

SVA vs SVB

Conclusions realment sorprenents, tot i que comparar 32000 casos amb 1600 es estadísticament discutible. A més no he pogut accedir a l'article, així que no se si els resultats estan ajustats per temps, edat,... Tot i que és un JAMA.

JAMA Intern Med. 2014 Nov 24. doi: 10.1001/jamainternmed.2014.5420. [Epub ahead of print]

Outcomes After Out-of-Hospital Cardiac Arrest Treated by Basic vs Advanced Life Support.

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Abstract

Importance: Most out-of-hospital cardiac arrests receiving emergency medical services in the United States are treated by ambulance service providers trained in advanced life support (ALS), but supporting evidence for the use of ALS over basic life support (BLS) is limited.

Objective: To compare the effects of BLS and ALS on outcomes after out-of-hospital cardiac arrest.

Design, Setting, and Participants: Observational cohort study of a nationally representative sample of traditional Medicare beneficiaries from nonrural counties who experienced out-of-hospital cardiac arrest between January 1, 2009, and October 2, 2011, and for whom ALS or BLS ambulance services were billed to Medicare (31 292 ALS cases and 1643 BLS cases). Propensity score methods were used to compare the effects of ALS and BLS on patient survival, neurological performance, and medical spending after cardiac arrest.

Main Outcomes and Measures: Survival to hospital discharge, to 30 days, and to 90 days; neurological performance; and incremental medical spending per additional survivor to 1 year.

Results: Survival to hospital discharge was greater among patients receiving BLS (13.1% vs 9.2% for ALS; 4.0 [95% CI, 2.3-5.7] percentage point difference), as was survival to 90 days (8.0% vs 5.4% for ALS; 2.6 [95% CI, 1.2-4.0] percentage point difference). Basic life support was associated with better neurological functioning among hospitalized patients (21.8% vs 44.8% with poor neurological functioning for ALS; 23.0 [95% CI, 18.6-27.4] percentage point difference). Incremental medical spending per additional survivor to 1 year for BLS relative to ALS was \$154 333.

Conclusions and Relevance: Patients with out-of-hospital cardiac arrest who received BLS had higher survival at hospital discharge and at 90 days compared with those who received ALS and were less likely to experience poor neurological functioning

DONACIÓ DESPRÉS DE LA MORT CIRCULATORIA

Una nova classificació dels donants després de la mort circulatoria pels Belgues.

Transplant Proc. 2014;46(9):3138-42. doi: 10.1016/j.transproceed.2014.09.169.

Belgian modified classification of maastricht for donors after circulatory death.

Evrard P1; Belgian Working Group on DCD National Protocol.

Author information 1Intensive Care Unit, CHU Dinant Godinne, UCL Namur, Université Catholique de Louvain, Yvoir, Belgium. Electronic address: patrick.evrard@uclouvain.be.

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Author information 1Intensive Care Unit, CHU Dinant Godinne, UCL Namur, Université Catholique de Louvain, Yvoir, Belgium. Electronic address: patrick.evrard@uclouvain.be.

Abstract

BACKGROUND: "Non-heart-beating donors," or, in a more recent and international definition, "donors after circulatory death," are a potential and additional group of deceased persons who are able to add organs to the pool.

METHODS: A new classification is proposed on the basis of the result of a consensus of experts issued from all Belgian transplant centers.

RESULTS: The first level of definition is simple and based on whether the situation is uncontrolled (categories I and II) or controlled (categories III, IV, and V). In category I, the patient is declared "dead on arrival" and, in category II, there is an "unsuccessful resuscitation" whether it occurred out or in the hospital for both situations. Category III is the most usual situation in which the treating physician and family are "awaiting cardiac arrest" to declare the death of the patient. Category IV is always characterized by "cardiac arrest during brain death." The special situation of the Belgian law allowing the euthanasia is elaborated in category V, "euthanasia," and includes patients who grant access to medically assisted circulatory death. Organ donation after euthanasia is allowed under the scope of donation after circulatory death.

