo widespread service reconfigurations and the so-called "Nightingale Hospitals" were created de novo to bolster bed provision, and industries were asked to direct efforts to the production of ventilators. A government-led public health campaign was publicized under the slogan of: "Stay home, Protect the NHS (National Health Service), Save lives." The approach had a significant impact on the delivery of all surgical services but particularly cardiac surgery with its inherent critical care bed capacity. This paper describes the impact on provision for elective and emergency cardiac surgery in the United Kingdom, with a focus on aortovascular disease. We describe our aortovascular activity and outcomes during the period of UK lockdown and present a patient survey of attitudes to aortic surgery during COVID-19 pandemic.

Database: Medline

8. COVID-19: The rising cost of cardiac surgery and disease.

Author(s): Osman, Fatima; Caplin, Noah; Bashir, Mohamad

Source: Journal of cardiac surgery; May 2021; vol. 36 (no. 5); p. 1593-1596

Publication Date: May 2021

Publication Type(s): Editorial

PubMedID: 33259108

Available at Journal of cardiac surgery - from Wiley Online Library

Available at Journal of cardiac surgery - from Unpaywall

Abstract: The coronavirus disease 19 (COVID-19) pandemic has resulted in widespread economic, health and social disruptions. The delivery of cardiovascular care has been stifled during the pandemic to adhere to infection control measures as a way of protecting patients and the workforce at large. This cautious approach has been protective since individuals with COVID-19 and cardiovascular disease are anticipated to have poorer outcomes and an increased risk of death. The combination of postponing elective cardiovascular surgeries, reduced acute care and long-term cardiac damage directly resulting from COVID-19 will likely have increased the demand for cardiac care, particularly from patients presenting with more severe symptoms. The combination of increased demand and inhibited supply will likely result in huge backlog of unmet patients' needs. The novelty, virulence and infectivity of severe acute respiratory syndrome coronavirus 2 has caused substantial morbidity and mortality, thus necessitating modifications to the UK government's healthcare strategy. Without improving cost efficiency, the UK's ageing population will likely need an increasing spend on cardiac surgery simply to maintain the same level of service. However, the government's short-term increase in spending is unsustainable especially in the face of ongoing economic uncertainty. This means that the long-term impact of COVID-19 will only increase the need to find innovative ways of delivering equivalent or superior cardiac care at a reduced unit cost.

Database: Medline

9. Effect of Intermediate-Dose vs Standard-Dose Prophylactic Anticoagulation on Thrombotic Events, Extracorporeal Membrane Oxygenation Treatment, or Mortality Among Patients With COVID-19 Admitted to the Intensive Care Unit: The INSPIRATION Randomized Clinical Trial.

Author(s): INSPIRATION Investigators; Sadeghipour, Parham; Talasaz, Azita H; Rashidi, Farid; Sharif-Kashani, Babak; Beigmohammadi, Mohammad Taghi; Farrokhpour, Mohsen; Sezavar, Seyed Hashem; Payandemehr, Pooya; Dabbagh, Ali; Moghadam, Keivan Gohari; Jamalkhani, Sepehr; Khalili, Hossein; Yadollahzadeh, Mahdi; Riahi, Taghi; Rezaeifar, Parisa; Tahamtan, Ouria; Matin, Samira; Abedini, Atefeh; Lookzadeh, Somayeh; Rahmani, Hamid; Zoghi, Elnaz; Mohammadi, Keyhan; Sadeghipour, Pardis; Abri, Homa; Tabrizi, Sanaz; Mousavian, Seyed Masoud; Shahmirzaei, Shaghayegh; Bakhshandeh, Hooman; Amin, Ahmad; Rafiee, Farnaz; Baghizadeh, Elahe; Mohebbi, Bahram; Parhizgar, Seyed Ehsan; Aliannejad, Rasoul; Eslami, Vahid; Kashefizadeh, Alireza; Kakavand, Hessam; Hosseini, Seyed Hossein; Shafaghi, Shadi; Ghazi, Samrand Fattah; Najafi, Atabak; Jimenez, David; Gupta, Aakriti; Madhavan, Mahesh V; Sethi, Sanjum S; Parikh, Sahil A; Monreal, Manuel; Hadavand, Naser; Hajighasemi, Alireza; Maleki, Majid; Sadeghian, Saeed; Piazza, Gregory; Kirtane, Ajay J; Van Tassell, Benjamin W; Dobesh, Paul P; Stone, Gregg W; Lip, Gregory Y H; Krumholz, Harlan M; Goldhaber, Samuel Z; Bikdeli, Behnood

Source: JAMA; Apr 2021; vol. 325 (no. 16); p. 1620-1630

Publication Date: Apr 2021

Publication Type(s): Research Support, Non-u.s. Gov't Randomized Controlled Trial Multicenter Study Journal Article

PubMedID: 33734299

Available at JAMA - from Unpaywall

Abstract:

Importance: Thrombotic events are commonly reported in critically ill patients with COVID-19. Limited data exist to guide the intensity of antithrombotic prophylaxis.

Objective: To evaluate the effects of intermediate-dose vs standard-dose prophylactic anticoagulation among patients with COVID-19 admitted to the intensive care unit (ICU).

Design, Setting, and Participants: Multicenter randomized trial with a 2 × 2 factorial design performed in 10 academic centers in Iran comparing intermediate-dose vs standard-dose prophylactic anticoagulation (first hypothesis) and statin therapy vs matching placebo (second hypothesis; not reported in this article) among adult patients admitted to the ICU with COVID-19. Patients were recruited between July 29, 2020, and November 19, 2020. The final follow-up date for the 30-day primary outcome was December 19, 2020.InterventionsIntermediate-dose (enoxaparin, 1 mg/kg daily) (n = 276) vs standard prophylactic anticoagulation (enoxaparin, 40 mg daily) (n = 286), with modification according to body weight and creatinine clearance. The assigned treatments were planned to be continued until completion of 30-day follow-up.

Main Outcomes and Measures: The primary efficacy outcome was a composite of venous or arterial thrombosis, treatment with extracorporeal membrane oxygenation, or mortality within 30 days, assessed in randomized patients who met the eligibility criteria and received at least 1 dose of the assigned treatment. Prespecified safety outcomes included major bleeding according to the Bleeding Academic Research Consortium (type 3 or 5 definition), powered for noninferiority (a noninferiority margin of 1.8 based on odds ratio), and severe thrombocytopenia (platelet count .99). Severe thrombocytopenia occurred only in patients assigned to the intermediate-dose group (6 vs 0 patients; risk difference, 2.2% [95% CI, 0.4%-3.8%]; P = .01).

Conclusions and Relevance: Among patients admitted to the ICU with COVID-19, intermediate-dose prophylactic anticoagulation, compared with standard-dose prophylactic anticoagulation, did not result in a significant difference in the primary outcome of a composite of adjudicated venous or arterial thrombosis, treatment with extracorporeal membrane oxygenation, or mortality within 30 days. These results do not support the routine empirical use of intermediate-dose prophylactic anticoagulation in unselected patients admitted to the ICU with COVID-19.Trial RegistrationClinicalTrials.gov Identifier: NCT04486508.

Database: Medline

10. Thrombosis after covid-19 vaccination.

Author(s): Hunter, Paul R

Source: BMJ (Clinical research ed.); Apr 2021; vol. 373 ; p. n958

Publication Date: Apr 2021

Publication Type(s): Editorial

PubMedID: 33853865

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

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

Database: Medline

11. Admission High-Sensitive Cardiac Troponin T Level Increase Is Independently Associated with Higher Mortality in Critically Ill Patients with COVID-19: A Multicenter Study.

Author(s): Larcher, Romaric; Besnard, Noemie; Akouz, Aziz; Rabier, Emmanuelle; Teule, Lauranne; Vandercamere, Thomas; Zozor, Samuel; Amalric, Matthieu; Benomar, Racim; Brunot, Vincent; Corne, Philippe; Barbot, Olivier; Dupuy, Anne-Marie; Cristol, Jean-Paul; Klouche, Kada

Source: Journal of clinical medicine; Apr 2021; vol. 10 (no. 8)

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33924475

Available at Journal of clinical medicine - from Europe PubMed Central - Open Access

Available at Journal of clinical medicine - from ProQuest (Health Research Premium) - NHS Version

Available at Journal of clinical medicine - from Unpaywall

Abstract:

BACKGROUND: In coronavirus disease 2019 (COVID-19) patients, increases in high-sensitive cardiac troponin T (hs-cTnT) have been reported to be associated with worse outcomes. In the critically ill, the prognostic value of hs-cTnT, however, remains to be assessed given that most previous studies have involved a case mix of non- and severely ill COVID-19 patients.

METHODS: We conducted, from March to May 2020, in three French intensive care units (ICUs), a multicenter retrospective cohort study to assess in-hospital mortality predictability of hs-cTnT levels in COVID-19 patients.

RESULTS: 111 laboratory-confirmed COVID-19 patients (68% of male, median age 67 (58-75) years old) were included. At ICU admission, the median Charlson Index, Simplified Acute Physiology Score II, and PaO2/FiO2 were at 3 (2-5), 37 (27-48), and 140 (98-154), respectively, and the median hs-cTnT serum levels were at 16.0 (10.1-31.9) ng/L. Seventy-five patients (68%) were mechanically ventilated, 41 (37%) were treated with norepinephrine, and 17 (15%) underwent renal replacement therapy. In-hospital mortality was 29% (32/111) and was independently associated with lower PaO2/FiO2 and higher hs-cTnT serum levels.

CONCLUSIONS: At ICU admission, besides PaO2/FiO2, hs-cTnT levels may allow early risk stratification and triage in critically ill COVID-19 patients.

Database: Medline

12. Risk stratification of adults with congenital heart disease during the COVID-19 pandemic: insights from a multinational survey among European experts.

Author(s): Ruperti-Repilado, Francisco Javier; Tobler, Daniel; Greutmann, Matthias; Bouchardy, Judith; Ladouceur, Magalie; Dos-Subira, Laura; Gallego, Pastora; Gabriel, Harald; Bouma, Berto; Schwerzmann, Markus; EPOCH

Source: Open heart; Apr 2021; vol. 8 (no. 1)

Publication Date: Apr 2021

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article

PubMedID: 33883228

Abstract:

OBJECTIVE: Adults with congenital heart disease (ACHD) may be at a higher risk of a fatal outcome in case of COVID-19. Current risk stratification among these patients relies on personal experience and extrapolation from patients with acquired heart disease. We aimed to provide an expert view on risk stratification while awaiting results from observational studies.

METHODS: This study was an initiative of the EPOCH (European Collaboration for Prospective Outcome Research in Congenital Heart disease). Among nine European countries (Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain and Switzerland), 24 experts from 23 tertiary ACHD centres participated in the survey. ACHD experts were asked to identify ACHD-specific COVID-19 risk factors from a list of potential outcome predictors and to estimate the risk of adverse COVID-19 outcomes in seven commonly seen patient scenarios.

RESULTS: 82% of participants did not consider all ACHD patients at risk of COVID-19 related complications. There was a consensus on pulmonary arterial hypertension, Fontan physiology and cyanotic heart disease as risk factors for adverse outcomes. Among different ACHD scenarios, a patient with Eisenmenger syndrome was considered to be at the highest risk. There was a marked variability in risk estimation among the other potential outcome predictors and ACHD scenarios.

CONCLUSIONS: Pulmonary arterial hypertension, Fontan palliation and cyanotic heart disease were widely considered as risk factors for poor outcome in COVID-19. However, there was a marked disparity in risk estimation for other clinical scenarios. We are in urgent need of outcome studies in ACHD suffering from COVID-19.

