COMPRESSIONS TORÀCIQUES

Hem de potenciar entre la població el "Hands only CPR"!!!

Am J Emerg Med. 2014 Feb 4. pii: S0735-6757(14)00087-4. doi: 10.1016/j.ajem.2014.01.055. [Epub ahead of print]

Compression-only cardiopulmonary resuscitation vs standard cardiopulmonary resuscitation: an updated meta-analysis of observational studies.

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Abstract
OBJECTIVES: To perform an updated meta-analysis of observational studies with unstratified cohort addressing whether compression-only cardiopulmonary resuscitation (CPR), compared with standard CPR, improves outcomes in adult patients with out-of-hospital cardiac arrest and a subgroup meta-analysis for the patients with cardiac etiology arrest.
METHODS: We searched the relevant literature from MEDLINE and EMBASE databases. The baseline information and outcome data (survival to hospital discharge, favorable neurologic outcome at hospital discharge, and return of spontaneous circulation on hospital arrival) were extracted both in an out-of-hospital cardiac arrest and cardiac origin arrest subgroup. Meta-analyses were performed by using Review Manager 5.0 RESULTS: Eight studies involving 92 033 patients were eligible. Overall meta-analysis showed that standard CPR was associated with statistically improved survival to hospital discharge (risk ratio [RR], 0.95 [95% confidence interval, 0.91-0.99]) and return of spontaneous circulation on hospital arrival (RR, 0.95 [95% confidence interval, 0.92-0.99]) compared with compression-only CPR, but there is no significant difference in favorable neurologic outcome at hospital discharge between 2 CPR methods (RR, 0.97 [95% confidence interval, 0.91-1.04]). In the subgroup of patients with a cardiac cause of arrest, the pooled meta-analysis found compression-only CPR resulted in the similar survival to hospital discharge as standard CPR (RR, 0.99 [95% confidence interval, 0.94-1.05]).
CONCLUSIONS: This meta-analysis found that compression-only CPR resulted in the similar survival rate as the standard CPR in the cardiac etiology subgroup. It is unclear for the patients with non-cardiac cause of arrest and with long periods of untreated arrest.

Els dispositius de feedback ajuden a millorar la qualitat de la RCP, però si s'utilitzen sobre superfícies compressibles, poden sobreestimar la profunditat de la compressió (fora del que diu l'article, hi han alguns que no es basen en acceleròmetres, com el de Physio Control, que no)

Resuscitation. 2014 Mar 19. pii: S0300-9572(14)00132-4. doi: 10.1016/j.resuscitation.2014.03.009. [Epub ahead of print]

Effect of mattress and bed frame deflection on real chest compression depth measured with two CPR sensors.

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Abstract
AIM: Implementation of chest compression (CC) feedback devices with a single force and deflection sensor (FDS) may improve the quality of CPR. However, CC depth may be overestimated if the patient is on a compliant surface. We have measured the true CC depth during in-hospital CPR using two FDSs on different bed and mattress types.
METHODS: This prospective observational study was conducted at Tampere University Hospital between August 2011 and September 2012. During in-hospital CPR one FDS was placed between the rescuer's hand and the patient's chest, with the second attached to the backboard between the patient's back and the mattress. The real CC depth was calculated as the difference between the total depth from upper FDS to lower FDS.
RESULTS: Ten cardiac arrests on three different bed and mattress types yielded 10,868 CCs for data analyses. The mean (SD) mattress/bed frame effect was 12.8 (4) mm on a standard hospital bed with a gel mattress, 12.4 (4) mm on an emergency room stretcher with a thin gel mattress and 14.1 (3) mm on an ICU bed with an emptied air mattress. The proportion of CCs with an adequate depth (≥50mm) decreased on all mattress types after compensating for the mattress/bed frame effect from 94 to 64%, 98 to 76% and 91 to 17%, in standard hospital bed, emergency room stretcher and ICU bed, respectively ($p<0.001$).
CONCLUSION: The use of FDS without real-time correction for deflection may result in CC depth not reaching the recommended depth of 50mm.

CURES POST-RESSUSCITACIÓ

Un bon control de la glucèmia en els dos primers dies post-ACR millora el pronòstic de les ACR.

Intensive Care Med. 2014 Mar 25. [Epub ahead of print]
Blood glucose level and outcome after cardiac arrest: insights from a large registry in the hypothermia era.
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Abstract
INTRODUCTION: The influence of blood glucose (BG) level during the post-resuscitation period after out-of-hospital cardiac arrest (OHCA) is still debated. To evaluate the relationship between blood glucose level and outcome, we included the median glycemia and its maximal amplitude over the first 48 h following ICU admission in an analysis of outcome predictors.
METHODS: We conducted a database study in a cardiac arrest center in Paris, France. Between 2006 and 2010, we included 381 patients who were all resuscitated from an OHCA. A moderate glycemic control was applied in all patients. The median glycemia and the largest change over the first 48 h were included in a multivariate analysis that was performed to determine parameters associated with a favorable outcome.

RESULTS: Of the 381 patients, 136 (36 %) had a favorable outcome (CPC 1-2). Median BG level was 7.6 mmol/L (6.3-9.8) in patients with a favorable outcome compared to 9.0 mmol/L (IQR 7.1-10.6) for patients with an unfavorable outcome ($p < 0.01$). Median BG level variation was 7.1 (4.2-11) and 9.6 (5.9-13.6) mmol/L in patients with and without a favorable outcome, respectively ($p < 0.01$). In multivariate analysis, an increased median BG level over the first 48 h was found to be an independent predictor of poor issue [OR = 0.43; 95 % CI (0.24-0.78), $p = 0.006$]. Finally a progressive increase in median BG level was associated with a progressive increase in the proportion of patients with a poor outcome.
CONCLUSION: We observed a relationship between high blood glucose level and outcome after cardiac arrest. These results suggest the need to test a strategy combining both control of glycemia and minimization of glycemic variations for its ability to improve post-resuscitation care.

OXIMETRIA CEREBRAL

Millors saturacions d'O_2 durant l'ACR s'associen a una major taxa de recuperació de circulació espontània.(no hi ha l'article, no tinc accés al EMJ, però és molt interesant i novedós)

Emerg Med J. 2014 Mar 24. doi: 10.1136/emermed-2013-203467. [Epub ahead of print]
Cerebral oximetry levels during CPR are associated with return of spontaneous circulation following cardiac arrest: an observational study.
Singer AJ1, Ahn A, Inigo-Santiago LA, Thode HC Jr, Henry MC, Parnia S.
Author information 1Resuscitation Research Group, Departments of Emergency Medicine and Medicine, Stony Brook University, Stony Brook, New York, USA.
Abstract
OBJECTIVES: Cerebral oximetry using near-infrared spectroscopy measures regional cerebral oxygen saturation (rSO2) non-invasively and may provide information regarding the quality of cerebral oxygen perfusion. We determined whether the level of rSO2 obtained during cardiopulmonary resuscitation is associated with return of spontaneous circulation (ROSC) and survival in Emergency Department (ED) patients presenting with cardiac arrest.