CONCLUSIONS: This classification conserves the skeleton of the Maastricht one, as it is simple and clear, but classifies easily the different donors after circulatory death types by processes for ethical issues and for the non-medical or non-specialized reader interested in the field. This is also an argument for public consideration and trust in the difficult field of organ donation.
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Experiència dels Belgues en donació després de la mort circulatoria. A Barcelona ho fem molt millors que ells.

Transplant Proc. 2014;46(9):3134-7. doi: 10.1016/j.transproceed.2014.09.164.

Fourteen years of experience in uncontrolled organ donation after cardio-circulatory death.

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Abstract

BACKGROUND: Since 1999, a protocol for uncontrolled donation after cardio-circulatory death (DCD) has been carried out in our institution. We aimed at evaluating those 14 years of local experience.

METHODS: We reviewed the charts of uncontrolled donors from 1999 till 2013. Potential donors with a no-flow period less than 30 minutes were considered. Kidneys were perfused by the use of a double balloon triple lumen catheter after at least a 2-minute period of no touch. We analyzed grafts outcome and warm and cold ischemia times.

RESULTS: Thirty-nine procedures were initiated: 19 were aborted because of family refusal (n = 7), medical reasons (n = 7), or cannulation failures (n = 5) and 20 harvesting procedures were completed. Transplantation was considered for 35 kidneys (cold storage [n = 5] and hypothermic preservation system [n = 30]). The causes of withdrawal from transplantation were mostly macroscopic lesions (poor perfusion, macroscopic parenchyma or vascular lesions, or infectious risk). We transplanted 22 kidneys locally and 3 were shipped to another Eurotransplant center. Mean donor age was 40 ± 13 years. Among the 20 donors, 13 came from the emergency unit and 7 from the intensive care unit. Mean no-flow time for out-hospital management was 8.7 ± 3.6 minutes. Mean time of cardiopulmonary resuscitation was 71 ± 46 minutes. Mean cold ischemia time was 19 ± 5 hours. Primary nonfunction and delayed graft function occurred in 1 and 12 cases (4.5% and 54%), respectively. Graft survival was 86% at 1 year. Causes of graft loss during the entire follow-up were graft rejection (n = 3), ischemically damaged kidney (n = 2), and recurrence of focal segmental glomerulosclerosis (n = 1).

CONCLUSION: In our experience, uncontrolled donors represent a valuable source of kidney grafts, with a prognosis of graft function and survival similar to the literature. To increase the number of available DCD organs, new techniques, such as the use of Normothermic ExtraCorporeal Membrane Oxygenation (NECMO), as well as improvement of recruitment of out of hospital potential donors have to be considered.

FEEDBACK

Una curiositat sobre fer feedback amb un metrònom per telèfon per part del personal de CECOS

Prehosp Emerg Care. 2014 Nov 24. [Epub ahead of print]

A Novel Use of a Metronome in Dispatcher-assisted Cardiopulmonary Resuscitation.

Ateyyah KA, Cady CE, Poltrock JT, Pirrallo RG.

Abstract

Abstract Early, high-quality cardiopulmonary resuscitation (CPR) is the key to increasing the likelihood of successful resuscitation in cardiac arrest. The use of dispatch-assisted (DA) CPR can increase the likelihood of bystander CPR. We describe a case in which a metronome was introduced to guide DA-CPR. The wife of a 52-year-old male activated 9-1-1 after her husband suffered a cardiac arrest. During her 9-1-1 call she received CPR instructions and heard a metronome over the phone while following the instructions. Return of spontaneous circulation of the patient occurred during paramedic on scene care. The patient was transported to hospital and discharged 6 days later with no neurological deficit. This case supports the use of a metronome by emergency medical dispatchers during the provision of DA-CPR to improve bystander CPR.

SÍNDROME DE BRUGADA

Una estratificació del risc dels pacients amb una síndrome de Brugada

Circ J. 2014 Nov 26. [Epub ahead of print]

Risk Stratification in Patients With Brugada Syndrome Without Previous Cardiac Arrest.

