REGISTRES

Estudi descriptiu de les ACR d'un Sistema d'Emergències a Itàlia

Emergency medical service treated out-of-hospital cardiac arrest: Identification of weak links in the chain-of-survival through an epidemiological study.
Sanson G1, Verduno J2, Zambon M3, Trevi R3, Caggegi GD3, Di Bartolomeo S4, Antonaglia V3.
Abstract
BACKGROUND:
In-depth analysis of emergency medical services (EMSs) performances in out-of-hospital cardiac arrest (OHCA) promotes quality improvement.
AIMS:
The purpose of this study was to identify the improvable factors of the EMS response to OHCA through the description and analysis of OHCA incidence, characteristics, management and outcome.
METHODS:
This was a retrospective cohort study on all OHCA patients treated by the EMSs of the district of Trieste, Italy (236,556 inhabitants) in 2011.
RESULTS:
A total of 678 OHCAs occurred and 142 (20.1%) underwent cardiopulmonary resuscitation (CPR), with a respective incidence of 287/100,000/year and 60/100,000/year. The incidence of shockable rhythms in the CPR group was 13/100,000. OHCAs occurred mainly during daytime, though the proportion of patients receiving CPR was significantly higher by night-time (p=0.01). Thirty-four CPR patients (23.9%) restored spontaneous circulation on scene; 12 (8.5%) survived to hospital discharge (11 with good neurological recovery). Survival was not correlated with age, while was significantly higher for patients with shockable rhythms (32.3%; p<0.001). Mean response time was 8 min. Direct intervention of physician-staffed units did not improve the outcome when compared with two-tiered activation. Patients immediately identified as OHCA by dispatch nurses and those undergoing therapeutic hypothermia showed a non-significant trend towards improved survival (p=0.09 and 0.07, respectively).
CONCLUSIONS:
OHCA identification by dispatch nurses and reduction of response time were the factors most susceptible to improvement.

La supervivència del ROC consortium ha augmentat en els últims anys, tant de bo nosaltres tinguèssim un registre per poder saber si aquí també…

Out-of-Hospital Cardiac Arrest Survival Improving Over Time: Results from the Resuscitation Outcomes Consortium (ROC).
Daya MR1, Schmicker RH2, Zive DM3, Rea TD4, Nichol G5, Buick JE6, Brooks S7, Christenson J8, MacPhee R9, Craig A6, Rittenberger JC10, Davis DP11, May S2, Wigginton J12, Wang H13; for the Resuscitation Outcomes Consortium Investigators.
Abstract
BACKGROUND:
Out-of-hospital cardiac arrest (OHCA) remains a leading cause of death and a 2010 meta-analysis concluded that outcomes have not improved over several decades. However, guidelines have changed to emphasize CPR quality, minimization of interruptions, and standardized post-resuscitation care. We sought to evaluate whether OHCA outcomes have improved over time among agencies participating in the Resuscitation Outcomes Consortium (ROC) cardiac arrest registry (Epistry) and randomized clinical trials (RCTs).
METHODS:
Observational cohort study of 47,148 EMS-treated OHCA cases in Epistry from 139 EMS agencies at 10 ROC sites that participated in at least one RCT between 1/1/2006 and 12/31/2010. We reviewed patient, scene, event characteristics, and outcomes of EMS-treated

OHCA over time, including subgroups with initial rhythm of pulseless ventricular tachycardia or ventricular fibrillation (VT/VF).
RESULTS:
Mean response interval, median age and male proportion remained similar over time. Unadjusted survival to discharge increased between 2006 and 2010 for treated OHCA (from 8.2% to 10.4%), as well as for subgroups of VT/VF (21.4% to 29.3%) and bystander witnessed VT/VF (23.5% to 30.3%). Compared with 2006, adjusted survival to discharge was significantly higher in 2010 for treated cases (OR=1.72; 95% CI 1.53, 1.94), VT/VF cases (OR=1.69; 95% CI 1.45, 1.98) and bystander witnessed VT/VF cases (OR=1.65; 95% CI 1.36, 2.00). Tests for trend in each subgroup were significant (p<0.001).
CONCLUSIONS:
ROC-wide survival increased significantly between 2006 and 2010. Additional research efforts are warranted to identify specific factors associated with this improvement.