Database: Medline

13. Reintroduction of elective cardiac interventions in the era of COVID-19: the Barts experience.

Author(s): Hamshere, Stephen; Comer, Katrina; Choudhry, Fizzah; Rathod, Krishna; Mills, Gordon; Ferguson, Gordon; Lambourne, Jonathan; Akhtar, Majid; Wragg, Andrew; Ozkor, Mick; Guttmann, Oliver; Mullen, Michael; Baumbach, Andreas; Smith, Elliot; Mathur, Anthony; Jones, Dan

Source: Open heart; Apr 2021; vol. 8 (no. 1)

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33879506

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

Available at Open heart - from HighWire - Free Full Text

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

Available at Open heart - from Unpaywall

Abstract:

BACKGROUND: The response to COVID-19 has required cancellation of all but the most urgent procedures; there is therefore a need for the reintroduction of a safe elective pathway.

METHODS: This was a study of a pilot pathway performed at Barts Heart Centre for the admission of patients requiring elective coronary and structural procedures during the COVID-19 pandemic (April-June 2020). All patients on coronary and structural waiting lists were screened for procedural indications, urgency and adverse features for COVID-19 prognosis and discussed at dedicated multidisciplinary teams. Dedicated admission pathways involving preadmission isolation, additional consent, COVID-19 PCR testing and dedicated clean areas were used.

RESULTS: 143 patients (101 coronary and 42 structural) underwent procedures (coronary angiography, percutaneous coronary intervention, transcatheter aortic valve intervention and MitralClip) during the study period. The average age was 68.2; 74% were male; and over 93% had one or more moderate COVID-19 risk factors. All patients were COVID-19 PCR negative on admission with (8.1%) COVID-19 antibody positive (swab negative). All procedures were performed successfully with low rates of procedural complications (9.8%). At 2-week follow-up, no patients had symptoms or confirmed COVID-19 infection with significant improvements in quality if life and symptoms.

CONCLUSION: We demonstrated that patients undergoing coronary and structural procedures can be safely admitted during the COVID-19 pandemic, with no patients contracting COVID-19 during their admission. Reassuringly, patients reflective of typical practice, that is, those at moderate or higher risk, were treated successfully. This pilot provides important information applicable to other settings, specialties and areas to reintroduce services safely.

Database: Medline

14. Cardiac abnormalities due to multisystem inflammatory syndrome temporally associated with Covid-19 among children: A systematic review and meta-analysis.

Author(s): Haghighi Aski, Behzad; Manafi Anari, Ali; Abolhasan Choobdar, Farhad; Zareh Mahmoudabadi, Ramin; Sakhaei, Maryam

Source: International journal of cardiology. Heart & vasculature; Apr 2021; vol. 33 ; p. 100764

Publication Date: Apr 2021

Publication Type(s): Journal Article Review

PubMedID: 33778151

Available at International journal of cardiology. Heart & vasculature - from Europe PubMed Central - Open Access

Available at International journal of cardiology. Heart & vasculature - from Unpaywall

Abstract:

Background: Cardiac defects due to multisystem inflammatory syndrome in children (MIS-C) have been abundantly reported leading high morbidity among children affected by Covid-19. We aimed to systematically assess the incidence of such cardiac abnormalities due to MIS-C in children suffering Covid-19.

Methods: The manuscript databases including Medline, Web of knowledge, Google scholar, Scopus, and Cochrane were deeply searched by the two blinded investigators for all eligible studies based on the relevant keywords. The risk of bias for each study was assessed according to QUADAS-2 tool. Statistical analysis was performed using the Comprehensive Meta Analysis (CMA) software.

Results: In final, 21 articles (including 916 children) were eligible for the final analysis that all yielded good quality and none of the citation was determined to have high risk of bias. Considering studies focusing different cardiac abnormalities related to MIS-C yielded a pooled prevalence of 38.0% for significant left ventricular dysfunction, 20.0% for coronary aneurism or dilatation, 28.1% for ECG abnormalities or cardiac arrhythmias, 33.3% for raised serum troponin level and 43.6% for raised proBNP/BNP level.

Conclusion: Although cardiac abnormalities among children suffering Covid-19 are uncommon, in the context of the MIS-C can be common and therefore potentially serious and life threatening.

Database: Medline

15. COVID-19 and changes in activity and treatment of ST elevation MI from a UK cardiac centre.

Author(s): Chen, Yang; Rathod, Krishnaraj S; Hamshere, Stephen; Choudry, Fizzah; Akhtar, Mohammed M; Curtis, Miles; Amersey, Rajiv; Guttmann, Oliver; O'Mahony, Constantinos; Jain, Ajay; Wragg, Andrew; Baumbach, Andreas; Mathur, Anthony; Jones, Daniel A

Source: International journal of cardiology. Heart & vasculature; Apr 2021; vol. 33 ; p. 100736

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33644297

Available at International journal of cardiology. Heart & vasculature - from Europe PubMed Central - Open Access

Available at International journal of cardiology. Heart & vasculature - from Unpaywall

Abstract:

Background: The international healthcare response to COVID-19 has been driven by epidemiological data related to case numbers and case fatality rate. Second order effects have been less well studied. This study aimed to characterise the changes in emergency activity of a high-volume cardiac catheterisation centre and to cautiously model any excess indirect morbidity and mortality.

Method: Retrospective cohort study of patients admitted with acute coronary syndrome fulfilling criteria for the heart attack centre (HAC) pathway at St. Bartholomew's hospital, UK. Electronic data were collected for the study period March 16th - May 16th 2020 inclusive and stored on a dedicated research server. Standard governance procedures were observed in line with the British Cardiovascular Intervention Society audit.

Results: There was a 28% fall in the number of primary percutaneous coronary interventions (PCIs) for ST elevation myocardial infarction (STEMI) during the study period (111 vs. 154) and 36% fewer activations of the HAC pathway (312 vs. 485), compared to the same time period averaged across three preceding years. In the context of 'missing STEMIs', the excess harm attributable to COVID-19 could result in an absolute increase of 1.3% in mortality, 1.9% in nonfatal MI and 4.5% in recurrent ischemia.

Conclusions: The emergency activity of a high-volume PCI centre was significantly reduced for STEMI during the peak of the first wave of COVID-19. Our data can be used as an exemplar to help future modelling within cardiovascular workstreams to refine aggregate estimates of the impact of COVID-19 and inform targeted policy action.

Database: Medline

16. How has technology been used to deliver cardiac rehabilitation during the COVID-19 pandemic? An international cross-sectional survey of healthcare professionals conducted by the BACPR.

Author(s): O'Doherty, Alasdair F; Humphreys, Helen; Dawkes, Susan; Cowie, Aynsley; Hinton, Sally; Brubaker, Peter H; Butler, Tom; Nichols, Simon

Source: BMJ open; Apr 2021; vol. 11 (no. 4); p. e046051

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33879492

Available at BMJ open - from BMJ Journals

Available at BMJ open - from Europe PubMed Central - Open Access

Available at BMJ open - from HighWire - Free Full Text

Available at BMJ open - from ProQuest (Health Research Premium) - NHS Version

Available at BMJ open - from Unpaywall

Abstract:

OBJECTIVE: To investigate whether exercise-based cardiac rehabilitation services continued during the COVID-19 pandemic and how technology has been used to deliver home-based cardiac rehabilitation.

DESIGN: A mixed methods survey including questions about exercise-based cardiac rehabilitation service provision, programme diversity, patient complexity, technology use, barriers to using technology, and safety.

SETTING: International survey of exercise-based cardiac rehabilitation programmes.

PARTICIPANTS: Healthcare professionals working in exercise-based cardiac rehabilitation programmes worldwide.

MAIN OUTCOME MEASURES: The proportion of programmes that continued providing exercise-based cardiac rehabilitation and which technologies had been used to deliver home-based cardiac rehabilitation.

RESULTS: Three hundred and thirty eligible responses were received; 89.7% were from the UK. Approximately half (49.3%) of respondents reported that cardiac rehabilitation programmes were suspended due to COVID-19. Of programmes that continued, 25.8% used technology before the COVID-19 pandemic. Programmes typically started using technology within 19 days of COVID-19 becoming a pandemic. 48.8% did not provide cardiac rehabilitation to high-risk patients, telephone was most commonly used to deliver cardiac rehabilitation, and some centres used sophisticated technology such as teleconferencing.

CONCLUSIONS: The rapid adoption of technology into standard practice is promising and may improve access to, and participation in, exercise-based cardiac rehabilitation beyond COVID-19. However, the exclusion of certain patient groups and programme suspension could worsen clinical symptoms and well-being, and increase hospital admissions. Refinement of current practices, with a focus on improving inclusivity and addressing safety concerns around exercise support to high-risk patients, may be needed.

Database: Medline

17. Incidence of emergency calls and out-of-hospital cardiac arrest deaths during the COVID-19 pandemic: findings from a cross-sectional study in a UK ambulance service.

Author(s): Charlton, Karl; Limmer, Matthew; Moore, Hayley

Source: Emergency medicine journal : EMJ; Apr 2021

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33832923

Available at Emergency medicine journal : EMJ - from BMJ Journals

Available at Emergency medicine journal : EMJ - from Unpaywall

Abstract:

BACKGROUND: In response to the COVID-19 pandemic, a national lockdown was introduced on 23 March 2020. In the following weeks, emergency departments in the UK reported a reduction in attendances. We aimed to explore the incidence of emergency calls across North East England, as well as the number of out-of-hospital cardiac arrest (OHCA) deaths.

METHODS: Data were collected for all patients who contacted North East Ambulance Service between 4 March 2019-2 June 2019 and 2 March 2020-31 May 2020 suffering stroke, ST elevation myocardial infarction, allergy, asthma, chronic obstructive pulmonary disease, falls, intoxication, seizure, sepsis, acute coronary syndrome and OHCA.

RESULTS: There were a reduction in incidence of calls, excluding OHCA, resulting in ambulance activation during the pandemic compared with same period in 2019, 16 743 versus 19 639, respectively (-14.74%). The decline in calls was partially reversed by the end of May 2020. Incidence of OHCA at the time of the national lockdown had increased by 13.79% with a peak increase of 73.56% in the second week in April 2020. OHCA deaths peaked in the first 2 weeks in April 2020, 95.65% and 90.07%, respectively, but by the end May 2020, incidence of OHCA and OHCA deaths had returned to prelockdown levels.

CONCLUSION: Incidence of emergency calls were reduced during the pandemic compared with 2019. There was a rise in incidence of OHCA and OHCA deaths during the same period; however, these changes appear transient. Further research is required to understand patient behaviour towards seeking help during the pandemic and the long-term consequences of not doing so.

Database: Medline

18. Impact of COVID-19 on inpatient referral of acute heart failure: a single-centre experience from the south-west of the UK.

Author(s): Doolub, Gemina; Wong, Chih; Hewitson, Lynsey; Mohamed, Ahmed; Todd, Fraser; Gogola, Laisha; Skyrme-Jones, Andrew; Aziz, Shahid; Sammut, Eva; Dastidar, Amardeep

Source: ESC heart failure; Apr 2021; vol. 8 (no. 2); p. 1691-1695

Publication Date: Apr 2021

Publication Type(s): Journal Article Observational Study

PubMedID: 33410281

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

Available at ESC heart failure - from Unpaywall

Abstract:

AIMS: Healthcare services worldwide have been significantly impacted by the COVID-19 pandemic. Recent reports have shown a decline in hospitalization for emergency cardiac conditions. The impact of the COVID-19 pandemic on hospitalization and particularly mortality due to acute heart failure has not been thoroughly described.