METHODS: We conducted a retrospective, observational study of adult ED patients presenting at an academic medical centre with cardiac arrest in whom continuous cerebral oximetry was performed. Demographic and clinical data including age, gender, presenting rhythm and mean rSO2 readings were abstracted. Cerebral oxygenation was measured with a commercially available oximeter.
RESULTS: A convenience study sample included 59 patients ages 18-102 years (mean age 68.7 ± 14.9 years); 50 (84.7%) were men. Presenting rhythms included pulseless electrical activity (21), asystole (20) and ventricular fibrillation/tachycardia (17). 24 patients (40.6%) had ROSC and only 1 (1.7%) survived to hospital discharge. Patients with and without ROSC were similar in age and presenting cardiac rhythms. The mean of mean rSO2 levels was higher in patients with ROSC, 43.8 (95% CI 40.1 to 47.6) compared with those without ROSC, 34.2 (95% CI 30.6 to 37.8); p=0.001. 91.7% of patients with ROSC had a rSO2 of 30% or greater compared with 62.9% in those without ROSC (p=0.01). The area under the curve for mean rSO2 as a predictor of ROSC was 0.76 (95% CI 0.64 to 0.89).
CONCLUSIONS: In ED patients with cardiac arrest higher cerebral oxygen saturations are associated with higher rates of ROSC.

REGISTRE

Resultats del registre d'aturades de París durant dos anys.

Intensive Care Med. 2014 Mar 22. [Epub ahead of print]
Characteristics and prognosis of sudden cardiac death in Greater Paris : Population-based approach from the Paris Sudden Death Expertise Center (Paris-SDEC).

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Abstract
PURPOSE: Sudden cardiac death (SCD) is a major public health concern, but data regarding epidemiology of this disease in Western European countries are outdated. This study reports the first results from a large registry of SCD.
METHODS: A population-based registry was established in May 2011 using multiple sources to collect every case of SCD in Paris and its suburbs, covering a population of 6.6 million. Utstein variables were recorded. Pre-hospital and in-hospital data were considered, and the main outcome was survival at hospital discharge. Neurologic status at discharge was established as well.
RESULTS: Of the 6,165 cases of SCD recorded over 2 years, 3,816 had a resuscitation attempt and represent the study population. Most patients were male (69 %), the SCD occurred at home (72 %) with bystanders in 80 % of cases, and cardiopulmonary resuscitation (CPR) was performed in 45 % of cases. Initial rhythm was shockable in 26 % of cases. A total of 1,332 patients (35 %) were admitted alive to hospital. Among hospitalized patients, 58 % had a coronary angiogram, and the same proportion had therapeutic hypothermia. Finally, 279 patients (7.5 %) were discharged alive, of whom 96 % had a favorable neurological outcome. In multivariate analysis, bystander CPR (OR 2.1, 95 % CI 1.5-3.1) and initial shockable rhythm (OR 11.5, 95 % CI 7.6-17.3) were positively associated with survival at hospital discharge, whereas age (OR 0.97 per year, 95 % CI 0.96-0.98), longer response time (OR 0.93 per minute, 95 % CI 0.89-0.97), occurrence at home (OR 0.4, 95 % CI 0.3-0.6), and epinephrine dose greater than 3 mg (OR 0.05, 95 % CI 0.03-0.08) were inversely associated with survival.
CONCLUSION: Despite being conducted in the therapeutic hypothermia and early coronary angiogram era, hospital discharge survival rate of resuscitated SCD remains poor. The current registry suggests ways to improve pre-hospital and in-hospital care of these patients.

PEDIATRIA

Singapore Med J. 2014 Mar;55(3):137-45.
Parental knowledge, attitudes and perceptions regarding infant basic life support.
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Author information 1SpecialKids Child Health and Development Clinic, 301 Upper Thomson Road, #03-03/04, Thomson Plaza, Singapore 574408. wblian@specialkidsclinic.com.sg.
Abstract
INTRODUCTION: Out-of-hospital cardiopulmonary arrest (CPA) in children is rare but significant, with poor survival rates and high morbidity. Asystole is the most common dysrhythmia, and cardiopulmonary resuscitation (CPR) is of great importance in such cases. We aimed to survey the knowledge, attitudes and perceptions of parents in Singapore regarding infant basic life support (IBLS).
METHODS: A questionnaire survey was administered to parents of children managed at the Neonatal Department of Singapore General Hospital, Singapore, between 1 September and 31 December 2008. The questionnaire consisted of three sections - section A collected demographic data, section B included questions on knowledge, and section C explored attitudes and perceptions. Knowledge T-scores were analysed for the entire cohort and subanalysed with respect to prior IBLS training.
RESULTS: In our study cohort (n = 375), the median Basic Knowledge (BK) T-score was 7 (range 1-9) and the pass rate was 55%. Median BK T-scores were significantly different between untrained (6; range 3 -9) and previously trained (8; range 3-9) participants. A majority of the trained participants obtained pass marks. Median Total Knowledge T-score, involving advanced questions, for previously trained participants was 11 (range 3-14), but pass rate was low (35.7%). Higher educational qualification was a significant factor impacting all scores. Untrained participants

indicated interest in attending IBLS courses, while trained participants were interested in refresher courses.
CONCLUSION: IBLS training, as part of basic cardiac life support training, is important given that CPR can significantly alter the outcome in children with CPA. Our survey revealed knowledge gaps that could be bridged through formal training. Refresher courses to regularly update parents' knowledge are recommended.

ECMO en ressuscitació pediàtrica

Singapore Med J. 2014 Mar;55(3):e37-8.
Extracorporeal life support for cardiac arrest in a paediatric emergency department.
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Abstract
The initiation of extracorporeal membrane oxygenation (ECMO) in the emergency department (ED) is a rare event. Herein, we report a case of acute fulminant myocarditis in a nine-year-old girl who was successfully resuscitated by early initiation of ECMO support in the paediatric ED of KK Women's and Children's Hospital, Singapore. The patient had rapidly progressed into a witnessed pulseless ventricular tachycardia on presentation, and ECMO was started in the ED following the failure of standard resuscitation measures to establish spontaneous circulation. ECMO was continued for nine days. The patient recovered well with normal neurocognitive function. The initiation of ECMO in the ED is potentially life-saving in the resuscitation of children with witnessed in-hospital cardiac arrest due to a reversible cause.

COMPRESSIONS TORÀCIQUES

Sembla que la RCP pot bonyegar els stents. S'haurien de revisar si el pacient es recupera.