Okamura H1, Kamakura T, Morita H, Tokioka K, Nakajima I, Wada M, Ishibashi K, Miyamoto K, Noda T, Aiba T, Nishii N, Nagase S, Shimizu W, Yasuda S, Ogawa H, Kamakura S, Ito H, Ohe T, Kusano KF.

Author information 1Department of Cardiovascular Medicine, National Cerebral and Cardiovascular Center.

Abstract

Background: Risk stratification in patients with Brugada syndrome for primary prevention of sudden cardiac death is still an unsettled issue. A recent consensus statement suggested the indication of implantable cardioverter defibrillator (ICD) depending on the clinical risk factors present (spontaneous type 1 Brugada electrocardiogram (ECG) [Sp1], history of syncope [syncope], and ventricular fibrillation during programmed electrical stimulation [PES+]). The indication of ICD for the majority of patients, however, remains unclear. Methods and Results: A total of 218 consecutive patients (211 male; aged 46±13 years) with a type 1 Brugada ECG without a history of cardiac arrest who underwent evaluation for ICD including electrophysiological testing were examined retrospectively. During a mean follow-up period of 78 months, 26 patients (12%) developed arrhythmic events. On Kaplan-Meier analysis patients with each of Sp1, syncope, or PES+ suffered arrhythmic events more frequently (P=0.018, P<0.001, and P=0.003, respectively). On multivariate analysis Sp1 and syncope were independent predictors of arrhythmic events. When dividing patients according to the number of these 3 risk factors present, patients with 2 or 3 risk factors experienced arrhythmic events more frequently than those with 0 or 1 risk factor (23/93 vs. 3/125; P<0.001). Conclusions: Syncope, Sp1, and PES+ are important risk factors and the combination of these risks well stratify the risk of later arrhythmic events.

VENTILACIÓ I DOCÈNCIA

Després de fer un mòdul docent als tècnics van millorar les seves competències en el maneig de la via aèria excepte en la ventilació amb "ambú". El que no diu a l'abstract és que la resta que s'avaluava era posar una cànul·la orofaríngea, una nasofaríngea i immobilitzar el coll! Vamos, que de ventilar no van aprendre res!

J Anaesthesiol Clin Pharmacol. 2014 Oct;30(4):492-495.

Evaluation of a sequential structured educational curriculum for emergency medical technicians in airway management.

Parida S, Mishra SK, Badhe AS.

Author information Department of Anesthesiology and Critical Care, JIPMER, Puducherry, India.

Abstract

BACKGROUND AND AIMS: Emergency medical technician (EMT) training programs for certification vary greatly from course to course, but it is necessary that each course at least meets local and national requirements. It is reasonable to expect that EMTs' performance should improve after a structured educational curriculum. We hypothesized that EMTs' performance in airway management would improve after a sequential structured educational curriculum involving airway, followed by cardiopulmonary resuscitation (CPR) modules, beyond what is achieved after only the airway module.

MATERIALS AND METHODS: To evaluate this, 76 EMTs were assigned to a 2-week airway module with a structured curriculum. This was followed by the 2-week CPR module, and the EMTs were tested before (preCPR test) and after (postCPR test) the CPR modules for improvement in their airway skills. EMTs also completed a questionnaire to evaluate the curriculum.

RESULTS: PostCPR test mean scores were higher than those of the preCPR test ($P < 0.05$) except for the bag valve mask domain. EMTs evaluated the curriculum and gave a score of 3.7/5 for perceived achievement of goals of the syllabus for improving their airway skills.

CONCLUSION: Thus, a sequential, structured curriculum in airway management followed by CPR, improves EMTs' performance levels above what they achieved after only the airway module, except for bag valve mask ventilation.

TRAUMA

Un descriptiu sobre les ACR traumàtiques a Romania. Treuen conclusions que no es corresponen a l'objectiu de l'estudi.