METHODS AND RESULTS: In this single-centre observational study, we examined referrals to the acute heart failure team over a period of 16 weeks (7 January to 27 April 2020) spanning the ongoing COVID-19 pandemic; 283 patients referred to our acute heart failure services over the study period were included on the basis of typical symptoms, raised BNP, and echocardiogram. There was a substantial but statistically non-significant drop in referrals with 164 referred in the 8 weeks before the first UK death due to COVID-19 on 2 March 2020 (BC), compared with 119 referred after (AC) in the subsequent 8 weeks, representing a 27% reduction overall (P = 0.06). The 30 day case

fatality rate was increased from 11% in the BC group compared with 21% in the AC group (risk ratio = 1.9, 95% confidence interval 1.09-3.3). Age, gender, length of stay, left ventricular ejection fraction, and N-terminal pro-brain natriuretic peptide were similar between the groups. Admission creatinine, age, and AC cohort status were found to be univariable predictors of mortality. On multivariate Cox regression analysis, only age (hazard ratio 1.04, P = 0.03) and AC cohort status (hazard ratio 2.1, P = 0.017) remained significant predictors of mortality. On sensitivity analysis, this increased mortality was driven by COVID-19 positive status.

CONCLUSIONS: There was a reduction in referral of patients with acute heart failure with significant increase in mortality in the 8 weeks following the first reported UK death due to COVID-19. The observation of increased mortality does not appear related to a change in population in terms of demographics, left ventricular ejection fraction, or N-terminal pro-brain natriuretic peptide. The observed increased mortality appears to be related to the coexistence of COVID19 infection with acute heart failure. The study highlights the need for widespread preventative and shielding measures particularly in this group of patients especially in the light of the second wave. Longer follow-up with inclusion of data from other centres and community heart failure services will be needed.

Database: Medline

19. The impact of COVID-19 on the management of heart failure: a United Kingdom patient questionnaire study.

Author(s): Sankaranarayanan, Rajiv; Hartshorne-Evans, Nick; Redmond-Lyon, Sam; Wilson, Jill; Essa, Hani; Gray, Alastair; Clayton, Louise; Barton, Carys; Ahmed, Fozia Z; Cunnington, Colin; Satchithananda, Duwarakan K; Murphy, Clare L

Source: ESC heart failure; Apr 2021; vol. 8 (no. 2); p. 1324-1332

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33463044

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

Available at ESC heart failure - from Unpaywall

Abstract:

AIMS: The coronavirus disease 2019 (COVID-19) pandemic has created significant challenges to healthcare globally, necessitating rapid restructuring of service provision. This questionnaire survey was conducted amongst adult heart failure (HF) patients in the United Kingdom (UK), to understand the impact of COVID-19 upon HF services.

METHODS AND RESULTS: The survey was conducted by the Pumping Marvellous Foundation, a UK HF patient charity. 'Survey Monkey' was used to disseminate the questionnaire in the Pumping Marvellous Foundation 's online patient group and in 10 UK hospitals (outpatient hospital and community HF clinics). There were 1050 responses collected (693/1050-66% women); 55% (579/1050) were aged over 60 years. Anxiety level was significantly higher regarding COVID-19 (mean 7 ± 2.5 on anxiety scale of 0 to 10) compared with anxiety regarding HF (6.1 ± 2.4; P 60 years; P = 0.005) and COVID-19 (7.3 ± 2.3 vs. 6.7 ± 2.6 those aged >60 years; P < 0.001). Sixty-five per cent of respondents (686/1050) reported disruption to HF appointments (cancellation or postponement) during the lockdown period. Thirty-seven per cent reported disruption to medication prescription services, and Thirty-four per cent reported inability to access their HF teams promptly. Thirty-two per cent expressed reluctance to attend hospital (25% stated they would only attend hospital if there was no alternative, and 7% stated that they would not attend hospital at all).

CONCLUSIONS: The COVID-19 pandemic has caused significant anxiety amongst HF patients regarding COVID-19 and HF. Cancellation or postponement of scheduled clinic appointments, investigations, procedures, prescription, and monitoring services were implicated as sources of anxiety.

Database: Medline

20. Researchers Investigate What COVID-19 Does to the Heart.

Author(s): Abbasi, Jennifer

Source: JAMA; Mar 2021; vol. 325 (no. 9); p. 808-811

Publication Date: Mar 2021

Publication Type(s): News

PubMedID: 33566089

Available at JAMA - from EBSCO (MEDLINE Complete)

Available at JAMA - from Unpaywall

Database: Medline

21. Rethinking heart failure care and health technologies from early COVID-19 experiences - A narrative review.

Author(s): Satici, Sakine; Iyngkaran, Pupalan; Andrew, Sharon; Patil, Arun; Bidargaddi, Niranjan; Battersby, Malcolm; De Courten, Maximilian

Source: Reviews in cardiovascular medicine; Mar 2021; vol. 22 (no. 1); p. 105-114

Publication Date: Mar 2021

Publication Type(s): Journal Article Review

PubMedID: 33792252

Available at Reviews in cardiovascular medicine - from EBSCO (MEDLINE Complete)

Available at Reviews in cardiovascular medicine - from Unpaywall

Abstract: Heart Failure (HF), a common chronic disease, requires multidisciplinary care to optimise outcomes. The COVID-19 pandemic, its impact on people's movement and access to health services, introduced severe challenges to chronic disease management. The era that will evolve after this pandemic is likely to provide uncertainty and service model disruptions. HF treatment is based on guidelines derived from randomised clinical trial evidence. Translational shortfalls from trials into practice have been overcome with post-trial service improvement studies like OPTIMIZE-HF where a team using a process of care can translate evidence to the general population. However, gaps remain for vulnerable populations e.g. those with more severe HF, with multiple comorbid conditions, and certain demographic groups and/or residents in remote locations. Health technology has come with great promise, to fill some of these gaps. The COVID-19 pandemic provides an opportunity to observe, from Australian healthcare lens, HF management outside the traditional model of care. This narrative review describes relatively recent events with health technology as a solution to improve on service gaps.

Database: Medline

22. Exploring the impact of the COVID-19 pandemic on provision of cardiology services: a scoping review.

Author(s): Yasmin, Farah; Shujauddin, Syed Muhammad; Naeem, Aisha; Jabeen, Adina; Shah, Syed Muhammad Ismail; Ochani, Rohan Kumar; Mohiuddin, Osama; Khan, Anosh Aslam; Jalees, Sumeen; Razzack, Aminah Abdul; Salman, Shiza; Khan, Shuja Abdul Karim; Mustafa, Ahmad; Lak, Hassan Mehmood

Source: Reviews in cardiovascular medicine; Mar 2021; vol. 22 (no. 1); p. 83-95

Publication Date: Mar 2021

Publication Type(s): Journal Article Review

PubMedID: 33792250

Available at Reviews in cardiovascular medicine - from EBSCO (MEDLINE Complete)

Available at Reviews in cardiovascular medicine - from Unpaywall

Abstract: The coronavirus disease-19 (COVID-19) pandemic has forced hospitals to prioritize COVID-19 patients, restrict resources, and cancel all non-urgent elective cardiac procedures. Clinical visits have only been facilitated for emergency purposes. Fewer patients have been admitted to the hospital for both ST-segment elevation myocardial infarctions (STEMI) and non-ST segment elevation myocardial infarctions (NSTEMI) and a profound decrease in heart

failure services has been reported. A similar reduction in the patient presentation is seen for ischemic heart disease, decompensated heart failure, and endocarditis. Cardiovascular services, including catheterization, primary percutaneous coronary intervention (PPCI), cardiac investigations such as electrocardiograms (ECGs), exercise tolerance test (ETT), dobutamine stress test, computed tomography (CT) angiography, transesophageal echocardiography (TOE) have been reported to have declined and performed on a priority basis. The long-term implications of this decline have been discussed with major concerns of severe cardiac complications and vulnerabilities in cardiac patients. The pandemic has also had psychological impacts on patients causing them to avoid seeking medical help. This review discusses the effects of the COVID-19 pandemic on the provision of various cardiology services and aims to provide strategies to restore cardiovascular services including structural changes in the hospital to make up for the reduced staff personnel, the use of personal protective equipment in healthcare workers, and provides alternatives for high-risk cardiac imaging, cardiac interventions, and procedures. Implementation of the triage system, risk assessment scores, and telemedicine services in patients and their adaptation to the cardiovascular department have been discussed.

Database: Medline

23. Vascular Abnormalities Detected with Chest CT in COVID-19: Spectrum, Association with Parenchymal Lesions, Cardiac Changes, and Correlation with Clinical Severity (COVID-CAVA Study).

Author(s): Qanadli, Salah D; Sauter, Alexander W; Alkadhi, Hatem; Christe, Andreas; Poletti, Pierre-Alexandre; Ebner, Lukas; Rotzinger, David C

Source: Diagnostics (Basel, Switzerland); Mar 2021; vol. 11 (no. 4)

Publication Date: Mar 2021

Publication Type(s): Journal Article

PubMedID: 33805443

Available at Diagnostics (Basel, Switzerland) - from Europe PubMed Central - Open Access

Available at Diagnostics (Basel, Switzerland) - from Unpaywall

Abstract: Although vascular abnormalities are thought to affect coronavirus disease 2019 (COVID-19) patients' outcomes, they have not been thoroughly characterized in large series of unselected patients. The Swiss national registry coronavirus-associated vascular abnormalities (CAVA) is a multicentric cohort of patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection who underwent a clinically indicated chest computed tomography (CT) aiming to assess the prevalence, severity, distribution, and prognostic value of vascular and non-vascular-related CT findings. Clinical outcomes, stratified as outpatient treatment, inpatient without mechanical ventilation, inpatient with mechanical ventilation, or death, will be correlated with CT and biological markers. The main objective is to assess the prevalence of cardiovascular abnormalities-including pulmonary embolism (PE), cardiac morphology, and vascular congestion. Secondary objectives include the predictive value of cardiovascular abnormalities in terms of disease severity and fatal outcome and the association of lung inflammation with vascular abnormalities at the segmental level. New quantitative approaches derived from CT imaging are developed and evaluated in this study. Patients with and without vascular abnormalities will be compared, which is supposed to provide insights into the prognostic role and potential impact of such signs on treatment strategy. Results are expected to enable the development of an integrative score combining both clinical data and imaging findings to predict outcomes.

Database: Medline

24. Cardiac Troponin I Levels in Hospitalized COVID-19 Patients as a Predictor of Severity and Outcome: A Retrospective Cohort Study.

Author(s): Ali, Jabar; Khan, Fahad R; Ullah, Rizwan; Hassan, Zair; Khattak, Safi; Lakhta, Gul; Zad Gul, Nooh; Ullah, Rahman

Source: Cureus; Mar 2021; vol. 13 (no. 3); p. e14061

Publication Date: Mar 2021

Publication Type(s): Journal Article

PubMedID: 33898144

Available at Cureus - from Europe PubMed Central - Open Access

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

Available at Cureus - from Unpaywall

Abstract:

Introduction: The COVID-19 (coronavirus disease) has affected millions of people, wreaking havoc worldwide. World Health Organization (WHO) labelled this disease as a serious threat to public health since its rapid spread from Wuhan, China. The respiratory manifestations of COVID-19 are common, but myocardium involvement causing myocardial injury and rise in cardiac markers is much less discussed.

Materials and methods: We conducted this retrospective cohort study from 1st April 2020 to 1st October 2020. Data was collected from the Hospital Management and Information System (HMIS) based on inclusion criteria. We used the Cox proportional hazard regression model for survival analysis, estimated the probability curves of survival using the Kaplan-Meier method, and contrasted it with the log-rank test.

Results: Among the 466 patients, 280 (69%) were male; the rest were female. The majority were both hypertensive and diabetic, and one-third had a myocardial injury on arrival. The most frequent symptoms in more than half of the patients (51.90%) included a combination of fever, dry cough, and shortness of breath. Out of 466 patients, 266 patients were discharged, and 200 did not survive. In our study, 168 (36.05%) patients had a cardiac injury; among them, 38 (22.61%) were in the discharge group, and the remaining 130 (77.39%) patients were in the nonsurvivor group. Our study results showed that the mortality rate was higher in patients with high cardiac troponin I (cTnI) levels (hazard ratio [HR] 3.61) on admission.

Conclusion: Our result concluded that measuring cTnI levels on presentation could help predict the severity and outcome in COVID-19 patients. It will allow physicians to triage patients and decrease mortality.