Clin Res Cardiol. 2014 Apr 4. [Epub ahead of print]
Compression, distortion and dislodgement of large caliber stents in congenital heart defects caused by cardiopulmonary resuscitation: a case series and review of the literature.
Haas NA1, Happel CM, Jategaonkar S, Moysich A, Hanslik A, Kececioglu D, Sandica E, Laser KT.
Author information 1Department of Congenital Heart Defects, Heart and Diabetes Centre North Rhine Westphalia, Ruhr University Bochum, Georgstrasse 11, 32545, Bad Oeynhausen, Germany, nhaas@hdz-nrw.de.
Abstract
Stenting of vascular, extracardiac or lately intracardiac stenosis has become an established interventional treatment for a variety of problems in congenital or acquired heart disease. Most stent procedures are completed successfully and the long-term outcome is favorable in the majority of cases. Stent collapse or deformation is a well recognized entity in peripheral stents and can be attributed to insufficient radial force; it can also be attributed to excessive external forces, like deformation of stents in the right ventricular outflow tract, where external compression is combined with continuous movement caused by the beating heart. The protection of the thoracic cage may prove to be insufficient in extraordinary circumstances, such as chest compression in trauma or cardiopulmonary resuscitation (CPR). In this case series, we describe three patients in whom large endovascular stents were placed to treat significant stenosis of the aorta, the aortic arch or the venous system of the inferior vena cava close to the atrium. In all patients, CPR was necessary during their clinical course for various reasons; after adequate CPR, including appropriate chest compression all patients survived the initial resuscitation phase. Clinical, echocardiographic as well as radiologic re-evaluation after resuscitation revealed significant stent distortion, compression, displacement or additional

vascular injury. The possibility of mechanical deformation of large endovascular stents needs to be considered and recognized when performing CPR; if CPR is successful, immediate re-evaluation of the implanted stents-if possible by biplane fluoroscopy-seems mandatory.

1ª revisió! Sobre la qualitat de la RCP. Del superpope Jerry Nolan, que tot i ser editor de la Revista Resuscitation, el publica al Current Opinion in Critical Care a la que jo no tinc accés ☹, però li he demanat a un colega suec que me l'envîi ;)

***Curr Opin Crit Care*.** 2014 Apr 8. [Epub ahead of print]
High-Quality Cardiopulmonary Resuscitation
Nolan JP.
Author information Royal United Hospital, Bath, UK.
Abstract
PURPOSE OF REVIEW: The quality of cardiopulmonary resuscitation (CPR) impacts on outcome after cardiac arrest. This review will explore the factors that contribute to high-quality CPR and the metrics that can be used to monitor performance.
RECENT FINDINGS: A recent consensus statement from North America defined five key components of high-quality CPR: minimizing interruptions in chest compressions, providing compressions of adequate rate and depth, avoiding leaning on the chest between compressions, and avoiding excessive ventilation. Studies have shown that real-time feedback devices improve the quality of CPR and, in one before-and-after study, outcome from out-of-hospital cardiac arrest.
SUMMARY: There is evidence for increasing survival rates following out-of-hospital cardiac arrest and this is associated with increasing rates of bystander CPR. The quality of CPR provided by healthcare professionals can be improved with real-time feedback devices. The components of high-quality CPR and the metrics that can be measured and fed back to healthcare professionals have been defined by expert consensus. In the future, real-time feedback based on the physiological responses to CPR may prove more effective.

VENTILACIÓ

2ª revisió sobre l'impacte de l'oxigenació i la carboxèmia durant l'ACR. Com a la del Jerry Nolan, no tinc accés al Current Opinion in Critical Care…

Curr Opin Crit Care. 2014 Apr 8. [Epub ahead of print]
The impact of oxygen and carbon dioxide management on outcome after cardiac arrest.
Eastwood GM1, Young PJ, Bellomo R.
Author information 1aDepartment of Intensive Care, Austin Hospital, Heidelberg, Melbourne, Victoria, Australia bIntensive Care Unit, Wellington Regional Hospital, Wellington, New Zealand cAustralian and New Zealand Intensive Care Research Centre, Melbourne, Victoria, Australia.
Abstract
PURPOSE OF REVIEW: To describe the impact of oxygen and carbon dioxide management on patient outcomes following cardiac arrest.
RECENT FINDINGS: Although there are no data that suggest that supplemental oxygen administration during cardiopulmonary resuscitation is harmful, there is concern that 100% oxygen during the postresuscitation phase may be undesirable. The evidence to avoid hyperoxia is limited to animal studies and retrospective clinical studies that examine the association between exposure and outcome. There is a correlation between end-tidal carbon dioxide values during cardiopulmonary resuscitation and resuscitation outcome, yet this correlation is likely to reflect low or absent cardiac output and be a biomarker of illness severity rather than a mediator of injury. Additionally, very limited high-level human data exist

on the relationship between arterial carbon dioxide tension and outcome following cardiac arrest. Retrospective studies have identified hypocapnia in the intensive care unit as being independently associated with worse neurological and mortality outcomes in cardiac arrest patients. Although there appears to be sufficient evidence to recommend avoiding hypocapnia after resuscitation, observational data suggest that hypercapnia may be independently associated with a greater likelihood of discharge home amongst cardiac arrest survivors. SUMMARY: Current data for oxygen and carbon dioxide management following resuscitation suggest that hyperoxia and hypocapnia may be injurious and should be avoided, and that mild hypercapnia may increase the likelihood of discharge home amongst survivors. Such data should be viewed as hypothesis generating. Randomized controlled trials have commenced to clarify the safety, feasibility and efficacy of targeting different oxygen and carbon dioxide tensions following cardiac arrest.

Una altra revisió sobre estratègies de ventilació a l'ACR.

Biomed Res Int. 2014;2014:376871. Epub 2014 Mar 3.
Oxygenation, Ventilation, and Airway Management in Out-of-Hospital Cardiac Arrest: A Review.
Henlin T1, Michalek P2, Tyll T1, Hinds JD3, Dobias M2.
Author information 1Department of Anaesthesia and Intensive Medicine, Military University Hospital, 1st Medical Faculty, Charles University in Prague, 160 00 Prague, Czech Republic.2Department of Anaesthesia and Intensive Medicine, General University Hospital, 1st Medical Faculty, Charles University in Prague, 120 21 Prague, Czech Republic.3Department of Anaesthesia, Craigavon Area Hospital, BT63 5QQ Portadown, Northern Ireland, UK.
Abstract
Recently published evidence has challenged some protocols related to oxygenation, ventilation, and airway management for out-of-hospital cardiac arrest. Interrupting chest compressions to attempt airway intervention in the early stages of OHCA in adults may worsen patient outcomes. The change of BLS algorithms from ABC to CAB was recommended by the AHA in 2010. Passive insufflation of oxygen into a patent airway may provide oxygenation in the early stages of cardiac arrest. Various alternatives to tracheal intubation or bag-mask ventilation have been trialled for prehospital airway management. Simple methods of airway management are associated with similar outcomes as tracheal intubation in patients with OHCA. The insertion of a laryngeal mask airway is probably associated with worse neurologically intact survival rates in comparison with other methods of airway management. Hyperoxemia following OHCA may have a deleterious effect on the neurological recovery of patients. Extracorporeal oxygenation techniques have been utilized by specialized centers, though their use in OHCA remains controversial. Chest hyperinflation and positive airway pressure may have a negative impact on hemodynamics during resuscitation and should be avoided. Dyscarbia in the postresuscitation period is relatively common, mainly in association with therapeutic hypothermia, and may worsen neurological outcome.