J Med Life. 2014 Jun 15;7(2):287-90. Epub 2014 Jun 25.

Traumatic cardiac arrest in the emergency department- Overview upon primary causes.

Georgescu V1, Tudorache O2, Strambu V3.

Author information 1"Carol Davila" Clinical Nephrology Hospital, Bucharest.2"Sf. Pantelimon" Emergency Hospital, Bucharest.3"Carol Davila" University of Medicine and Pharmacy, Bucharest, "Carol Davila" Clinical Nephrology Hospital, Bucharest.

Abstract

RATIONALE: Trauma is the leading cause of death for patients aged less than 40 years. Trauma patients with cardiac arrest have low survival rates, the resuscitation being often considered futile and consumptive of medical and human resources.

OBJECTIVE: The aim of this study is to describe the main characteristics in cases of patients critically traumatized, who were admitted in our emergency department.

METHODS AND RESULTS: The study is based on a retrospective analysis of cases of major trauma admitted in an Emergency Department between 2004 and 2008. There were 201 cases of critically traumatized patients, who received cardiopulmonary resuscitation. The patients were aged between 16 and 79, mostly men (67.16%), with a range of ISS between 30 and 75. Regarding the type of mechanism that produced the injury we noted a predominance of blunt trauma (87,2% of cases) and hypovolemia as a direct cause that led to the cardiac arrest. The first monitored rhythm was non-shockable for over 90% of the cases. In our group, 4 patients were discharged alive (2% of all cardiac arrest cases). The mechanism of cardiac arrest for those 4 cases were hypoxia through massive facial trauma in one case and tension pneumothorax through severe thoracic trauma in three cases.

DISCUSSION: Given the low survival figures, all the efforts that could be achieved by an emergency team in the face of severe trauma had to be oriented towards the maintaining of the vital functions or, when needed, towards restoring life in order to enrich the operation theatre for the definitive care.

DEA

L'ús de DEAs a Holanda, s'associa amb una major supervivència de les ACR! Els posaran ells també a les farmàcies???)

Circulation. 2014 Nov 18;130(21):1868-75. doi: 10.1161/CIRCULATIONAHA.114.010905.

Improved Survival After Out-of-Hospital Cardiac Arrest and Use of Automated External Defibrillators.

Blom MT1, Beesems SG1, Homma PC1, Zijlstra JA1, Hulleman M1, van Hoeijen DA1, Bardai A1, Tijssen JG1, Tan HL2, Koster RW1.

Author information 1From the Department of Cardiology, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands (M.T.B., S.G.B., P.C.M.H., J.A.Z., M.H., D.A.v.H., A.B., J.G.P.T., H.L.T., R.W.K.); Interuniversity Cardiology Institute Netherlands, Utrecht, The Netherlands (A.B.).2From the Department of Cardiology, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands (M.T.B., S.G.B., P.C.M.H., J.A.Z., M.H., D.A.v.H., A.B., J.G.P.T., H.L.T., R.W.K.); Interuniversity Cardiology Institute Netherlands, Utrecht, The Netherlands (A.B.). h.l.tan@amc.uva.nl.

Abstract

BACKGROUND: In recent years, a wider use of automated external defibrillators (AEDs) to treat out-of-hospital cardiac arrest was advocated in The Netherlands. We aimed to establish whether survival with favorable neurologic outcome after out-of-hospital cardiac arrest has significantly increased, and, if so, whether this is attributable to AED use.

