

Drawing the Yongquan protocol into the different stages of the cardiopulmonary resuscitation sequence

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Abstract

AIM: To introduce new applications into the ILCOR-cardiopulmonary resuscitation (CPR) "chain" sequence.

METHODS: Stages of the CPR sequence ("chain"): prior to the application of chest massage: assess the victim's state of consciousness and lung-heart failure; seek help (call 911), or in situations in which it is impossible to start the ILCOR protocol: (1) if the victim is trapped in car crash, overturned car, landslide, massive number of victims or catastrophe; or (2) delayed CPR. During chest compression: Yongquan is simultaneously stimulated by a third rescuer. During defibrillator application: activate K-1 Yongquan through needles before defibrillation. Unsuccessful CPR: "gold standard" for legal clinical death.

RESULTS: Implies comparing two hypotheses: Ho

(null hypothesis) demonstrates no association between the two variables studied; Ha (alternative hypothesis) implies some degree of relation between them. Difference between the two treatments is observed. If it is greater than the standard error multiplied by a coefficient of security, the difference is significant: Ha will be accepted and Ho rejected. First we will compare CPR without defibrillator (method "A") and K-1 Yongquan method (method "B"), using percentages of representative samples (treatment "A": 6.4% response, treatment "B": 85% response). If $|PA - PB|$ is greater than the product of 1.96 times the standard error, the difference is significant. Because $|PA - PB| = 0.786$ is greater than 0.098, the difference between 0.064 and 0.85 is statistically significant. Thus, we reject Ho and accept Ha as correct. Thus, it is improbable that chance was responsible for this association. This analysis shows that K-1 Yongquan method has a "quality guarantee". Second, we compare defibrillators ("A") with K-1 Yongquan method ("B") (treatment "A": 48%, treatment "B": 84%, $|PA - PB| = 0.36$; $|PA - PB| = 0.36$ is greater than $SE \times 1.96 = 0.0148$ and also statistically significant, demonstrating again the comparative value of the Yongquan method.

CONCLUSION: The Yongquan resuscitation manoeuvre is a non-invasive, non-tiring, costless, and easy-to-apply procedure that provides a second chance when other options fail.

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Key words: Yongquan; K-1 acupuncture point; Resuscitation manoeuvre; ILCOR protocol inclusion; Complementary life support

Core tip: As a result of 25 years of experience on the application of the "Lazarus Effect" in Acupuncture, a formalized protocol project is shown and submitted in order to integrate this maneuver into the cardiopulmo-

nary resuscitation (CPR) sequence. The K-1 maneuver is neither intended to replace nor to interrupt the CPR international protocol, but to provide an alternative way of upgrading heart stoppage mortality when the ILCOR-CPR protocol has failed.

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INTRODUCTION

After 25 years of research into the K-1 Yongquan resuscitation manoeuvre, called the “Lazarus phenomenon”, the main reasons for standardising this antidote point in situations in which cardiopulmonary resuscitation (CPR) is expected to be applied are introduced^[1-8].

Evidenced-based analysis of both basic and advanced CPR failure reveals that K-1 Yongquan resuscitation manoeuvre should be formally included in the different stages of the CPR sequence protocol.

MATERIALS AND METHODS

Material

Since 1987, 58 patients have been treated with the K-1 Yongquan manoeuvre after basic and advanced CPR failure^[3,4,9,10].

Thereafter, the classic action chain sequence for CPR changed, especially after the last H1N1 pandemic in 2009. It would not seem strange that a real fear of contagion may have influenced the public to reject the practice of mouth-to-mouth resuscitation. The change of the ILCOR-2010 sequence of application of life support manoeuvres, giving priority to thoracic compression over support for ventilation, does not appear to be due to chance.

Thus, the application method of the K-1 Yongquan point has been compared statistically with known conventional systems of resuscitation and then integrated with the ILCOR-2010 sequence to plan a contingency procedure before the possible failure of basic and advanced CPR.

Stages of the CPR sequence (“chain”)

Prior to application of chest massage: Assess the victim’s state of consciousness and lung-heart failure.

Seek help (call 911): there are many situations in which it is impossible to start ILCOR protocol, such as the following: the victim is trapped in a car crash, an overturned car, a landslide, a catastrophe with a massive number of victims; CPR is delayed for any reason.

During the application of chest compression: Yongquan could be simultaneously stimulated by a third rescuer, improving the CPR success.