Predictors for outcome among cardiac arrest patients: the importance of initial cardiac arrest rhythm versus time to return of spontaneous circulation, a retrospective cohort study.
Wibrandt I, Norsted K, Schmidt H, Schierbeck J.
Abstract
Background:
In the past decade, early treatment of cardiac arrest (CA) victims has been improved in several ways, leading to more optimistic over all prognoses. However, the global survival rate after out-of-hospital CA (OHCA) is still not more than 5-10%. With a better knowledge of the predictors for outcome among CA patients, we can improve the management of CA, in order to strengthen the leads in the chain of survival.
Methods:
A retrospective cohort study including 172 CA patients admitted to the intensive care unit (ICU) in Odense University Hospital (OUH) in a three-year period was conducted. We determined the 90-day mortality and neurological outcome at discharge for CA patients treated with therapeutic hypothermia (TH), in regard to determine the importance of the predictors for mortality and neurological outcome, with emphasize on combining initial rhythm and time to return of spontaneous circulation (ROSC).
Results:
The overall mortality was 44% and a favorable neurological outcome was seen among 52%. Strong predictors for survival and favorable neurological outcome were ventricular tachycardia/ventricular fibrillation (VT/VF) as initial rhythm, cardiac etiology and time to ROSC <20 minutes. Age <60 years was a predictor for survival only. Patients with the combination of VT/VF and ROSC<20 minutes had undeniably the best chance of both survival and a favorable neurological outcome.
Conclusions:
We found significant predictors for both survival and neurological outcome, in which an initial rhythm of VT/VF and a cardiac etiology were the strongest.

CURES POST-RCE / HIPOTÈRMIA

Enquesta sobre les pràctiques en pronòstic NRL

Survey on Current Practices for Neurological Prognostication after Cardiac Arrest.
Friberg H1, Cronberg T2, Dünser MW3, Duranteau J4, Horn J5, Oddo M6.
Abstract
PURPOSE:
To investigate current practices and timing of neurological prognostication in comatose cardiac arrest patients.
METHODS:

An anonymous questionnaire was distributed to the 8000 members of the European Society of Intensive Care Medicine during September and October 2012. The survey had 27 questions divided into three categories; background data, clinical data, decision-making & consequences.
RESULTS:
A total of 1025 respondents (13%) answered the survey with complete forms in more than 90%. Twenty per cent of respondents practiced outside of Europe. Overall, 22% answered that they had national recommendations, with the highest percentage in the Netherlands (>80%). Eighty-nine per cent used induced hypothermia (32-34°C) for comatose cardiac arrest patients, while 11% did not. Twenty per cent had separate prognostication protocols for hypothermia patients. Seventy-nine per cent recognized that neurological examination alone is not enough to predict outcome and a similar number (76%) used additional methods. Intermittent electroencephalography (EEG), brain computed tomography (CT) scan and evoked potentials (EP) were considered most useful. Poor prognosis was defined as cerebral performance category (CPC) 3-5 (58%) or CPC 4-5 (39%) or other (3%). When prognosis was considered poor, 73% would actively withdraw intensive care while 20% would not and 7% were uncertain.
CONCLUSION:
National recommendations for neurological prognostication after cardiac arrest are uncommon and only one physician out of five uses a separate protocol for hypothermia treated patients. A neurological examination alone was considered insufficient to predict outcome in comatose patients and most respondents advocated a multimodal approach; EEG, brain CT and EP were considered most useful. Uncertainty regarding neurological prognostication and decisions on level of care was substantial.

Les ACR recuperades al carrer tenen millor pronòstic que les d'Urgències (ull que si us llegiu l'article hi ha truc), però la hipotèrmia no sembla ser tan important quan l'ACR és prehspitalària.