METHODS AND RESULTS: We performed a population-based cohort study, including patients with out-of-hospital cardiac arrest from cardiac causes between 2006 and 2012, excluding emergency medical service-witnessed arrests. We determined survival status at each stage (to emergency department, to admission, and to discharge) and examined temporal trends using logistic regression analysis with year of resuscitation as an independent variable. By adding each covariable subsequently to the regression model, we investigated their impact on the odds ratio of year of resuscitation. Analyses were performed according to initial rhythm (shockable versus nonshockable) and AED use. Rates of survival with favorable neurologic outcome after out-of-hospital cardiac arrest increased significantly (N=6133, 16.2% to 19.7%; P for trend=0.021), although solely in patients presenting with a shockable initial rhythm (N=2823; 29.1% to 41.4%; P for trend<0.001). In this group, survival increased at each stage but was strongest in the prehospital phase (odds ratio, 1.11 [95% CI, 1.06-1.16]). Rates of AED use almost tripled during the study period (21.4% to 59.3%; P for trend <0.001), thereby decreasing time from emergency call to defibrillation-device connection (median, 9.9 to 8.0 minutes; P<0.001). AED use statistically explained increased survival with favorable neurologic outcome by decreasing the odds ratio of year of resuscitation to a nonsignificant 1.04.

CONCLUSIONS: Increased AED use is associated with increased survival in patients with a shockable initial rhythm. We recommend continuous efforts to introduce or extend AED programs.

A Osaka, el fet de posar desfibril·ladors a llocs públics (les farmàcies ho són??), ha contribuït a augmentar les desfibril·lacions per personal no sanitari.

J Am Heart Assoc. 2014 Apr 22;3(2):e000533. doi: 10.1161/JAHA.113.000533.

Outcomes of out-of-hospital cardiac arrest by public location in the public-access defibrillation era.

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Author information 1Department of Preventive Services, Kyoto University School of Public Health, Kyoto, Japan.

Abstract

BACKGROUND: The strategy to place public-access automated external defibrillators (AEDs) has not yet been established in real settings.

METHODS AND RESULTS: This, prospective, population-based observational study in Osaka, Japan, included consecutive out-of-hospital cardiac arrest (OHCA) patients with resuscitation attempts during 7 years, from January 2005 through December 2011. The trends in the proportion of public-access AED use and 1-month survival with neurologically favorable outcome were evaluated by location. Factors associated with neurologically favorable

outcome (defined as cerebral performance category 1 or 2) after ventricular fibrillation were also assessed using multiple logistic regression analysis. A total of 9453 bystander-witnessed OHCA of cardiac origin were documented and 894 (9.5%) of them occurred at public places. The proportion of public-access AED use significantly increased from 0.0% (0/20) in 2005 to 41.2% (7/17) in 2011 at railway stations and from 0.0% (0/7) to 56.5% (13/23) at sports facilities. Mean time from collapse to shock was 5.0 minutes among those who received shocks with public-access AEDs. The proportion of neurologically favorable outcome was 28.0% (33/118) at railway stations, 51.6% (48/93) at sports facilities, 23.3% (20/86) in public buildings, and 41.9% (13/31) in schools. In multivariate analysis, early defibrillation, irrespective of bystander or emergency medical service (EMS) personnel, was significantly associated with neurologically favorable outcome (adjusted odds ratio for 1-minute increment, 0.89; 95% confidence interval, 0.87 to 0.92).

CONCLUSIONS: This large, population-based OHCA registry demonstrated that earlier shock, irrespective the shock provider (bystander or EMS personnel), contributed to improving outcome, and a public-access defibrillation program was successfully implemented so that shocks with public-access AEDs were delivered to over 40% of bystander-witnessed OHCA and time to shock was shortened in some kinds of public places.

PEDIATRIA

Un model porcí per guiar les compressions segons els valors de l'EtCO₂. Manca saber l'aplicabilitat que això té en una ACR real, on no tot està tan controlat.

J Am Heart Assoc. 2014 Apr 14;3(2):e000450. doi: 10.1161/JAHA.113.000450.

Efficacy of chest compressions directed by end-tidal CO₂ feedback in a pediatric resuscitation model of basic life support.

Hamrick JL1, Hamrick JT, Lee JK, Lee BH, Koehler RC, Shaffner DH.

Author information 1Department of Pediatric Anesthesiology and Pain Medicine, University of Arkansas for Medical Sciences, Arkansas Children's Hospital, Little Rock, AR.