Database: Medline

25. Cardiac operations and interventions during the COVID-19 pandemic: a nationwide perspective.

Author(s): Leyva, Francisco; Zegard, Abbasin; Okafor, Osita; Stegemann, Berthold; Ludman, Peter; Qiu, Tian

Source: Europace : European pacing, arrhythmias, and cardiac electrophysiology : journal of the working groups on cardiac pacing, arrhythmias, and cardiac cellular electrophysiology of the European Society of Cardiology; Mar 2021

Publication Date: Mar 2021

Publication Type(s): Journal Article

PubMedID: 33778881

Abstract:

AIMS: The COVID-19 pandemic has led to a decline in hospitalizations for non-COVID-19-related conditions. We explored the impact of the COVID-19 pandemic on cardiac operations and interventions undertaken in England.

METHODS AND RESULTS: An administrative database covering hospital activity for England, the Health Episodes Statistics, was used to assess a total of 286 697 hospitalizations for cardiac operations and interventions, as well as 227 257 hospitalizations for myocardial infarction (MI) and 453 799 for heart failure (HF) from 7 January 2019 to 26 July 2020. Over the 3 months of 'lockdown', total numbers and mean reductions in weekly rates [n (-%)], compared with the same time period in 2019, were: coronary artery bypass grafting [-2507 (-64%)]; percutaneous coronary intervention [-5245 (-28%)]; surgical [-1324 (-41%)] and transcatheter [-284 (-21%)] aortic valve replacement; mitral valve replacement; implantation of pacemakers [-6450 (-44%)], cardiac resynchronization therapy with [-356 (-42%)] or without [-491 (-46%)] defibrillation devices, and implantable cardioverter-defibrillators [-501 (-45%)]; atrial fibrillation ablation [-1902 (-83%)], and other ablations [-1712 (-64%)] (all P < 0.001). Over this period, there were 21

038 fewer procedures than in the reference period in 2019 (P < 0.001). These changes paralleled reductions in hospitalizations for MI [-10 794 (-27%)] and HF [-63 058 (-28%)] (both P < 0.001).

CONCLUSIONS: The COVID-19 pandemic has led to substantial reductions in the number of cardiac operations and interventions undertaken. An alternative strategy for healthcare delivery to patients with cardiac conditions during the COVID-19 pandemic is urgently needed.

Database: Medline

26. Cardiac surgery outcome during the COVID-19 pandemic: a retrospective review of the early experience in nine UK centres.

Author(s): Sanders, Julie; Akowuah, Enoch; Cooper, Jackie; Kirmani, Bilal H; Kanani, Mazyar; Acharya, Metesh; Jeganathan, Reuben; Krasopoulos, George; Ngaage, Dumbor; Deglurkar, Indu; Yiu, Patrick; Kendall, Simon; Oo, Aung Ye

Source: Journal of cardiothoracic surgery; Mar 2021; vol. 16 (no. 1); p. 43

Publication Date: Mar 2021

Publication Type(s): Multicenter Study Journal Article Observational Study

PubMedID: 33752706

Available at Journal of cardiothoracic surgery - from BioMed Central

Available at Journal of cardiothoracic surgery - from Europe PubMed Central - Open Access

Available at Journal of cardiothoracic surgery - from ProQuest (Health Research Premium) - NHS Version

Available at Journal of cardiothoracic surgery - from EBSCO (MEDLINE Complete)

Available at Journal of cardiothoracic surgery - from Unpaywall

Abstract:

BACKGROUND: Early studies conclude patients with Covid-19 have a high risk of death, but no studies specifically explore cardiac surgery outcome. We investigate UK cardiac surgery outcomes during the early phase of the Covid-19 pandemic.

METHODS: This retrospective observational study included all adult patients undergoing cardiac surgery between 1st March and 30th April 2020 in nine UK centres. Data was obtained and linked locally from the National Institute for Cardiovascular Outcomes Research Adult Cardiac Surgery database, the Intensive Care National Audit and Research Centre database and local electronic systems. The anonymised datasets were analysed by the lead centre. Statistical analysis included descriptive statistics, propensity score matching (PSM), conditional logistic regression and hierarchical quantile regression.

RESULTS: Of 755 included individuals, 53 (7.0%) had Covid-19. Comparing those with and without Covid-19, those with Covid-19 had increased mortality (24.5% v 3.5%, p < 0.0001) and longer post-operative stay (11 days v 6 days, p = 0.001), both of which remained significant after PSM. Patients with a pre-operative Covid-19 diagnosis recovered in a similar way to non-Covid-19 patients. However, those with a post-operative Covid-19 diagnosis remained in hospital for an additional 5 days (12 days v 7 days, p = 0.024) and had a considerably higher mortality rate compared to those with a pre-operative diagnosis (37.1% v 0.0%, p = 0.005).

CONCLUSIONS: To mitigate against the risks of Covid-19, particularly the post-operative burden, robust and effective pre-surgery diagnosis protocols alongside effective strategies to maintain a Covid-19 free environment are needed. Dedicated cardiac surgery hubs could be valuable in achieving safe and continual delivery of cardiac surgery.

Database: Medline

27. Out-of-Hospital Cardiac Arrest in London during the COVID-19 pandemic.

Author(s): Fothergill, Rachael T; Smith, Adam L; Wrigley, Fenella; Perkins, Gavin D

Source: Resuscitation plus; Mar 2021; vol. 5 ; p. 100066

Publication Date: Mar 2021

Publication Type(s): Journal Article

PubMedID: 33521706

Available at Resuscitation plus - from Unpaywall

Abstract:

Aim: There is an emerging potential link between the COVID-19 pandemic and incidence and outcomes from out-of-hospital cardiac arrest (OHCA). We aimed to describe the incidence, characteristics and outcomes from OHCA in London, UK during the first wave of the pandemic.

Methods: We examined data for all OHCA patients attended by the London Ambulance Service from 1st March to 30th April 2020 and compared our findings to the previous year. We also compared OHCA characteristics and short-term outcomes for those suspected or confirmed to have COVID-19 with those who were not. Additionally, we investigated the relationship between daily COVID-19 cases and OHCA incidents.

Results: We observed an 81% increase in OHCAs during the pandemic, and a strong correlation between the daily number of COVID-19 cases and OHCA incidents ($r = 0.828$, $p < 0.001$). We report an increase in OHCA occurring in a private location (92.9% vs 85.5%, $p < 0.001$) and an increased bystander CPR (63.3% vs 52.6%, $p < 0.001$) during the pandemic, as well as fewer resuscitation attempts (36.4% vs 39.6%, $p = 0.03$) and longer EMS response times (9.3 vs 7.2 min, $p < 0.001$). Survival at 30 days post-arrest was poorer during the pandemic (4.4% vs 10.6%, $p < 0.001$) and amongst patients where COVID-19 was considered likely (1.0% vs 6.3%, $p < 0.001$).

Conclusions: During the first wave of the COVID-19 pandemic in London, we saw a dramatic rise in the incidence of OHCA, accompanied by a significant reduction in survival. The pattern of increased incidence and mortality closely reflected the rise in confirmed COVID-19 infections in the city.

Database: Medline

28. Early initiation of prophylactic anticoagulation for prevention of coronavirus disease 2019 mortality in patients admitted to hospital in the United States: cohort study.

Author(s): Rentsch, Christopher T; Beckman, Joshua A; Tomlinson, Laurie; Gellad, Walid F; Alcorn, Charles; Kidwai-Khan, Farah; Skanderson, Melissa; Brittain, Evan; King, Joseph T; Ho, Yuk-Lam; Eden, Svetlana; Kundu, Suman; Lann, Michael F; Greevy, Robert A; Ho, P Michael; Heidenreich, Paul A; Jacobson, Daniel A; Douglas, Ian J; Tate, Janet P; Evans, Stephen J W; Atkins, David; Justice, Amy C; Freiberg, Matthew S

Source: BMJ (Clinical research ed.); Feb 2021; vol. 372 ; p. n311

Publication Date: Feb 2021

Publication Type(s): Research Support, Non-u.s. Gov't Research Support, N.i.h., Extramural Research Support, U.s. Gov't, Non-p.h.s. Journal Article Observational Study

PubMedID: 33574135

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

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

Abstract:

OBJECTIVE: To evaluate whether early initiation of prophylactic anticoagulation compared with no anticoagulation was associated with decreased risk of death among patients admitted to hospital with coronavirus disease 2019 (covid-19) in the United States.

DESIGN: Observational cohort study.

SETTING: Nationwide cohort of patients receiving care in the Department of Veterans Affairs, a large integrated national healthcare system.

PARTICIPANTS: All 4297 patients admitted to hospital from 1 March to 31 July 2020 with laboratory confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and without a history of anticoagulation.

MAIN OUTCOME MEASURES: The main outcome was 30 day mortality. Secondary outcomes were inpatient mortality, initiating therapeutic anticoagulation (a proxy for clinical deterioration, including thromboembolic events), and bleeding that required transfusion.

RESULTS: Of 4297 patients admitted to hospital with covid-19, 3627 (84.4%) received prophylactic anticoagulation within 24 hours of admission. More than 99% (n=3600) of treated patients received subcutaneous heparin or enoxaparin. 622 deaths occurred within 30 days of hospital admission, 513 among those who received prophylactic anticoagulation. Most deaths (510/622, 82%) occurred during hospital stay. Using inverse probability of treatment weighted analyses, the cumulative incidence of mortality at 30 days was 14.3% (95% confidence interval 13.1% to 15.5%) among those who received prophylactic anticoagulation and 18.7% (15.1% to 22.9%) among those who did not. Compared with patients who did not receive prophylactic anticoagulation, those who did had a 27% decreased risk for 30 day mortality (hazard ratio 0.73, 95% confidence interval 0.66 to 0.81). Similar associations were found for inpatient mortality and initiation of therapeutic anticoagulation. Receipt of prophylactic anticoagulation was not associated with increased risk of bleeding that required transfusion (hazard ratio 0.87, 0.71 to 1.05). Quantitative bias analysis showed that results were robust to unmeasured confounding (e-value lower 95% confidence interval 1.77 for 30 day mortality). Results persisted in several sensitivity analyses.

CONCLUSIONS: Early initiation of prophylactic anticoagulation compared with no anticoagulation among patients admitted to hospital with covid-19 was associated with a decreased risk of 30 day mortality and no increased risk of serious bleeding events. These findings provide strong real world evidence to support guidelines recommending the use of prophylactic anticoagulation as initial treatment for patients with covid-19 on hospital admission.

Database: Medline

29. Autoantibodies May Drive COVID-19 Blood Clots.

Author(s): Hampton, Tracy

Source: JAMA; Feb 2021; vol. 325 (no. 5); p. 425

Publication Date: Feb 2021

Publication Type(s): News

PubMedID: 33528515

Available at JAMA - from EBSCO (MEDLINE Complete)

Available at JAMA - from Unpaywall

Database: Medline

30. How the COVID-19 pandemic changed treatment of severe aortic stenosis: a single cardiac center experience.

Author(s): Perek, Bartlomiej; Olasinska-Wisniewska, Anna; Misterski, Marcin; Puslecki, Mateusz; Grygier, Marek; Buczkowski, Piotr; Lesiak, Maciej; Stankowski, Tomasz; Szarpak, Lukasz; Ruetzler, Kurt; Turan, Oguz; Jemielity, Marek

Source: Journal of thoracic disease; Feb 2021; vol. 13 (no. 2); p. 906-917

Publication Date: Feb 2021

Publication Type(s): Journal Article

PubMedID: 33717563

Available at Journal of thoracic disease - from Europe PubMed Central - Open Access

Available at Journal of thoracic disease - from Unpaywall

Abstract:

Background: Currently, two effective therapeutic options for severe aortic stenosis (AS) are available, one catheter-based [transcatheter aortic valve implantation (TAVI)], the other open surgical approach [surgical aortic valve replacement (SAVR)]. The COVID-19 pandemic has limited the availability of medical procedures. The purpose of this

cross-sectional study was to assess if this pandemic had any impact on the treatment strategy of severe AS in a single cardiac center.