The Effect of Mild Therapeutic Hypothermia on Good Neurological Recovery after Out-of-hospital Cardiac Arrest according to Location of Return of Spontaneous Circulation; a Nationwide Observational Study.
Bae KS1, Shin SD2, Ro YS3, Song KJ4, Lee EJ5, Lee YJ6, Suh GJ7, Kwak YH8.
Abstract
BACKGROUND:
Mild therapeutic hypothermia (MTH) has been known to be associated with good neurological recovery after out-of-hospital cardiac arrest (OHCA). Prehospital return of spontaneous circulation (P-ROSC) is associated with better hospital outcomes than ROSC at emergency department (ED-ROSC). It is unclear whether MTH has an interaction with location of ROSC (Prehospital vs. ED) for good neurological recovery. The study aims to examine the association between MTH by of ROSC and good neurological recovery after OHCA.
METHODS:
Adult OHCA cases with presumed cardiac etiology who survived to hospital admission were collected from a nationwide cardiac registry between 2008 and 2013. Study variables included age, gender, place of OHCA occurrence, witness, bystander cardiopulmonary resuscitation (CPR), metropolitan, emergency medical services (EMS) response time, prehospital defibrillation, levels of ED, reperfusion therapy, primary ECG, and P-ROSC versus ED-ROSC. MTH was defined as a case receiving hypothermia procedure regardless of procedure method. Primary outcome was good neurological recovery with cerebral performance category score of 1 and 2 measured by hospital medical record review. Multivariable logistic regression analysis was performed adjusting for potential confounders with an interaction term between MTH and location of ROSC to calculate adjusted odds ratios (AORs) and 95% confidence intervals (CIs).
RESULTS:
Of 138,410 adult OHCAs with cardiac etiology, 11,158(8.1%) patients survived to admission. Among such cases, good neurological recovery was 23.6% (399/1,691) in MTH vs. 15.0% (1,400/9,316) in non-MTH (p<0.001), and 58.2% (1,074/1,864) in P-ROSC vs. 7.9% (725/9,161)

in ED-ROSC (p<0.001). MTH was performed in 15.4% of total patients, 16.1% in P-ROSC (n=1,846), and 13.2% in ED-ROSC (n=9,161), respectively. There was a significant association between MTH and good neurological recovery (AOR=1.32, 95% CI=1.11-1.57). In the interaction model, AOR of MTH and interaction effect with P-ROSC and ED-ROSC was 0.78 (0.58-2.70) and 1.68 (1.34-1.98), respectively.

CONCLUSION:
MTH was significantly associated with good neurological recovery among OHCA survivors, but the effect was different in P-ROSC and ED-ROSC. Prehospital ROSC group showed substantially higher good neurological recovery. However, MTH showed significant benefits in patient group with ROSC at ED, not in P-ROSC group, in a nationwide observational study.

PEDIATRIA

Perllongar més enllà de 30 minuts la RCP en nens ofegats, podria considerar-se fútil

Outcome after resuscitation beyond 30 minutes in drowned children with cardiac arrest and hypothermia: Dutch nationwide retrospective cohort study.
Kieboom JK1, Verkade HJ2, Burgerhof JG3, Bierens JJ4, Rheenen PF2, Kneyber MC2, Albers MJ5.
Abstract
OBJECTIVES:
To evaluate the outcome of drowned children with cardiac arrest and hypothermia, and to determine distinct criteria for termination of cardiopulmonary resuscitation in drowned children with hypothermia and absence of spontaneous circulation.

DESIGN:
Nationwide retrospective cohort study.

SETTING:
Emergency departments and paediatric intensive care units of the eight university medical centres in the Netherlands.

PARTICIPANTS:
Children aged up to 16 with cardiac arrest and hypothermia after drowning, who presented at emergency departments and/or were admitted to intensive care.

MAIN OUTCOME MEASURE:
Survival and neurological outcome one year after the drowning incident. Poor outcome was defined as death or survival in a vegetative state or with severe neurological disability (paediatric cerebral performance category (PCPC) ≥4).