CURES POST-RCE

Una revisió sobre neuroprotecció precoç. Tampoc tinc accés a l'article.

Curr Opin Crit Care. 2014 Apr 8. [Epub ahead of print]
Early neuroprotection after cardiac arrest.
Dell'anna AM1, Scolletta S, Donadello K, Taccone FS.
Author information 1Department of Intensive Care, Erasme Hospital, Université Libre de Bruxelles (ULB), Brussels, Belgium.
Abstract

PURPOSE OF REVIEW: Many efforts have been made in the last decades to improve outcome in patients who are successfully resuscitated from sudden cardiac arrest. Despite some advances, postanoxic encephalopathy remains the most common cause of death among those patients and several investigations have focused on early neuroprotection in this setting.
RECENT FINDINGS: Therapeutic hypothermia is the only strategy able to provide effective neuroprotection in clinical practice. Experimental studies showed that therapeutic hypothermia was even more effective when it was started immediately after the ischemic event. In human studies, the use of prehospital hypothermia was able to reduce the time to target temperature but did not result in higher survival rate or neurological recovery in patients with out-of-hospital cardiac arrest, when compared with standard in-hospital therapeutic hypothermia. Thus, intra-arrest hypothermia (i.e., initiated during cardiopulmonary resuscitation) may be a valid alternative to improve the effectiveness of therapeutic hypothermia in this setting; however, more clinical data are needed to demonstrate any potential benefit of such intervention on neurological outcome. Together with cooling, early hemodynamic optimization should be considered to improve cerebral perfusion in cardiac arrest patients and minimize any secondary brain injury. Nevertheless, only scarce data are available on the impact of early hemodynamic optimization on the development of organ dysfunction and neurological recovery in such patients. Some new protective strategies, including inhaled gases (i.e., xenon, argon, nitric oxide) and intravenous drugs (i.e., erythropoietin) are emerging in experimental studies as promising tools to improve neuroprotection, especially when combined with therapeutic hypothermia.
SUMMARY: Early cooling may contribute to enhance neuroprotection after cardiac arrest. Hemodynamic optimization is mandatory to avoid cerebral hypoperfusion in this setting. The combination of such interventions with other promising neuroprotective strategies should be evaluated in future large clinical studies.

L'escala SAPS III no prediu la mortalitat de les ACR.

Resuscitation. 2014 Apr 2. pii: S0300-9572(14)00446-8. doi: 10.1016/j.resuscitation.2014.03.302. [Epub ahead of print]
Effectiveness of SAPS III to predict hospital mortality for post-cardiac arrest patients.
Jouve E1, Papazian L2, Bourmont SD3, Perrin G4, Eon B4, Gainnier M3, Bisbal M5.
Author information 1APHM, Hôpital La Timone, CIC-UPCET, Pharmacologie Clinique et Evaluations Thérapeutiques, 13005 Marseille, France.2Aix-Marseille Univ, URMITE CNRS-UMR 7278, 13005 Marseille, France; APHM, Hôpital Nord, Réanimation, 13015 Marseille, France.3Aix-Marseille Univ, 13005 Marseille, France; APHM, Hôpital La Timone, Réanimation des Urgences et Médicale, 13005 Marseille, France.4APHM, Hôpital La Timone, Réanimation des Urgences et Médicale, 13005 Marseille, France.5Aix-Marseille Univ, 13005 Marseille, France; APHM, Hôpital La Timone, Réanimation des Urgences et Médicale, 13005 Marseille, France. Electronic address: magalibisbal@gmail.com.
Abstract
PURPOSE: The mortality for patients admitted to intensive care unit (ICU) after cardiac arrest (CA) remains high despite advances in resuscitation and post-resuscitation care. The Simplified Acute Physiology Score (SAPS) III is the only score that can predict hospital mortality within an hour of admission to ICU. The objective was to evaluate the performance of SAPS III to predict mortality for post-CA patients.
METHODS: This retrospective single-center observational study included all patients admitted to ICU after CA between August 2010 and March 2013. The calibration (standardized mortality ratio [SMR]) and the discrimination of SAPS III (area under the curve [AUC] for receiver operating characteristic [ROC]) were measured. Univariate logistic regression tested the relationship between death and scores for SAPS III, SAPS II, Sequential Organ Failure

Assessment (SOFA) Score and out-of-hospital cardiac arrests (OHCA) score. Independent factors associated with mortality were determined.
RESULTS: One-hundred twenty-four patients including 97 out-of-hospital CA were included. In-hospital mortality was 69%. The SAPS III was unable to predict mortality (SMRSAPS III: 1.26) and was less discriminating than other scores (AUCSAPSIII: 0.62 [0.51, 0.73] vs AUCSAPSII: 0.75 [0.66, 0.84], AUCSOFA: 0.72 [0.63, 0.81], AUCOHCA: 0.84 [0.77, 0.91]). An early return of spontaneous circulation, early resuscitation care and initial ventricular arrhythmia were associated with a better prognosis.
CONCLUSIONS: The SAPS III did not predict mortality in patients admitted to ICU after CA. The amount of time before specialized CPR, the low-flow interval and the absence of an initial ventricular arrhythmia appeared to be independently associated with mortality and these factors should be used to predict mortality for these patients.