Methods: This study involved AS patients treated in 3-month periods (February through April) over 3 consecutive years 2018, 2019 [defined as COV(-) group] and 2020 [COV(+)]. We assessed if there were any differences regarding patients' clinical profile, applied therapeutic method, procedure complexity and early clinical outcomes.

Results: In the years 2018 through 2019, approximately 50% of AS patients were treated classically (SAVR) while in 2020 this rate dropped to 34%. The preoperative clinical characteristic of TAVI subjects was comparable irrespective of the year. Regarding SAVR, more patients in COV(+) underwent urgent and more complex procedures. More of them were found in NYHA class III or IV, and had lower left ventricular ejection fraction (LVEF) (51.9%±14.4% vs. 58.3%±8.1%; P=0.021) than in COV(-) individuals. During the pandemic, a change in applied therapeutic methods and differences in patients' clinical profile did not have an unfavorable impact on in-hospital mortality (2.0% before vs. 3.6% during pandemic) and morbidity. Of note, intubation time and in-hospital stay were significantly shorter (P<0.05) in 2020 (4.2 hours and 7.5 days) than in the previous years (7.5 hours and 9.0 days, respectively).

Conclusions: The coronavirus pandemic has changed substantially the management of severe AS. The shift into less invasive treatment method of AS patients resulted in shortening of in-hospital stay without compromise of short-term outcomes.

Database: Medline

31. Remote monitoring for heart failure management during COVID-19 pandemic.

Author(s): Bertagnin, Enrico; Greco, Antonio; Bottaro, Giuseppe; Zappulla, Paolo; Romanazzi, Imma; Russo, Maria Daniela; Lo Presti, Marco; Valenti, Noemi; Sollano, Giuseppe; Calvi, Valeria

Source: International journal of cardiology. Heart & vasculature; Feb 2021; vol. 32 ; p. 100724

Publication Date: Feb 2021

Publication Type(s): Journal Article

PubMedID: 33532544

Available at International journal of cardiology. Heart & vasculature - from Europe PubMed Central - Open Access

Available at International journal of cardiology. Heart & vasculature - from Unpaywall

Abstract:

Background: COVID-19 pandemic impacted on heart failure patients' lifestyle and quality of life, affecting both physical activity levels and state of health.

Methods: Demographic data and device records were extracted for patients with heart failure in the 16 weeks at the turn of lockdown during pandemic. To explore the variability across the lockdown period, a week-to-week analysis was performed. Patients were interviewed to investigate physical activity and psychological insights. The primary endpoint was the variation in physical activity at the turn of lockdown.

Results: At our facility, 2225 patients implanted with a cardiac device were screened and data were collected for 211 patients fulfilling the inclusion criteria. Patients' physical activity significantly decreased in the lockdown period compared with the control period (active time per day 8.0% vs. 10.8%; relative reduction [RRR] 25.9%; p < 0.0001). A small decrease was noted for mean heart rate (70.1 vs. 71.7 beats per minute [bpm]; RRR 2.2%; p < 0.0001), while thoracic impedance slightly increased (82.2 vs. 82.7 ohm; RRR 0.6%; p = 0.001). Patients' physical activity decreased from week 7 to week 11 (10.9% vs. 6.9%; RRR 36.7%; P < 0.0001) with an increase between week 11 and week 16 (6.9% vs. 8.5%; RRR 18.8%; P < 0.0001). Patients' perceptions about physical activity showed a very low correlation with remote monitoring-assessed physical activity levels (r2 = 0.035, p = 0.039).

Conclusions: Telemedicine and remote monitoring can explore the impact of COVID-19 pandemic on vital signs and physical activity levels of heart failure patients, playing a crucial role in the prediction of heart failure worsening during circumstances discouraging outpatient visits.

Database: Medline

32. The assessment of high sensitivity cardiac troponin in patients with COVID-19: A multicenter study.

Author(s): Perrone, Marco Alfonso; Spolaore, Federica; Ammirabile, Massimiliano; Romeo, Francesco; Caciagli, Patrizio; Ceriotti, Ferruccio; Bernardini, Sergio

Source: International journal of cardiology. Heart & vasculature; Feb 2021; vol. 32 ; p. 100715

Publication Date: Feb 2021

Publication Type(s): Journal Article

PubMedID: 33457490

Available at International journal of cardiology. Heart & vasculature - from Europe PubMed Central - Open Access

Available at International journal of cardiology. Heart & vasculature - from Unpaywall

Abstract:

Background: Recent studies have shown that patients diagnosed with coronarivus disease 2019 (COVID-19) and also with previous cardiovascular diseases have a higher mortality due to worsening heart disease. At the same time, patients without previous cardiovascular disease may also have cardiac complications. The aim of this multicenter study was to assess high sensitivity cardiac troponin T (hs-cTnT) in patients with COVID-19 and to evaluate the incidence of myocardial injury.

Methods: In this multicenter study we enrolled 543 patients, 57.8% males, median age 63 years (range 18-99) from three selected hospitals: University Hospital Tor Vergata in Rome, Fondazione IRCCS Ca 'Granda Ospedale Maggiore Policlinico, in Milan, S Chiara Hospital in Trento. We measured hs-cTnT in all patients to assess myocardial injury and correlations with patient's age, symptoms and disease course.

Results: The data showed that, among the 543 patients studied, 257 patients (47.3%) had hs-cTnT values higher than the upper reference limit (URL) of 14 ng/L. Patients with high hs-cTnT had more frequently fever ($p < 0.01$) and respiratory symptoms ($p < 0.01$), compared to the group with hs-cTnT values below URL. The results showed also that patients with hs-cTnT above URL had a higher frequency of previous cardiovascular disease ($p < 0.01$) as well as of hypertension ($p < 0.01$). Instead, among 231 patients with no previous cardiovascular disease, 81 (31.5%) had hs-cTnT values above the URL. Finally. the majority of the patients with high hs-cTnT were admitted to the intensive care unit ($p < 0.01$).

Conclusion: Our data suggest the assessment of high sensitivity cardiac troponin in patients with COVID-19 for early diagnosis of cardiac involvement.

Database: Medline

33. Trajectory of Cardiac Catheterization for Acute Coronary Syndrome and Out-of-Hospital Cardiac Arrest During the COVID-19 Pandemic.

Author(s): Desai, Pooja S; Fanous, Elias J; Tan, Weiyi; Lee, James; Trinh, Tri; Rafique, Asim M; Parikh, Rushi V; Press, Marcella Calfon

Source: Cardiology research; Feb 2021; vol. 12 (no. 1); p. 47-50

Publication Date: Feb 2021

Publication Type(s): Journal Article

PubMedID: 33447325

Available at Cardiology research - from Europe PubMed Central - Open Access

Available at Cardiology research - from Unpaywall

Abstract:

Background: We sought to investigate the trajectory of cardiac catheterizations for acute coronary syndrome (ACS) and out-of-hospital cardiac arrest (OHCA) during the pre-isolation (PI), strict-isolation (SI), and relaxed-isolation (RI) periods of the coronavirus disease 2019 (COVID-19) pandemic at three hospitals in Los Angeles, CA, USA.

Methods: A retrospective analysis was conducted on adult patients undergoing urgent or emergent cardiac catheterization for suspected ACS or OHCA between January 1, 2020 and June 2, 2020 at three hospitals in Los Angeles, CA, USA. We designated January 1, 2020 to March 17, 2020 as the PI COVID-19 period, March 18, 2020 to May 5, 2020 as the SI COVID-19 period, and May 6, 2020 to June 2, 2020 as the RI COVID-19 period.

Results: From PI to SI, there was a significant reduction in mean weekly cases of catheterizations for non-ST elevation myocardial infarction/unstable angina (NSTEMI/UA) (8.29 vs. 12.5, P = 0.019), with all other clinical categories trending downwards. From SI to RI, mean weekly cases of catheterizations for total ACS increased by 17%, NSTEMI/UA increased by 27%, and OHCA increased by 32%, demonstrating a "rebound effect".

Conclusions: Cardiac catheterizations for ACS and NSTEMI/UA exhibited a "rebound effect" once social isolation was relaxed.

Database: Medline

34. A pilot study on right ventricular longitudinal strain as a predictor of outcome in COVID-19 patients with evidence of cardiac involvement.

Author(s): Stockenhuber, Alexander; Vrettos, Apostolos; Androschuck, Vitaliy; George, Manju; Robertson, Calum; Bowers, Nicola; Clifford, Piers; Firoozan, Soroosh

Source: Echocardiography (Mount Kisco, N.Y.); Feb 2021; vol. 38 (no. 2); p. 222-229

Publication Date: Feb 2021

Publication Type(s): Journal Article Observational Study

PubMedID: 33368601

Available at Echocardiography (Mount Kisco, N.Y.) - from Wiley Online Library

Available at Echocardiography (Mount Kisco, N.Y.) - from Unpaywall

Abstract:

AIMS: The aim of this investigation was to evaluate echocardiographic parameters of cardiac function and in particular right ventricular (RV) function as a predictor of mortality in patients with coronavirus disease-2019 (COVID-19) pneumonia.

METHODS AND RESULTS: This prospective observational study included 35 patients admitted to a UK district general hospital with COVID-19 and evidence of cardiac involvement, that is, raised Troponin I levels or clinical evidence of heart failure during the first wave of the COVID-19 pandemic (March-May 2020). All patients underwent echocardiography including speckle tracking for right ventricular longitudinal strain (RVLS) providing image quality was sufficient (30 out of 35 patients). Upon comparison of patients who survived COVID-19 with non-survivors, survivors had significantly smaller RVs (basal RV diameter 38.2 vs 43.5 mm P = .0295) with significantly better RV function (Tricuspid annular plane systolic excursion (TAPSE): 17.5 vs 15.3 mm P = .049; average RVLS: 24.3% vs 15.6%; P = .0018). Tricuspid regurgitation (TR) maximal velocity was higher in survivors (2.75 m/s vs 2.11 m/s; P = .0045) indicating that pressure overload was not the predominant driver of this effect and there was no significant difference in left ventricular (LV) ejection fraction. Kaplan-Meier and log-rank analysis of patients split into groups according to average RVLS above or below 20% revealed significantly increased 30-day mortality in patients with average RVLS under 20% (HR: 3.189; 95% CI: 1.297-12.91; P = .0195).

CONCLUSION: This study confirms that RVLS is a potent and independent predictor of outcome in COVID-19 patients with evidence of cardiac involvement.

Database: Medline

35. Effect of Discontinuing vs Continuing Angiotensin-Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers on Days Alive and Out of the Hospital in Patients Admitted With COVID-19: A Randomized Clinical Trial.

Author(s): Lopes, Renato D; Macedo, Ariane V S; de Barros E Silva, Pedro G M; Moll-Bernardes, Renata J; Dos Santos, Tiago M; Mazza, Lilian; Feldman, André; D'Andréa Saba Arruda, Guilherme; de Albuquerque, Denílson C; Camiletti, Angelina S; de Sousa, Andréa S; de Paula, Thiago C; Giusti, Karla G D; Domiciano, Rafael A M; Noya-Rabelo, Márcia M; Hamilton, Alan M; Loures, Vitor A; Dionísio, Rodrigo M; Furquim, Thyago A B; De Luca, Fábio A; Dos Santos Sousa, Ítalo B; Bandeira, Bruno S; Zukowski, Cleverson N; de Oliveira, Ricardo G G; Ribeiro, Noara B; de Moraes, Jeffer L; Petriz, João L F; Pimentel, Adriana M; Miranda, Jacqueline S; de Jesus Abufaiad, Bárbara E; Gibson, C Michael; Granger, Christopher B; Alexander, John H; de Souza, Olga F; BRACE CORONA Investigators

Source: JAMA; Jan 2021; vol. 325 (no. 3); p. 254-264

Publication Date: Jan 2021

Publication Type(s): Randomized Controlled Trial Pragmatic Clinical Trial Multicenter Study Journal Article

PubMedID: 33464336

Abstract:

Importance: It is unknown whether angiotensin-converting enzyme inhibitors (ACEIs) or angiotensin II receptor blockers (ARBs) have a positive, neutral, or negative effect on clinical outcomes in patients with coronavirus disease 2019 (COVID-19).