RESULTS:
From 1993 to 2012, 160 children presented with cardiac arrest and hypothermia after drowning. In 98 (61%) of these children resuscitation was performed for more than 30 minutes (98/160, median duration 60 minutes), of whom 87 (89%) died (95% confidence interval 83% to 95%; 87/98). Eleven of the 98 children survived (11%, 5% to 17%), but all had a PCPC score ≥4. In the 62 (39%) children who did not require prolonged resuscitation, 17 (27%, 16% to 38%) survived with a PCPC score ≤3 after one year: 10 (6%) had a good neurological outcome (score 1), five (3%) had mild neurological disability (score 2), and two (1%) had moderate neurological disability (score 3). From the original 160 children, only 44 were alive at one year with any outcome.

CONCLUSIONS:
Drowned children in whom return of spontaneous circulation is not achieved within 30 minutes of advanced life support have an extremely poor outcome. Good neurological outcome is more likely when spontaneous circulation returns within 30 minutes of advanced life support, especially when the drowning incident occurs in winter. These findings question the therapeutic value of resuscitation beyond 30 minutes in drowned children with cardiac arrest and hypothermia.

Segons aquest treball, és millor fer RCP amb la tècnica dels dos polzes en comptes de amb l'index i l'anular tot i ser un únic rescatador.

Two-thumb-encircling hands technique is more advisable than 2-finger technique when lone rescuer performs cardiopulmonary resuscitation on infant manikin.
Jiang J1, Zou Y1, Shi W1, Zhu Y1, Tao R1, Jiang Y2, Lu Y1, Tong J3.
Abstract

OBJECTIVE:

The 2010 guidelines recommend new requirements of the chest compression depth for infant. The compression technique recommendation for infant remains the 2-finger (TF) technique for lone rescuer and the 2-thumb-encircling hands technique for 2 rescuers. We hypothesized that the TF technique cannot result in an enough compression depth to meet the guideline requirements and that the 2-thumb-encircling hands technique will not affect the ventilation.

DESIGN:

Crossover experimental study randomizes 27 health care providers to perform 2 sets of 5-minute cardiopulmonary resuscitation using a 30:2 compression/ventilation ratio to compare TF and 2-thumb-encircling hands techniques. A Laerdal Resusci Baby QCPR manikin equipped with PC SkillReporting System was used for measuring and recording cardiopulmonary resuscitation data. Data (mean ± SD) were analyzed by using a paired t test. Significance was defined qualitatively as $P \leq .05$.

RESULTS:

Mean compression depths were 39.25 ± 3.06 cm in the TF technique and 42.37 ± 1.15 cm in the 2-thumb-encircling hands technique, $P < .001$. Two-finger technique had significant lower fractions of correct hand position than 2-thumb-encircling hands technique (96.56% ± 6.74% vs 99.41% ± 2.52%, $P < .05$). The fatigue point appears much earlier in TF than in 2-thumb-encircling hands. No difference was identified on ventilation between 2 groups.

CONCLUSION:

The 2-thumb-encircling hands technique can produce a compression depth meeting the current guidelines recommendation without negative influence on ventilation, whereas the TF technique cannot. The 2-thumb-encircling hands technique generates a significant higher ratio of correct compression position than the TF technique. Furthermore, the 2-thumb-encircling hands technique is less fatiguing than the TF technique.

ENTRENAMENT

Aquí proposen recomanar 140 com a freqüència per les compressions toràciques...

Rate at 120/min provides qualified chest compression during cardiopulmonary resuscitation.
Zou Y1, Shi W1, Zhu Y1, Tao R1, Jiang Y2, Li S1, Ye J1, Lu Y1, Jiang J3, Tong J4.
Abstract

OBJECTIVES:

The quality of cardiopulmonary resuscitation (CPR) is a very important prognostic factor for cardiac arrest. Chest compression is thought to be one of the most important aspects of high-quality CPR. Recent studies have prompted that there may be an interaction between chest compression rate and other factors related to the quality of chest compression. We aimed to investigate the effect of different compression rates on chest compression depth, recoil, and rescuers' fatigue point during CPR.

METHODS:

Participants performed 2 minutes of chest compression-only CPR after the guiding sounds, at 3 rates (100, 120, and 140 compressions/min) in random sequence. A repeated-measures analysis of variance was used to compare the average chest compression depth and other factors related to the quality of chest compression among the groups.