Abstract

BACKGROUND: End-tidal carbon dioxide (ETCO₂) correlates with systemic blood flow and resuscitation rate during cardiopulmonary resuscitation (CPR) and may potentially direct chest compression performance. We compared ETCO₂-directed chest compressions with chest compressions optimized to pediatric basic life support guidelines in an infant swine model to determine the effect on rate of return of spontaneous circulation (ROSC).

METHODS AND RESULTS: Forty 2-kg piglets underwent general anesthesia, tracheostomy, placement of vascular catheters, ventricular fibrillation, and 90 seconds of no-flow before receiving 10 or 12 minutes of pediatric basic life support. In the optimized group, chest compressions were optimized by marker, video, and verbal feedback to obtain American Heart Association-recommended depth and rate. In the ETCO₂-directed group, compression depth, rate, and hand position were modified to obtain a maximal ETCO₂ without video or verbal feedback. After the interval of pediatric basic life support, external defibrillation and intravenous epinephrine were administered for another 10 minutes of CPR or until ROSC. Mean ETCO₂ at 10 minutes of CPR was 22.7±7.8 mm Hg in the optimized group (n=20) and 28.5±7.0 mm Hg in the ETCO₂-directed group (n=20; P=0.02). Despite higher ETCO₂ and mean arterial pressure in the latter group, ROSC rates were similar: 13 of 20 (65%; optimized) and 14 of 20 (70%; ETCO₂ directed). The best predictor of ROSC was systemic perfusion pressure. Defibrillation attempts, epinephrine doses required, and CPR-related injuries were similar between groups.

CONCLUSIONS: The use of ETCO₂-directed chest compressions is a novel guided approach to resuscitation that can be as effective as standard CPR optimized with marker, video, and verbal feedback.

FEEDBACK

Els mòbils poden servir com a dispositiu de feedback sense massa error, segons aquest article...

Telemed J E Health. 2014 Nov 17. [Epub ahead of print]

A New Chest Compression Depth Feedback Algorithm for High-Quality CPR Based on Smartphone.

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Abstract

Background: Although many smartphone application (app) programs provide education and guidance for basic life support, they do not commonly provide feedback on the chest compression depth (CCD) and rate. The validation of its accuracy has not been reported to date. This study was a feasibility assessment of use of the smartphone as a CCD feedback device. In this study, we proposed the concept of a new real-time CCD estimation algorithm using a smartphone and evaluated the accuracy of the algorithm.

Materials and Methods: Using the double integration of the acceleration signal, which was obtained from the accelerometer in the smartphone, we estimated the CCD in real time. Based on its periodicity, we removed the bias error from the accelerometer. To evaluate this instrument's accuracy, we used a potentiometer as the reference depth measurement. The evaluation experiments included three levels of CCD (insufficient, adequate, and excessive) and four types of grasping orientations with various compression directions. We used the difference between the reference measurement and the estimated depth as the error. The error was calculated for each compression.

Results: When chest compressions were performed with adequate depth for the patient who was lying on a flat floor, the mean (standard deviation) of the errors was 1.43 (1.00) mm. When the patient was lying on an oblique floor, the mean (standard deviation) of the errors was 3.13 (1.88) mm.

Conclusions: The error of the CCD estimation was tolerable for the algorithm to be used in the smartphone-based CCD feedback app to compress more than 51 mm, which is the 2010 American Heart Association guideline.

REGISTRIES AND REVIEWS

Revisió sobre la capnografia en l'ACR

J Emerg Trauma Shock. 2014 Oct;7(4):332-40. doi: 10.4103/0974-2700.142778.

Capnography during cardiopulmonary resuscitation: Current evidence and future directions.