Objective: To determine whether discontinuation compared with continuation of ACEIs or ARBs changed the number of days alive and out of the hospital through 30 days.

Design, Setting, and Participants: A randomized clinical trial of 659 patients hospitalized in Brazil with mild to moderate COVID-19 who were taking ACEIs or ARBs prior to hospitalization (enrolled: April 9-June 26, 2020; final follow-up: July 26, 2020).

Interventions: Discontinuation (n = 334) or continuation (n = 325) of ACEIs or ARBs.

Main Outcomes and Measures: The primary outcome was the number of days alive and out of the hospital through 30 days. Secondary outcomes included death, cardiovascular death, and COVID-19 progression.

Results: Among 659 patients, the median age was 55.1 years (interquartile range [IQR], 46.1-65.0 years), 14.7% were aged 70 years or older, 40.4% were women, and 100% completed the trial. The median time from symptom onset to hospital admission was 6 days (IQR, 4-9 days) and 27.2% of patients had an oxygen saturation of less than 94% of room air at baseline. In terms of clinical severity, 57.1% of patients were considered mild at hospital admission and 42.9% were considered moderate. There was no significant difference in the number of days alive and out of the hospital in patients in the discontinuation group (mean, 21.9 days [SD, 8 days]) vs patients in the continuation group (mean, 22.9 days [SD, 7.1 days]) and the mean ratio was 0.95 (95% CI, 0.90-1.01). There also was no statistically significant difference in death (2.7% for the discontinuation group vs 2.8% for the continuation group; odds ratio [OR], 0.97 [95% CI, 0.38-2.52]), cardiovascular death (0.6% vs 0.3%, respectively; OR, 1.95 [95% CI, 0.19-42.12]), or COVID-19 progression (38.3% vs 32.3%; OR, 1.30 [95% CI, 0.95-1.80]). The most common adverse events were respiratory failure requiring invasive mechanical ventilation (9.6% in the discontinuation group vs 7.7% in the continuation group), shock requiring vasopressors (8.4% vs 7.1%, respectively), acute myocardial infarction (7.5% vs 4.6%), new or worsening heart failure (4.2% vs 4.9%), and acute kidney failure requiring hemodialysis (3.3% vs 2.8%).

Conclusions and Relevance: Among patients hospitalized with mild to moderate COVID-19 and who were taking ACEIs or ARBs before hospital admission, there was no significant difference in the mean number of days alive and out of the hospital for those assigned to discontinue vs continue these medications. These findings do not support routinely discontinuing ACEIs or ARBs among patients hospitalized with mild to moderate COVID-19 if there is an indication for treatment.Trial RegistrationClinicalTrials.gov Identifier: NCT04364893.

Database: Medline

36. The Novel Perspectives Opened by ST2 in the Pandemic: A Review of Its Role in the Diagnosis and Prognosis of Patients with Heart Failure and COVID-19.

Author(s): Miftode, Radu-Stefan; Petriș, Antoniu Octavian; Onofrei Aursulesei, Viviana; Cianga, Corina; Costache, Irina-Iuliana; Mitu, Ovidiu; Miftode, Ionela-Larisa; Șerban, Ionela-Lăcrămioara

Source: Diagnostics (Basel, Switzerland); Jan 2021; vol. 11 (no. 2)

Publication Date: Jan 2021

Publication Type(s): Journal Article Review

PubMedID: 33530550

Available at Diagnostics (Basel, Switzerland) - from Europe PubMed Central - Open Access

Available at Diagnostics (Basel, Switzerland) - from Unpaywall

Abstract: The increasing incidence of coronavirus disease 19 (COVID-19) and its polymorphic clinical manifestations due to local and systemic inflammation represent a high burden for many public health systems. Multiple evidence revealed the interdependence between the presence of cardiovascular comorbidities and a severe course of COVID-19, with heart failure (HF) being incriminated as an independent predictor of mortality. Suppression of tumorigenicity-2 ST2 has emerged as one of the most promising biomarkers in assessing the evolution and prognosis of patients with HF. The uniqueness of ST2 is determined by its structural particularities. Its transmembrane isoform exerts cardioprotective effects, while the soluble isoform (sST2), which is detectable in serum, is associated with myocardial fibrosis and poor outcome in patients with HF. Some recent data also suggested the potential role of sST2 as a marker of inflammation, while other studies highlighted it as a valuable prognostic factor in patients with COVID-19. In this review, we summarized the pathways by which sST2 is related to myocardial injury and its connection to the severity of inflammation in patients with COVID-19. Also, we reviewed possible perspectives of using it as a dual cardio-inflammatory biomarker, for both early diagnosis, risk stratification and prognosis assessment of patients with concomitant HF and COVID-19.

Database: Medline

37. Cardiac MRI and Myocardial Injury in COVID-19: Diagnosis, Risk Stratification and Prognosis.

Author(s): Sanghvi, Saagar K; Schwarzman, Logan S; Nazir, Noreen T

Source: Diagnostics (Basel, Switzerland); Jan 2021; vol. 11 (no. 1)

Publication Date: Jan 2021

Publication Type(s): Journal Article Review

PubMedID: 33467705

Available at Diagnostics (Basel, Switzerland) - from Europe PubMed Central - Open Access

Available at Diagnostics (Basel, Switzerland) - from Unpaywall

Abstract: Myocardial injury is a common complication of the COVID-19 illness and is associated with a worsened prognosis. Systemic hyperinflammation seen in the advanced stage of COVID-19 likely contributes to myocardial injury. Cardiac magnetic resonance imaging (CMR) is the preferred imaging modality for non-invasive evaluation in acute myocarditis, enabling risk stratification and prognostication. Modified scanning protocols in the pandemic setting reduce risk of exposure while providing critical data regarding cardiac tissue inflammation and fibrosis, chamber remodeling, and contractile function. The growing use of CMR in clinical practice to assess myocardial injury will improve understanding of the acute and chronic sequelae of myocardial inflammation from various pathological etiologies.

Database: Medline

38. Predictors and Prognostic Implications of Cardiac Arrhythmias in Patients Hospitalized for COVID-19.

Author(s): Zylla, Maura M; Merle, Uta; Vey, Johannes A; Korosoglou, Grigorios; Hofmann, Eva; Müller, Michael; Herth, Felix; Schmidt, Werner; Blessing, Erwin; Göggelmann, Christoph; Weidner, Norbert; Fiedler, Mascha O; Weigand, Markus A; Kälble, Florian; Morath, Christian; Leiner, Johannes; Kieser, Meinhard; Katus, Hugo A; Thomas, Dierk

Source: Journal of clinical medicine; Jan 2021; vol. 10 (no. 1)

Publication Date: Jan 2021

Publication Type(s): Journal Article

PubMedID: 33401735

Available at Journal of clinical medicine - from Europe PubMed Central - Open Access

Available at Journal of clinical medicine - from ProQuest (Health Research Premium) - NHS Version

Available at Journal of clinical medicine - from Unpaywall

Abstract:

BACKGROUND: Cardiac manifestation of COVID-19 has been reported during the COVID pandemic. The role of cardiac arrhythmias in COVID-19 is insufficiently understood. This study assesses the incidence of cardiac arrhythmias and their prognostic implications in hospitalized COVID-19-patients.

METHODS: A total of 166 patients from eight centers who were hospitalized for COVID-19 from 03/2020-06/2020 were included. Medical records were systematically analyzed for baseline characteristics, biomarkers, cardiac arrhythmias and clinical outcome parameters related to the index hospitalization. Predisposing risk factors for arrhythmias were identified. Furthermore, the influence of arrhythmia on the course of disease and related outcomes was assessed using univariate and multiple regression analyses.

RESULTS: Arrhythmias were detected in 20.5% of patients. Atrial fibrillation was the most common arrhythmia. Age and cardiovascular disease were predictors for new-onset arrhythmia. Arrhythmia was associated with a pronounced increase in cardiac biomarkers, prolonged hospitalization, and admission to intensive- or intermediate-care-units, mechanical ventilation and in-hospital mortality. In multiple regression analyses, incident arrhythmia was strongly associated with duration of hospitalization and mechanical ventilation. Cardiovascular disease was associated with increased mortality.

CONCLUSIONS: Arrhythmia was the most common cardiac event in association with hospitalization for COVID-19. Older age and cardiovascular disease predisposed for arrhythmia during hospitalization. Whereas in-hospital mortality is affected by underlying cardiovascular conditions, arrhythmia during hospitalization for COVID-19 is independently associated with prolonged hospitalization and mechanical ventilation. Thus, incident arrhythmia may indicate a patient subgroup at risk for a severe course of disease.

Database: Medline

39. Acute Ischemic Stroke in COVID-19: Putative Mechanisms, Clinical Characteristics, and Management

Author(s): Ojo A.S.; Balogun S.A.; Idowu A.O.

Source: Neurology Research International; 2020; vol. 2020

Publication Date: 2020

Publication Type(s): Review

Available at Neurology research international - from Europe PubMed Central - Open Access

Available at Neurology research international - from Hindawi Open Access Journals

Available at Neurology research international - from Unpaywall

Abstract: The emergence and spread of the highly contagious novel coronavirus disease (COVID-19) have triggered the greatest public health challenge of the last century. Aside from being a primary respiratory disease, acute ischemic stroke has emerged as a complication of the disease. While current evidence shows COVID-19 could cause ischemic stroke especially in severe disease, there are similarities in the risk factors for severe COVID-19 as well as

ischemic stroke, underscoring the complex relationship between these two conditions. The pandemic has created challenges for acute stroke care. Rapid assessment and time-sensitive interventions required for optimum outcomes in acute stroke care have been complicated by COVID-19 due to the need for disease transmission preventive measures. The purpose of this article is to explore the putative mechanisms of ischemic stroke in COVID-19 and the clinical characteristics of COVID-19 patients who develop ischemic stroke. In addition, we discuss the challenges of managing acute ischemic stroke in the setting of COVID-19 and review current management guidelines. We also highlighted potential areas for future research.Copyright © 2020 Ademola S. Ojo et al.

Database: EMBASE

40. Diagnosis, Management, and Pathophysiology of Arterial and Venous Thrombosis in COVID-19.

Author(s): Piazza, Gregory; Morrow, David A

Source: JAMA; Dec 2020; vol. 324 (no. 24); p. 2548-2549

Publication Date: Dec 2020

Publication Type(s): Journal Article

PubMedID: 33226423

Available at JAMA - from EBSCO (MEDLINE Complete)

Available at JAMA - from Unpaywall

Database: Medline

41. Cardiac Troponin-I and COVID-19: A Prognostic Tool for In-Hospital Mortality.

Author(s): Al Abbasi, Baher; Torres, Pedro; Ramos-Tuarez, Fergie; Dewaswala, Nakeya; Abdallah, Ahmed; Chen, Kai; Abdul Qader, Mohamed; Job, Riya; Aboulenain, Samar; Dziadkowiec, Karolina; Bhopalwala, Huzefa; Pino, Jesus E; Chait, Robert D

Source: Cardiology research; Dec 2020; vol. 11 (no. 6); p. 398-404

Publication Date: Dec 2020

Publication Type(s): Journal Article

PubMedID: 33224386

Available at Cardiology research - from Europe PubMed Central - Open Access

Available at Cardiology research - from Unpaywall

Abstract:

Background: The number of fatalities due to coronavirus disease 2019 (COVID-19) is escalating with more than 800,000 deaths globally. The scientific community remains in urgent need of prognostic tools to determine the probability of survival in patients with COVID-19 and to determine the need for hospitalization.