RESULTS:

As the chest compression rate increases through all the 3 rates, the fractions of chest compressions with complete release and the fractions of chest compressions with sufficient

depth were deteriorated at the rate of 140 compressions/min (P < .05), although the average compression depth was above the recommended 2010 guideline depth of 5 cm(P > .05). Of note, the fatigue point at 140 compressions/min happened significantly (P < .05) sooner.
CONCLUSION:
Our study supported the concern of some that there may be a risk of increasing recommended chest compression rate without providing an upper limit. An appropriate choice may be 120 compressions/min.

QUALITAT DE LA RCP

El EtCO2 s'associa a la qualitat de la RCP.

Quantitative relationship between end-tidal carbon dioxide and CPR quality during both in-hospital and out-of-hospital cardiac arrest.
Sheak KR1, Wiebe DJ2, Leary M1, Babaeizadeh S3, Yuen TC4, Zive D5, Owens PC6, Edelson DP4, Daya MR5, Idris AH6, Abella BS7.
Abstract
OBJECTIVE:
Cardiopulmonary resuscitation (CPR) guidelines recommend the administration of chest compressions (CC) at a standardized rate and depth without guidance from patient physiologic output. The relationship between CC performance and actual CPR-generated blood flow is poorly understood, limiting the ability to define "optimal" CPR delivery. End-tidal carbon dioxide (ETCO2) has been proposed as a surrogate measure of blood flow during CPR, and has been suggested as a tool to guide CPR despite a paucity of clinical data. We sought to quantify the relationship between ETCO2 and CPR characteristics during clinical resuscitation care.
METHODS:
Multicenter cohort study of 583 in- and out-of-hospital cardiac arrests with time-synchronized ETCO2 and CPR performance data captured between 4/2006-5/2013. ETCO2, ventilation rate, CC rate and depth were averaged over 15-sec epochs. A total of 29,028 epochs were processed for analysis using mixed-effects regression techniques.
RESULTS:
CC depth was a significant predictor of increased ETCO2. For every 10mm increase in depth, ETCO2 was elevated by 1.4mmHg (p<.001). For every 10 breaths/min in ventilation rate, ETCO2 was lowered by 3.0mmHg (p<.001). CC rate was not a predictor of ETCO2 over the dynamic range of actual CC delivery. Case-averaged ETCO2 values in those with return of spontaneous circulation were higher compared to those who did not have a pulse restored (34.5±4.5 vs 23.1±12.9mmHg, p<.001).
CONCLUSIONS:
ETCO2 values generated during CPR were statistically associated with CC depth and ventilation rate. Further studies are needed to assess ETCO2 as a potential tool to guide care.

REGISTRES I REVISIONS

No recollim gaire bé les dades de les ACR...

Inaccuracy of patient care reports for identification of critical resuscitation events during out-of-hospital cardiac arrest.
Sundermann ML1, Salcido DD2, Koller AC2, Menegazzi JJ2.
Abstract
OBJECTIVE:
Out-of-hospital cardiac arrest (OHCA) is a leading cause of mortality in the United States. We sought to evaluate the accuracy of the patient care report (PCR) for detection of 2 clinically important events: return of spontaneous circulation (ROSC) and rearrest (RA).

METHODS:

We used defibrillator recordings and PCRs for Emergency Medical Services-treated OHCA collected by the Resuscitation Outcomes Consortium's Pittsburgh site from 2006 to 2008 and 2011 to 2012. Defibrillator data included electrocardiogram rhythm tracing, chest compression measurement, and audio voice recording. Sensitivity analysis was performed by comparing the accuracy of the PCR to detect the presence and number of ROSC and RA events to integrated defibrillator data.

RESULTS:

In the 158 OHCA cases, there were 163 ROSC events and 53 RA events. The sensitivity of PCRs to identify all ROSC events was 85% (confidence interval [CI], .795-.905); to identify primary ROSC events, it was 85% (CI, .793-.907); and to identify secondary ROSC events, it was 78% (CI, .565-.995). The sensitivity of PCRs to identify the presence of all RA events was .60 (CI, .469-.731); to identify primary RA events, it was 71% (CI, .578-.842); and to identify secondary RA events, it was 0. Of the 32 RA incidents captured by the PCR, only 15 (47%) correctly identified the correct lethal arrhythmia.