Els predictors de pronòstic en els pacients que han estat sotmesos a hipotèrmia requereixen el seu temps per ser vàlids…

Crit Care Med. 2014 Apr 8. [Epub ahead of print]
Predicting Neurologic Outcome After Targeted Temperature Management for Cardiac Arrest: Systematic Review and Meta-Analysis.
Golan E1, Barrett K, Alali AS, Duggal A, Jichici D, Pinto R, Morrison L, Scales DC.
Author information 11Interdepartmental Division of Critical Care and Department of Medicine, University of Toronto, Toronto, ON, Canada. 2Institute of Health Policy, Management and Evaluation, University of Toronto, Toronto, ON, Canada. 3Medical Intensive Care Unit, Respiratory Institute, Cleveland Clinic Foundation, Cleveland, OH. 4Division of Critical Care and Neurology, Department of Medicine, McMaster University, Hamilton, ON, Canada. 5Trauma, Emergency, and Critical Care Program, Sunnybrook Health Sciences Centre, Toronto, ON, Canada. 6Department of Emergency Medicine, St. Michael's Hospital, Toronto, ON, Canada. 7Division of Emergency Medicine, Department of Medicine, University of Toronto, Toronto, ON, Canada. 8Rescu, Keenan Research Centre of the Li Ka Shing Knowledge Institute, St. Michael's Hospital, University of Toronto, ON, Canada. 9Department of Critical Care Medicine and Sunnybrook Research Institute, Sunnybrook Health Sciences Centre, Toronto, ON, Canada. 10Institute for Clinical Evaluative Sciences, Toronto, ON, Canada.
Abstract
OBJECTIVES:: Targeted temperature management improves survival and neurologic outcomes for adult out-of-hospital cardiac arrest survivors but may alter the accuracy of tests for predicting neurologic outcome after cardiac arrest.
DATA SOURCES:: We systematically searched Medline, Embase, CINAHL, and CENTRAL from database inception to September 2012.
STUDY SELECTION:: Citations were screened for studies that examined diagnostic tests to predict poor neurologic outcome or death following targeted temperature management in adult cardiac arrest survivors.
DATA EXTRACTION:: Data on study outcomes and quality were abstracted in duplicate. We constructed contingency tables for each diagnostic test and calculated sensitivity, specificity, and positive and negative likelihood ratios.
DATA SYNTHESIS:: Of 2,737 citations, 20 studies (n = 1,845) met inclusion criteria. Meta-analysis showed that three tests accurately predicted poor neurologic outcome with low false-positive rates: bilateral absence of pupillary reflexes more than 24 hours after a return of spontaneous circulation (false-positive rate, 0.02; 95% CI, 0.01-0.06; summary positive likelihood ratio, 10.45; 95% CI, 3.37-32.43), bilateral absence of corneal reflexes more than 24 hours (false-positive rate, 0.04; 95% CI, 0.01-0.09; positive likelihood ratio, 6.8; 95% CI, 2.52-18.38), and bilateral absence of somatosensory-evoked potentials between days 1 and 7 (false-

positive rate, 0.03; 95% CI, 0.01-0.07; positive likelihood ratio, 12.79; 95% CI, 5.35-30.62). False-positive rates were higher for a Glasgow Coma Scale motor score showing extensor posturing or worse (false-positive rate, 0.09; 95% CI, 0.06-0.13; positive likelihood ratio, 7.11; 95% CI, 5.01-10.08), unfavorable electroencephalogram patterns (false-positive rate, 0.07; 95% CI, 0.04-0.12; positive likelihood ratio, 8.85; 95% CI, 4.87-16.08), myoclonic status epilepticus (false-positive rate, 0.05; 95% CI, 0.02-0.11; positive likelihood ratio, 5.58; 95% CI, 2.56-12.16), and elevated neuron-specific enolase (false-positive rate, 0.12; 95% CI, 0.06-0.23; positive likelihood ratio, 4.14; 95% CI, 1.82-9.42). The specificity of available tests improved when these were performed beyond 72 hours. Data on neuroimaging, biomarkers, or combination testing were limited and inconclusive.
CONCLUSION:: Simple bedside tests and somatosensory-evoked potentials predict poor neurologic outcome for survivors of cardiac arrest treated with targeted temperature management, and specificity improves when performed beyond 72 hours. Clinicians should use caution with these predictors as they carry the inherent risk of becoming self-fulfilling.

FÀRMACS

Una meta-anàlisis sobre la utilitat de la vasopresina. Té els seus moments… ;)

Resuscitation. 2014 Apr 2. pii: S0300-9572(14)00447-X. doi: 10.1016/j.resuscitation.2014.03.303. [Epub ahead of print]
Efficacy of vasopressin during cardio-pulmonary resuscitation in adult patients: A meta-analysis.
Layek A1, Maitra S2, Pal S3, Bhattacharjee S4, Baidya DK5.
Author information 1Senior Resident, Department of Anaesthesiology, CNBC, New Delhi, India.2Senior Resident, Department of Anaesthesiology & Intensive Care, All India Institute of Medical Sciences, New Delhi, India.3Senior Resident, Department of Anaesthesiology & Intensive Care, JPNATC, All India Institute of Medical Sciences, New Delhi, India.4Senior Resident, Department of Anaesthesiology & Intensive Care, All India Institute of Medical Sciences, New Delhi, India. Electronic address: bhattacharjee.sulagna85@gmail.com.5Assistant Professor, Department of Anaesthesiology & Intensive Care, CDER, All India Institute of Medical Sciences, New Delhi, India.
Abstract
BACKGROUND: Experimental and animal studies suggested that vasopressin may have a favourable survival profile during CPR. This meta-analysis aimed to determine the efficacy of vasopressin in adult cardiac patients. Methodology: Meta-analysis of randomized control trials (RCTs) comparing the efficacy of vasopressin containing regimen during CPR in adult cardiac arrest population with an epinephrine only regimen.
RESULTS: A total of 6120 patients from 10 RCTs were included in this meta-analysis. Vasopressin use during CPR has no beneficial impact in an unselected population in ROSC [OR 1.19, 95% CI 0.93, 1.52], survival to hospital discharge [OR 1.13, 95% CI 0.89, 1.43], survival to hospital admission [OR 1.12, 95% CI 0.99, 1.27] and favourable neurological outcome [OR 1.02, 95% CI 0.75, 1.38]. ROSC in "in-hospital" cardiac arrest setting [OR 2.20, 95% CI 1.08, 4.47] is higher patients receiving vasopressin. Subgroup analyses revealed equal or higher chance of ROSC [OR 2.15, 95% CI 1.00, 4.61], higher possibility of survival to hospital discharge [OR 2.39, 95% CI 1.34, 4.27] and favourable neurological outcome [OR 2.58, 95% CI 1.39, 4.79] when vasopressin was used as repeated boluses of 4-5 times titrating desired effects during CPR.
CONCLUSION: ROSC in "in-hospital" cardiac arrest patients is significantly better when vasopressin was used. A subgroup analysis of this meta-analysis found that ROSC, survival to hospital admission and discharge and favourable neurological outcome may be better when vasopressin was used as repeated boluses of 4-5 times titrated to desired effects; however, overall no beneficial effect was noted in unselected cardiac arrest population.

DESFIBRIL·LACIÓ

A veure si aquí som capaços de fer el mateix amb l'OHSCAR!!!