Methods: This is a retrospective cohort study of patients with a diagnosis of COVID-19 admitted to a tertiary center between March 2020 and July 2020. Patients age 18 years and older were stratified into two groups based on their troponin-I level in the first 24 h of admission (groups: elevated vs. normal). The aim of the study is to explore the utility of cardiac troponin-I level for early prognostication of patients with COVID-19.

Results: This cohort of 257 patients included 122/257 (47%) women with a mean age of 63 ± 17 years. Patients with an elevated troponin-I level were more likely to be older (77 ± 13 vs. 58 ± 16 years, $P < 0.0001$), have a history of hypertension ($P < 0.0001$), diabetes mellitus ($P = 0.0019$), atrial fibrillation or flutter ($P = 0.0009$), coronary artery disease ($P < 0.0001$), and chronic heart failure ($P = 0.0011$). Patients with an elevated troponin-I level in the first 24 h of admission were more likely to have higher in-hospital mortality (52% vs. 10%, $P < 0.0001$). Troponin-I level in the first 24 h of admission had a negative predictive value of 89.7% and a positive predictive value of 51.9% for all-cause in-hospital mortality.

Conclusions: Troponin-I elevation is commonly seen in patients with COVID-19 and is significantly associated with fatal outcomes. However, a normal troponin-I level in the first 24 h of admission had a high negative predictive value for all-cause in-hospital mortality, thereby predicting favorable survival at the time of discharge.

Database: Medline

42. Managing hyperlipidaemia in patients with COVID-19 and during its pandemic: An expert panel position statement from HEART UK.

Author(s): Iqbal, Zohaib; Ho, Jan Hoong; Adam, Safwaan; France, Michael; Syed, Akheel; Neely, Dermot; Rees, Alan; Khatib, Rani; Cegla, Jaimini; Byrne, Christopher; Qureshi, Nadeem; Capps, Nigel; Ferns, Gordon; Payne, Jules; Schofield, Jonathan; Nicholson, Kirsty; Datta, Dev; Pottle, Alison; Halcox, Julian; Krentz, Andrew; Durrington, Paul; Soran, Handrean; Heart UK's Medical Scientific and Research Committee

Source: Atherosclerosis; Nov 2020; vol. 313 ; p. 126-136

Publication Date: Nov 2020

Publication Type(s): Journal Article Review

PubMedID: 33045618

Available at Atherosclerosis - from Unpaywall

Abstract: The emergence of the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) which causes Coronavirus Disease 2019 (COVID-19) has resulted in a pandemic. SARS-CoV-2 is highly contagious and its severity highly variable. The fatality rate is unpredictable but is amplified by several factors including advancing age, atherosclerotic cardiovascular disease, diabetes mellitus, hypertension and obesity. A large proportion of patients with these conditions are treated with lipid lowering medication and questions regarding the safety of continuing lipid-lowering medication in patients infected with COVID-19 have arisen. Some have suggested they may exacerbate their condition. It is important to consider known interactions with lipid-lowering agents and with specific therapies for COVID-19. This statement aims to collate current evidence surrounding the safety of lipid-lowering medications in patients who have COVID-19. We offer a consensus view based on current knowledge and we rated the strength and level of evidence for these recommendations. Pubmed, Google scholar and Web of Science were searched extensively for articles using search terms: SARS-CoV-2, COVID-19, coronavirus, Lipids, Statin, Fibrates, Ezetimibe, PCSK9 monoclonal antibodies, nicotinic acid, bile acid sequestrants, nutraceuticals, red yeast rice, Omega-3-Fatty acids, Lomitapide, hypercholesterolaemia, dyslipidaemia and Volanesorsen. There is no evidence currently that lipid lowering therapy is unsafe in patients with COVID-19 infection. Lipid-lowering therapy should not be interrupted because of the pandemic or in patients at increased risk of COVID-19 infection. In patients with confirmed COVID-19, care should be taken to avoid drug interactions, between lipid-lowering medications and drugs that may be used to treat COVID-19, especially in patients with abnormalities in liver function tests.

Database: Medline

43. Registry of Arterial and Venous Thromboembolic Complications in Patients With COVID-19

Author(s): Piazza G.; Campia U.; Snyder J.E.; Rizzo S.M.; Pfeferman M.B.; Morrison R.B.; Nauffal V.; Almarzooq Z.; Goldhaber S.Z.; Hurwitz S.; Leiva O.; Fanikos J.

Source: Journal of the American College of Cardiology; Nov 2020; vol. 76 (no. 18); p. 2060-2072

Publication Date: Nov 2020

Publication Type(s): Article

PubMedID: 33121712

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

Abstract:

Background: Cardiovascular complications, including myocardial infarction, ischemic stroke, and pulmonary embolism, represent an important source of adverse outcomes in coronavirus disease-2019 (COVID-19). Objective(s): To assess the frequency of arterial and venous thromboembolic disease, risk factors, prevention and management patterns, and outcomes in patients with COVID-19, the authors designed a multicenter, observational cohort study.

Method(s): We analyzed a retrospective cohort of 1,114 patients with COVID-19 diagnosed through our Mass General Brigham integrated health network. The total cohort was analyzed by site of care: intensive care (n = 170); hospitalized nonintensive care (n = 229); and outpatient (n = 715). The primary study outcome was a composite of adjudicated major arterial or venous thromboembolism.

Result(s): Patients with COVID-19 were 22.3% Hispanic/Latinx and 44.2% non-White. Cardiovascular risk factors of hypertension (35.8%), hyperlipidemia (28.6%), and diabetes (18.0%) were common. Prophylactic anticoagulation was prescribed in 89.4% of patients with COVID-19 in the intensive care cohort and 84.7% of those in the hospitalized nonintensive care setting. Frequencies of major arterial or venous thromboembolism, major cardiovascular adverse events, and symptomatic venous thromboembolism were highest in the intensive care cohort (35.3%, 45.9%, and 27.0 %, respectively) followed by the hospitalized nonintensive care cohort (2.6%, 6.1%, and 2.2%, respectively) and the outpatient cohort (0% for all).

Conclusion(s): Major arterial or venous thromboembolism, major adverse cardiovascular events, and symptomatic venous thromboembolism occurred with high frequency in patients with COVID-19, especially in the intensive care setting, despite a high utilization rate of thromboprophylaxis.

Database: EMBASE

44. COVID-19 and Heart Failure With Preserved Ejection Fraction.

Author(s): Freaney, Priya Mehta; Shah, Sanjiv J; Khan, Sadiya S

Source: JAMA; Oct 2020; vol. 324 (no. 15); p. 1499-1500

Publication Date: Oct 2020

Publication Type(s): Journal Article

PubMedID: 33001179

Available at JAMA - from EBSCO (MEDLINE Complete)

Available at JAMA - from Unpaywall

Database: Medline

45. A nationwide survey of UK cardiac surgeons' view on clinical decision making during the coronavirus disease 2019 (COVID-19) pandemic.

Author(s): Benedetto, Umberto; Goodwin, Andrew; Kendall, Simon; Uppal, Rakesh; Akowuah, Enoch

Source: The Journal of thoracic and cardiovascular surgery; Oct 2020; vol. 160 (no. 4); p. 968-973

Publication Date: Oct 2020

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article

PubMedID: 32505456

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

Abstract:

BACKGROUND: No firm recommendations are currently available to guide decision making for patients requiring cardiac surgery during the coronavirus disease 2019 (COVID-19) pandemic. Systematic appraisal of senior surgeons' consensus can be used to generate interim recommendations until data from clinical observations become available. Hence, we aimed to collect and quantitatively appraise nationwide UK consultants' opinions on clinical decision making for patients requiring cardiac surgery during the COVID-19 pandemic.

METHODS: We E-mailed a Web-based questionnaire to all consultant cardiac surgeons through the Society for Cardiothoracic Surgery in Great Britain and Ireland mailing list on the April 17, 2020, and we predetermined to close the survey on the April 21, 2020. This survey was primarily designed to gather information on UK surgeons' opinions using 12 items. Strong consensus was predefined as an opinion shared by at least 60% of responding consultants.

RESULTS: A total of 86 consultant surgeons undertook the survey. All UK cardiac units were represented by at least 1 consultant. Strong consensus was achieved for the following key questions: (1) before any hospital admission for cardiac surgery, nasopharyngeal swab, polymerase chain reaction, and computed tomography of the chest should be performed; (2) the use of full personal protective equipment should to be adopted in every case by the theater team regardless of the patient's COVID-19 status; (3) the risk of COVID-19 exposure for patients undergoing heart surgery should be considered moderate to high and likely to increase mortality if it occurs; and (4) cardiac procedures should be decided based on a rapidly convened multidisciplinary team discussion for every patient. The majority believed that both aortic and mitral surgery should be considered in selected cases. The role of coronary artery bypass graft surgery during the pandemic was controversial.

CONCLUSIONS: In this unprecedented pandemic period, this survey provides information for generating interim recommendations until data from clinical observations become available.

Database: Medline

46. Prophylactic anticoagulants for people hospitalised with COVID-19

Author(s): Flumignan R.L.G.; Pascoal P.I.F.; Areias L.L.; Nakano L.C.U.; Tinoco J.D.D.S.a.; Cossi M.S.; Fernandes M.I.C.D.; Costa I.K.F.; Souza L.; Matar C.F.; Tendal B.; Trevisani V.F.M.; Atallah A.N.

Source: Cochrane Database of Systematic Reviews; Oct 2020; vol. 2020 (no. 9)

Publication Date: Oct 2020

Publication Type(s): Article

PubMedID: 33502773

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

Abstract:

Background: Coronavirus disease 2019 (COVID-19) is a serious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The primary manifestation is respiratory insufficiency that can also be related to diffuse pulmonary microthrombosis in people with COVID-19. This disease also causes thromboembolic events, such as pulmonary embolism, deep venous thrombosis, arterial thrombosis, catheter thrombosis, and disseminated intravascular coagulopathy. Recent studies have indicated a worse prognosis for people with COVID-19 who developed thromboembolism. Anticoagulants are medications used in the prevention and treatment of venous or arterial thromboembolic events. Several drugs are used in the prophylaxis and treatment of thromboembolic events, such as heparinoids (heparins or pentasaccharides), vitamin K antagonists and direct anticoagulants. Besides their anticoagulant properties, heparinoids have an additional anti-inflammatory potential, that may affect the clinical evolution of people with COVID-19. Some practical guidelines address the use of anticoagulants for thromboprophylaxis in people with COVID-19, however, the benefit of anticoagulants for people with COVID-19 is still under debate. Objective(s): To assess the effects of prophylactic anticoagulants versus active comparator, placebo or no intervention, on mortality and the need for respiratory support in people hospitalised with COVID-19.

Search Method(s): We searched CENTRAL, MEDLINE, Embase, LILACS and IBECS databases, the Cochrane COVID-19 Study Register and medRxiv preprint database from their inception to 20 June 2020. We also checked reference lists of any relevant systematic reviews identified and contacted specialists in the field for additional references to trials. Selection Criteria: Randomised controlled trials (RCTs), quasi-RCTs, cluster-RCTs and cohort studies that compared prophylactic anticoagulants (heparin, vitamin K antagonists, direct anticoagulants, and pentasaccharides) versus active comparator, placebo or no intervention for the management of people hospitalised with COVID-19. We excluded studies without a comparator group. Primary outcomes were all-cause mortality and need for additional respiratory support. Secondary outcomes were mortality related to COVID-19, deep vein thrombosis (DVT), pulmonary embolism, major bleeding, adverse events, length of hospital stay and quality of life. Data Collection and

Analysis: We used standard Cochrane methodological procedures. We used ROBINS-I to assess risk of bias for non-randomised studies (NRS) and GRADE to assess the certainty of evidence. We reported results narratively.