CONCLUSIONS:

We found that PCRs are not a reliable source of information for assessing the presence of ROSC and post-RA electrocardiogram rhythm. For quality control and research purposes, medical providers should consider augmenting data collection with continuous defibrillator recordings before making any conclusions about the occurrence of critical resuscitation events.

Factors que han influit en millorar la supervivència a SIngapur

Interventional strategies associated with improvements in survival for out-of-hospital cardiac arrests in Singapore over 10 years.
Lai H1, Choong CV2, Fook-Chong S3, Ng YY4, Finkelstein EA5, Haaland B6, Goh ES7, Leong BS8, Gan HN9, Foo D10, Tham LP11, Charles R12, Ong ME13; For the PAROS study group.

Abstract

AIM:

We aim to study if there has been an improvement in survival for Out-of-Hospital Cardiac Arrest (OHCA) in Singapore, the effects of various interventional strategies over the past 10 years, and identify strategies that contributed to improved survival.

METHODS:

Rates of OHCA survival were compared between 2001-2004 and 2010-2012, using nationwide data for all OHCA presenting to EMS and public hospitals. A multivariate logistic regression model for survival to discharge was constructed to identify strategies with significant impact.

RESULTS:

A total of 5453 cases were included, 2428 cases from 2001 to 2004 and 3025 cases from 2010 to 2012. There was significant improvement in Utstein (witnessed, shockable) survival to discharge from 2001-2004 (2.5%) to 2010-2012 (11.0%), adjusted odds ratio (OR) 9.6 [95% CI: 2.2-41.9]). Overall survival to discharge increased from 1.6% to 3.2% (adjusted OR 2.2 [1.5-3.3]). Bystander CPR rates increased from 19.7% to 22.4% (p=0.02). The multivariate regression model (adjusted for important non-modifiable risk factors) showed that response time <8min (OR 1.5 [1.0-2.3]), bystander AED (OR 5.8 [2.0-16.2]), and post-resuscitation hypothermia (OR 30.0 [11.5-78.0]) were significantly associated with survival to hospital discharge. Conversely, pre-hospital epinephrine (OR 0.6 [0.4-0.9]) was associated negatively with survival.

CONCLUSIONS:

OHCA survival has improved in Singapore over the past 10 years. Improvement in response time, public AEDs and post-resuscitation hypothermia appear to have contributed to the increase in survival. Singapore's experience might suggest that developing EMS systems should focus on reducing times to basic life support, including bystander defibrillation and post-resuscitation care.

Els hospitals que atenen un major volum d'ACR sembla que ho fan millor, però això no influeix en el pronòstic

Impact of case volume on outcome and performance of targeted temperature management in out-of-hospital cardiac arrest survivors.
Lee SJ1, Jeung KW2, Lee BK3, Min YI2, Park KN4, Suh GJ5, Kim KS5, Kang GH6; Korean Hypothermia Network (KorHN) Investigators.
Abstract
PURPOSE:

This study aimed to determine the effect of case volume on targeted temperature management (TTM) performance, incidence of adverse events, and neurologic outcome in comatose out-of-hospital cardiac arrest (OHCA) survivors treated with TTM.

METHODS:

We used a Web-based, multicenter registry (Korean Hypothermia Network registry), to which 24 hospitals throughout the Republic of Korea participated to study adult (≥18 years) comatose out-of-hospital cardiac arrest patients treated with TTM between 2007 and 2012. The primary outcome was neurologic outcome at hospital discharge. The secondary outcomes were inhospital mortality, TTM performance, and adverse events. We extracted propensity-matched cohorts to control for bias. Multivariate logistic regression analysis was performed to assess independent risk factors for neurologic outcome.