Emerg Med Australas. 2014 Apr 8. doi: 10.1111/1742-6723.12174. [Epub ahead of print]
Implications for public access defibrillation placement by non-traumatic out-of-hospital cardiac arrest occurrence in Singapore.
Zakaria ND1, Ong ME, Gan HN, Foo D, Doctor N, Leong BS, Goh ES, Ng YY, Tham LP, Charles R, Shahidah N, Sultana P, Anantharaman V; PAROS study group.
Author information 1Yong Loo Lin School of Medicine, National University Health System, Singapore.
Abstract
INTRODUCTION: The American Heart Association recommends automated external defibrillator placement in public areas with a high probability (>1) of out-of-hospital cardiac arrest (OHCA) occurring in 5 years. We aimed to determine the incidence rate of OHCA for different location categories in Singapore.
METHODS: Cardiac arrest incidence was obtained from a national registry. Denominators for the actual number of sites per location category were obtained from public accessible sources, government officers and purchased statistics. Analysis was performed and expressed in terms of the corresponding 95% confidence interval (CI).
RESULTS: From 1 October 2001 to 14 October 2004, 2254 non-trauma OHCA cases were included. Mean age for arrests was 62.2 years, with 67.5% men. The location category with the highest incidence of cardiac arrests per site per 5 years was Port/Airport/Immigration Checkpoints (5.24 CI [3.66-7.20]). Top individual site with high average incidence of cardiac arrests per 5 years was Changi Airport (25.0 CI [16.18-36.90]). Seventy-one per cent of arrests occurred in residential areas. The postal sector with the highest average incidence per 100 000 population was Bedok Reservoir (54.89), whereas that with the highest population density was Bukit Merah/Alexandra with 348.14 population per 100 km2 .
CONCLUSION: In this study, we found the categories and individual sites that clearly fulfilled the American Heart Association criteria of at least 1 OHCA per site per 5 years. This study provides a model of how cardiac arrest registry data can be used to guide local health policy on automated external defibrillator deployment.

PEDIATRIA

Hem de parlar i veure que hem fet que sigui millorable, però els llatins som molt poc donats a fer-ho i hauríem d'aprendre.

Crit Care Med. 2014 Apr 8. [Epub ahead of print]
Interdisciplinary ICU Cardiac Arrest Debriefing Improves Survival Outcomes.
Wolfe H1, Zebuhr C, Topjian AA, Nishisaki A, Niles DE, Meaney PA, Boyle L, Giordano RT, Davis D, Priestley M, Apkon M, Berg RA, Nadkarni VM, Sutton RM.
Author information 11Department of Anesthesiology and Critical Care Medicine, The Children's Hospital of Philadelphia, Philadelphia, PA. 2Department of Pediatrics, Section of Critical Care Medicine, Children's Hospital Colorado, Aurora, CO.
Abstract
OBJECTIVE:: In-hospital cardiac arrest is an important public health problem. High-quality resuscitation improves survival but is difficult to achieve. Our objective is to evaluate the effectiveness of a novel, interdisciplinary, postevent quantitative debriefing program to improve survival outcomes after in-hospital pediatric chest compression events.

DESIGN, SETTING, AND PATIENTS:: Single-center prospective interventional study of children who received chest compressions between December 2008 and June 2012 in the ICU.
INTERVENTIONS:: Structured, quantitative, audiovisual, interdisciplinary debriefing of chest compression events with front-line providers.
MEASUREMENTS AND MAIN RESULTS:: Primary outcome was survival to hospital discharge. Secondary outcomes included survival of event (return of spontaneous circulation for ≥ 20 min) and favorable neurologic outcome. Primary resuscitation quality outcome was a composite variable, termed "excellent cardiopulmonary resuscitation," prospectively defined as a chest compression depth ≥ 38 mm, rate ≥ 100/min, ≤ 10% of chest compressions with leaning, and a chest compression fraction > 90% during a given 30-second epoch. Quantitative data were available only for patients who are 8 years old or older. There were 119 chest compression events (60 control and 59 interventional). The intervention was associated with a trend toward improved survival to hospital discharge on both univariate analysis (52% vs 33%, p = 0.054) and after controlling for confounders (adjusted odds ratio, 2.5; 95% CI, 0.91-6.8; p = 0.075), and it significantly increased survival with favorable neurologic outcome on both univariate (50% vs 29%, p = 0.036) and multivariable analyses (adjusted odds ratio, 2.75; 95% CI, 1.01-7.5; p = 0.047). Cardiopulmonary resuscitation epochs for patients who are 8 years old or older during the debriefing period were 5.6 times more likely to meet targets of excellent cardiopulmonary resuscitation (95% CI, 2.9-10.6; p < 0.01).
CONCLUSION:: Implementation of an interdisciplinary, postevent quantitative debriefing program was significantly associated with improved cardiopulmonary resuscitation quality and survival with favorable neurologic outcome.

CECOS

Enviar la unitat més propera, com era d'esperar, millora la supervivència, tot i que siguin els bombers amb un DEA.

Eur Heart J Acute Cardiovasc Care. 2014 Apr 16. [Epub ahead of print] The implementation of a dual dispatch system in out-of-hospital cardiac arrest is associated with improved short and long term survival.
Nordberg P1, Hollenberg J, Rosenqvist M, Herlitz J, Jonsson M, Järnbert-Petterson H, Forsberg S, Dahlqvist T, Ringh M, Svensson L.
Author information 1Department of Clinical Science and Education Karolinska Institutet, Section of Cardiology, Södersjukhuset Stockholm, Sweden.
Abstract
AIMS: To determine the impact of a dual dispatch system, using fire fighters as first responders, in out-of-hospital cardiac arrest (OHCA) on short (30 days) and long term (three years) survival, and, to investigate the potential differences regarding in-hospital factors and interventions between the patient groups, such as the use of therapeutic hypothermia and cardiac catheterization.
METHODS AND RESULTS: OHCAs from 2004 (historical controls) and 2006-2009 (intervention period) were included. During the intervention period, fire fighters equipped with automated external defibrillators (AEDs) were dispatched in suspected OHCA. Logistic regression analyses of outcome data included: the intervention with dual dispatch, sex, age, location, aetiology, witnessed status, bystander-cardiopulmonary resuscitation, first rhythm and therapeutic hypothermia. In total, 2581 OHCAs were included (historical controls n=620, intervention period n=1961). Fire fighters initiated cardiopulmonary resuscitation and connected an AED before emergency medical services' arrival in 41% of the cases. The median time from dispatch to arrival of first responder or emergency medical services shortened from 7.7 in the control period to 6.7 min in the intervention period (p<0.001). The 30-day survival improved from

3.9% to 7.6% (p=0.001), adjusted odds ratio 2.8 (confidence interval 1.6-4.9). Survival to three years increased from 2.4% to 6.5% (p<0.001), adjusted odds ratio 3.8 (confidence interval 1.9-7.6). In the logistic regression analysis including in-hospital factors we found no outcome benefit of therapeutic hypothermia.
CONCLUSIONS: The implementation of a dual dispatch system using fire fighters in OHCA was associated with increased 30-day and three-year survival. No major differences in the in-hospital treatment were seen between the studied patient groups.