Main Result(s): We identified no RCTs or quasi-RCTs that met the inclusion criteria. We included seven retrospective NRS (5929 participants), three of which were available as preprints. Studies were conducted in China, Italy, Spain and the USA. All of the studies included people hospitalised with COVID-19, in either intensive care units, hospital wards or emergency departments. The mean age of participants (reported in 6 studies) ranged from 59 to 72 years. Only three included studies reported the follow-up period, which varied from 8 to 35 days. The studies did not report on most of our outcomes of interest: need for additional respiratory support, mortality related to COVID-19, DVT, pulmonary embolism, adverse events, and quality of life.Anticoagulants (all types) versus no treatment (6 retrospective NRS, 5685 participants). One study reported a reduction in all-cause mortality (adjusted odds ratio (OR) 0.42, 95% confidence interval (CI) 0.26 to 0.66; 2075 participants). One study reported a reduction in mortality only in a subgroup of 395 people who required mechanical ventilation (hazard ratio (HR) 0.86, 95% CI 0.82 to 0.89). Three studies reported no differences in mortality (adjusted OR 1.64, 95% CI 0.92 to 2.92; 449 participants; unadjusted OR 1.66, 95% CI 0.76 to 3.64; 154 participants and adjusted risk ratio (RR) 1.15, 95% CI 0.29 to 2.57; 192 participants). One study reported zero events in both intervention groups (42 participants). The overall risk of bias for all-cause mortality was critical and the certainty of the evidence was very low. One NRS reported bleeding events in 3% of the intervention group and 1.9% of the control group (OR 1.62, 95% CI 0.96 to 2.71; 2773 participants; low-certainty evidence).Therapeutic-dose anticoagulants versus prophylactic-dose anticoagulants (1 retrospective NRS, 244 participants). The study reported a reduction in all-cause mortality (adjusted HR 0.21, 95% CI 0.10 to 0.46) and a lower absolute rate of death in the therapeutic group (34.2% versus 53%). The overall risk of bias for all-cause mortality was serious and the certainty of the evidence was low. The study also reported bleeding events in 31.7% of the intervention group and 20.5% of the control group (OR 1.8, 95% CI 0.96 to 3.37; low-certainty evidence).Ongoing studies. We found 22 ongoing studies in hospital settings (20 RCTs, 14,730 participants; 2 NRS, 997 participants) in 10 different countries (Australia (1), Brazil (1), Canada (2), China (3), France (2), Germany (1), Italy (4), Switzerland (1), UK (1) and USA (6)). Twelve ongoing studies plan to report mortality and six plan to report additional respiratory support. Thirteen studies are expected to be completed in December 2020 (6959 participants), eight in July 2021 (8512 participants), and one in December 2021 (256 participants). Four of the studies plan to include 1000 participants or more.

Authors' conclusions: There is currently insufficient evidence to determine the risks and benefits of prophylactic anticoagulants for people hospitalised with COVID-19. Since there are 22 ongoing studies that plan to evaluate more than 15,000 participants in this setting, we will add more robust evidence to this review in future updates.

Database: EMBASE

47. In-hospital cardiac arrest in critically ill patients with covid-19: multicenter cohort study.

Author(s): Hayek, Salim S; Brenner, Samantha K; Azam, Tariq U; Shadid, Husam R; Anderson, Elizabeth; Berlin, Hanna; Pan, Michael; Meloche, Chelsea; Feroz, Rafey; O'Hayer, Patrick; Kaakati, Rayan; Bitar, Abbas; Padalia, Kishan; Perry, Daniel; Blakely, Pennelope; Gupta, Shruti; Shaefi, Shahzad; Srivastava, Anand; Charytan, David M; Bansal, Anip; Mallappallil, Mary; Melamed, Michal L; Shehata, Alexandre M; Sunderram, Jag; Mathews, Kusum S; Sutherland, Anne K; Nallamothu, Brahmajee K; Leaf, David E; STOP-COVID Investigators

Source: BMJ (Clinical research ed.); Sep 2020; vol. 371 ; p. m3513

Publication Date: Sep 2020

Publication Type(s): Research Support, Non-u.s. Gov't Research Support, N.i.h., Extramural Multicenter Study Journal Article

PubMedID: 32998872

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

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

Abstract:

OBJECTIVES: To estimate the incidence, risk factors, and outcomes associated with in-hospital cardiac arrest and cardiopulmonary resuscitation in critically ill adults with coronavirus disease 2019 (covid-19).

DESIGN: Multicenter cohort study.

SETTING: Intensive care units at 68 geographically diverse hospitals across the United States.

PARTICIPANTS: Critically ill adults (age ≥18 years) with laboratory confirmed covid-19.

MAIN OUTCOME MEASURES: In-hospital cardiac arrest within 14 days of admission to an intensive care unit and in-hospital mortality.

RESULTS: Among 5019 critically ill patients with covid-19, 14.0% (701/5019) had in-hospital cardiac arrest, 57.1% (400/701) of whom received cardiopulmonary resuscitation. Patients who had in-hospital cardiac arrest were older (mean age 63 (standard deviation 14) v 60 (15) years), had more comorbidities, and were more likely to be admitted to a hospital with a smaller number of intensive care unit beds compared with those who did not have in-hospital cardiac arrest. Patients who received cardiopulmonary resuscitation were younger than those who did not (mean age 61 (standard deviation 14) v 67 (14) years). The most common rhythms at the time of cardiopulmonary resuscitation were pulseless electrical activity (49.8%, 199/400) and asystole (23.8%, 95/400). 48 of the 400 patients (12.0%) who received cardiopulmonary resuscitation survived to hospital discharge, and only 7.0% (28/400) survived to hospital discharge with normal or mildly impaired neurological status. Survival to hospital discharge differed by age, with 21.2% (11/52) of patients younger than 45 years surviving compared with 2.9% (1/34) of those aged 80 or older.

CONCLUSIONS: Cardiac arrest is common in critically ill patients with covid-19 and is associated with poor survival, particularly among older patients.

Database: Medline

48. Obesity and Hypertension in the Time of COVID-19.

Author(s): Rodgers, Griffin P; Gibbons, Gary H

Source: JAMA; Sep 2020; vol. 324 (no. 12); p. 1163-1165

Publication Date: Sep 2020

Publication Type(s): Editorial Comment

PubMedID: 32902581

Available at JAMA - from EBSCO (MEDLINE Complete)

Available at JAMA - from Unpaywall

Database: Medline

49. COVID-19 and cardiovascular disease: from basic mechanisms to clinical perspectives

Author(s): Nishiga M.; Wu J.C.; Wang D.W.; Han Y.; Lewis D.B.

Source: Nature Reviews Cardiology; Sep 2020; vol. 17 (no. 9); p. 543-558

Publication Date: Sep 2020

Publication Type(s): Review

PubMedID: 32690910

Available at Nature reviews. Cardiology - from Unpaywall

Abstract: Coronavirus disease 2019 (COVID-19), caused by a strain of coronavirus known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has become a global pandemic that has affected the lives of billions of individuals. Extensive studies have revealed that SARS-CoV-2 shares many biological features with SARS-CoV, the zoonotic virus that caused the 2002 outbreak of severe acute respiratory syndrome, including the system of cell entry, which is triggered by binding of the viral spike protein to angiotensin-converting enzyme 2. Clinical studies

have also reported an association between COVID-19 and cardiovascular disease. Pre-existing cardiovascular disease seems to be linked with worse outcomes and increased risk of death in patients with COVID-19, whereas COVID-19 itself can also induce myocardial injury, arrhythmia, acute coronary syndrome and venous thromboembolism. Potential drug-disease interactions affecting patients with COVID-19 and comorbid cardiovascular diseases are also becoming a serious concern. In this Review, we summarize the current understanding of COVID-19 from basic mechanisms to clinical perspectives, focusing on the interaction between COVID-19 and the cardiovascular system. By combining our knowledge of the biological features of the virus with clinical findings, we can improve our understanding of the potential mechanisms underlying COVID-19, paving the way towards the development of preventative and therapeutic solutions.

Database: EMBASE

50. COVID-19 pandemic and admission rates for and management of acute coronary syndromes in England.

Author(s): Mafham, Marion M; Spata, Enti; Goldacre, Raphael; Gair, Dominic; Curnow, Paula; Bray, Mark; Hollings, Sam; Roebuck, Chris; Gale, Chris P; Mamas, Mamas A; Deanfield, John E; de Belder, Mark A; Luescher, Thomas F; Denwood, Tom; Landray, Martin J; Emberson, Jonathan R; Collins, Rory; Morris, Eva J A; Casadei, Barbara; Baigent, Colin

Source: Lancet (London, England); Aug 2020; vol. 396 (no. 10248); p. 381-389

Publication Date: Aug 2020

Publication Type(s): Journal Article

PubMedID: 32679111

Abstract:

BACKGROUND: Several countries affected by the COVID-19 pandemic have reported a substantial drop in the number of patients attending the emergency department with acute coronary syndromes and a reduced number of cardiac procedures. We aimed to understand the scale, nature, and duration of changes to admissions for different types of acute coronary syndrome in England and to evaluate whether in-hospital management of patients has been affected as a result of the COVID-19 pandemic.

METHODS: We analysed data on hospital admissions in England for types of acute coronary syndrome from Jan 1, 2019, to May 24, 2020, that were recorded in the Secondary Uses Service Admitted Patient Care database. Admissions were classified as ST-elevation myocardial infarction (STEMI), non-STEMI (NSTEMI), myocardial infarction of unknown type, or other acute coronary syndromes (including unstable angina). We identified revascularisation procedures undertaken during these admissions (ie, coronary angiography without percutaneous coronary intervention [PCI], PCI, and coronary artery bypass graft surgery). We calculated the numbers of weekly admissions and procedures undertaken; percentage reductions in weekly admissions and across subgroups were also calculated, with 95% CIs.

FINDINGS: Hospital admissions for acute coronary syndrome declined from mid-February, 2020, falling from a 2019 baseline rate of 3017 admissions per week to 1813 per week by the end of March, 2020, a reduction of 40% (95% CI 37-43). This decline was partly reversed during April and May, 2020, such that by the last week of May, 2020, there were 2522 admissions, representing a 16% (95% CI 13-20) reduction from baseline. During the period of declining admissions, there were reductions in the numbers of admissions for all types of acute coronary syndrome, including both STEMI and NSTEMI, but relative and absolute reductions were larger for NSTEMI, with 1267 admissions per week in 2019 and 733 per week by the end of March, 2020, a percent reduction of 42% (95% CI 38-46). In parallel, reductions were recorded in the number of PCI procedures for patients with both STEMI (438 PCI procedures per week in 2019 vs 346 by the end of March, 2020; percent reduction 21%, 95% CI 12-29) and NSTEMI (383 PCI procedures per week in 2019 vs 240 by the end of March, 2020; percent reduction 37%, 29-45). The median length of stay among patients with acute coronary syndrome fell from 4 days (IQR 2-9) in 2019 to 3 days (1-5) by the end of March, 2020.

INTERPRETATION: Compared with the weekly average in 2019, there was a substantial reduction in the weekly numbers of patients with acute coronary syndrome who were admitted to hospital in England by the end of March, 2020, which had been partly reversed by the end of May, 2020. The reduced number of admissions during this period is likely to have resulted in increases in out-of-hospital deaths and long-term complications of myocardial infarction and missed opportunities to offer secondary prevention treatment for patients with coronary heart disease. The full extent of the effect of COVID-19 on the management of patients with acute coronary syndrome will continue to be assessed by updating these analyses.FUNDINGUK Medical Research Council, British Heart Foundation, Public Health England, Health Data Research UK, and the National Institute for Health Research Oxford Biomedical Research Centre.

Database: Medline