RESULTS:

A total of 901 patients were included in this study; 544 (60.4%) survived to hospital discharge, and 248 (27.5%) were discharged with good neurologic outcome. The high-volume hospitals initiated TTM significantly earlier and had lower rates of hyperglycemia, bleeding, hypotension, and rebound hyperthermia. However, neurologic outcome and inhospital mortality were comparable between high-volume (27.7% and 44.6%, respectively) and low-volume hospitals (21.1% and 40.5%) in the propensity-matched cohorts. The adjusted odds ratio for the high-volume hospitals compared with low-volume hospitals was 1.506 (95% confidence interval, 0.875-2.592) for poor neurologic outcome.

CONCLUSIONS:

Higher TTM case volume was significantly associated with early initiation of TTM and lower incidence of adverse events. However, case volume had no association with neurologic outcome and inhospital mortality.

HIPOTÈRMIA

"A vueltas" amb la temperatura de refredament ideal…

Cognitive Function in Survivors of Out-of-Hospital Cardiac Arrest After Target Temperature Management at 33ºC Versus 36ºC.
Lilja G1, Nielsen N2, Friberg H3, Horn J4, Kjaergaard J5, Nilsson F6, Pellis T7, Wetterslev J8, Wise MP9, Bosch F10, Bro-Jeppesen J5, Brunetti I11, Forti Buratti A12, Hassager C5, Hofgren C13, Insorsi A11, Kuiper M14, Martini A7, Palmer N9, Rundgren M3, Rylander C15, van der Veen A4, Wanscher M5, Watkins H9, Cronberg T3.
Abstract
BACKGROUND:

Target temperature management is recommended as a neuro-protective strategy after out-of-hospital cardiac arrest. Potential effects of different target temperatures on cognitive impairment commonly described in survivors are not sufficiently investigated. The primary aim of this study was to evaluate whether a target temperature of 33ºC compared to 36ºC was favourable for cognitive function, and secondary to describe cognitive impairment in cardiac arrest survivors in general.

METHODS AND RESULTS:

Study-sites included 652 cardiac arrest survivors originally randomized and stratified for site to temperature control at 33ºC or 36ºC within the Target Temperature Management trial. Survival until 180 days after the arrest was 52% (33ºC n=178/328 36ºC n=164/324). Survivors were invited to a face-to-face follow-up and 287 cardiac arrest survivors (33ºC n=148/36ºC n=139) were assessed with tests for memory (Rivermead Behavioural Memory Test), executive

functions (Frontal Assessment Battery) and attention/mental speed (Symbol Digit Modalities Test). A control-group of 119 matched patients hospitalized for acute ST-elevation myocardial infarction (STEMI) without cardiac arrest performed the same assessments. Half of the cardiac arrest survivors had cognitive impairment, which was mostly mild. Cognitive outcome did not differ (p >0.30) between the two temperature groups (33ºC/36ºC). Compared to STEMI-controls attention/mental speed was more affected among cardiac arrest patients, but results for memory and executive functioning were similar.

CONCLUSIONS:

Cognitive function was comparable in survivors of out-of-hospital cardiac arrest when targeting a temperature of 33ºC and 36ºC. Cognitive impairment detected in cardiac arrest survivors was also common in matched STEMI-controls not having had a cardiac arrest.

FÀRMACS

Una sèrie petita de casos on sembla que la trombòlisis funciona en cas de sospita de TEP.

Thrombolysis after initially unsuccessful cardiopulmonary resuscitation in presumed pulmonary embolism.

Yin Q1, Li X1, Li C2.

Abstract

The life-saving administration of thrombolytic therapy after initially unsuccessful cardiopulmonary resuscitation (CPR) in 7 patients with presumed pulmonary embolism (PE) was reported. Seven patients who had cardiac arrest were admitted to our emergency department. The clinical diagnosis of all these patients was highly suspected with PE; therefore, 50 mg recombinant tissue plasminogen activator with 50-mL dilution was administered in a 15-minute period after initially unsuccessful CPR. Of 7 patients, 5 (71.4%) achieved return of spontaneous circulation after CPR and thrombolytic therapy, and 3 (42.9%) of 7 patients were discharged alive through successive treatments. A 90-day follow-up showed that 2 patients were neurologically intact, and 1 patient was mildly disabled. These results demonstrate that thrombolysis after initially unsuccessful CPR in presumed PE may have beneficial effects.