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Abstract

Capnography continues to be an important tool in measuring expired carbon dioxide (CO₂). Most recent Advanced Cardiac Life Support (ACLS) guidelines now recommend using capnography to ascertain the effectiveness of chest compressions and duration of cardiopulmonary resuscitation (CPR). Based on an extensive review of available published literature, we selected all available peer-reviewed research investigations and case reports. Available evidence suggests that there is significant correlation between partial pressure of

end-tidal CO₂ (PETCO₂) and cardiac output that can indicate the return of spontaneous circulation (ROSC). Additional evidence favoring the use of capnography during CPR includes definitive proof of correct placement of the endotracheal tube and possible prediction of patient survival following cardiac arrest, although the latter will require further investigations. There is emerging evidence that PETCO₂ values can guide the initiation of extracorporeal life support (ECLS) in refractory cardiac arrest (RCA). There is also increasing recognition of the value of capnography in intensive care settings in intubated patients. Future directions include determining the outcomes based on capnography waveforms PETCO₂ values and determining a reasonable duration of CPR. In the future, given increasing use of capnography during CPR large databases can be analyzed to predict outcomes.

Sobre les tendències en la supervivència...

Circulation. 2014 Nov 18;130(21):1883-90. doi: 10.1161/CIRCULATIONAHA.114.010633.

Trends in Short- and Long-Term Survival Among Out-of-Hospital Cardiac Arrest Patients Alive at Hospital Arrival.

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Author information 1From the Institute of Clinical Evaluative Sciences, Toronto, Ontario, Canada (M.K.Y.W., F.Q., P.C.A., D.C.S., J.V.T., H.C.W., D.T.K.); Department of Medicine, University of Toronto, Toronto, Ontario, Canada (M.K.Y.W., L.J.M., S.C., P.D., D.C.S., J.V.T., P.R.V., H.C.W., D.T.K.); Li Ka Shing Knowledge Institute, St Michael's Hospital, Toronto, Ontario, Canada (L.J.M., S.C., P.D., P.R.V.); Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada (S.C., D.C.S., J.V.T., P.R.V.); Schulich Heart Centre, Toronto, Ontario, Canada (H.C.W., D.T.K.).2From the Institute of Clinical Evaluative Sciences, Toronto, Ontario, Canada (M.K.Y.W., F.Q., P.C.A., D.C.S., J.V.T., H.C.W., D.T.K.); Department of Medicine, University of Toronto, Toronto, Ontario, Canada (M.K.Y.W., L.J.M., S.C., P.D., D.C.S., J.V.T., P.R.V., H.C.W., D.T.K.); Li Ka Shing Knowledge Institute, St Michael's Hospital, Toronto, Ontario, Canada (L.J.M., S.C., P.D., P.R.V.); Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada (S.C., D.C.S., J.V.T., P.R.V.); Schulich Heart Centre, Toronto, Ontario, Canada (H.C.W., D.T.K).
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Abstract

BACKGROUND: Out-of-hospital cardiac arrest (OHCA) is associated with a poor prognosis and poses a significant burden to the healthcare system, but few studies have evaluated whether OHCA incidence and survival have changed over time.

METHODS AND RESULTS: A population-based cohort study was conducted, including 34 291 OHCA patients >20 years of age who were transported alive to the emergency department of an acute-care hospital from April 1, 2002, to March 31, 2012, in Ontario, Canada. Patients with life-threatening trauma and those who died before hospital arrival were excluded. The overall age- and sex-standardized incidence of OHCA patients who were transported alive was 36 cases per 100 000 persons and did not significantly change over the study period. Cardiac risk factor prevalence increased significantly, whereas the rate of most cardiovascular conditions decreased significantly. The 30-day survival improved from 9.4% in 2002 to 13.6% in 2011; 1-year survival improved from 7.7% to 11.8% (P<0.001). Patients hospitalized in 2011 were significantly more likely to survive 30 days (adjusted odds ratio, 1.47 [95% CI, 1.22-1.77]) and 1 year (adjusted odds ratio, 1.55 [95% CI, 1.27-1.91]) compared with 2002. A significant interaction between temporal trends in survival improvement and age group was observed in which the improvement in survival was largest in the youngest age groups.