POST-ACR

La supervivència a llarg termini en les ACR es relaciona amb l'alta amb bona funció NRL

Resuscitation. 2014 Apr 8. pii: S0300-9572(14)00456-0. doi: 10.1016/j.resuscitation.2014.03.312. [Epub ahead of print]
Predictors of long-term survival after out-of-hospital cardiac arrest: the impact of activity of daily living and cerebral performance category scores.
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Author information 1Medical Intern, Hebrew University-Hadassah Faculty of Medicine, Ein Kerem, Jerusalem, Israel. Paramedic, Magen David Adom, Jerusalem, Israel.2Research Nurse, Intensive Care Unit and Staff Nurse, Department of Emergency Medicine, Shaare Zedek Medical Center, Jerusalem, Israel.3Consultant statistician, Hebrew University-Hadassah Faculty of Medicine, Ein Kerem, Jerusalem, Israel.4Epidemiology Unit, Hebrew University-Hadassah Braun School of Public Health and Community Medicine, Ein Kerem, Jerusalem, Israel.5Director of Surgical Intensive Care, Shaare Zedek Medical Center, and Senior Lecturer, Hebrew University-Hadassah Faculty of Medicine, Ein Kerem, Jerusalem, Israel. Electronic address: einav_s@szmc.org.il.
Abstract
BACKGROUND: Current focus on immediate survival from out-of-hospital cardiac arrest (OHCA) has diverted attention away from the variables potentially affecting long-term survival.
AIM: To determine the relationship between neurological and functional status at hospital discharge and long-term survival after OHCA.
METHODS: Prospective data collection for all OHCA patients aged >18 years in the Jerusalem district (n=1043, 2008-2009). Primary outcome measure: Length of survival after OHCA. Potential predictors: Activities of Daily Living (ADL) and Cerebral Performance Category (CPC) scores at hospital discharge, age and sex.
RESULTS: There were 52/279 (18.6%) survivors to hospital discharge. Fourteen were discharged on mechanical ventilation (27%). Interviews with survivors and/or their legal guardians were sought 2.8±0.6 years post-arrest. Eighteen died before long-term follow-up (median survival 126 days, IQR 94-740). Six improved their ADL and CPC scores between discharge and follow-up. Long-term survival was positively related with lower CPC scores (p=0.002) and less deterioration in ADL from before the arrest to hospital discharge (p=0.001). For each point increment in ADL at hospital discharge, the hazard ratio of death was 1.31 (95%CI 1.12, 1.53, p=0.001); this remained unchanged after adjustment for age and sex (HR 1.26, 95%CI 0.07, 1.48, p=0.005).
CONCLUSIONS: One-third of the patients discharged from hospital after OHCA died within 30 months of the event. Long-term survival was associated both with better neurological and functional level at hospital discharge and a smaller decrease in functional limitation from before to after the arrest, yet some patients with a poor neurological outcome survived prolonged periods after hospital discharge.

PEDIATRIA

BJA: Chest compressions guided by ETCO2!

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.

HIPOTÈRMIA

Una altra meta-anàlisis que qüestiona la hipotèrmia, aquest cop l'inici extrahsopitalari.

Acad Emerg Med. 2014 Apr;21(4):355-364. doi: 10.1111/acem.12342.
No Benefit to Prehospital Initiation of Therapeutic Hypothermia in Out-of-hospital Cardiac Arrest: A Systematic Review and Meta-analysis.
Hunter BR1, O'Donnell DP, Allgood KL, Seupaul RA.
Author information 1The Department of Emergency Medicine, Indiana University School of Medicine, Indianapolis, IN.
Abstract
OBJECTIVES: The aim of this review was to define the effect of prehospital therapeutic hypothermia (TH) on survival and neurologic recovery in patients who have suffered out-of-hospital cardiac arrest (OHCA).
METHODS: Included in this review are randomized trials assessing the effect of prehospital TH in adult patients suffering nontraumatic OHCA. Trials assessing the effect of in-hospital TH were excluded. Only studies with a low risk of bias were eligible for meta-analysis. A medical librarian searched PubMed, Ovid, EMBASE, Ovid Global Health, the Cochrane Library, Guidelines.gov, EM Association Websites, CenterWatch, IFPMA Clinical Trial Results Portal,

CINAHL, ProQuest, and the Emergency Medical Abstracts Database without language restrictions. Clinicaltrials.gov was searched for unpublished studies. Bibliographies were hand searched and experts in the field were queried about other published or unpublished trials. Using standardized forms, two authors independently extracted data from all included trials. Results from high-quality trials were pooled using a random-effects model. Two authors, using the Cochrane risk of bias tool, assessed risk of bias independently.
RESULTS: Of 740 citations, six trials met inclusion criteria. Four trials were at a low risk of bias and were included in the meta-analysis (N = 715 patients). Pooled analysis of these trials revealed no difference in overall survival (relative risk [RR] = 0.98, 95% CI = 0.79 to 1.21) or good neurologic outcome (RR = 0.96, 95% CI = 0.76 to 1.22) between patients randomized to prehospital TH versus standard therapy. Heterogeneity was low for both survival and neurologic outcome ($I^2 = 0$).
CONCLUSIONS: Randomized trial data demonstrate no important patient benefit from prehospital initiation of TH. Pending the results of ongoing larger trials, resources dedicated to this intervention may be better spent elsewhere.

FÀRMACS

Potser la Nitroglicerina té un paper durant l'ACR. Caldria fer estudis en humans.

Eur J Pharmacol. 2014 Apr 13. pii: S0014-2999(14)00268-4. doi: 10.1016/j.ejphar.2014.04.002. [Epub ahead of print]
The effects of nitroglycerin during cardiopulmonary resuscitation.
Stefaniotou A1, Varvarousi G1, Varvarousis DP1, Xanthos T2.
Author information 1MSc Program Cardiopulmonary Resuscitation, University of Athens, Medical School, Greece, 75 Mikras Asias Street, 11527 Athens, Greece.2MSc Program Cardiopulmonary Resuscitation, University of Athens, Medical School, Greece, 75 Mikras Asias Street, 11527 Athens, Greece. Electronic address: theodorosxanthos@yahoo.com.
Abstract
The outcome for both in-hospital and out-of hospital cardiac arrest remains dismal. Vasopressors are used to increase coronary perfusion pressure and thus facilitate return of spontaneous circulation during cardiopulmonary resuscitation. However, they are associated with a number of potential adverse effects and may decrease endocardial and cerebral organ blood flow. Nitroglycerin has a favourable haemodynamic profile which promotes forward blood flow. Several studies suggest that combined use of nitroglycerin with vasopressors during resuscitation, is associated with increased rates of resuscitation and improved post-resuscitation outcome. This article reviews the effects of nitroglycerin during cardiopulmonary resuscitation and postresuscitation period, as well as the beneficial outcomes of a combination regimen consisting of a vasopressor and a vasodilator, such as nitroglycerin.