CONCLUSIONS: OHCA patients who were transported alive are increasingly likely to have cardiovascular risk factors but less likely to have previous cardiovascular conditions. The overall incidence of OHCA patients transported to hospital alive did not change over the past

decade. Short- and longer-term survival after OHCA has substantially improved, with younger patients experiencing the greatest improvement.

Més del mateix, abans a Canadà, ara als USA

Circulation. 2014 Nov 18;130(21):1876-82. doi: 10.1161/CIRCULATIONAHA.114.009711.

Recent Trends in Survival From Out-of-Hospital Cardiac Arrest in the United States.

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Abstract

BACKGROUND: Despite intensive efforts over many years, the United States has made limited progress in improving rates of survival from out-of-hospital cardiac arrest. Recently, national organizations, such as the American Heart Association, have focused on promoting bystander cardiopulmonary resuscitation, use of automated external defibrillators, and other performance improvement efforts.

METHODS AND RESULTS: Using the Cardiac Arrest Registry to Enhance Survival (CARES), a prospective clinical registry, we identified 70 027 U.S. patients who experienced an out-of-hospital cardiac arrest between October 2005 and December 2012. Using multilevel Poisson regression, we examined temporal trends in risk-adjusted survival. After adjusting for patient and cardiac arrest characteristics, risk-adjusted rates of out-of-hospital cardiac arrest survival increased from 5.7% in the reference period of 2005 to 2006 to 7.2% in 2008 (adjusted risk ratio, 1.27; 95% confidence interval, 1.12-1.43; P<0.001). Survival improved more modestly to 8.3% in 2012 (adjusted risk ratio, 1.47; 95% confidence interval, 1.26-1.70; P<0.001). This improvement in survival occurred in both shockable and nonshockable arrest rhythms (P for interaction=0.22) and was also accompanied by better neurological outcomes among survivors (P for trend=0.01). Improved survival was attributable to both higher rates of prehospital survival, where risk-adjusted rates increased from 14.3% in 2005 to 2006 to 20.8% in 2012 (P for trend<0.001), and in-hospital survival (P for trend=0.015). Rates of bystander cardiopulmonary resuscitation and automated external defibrillator use modestly increased during the study period and partly accounted for prehospital survival trends.

CONCLUSIONS: Data drawn from a large subset of U.S. communities suggest that rates of survival from out-of-hospital cardiac arrest have improved among sites participating in a performance improvement registry.

VENTILATION

Complicacions de la intubació que porten a l'ACR

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Factors associated with the occurrence of cardiac arrest after emergency tracheal intubation in the emergency department.

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Abstract

OBJECTIVES: Emergency tracheal intubation has achieved high success and low complication rates in the emergency department (ED). The objective of this study was to evaluate the incidence of post-intubation CA and determine the clinical factors associated with this complication.

METHODS: A matched case-control study with a case to control ratio of 1:3 was conducted at an urban tertiary care center between January 2007 and December 2011. Critically ill adult patients requiring emergency airway management in the ED were included. The primary endpoint was post-intubation CA, defined as CA within 10 minutes after tracheal intubation. Clinical variables were compared between patients with post-intubation CA and patients without CA who were individually matched based on age, sex, and pre-existing comorbidities.

RESULTS: Of 2,403 patients who underwent emergency tracheal intubation, 41 patients (1.7%) had a post-intubation CA within 10 minutes of the procedure. The most common initial rhythm was pulseless electrical activity (78.1%). Patients experiencing CA had higher in-hospital mortality than patients without CA (61.0% vs. 30.1%; $p < 0.001$). Systolic hypotension prior to intubation, defined as a systolic blood pressure ≤ 90 mmHg, was independently associated with post-intubation CA (OR, 3.67 [95% CI, 1.58-8.55], $p = 0.01$).

CONCLUSION: Early post-intubation CA occurred with an approximate 2% frequency in the ED. Systolic hypotension before intubation is associated with this complication, which has potentially significant implications for clinicians at the time of intubation.