O potser no hauríem de fer servir fàrmacs…? No tinc accés al Current Opinion in critical care, però m'ha semblt molt interesant.

Curr Opin Crit Care. 2014 Apr 16. [Epub ahead of print]
Towards cardiopulmonary resuscitation without vasoactive drugs.
Sunde K1, Olasveengen TM.
Author information 1aUniversity of Oslo bDepartment of Anaesthesiology, Division of Emergencies and Critical Care cDepartment of Research and Development, Division of Emergencies and Critical Care, Oslo University Hospital, Oslo, Norway.
Abstract
PURPOSE OF REVIEW: Whereas there is clear evidence for improved survival with cardiopulmonary resuscitation (CPR) and defibrillation during cardiac arrest management,

there is today lacking evidence that any of the recommended and used drugs lead to any long-term benefit for the patients. In this review, we try to discuss our current view on why advanced life support (ALS) today can be performed without the use of drugs, and instead gain all focus on improving the tasks we know improve survival: CPR and defibrillation.
RECENT FINDINGS: Previous and recent cardiac arrest drug studies have been reviewed. These are mostly consisting of retrospective register data, some experimental data and a few new randomized trials. The alternative drug-free ALS concept is also discussed with relevant studies.
SUMMARY: There is currently no evidence to support any specific drugs during cardiac arrest. Good-quality CPR, early defibrillation and goal-directed postresuscitation care is more important. Healthcare systems should not prioritize implementation of unproven drugs before good quality of care can be documented. More drug studies are indeed required, and future research needs to incorporate better diagnostic tools to test more specific and tailored therapies that account for underlying causes and individual responsiveness.

SIMULACIÓ

Ensenyament de l'SVA amb realitat virtual. Si ja ens sembla complicat amb la Moodle!!!

J Biomed Inform. 2014 Apr 11. pii: S1532-0464(14)00090-2. doi: 10.1016/j.jbi.2014.04.005. [Epub ahead of print]
Collaborative Virtual Reality Based Advanced Cardiac Life Support Training Simulator using Virtual Reality Principles.
Khanal P1, Vankipuram A2, Ashby A2, Vankipuram M3, Gupta A4, Drumm-Gurnee D5, Josey K5, Tinker L5, Smith M5.
Author information 1Department of Biomedical Informatics, Arizona State University, Scottsdale, Arizona. Electronic address: prabalkhanal@gmail.com.2Department of Biomedical Informatics, Arizona State University, Scottsdale, Arizona.3HP Labs, Palo Alto, California.4Department of Management, University of Tennessee Chattanooga, Tennessee.5Banner Health SimET Center, Phoenix, Arizona.
Abstract
BACKGROUND: Advanced Cardiac Life Support (ACLS) is a series of team-based, sequential and time constrained interventions, requiring effective communication and coordination of activities that are performed by the care provider team on a patient undergoing cardiac arrest or respiratory failure. The state-of-the-art ACLS training is conducted in a face-to-face environment under expert supervision and suffers from several drawbacks including conflicting care provider schedules and high cost of training equipment.
OBJECTIVE: The major objective of the study is to describe, including the design, implementation, and evaluation of a novel approach of delivering ACLS training to care providers using the proposed virtual reality simulator that can overcome the challenges and drawbacks imposed by the traditional face-to-face training method.
METHODS: We compare the efficacy and performance outcomes associated with traditional ACLS training with the proposed novel approach of using a virtual reality (VR) based ACLS training simulator. One hundred and forty eight (148) ACLS certified clinicians, translating into 26 care provider teams, were enrolled for this study. Each team was randomly assigned to one of the three treatment groups: control (traditional ACLS training), persuasive (VR ACLS training with comprehensive feedback components), or minimally persuasive (VR ACLS training with limited feedback components). The teams were tested across two different ACLS procedures that vary in the degree of task complexity: ventricular fibrillation or tachycardia (VFib/VTach) and pulseless electric activity (PEA).
RESULTS: The difference in performance between control and persuasive groups was not statistically significant (P = .37 for PEA and P = .1 for VFib/VTach). However, the difference in

performance between control and minimally persuasive groups was significant (P = .05 for PEA and P = .02 for VFib/VTach). The pre-post comparison of performances of the groups showed that control (P = .017 for PEA, P = .01 for VFib/VTach) and persuasive (P = .02 for PEA, P = .048 for VFib/VTach) groups improved their performances significantly, whereas minimally persuasive group did not (P = .45 for PEA, P = .46 for VFib/VTach). Results also suggest that the benefit of persuasiveness is constrained by the potentially interruptive nature of these features.
CONCLUSIONS: Our results indicate that the VR-based ACLS training with proper feedback components can provide a learning experience similar to face-to-face training, and therefore could serve as a more easily accessed supplementary training tool to the traditional ACLS training. Our findings also suggest that the degree of persuasive features in VR environments have to be designed considering the interruptive nature of the feedback elements.

El coneixement de la RCP pels estudiants danesos i com millorar-lo. Hem de posar-nos les piles aquí!!!

Scand J Trauma Resusc Emerg Med. 2014 Apr 14;22(1):24. [Epub ahead of print]
Basic life support knowledge, self-reported skills and fears in Danish high school students and effect of a single 45-min training session run by junior doctors; a prospective cohort study.
Aaberg AM, Larsen CE, Rasmussen BS, Hansen CM, Larsen JM.
Abstract
BACKGROUND: Early recognition and immediate bystander cardiopulmonary resuscitation are critical determinants of survival after out-of-hospital cardiac arrest (OHCA). Our aim was to evaluate current knowledge on basic life support (BLS) in Danish high school students and benefits of a single training session run by junior doctors.
METHODS: Six-hundred-fifty-one students were included. They underwent one 45-minute BLS training session including theoretical aspects and hands-on training with mannequins. The students completed a baseline questionnaire before the training session and a follow-up questionnaire one week later. The questionnaire consisted of an eight item multiple-choice test on BLS knowledge, a four-level evaluation of self-assessed BLS skills and evaluation of fear based on a qualitative description and visual analog scale from 0 to 10 for being first responder.
RESULTS: Sixty-three percent of the students (413/651) had participated in prior BLS training. Only 28% (179/651) knew how to correctly recognize normal breathing. The majority was afraid of exacerbating the condition or causing death by intervening as first responder. The response rate at follow-up was 61% (399/651). There was a significant improvement in correct answers on the multiple-choice test ($p < .001$). The proportion of students feeling well prepared to perform BLS increased from 30% to 90% ($p < .001$), and the level of fear of being first responder was decreased 6.8 +/- 2.2 to 5.5 +/- 2.4 ($p < .001$).
CONCLUSION: Knowledge of key areas of BLS is poor among high school students. One hands-on training session run by junior doctors seems to be efficient to empower the students to be first responders to OHCA.