During defibrillator application: Activate the K-1 Yongquan through needles before applying defibrillation to guide the shock to this acupuncture point.

Unsuccessful CPR

“Gold standard” for legal clinical death^[1-4]. Comparisons between the Utstein and Yongquan protocols are presented in Figure 1.

Statistical analysis

The performance of any applied method in medicine should demonstrate whether there is an association between different variables and whether this association is real or is the product of chance. The larger the sample, the greater is the precision, and the variability due to chance is reduced.

Although we apply statistical significance here, adapting it to the circumstances, the statistical significance does not resolve all of the questions that must be answered (because the results may not be clinically relevant). However, the term “statistically significant” indicates a guarantee of quality. The word “significant” implies using terms comparing two hypotheses. Ho (null hypothesis) represents an affirmation that there is no association between the two variables studied. Ha (alternative hypothesis) affirms that there is some degree of relation between the two variables.

Statistical analysis assists us in selecting the correct hypothesis. First, one observes the magnitude of the difference that exists between the two treatments being compared. If this magnitude is greater than the standard error multiplied by a defined coefficient of security, we conclude that there is a significant difference between both methods; thus, Ha will be accepted, and Ho will be rejected.

In our case, we will first compare CPR treatment without a defibrillator (method “A”) with K-1 Yongquan method (method “B”) using response percentages for these protocols, based on representative samples: treatment “A” yields a 6.4% response; treatment “B” yields an 85% response.

If $|PA - PB|$ is greater than the product of 1.96 times the standard error, we conclude that the difference is significant ($|PA - PB| = |0.064 - 0.85| = 0.786 < SE (0.05) \times 1.96 = 0.098$).

Because the difference $|PA - PB| = 0.786$ is greater than the value of 0.098, which is calculated by multiplying the standard error by the fixed constant, we conclude that the difference between 0.064 and 0.85 is statistically significant. Thus, we reject Ho (the null hypothesis) and we accept Ha (the alternative hypothesis) as most likely correct. In this manner, we state that it is highly improbable that chance was responsible for this association. Using this analysis, we show that K-1 Yongquan method has a “quality guarantee”.

Second, we compare the CPR method, this time with a defibrillator: treatment “A” with 48% (CPR with a defibrillator); treatment “B” with 84% (K-1 Yongquan method) ($|PA - PB| = |0.48 - 0.84| = 0.36 < SE (0.0076) \times$

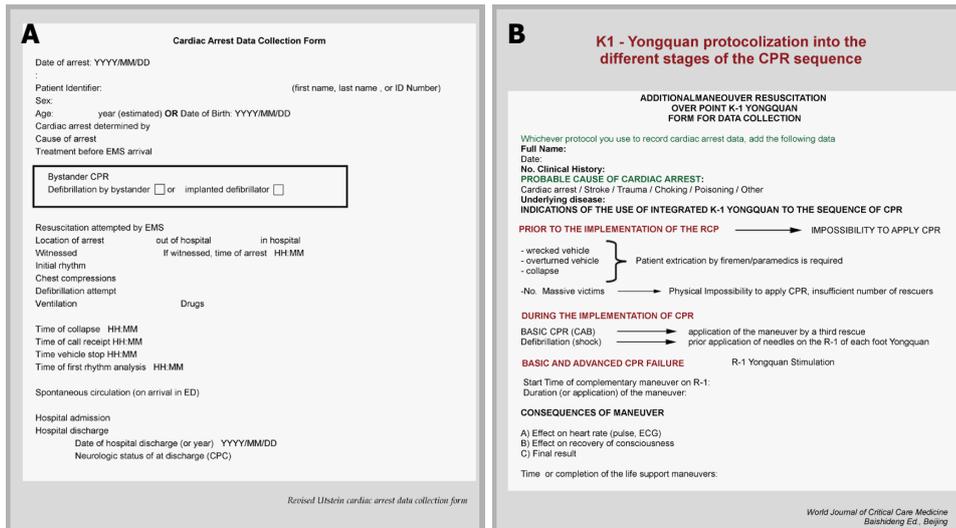


Figure 1 Comparison between the Utstein and Yongquan protocols. A: Revised Utstein cardiac arrest data collection form; B: K1-Yongquan protocolization into the different stages of the cardiopulmonary resuscitation (CPR) sequence.

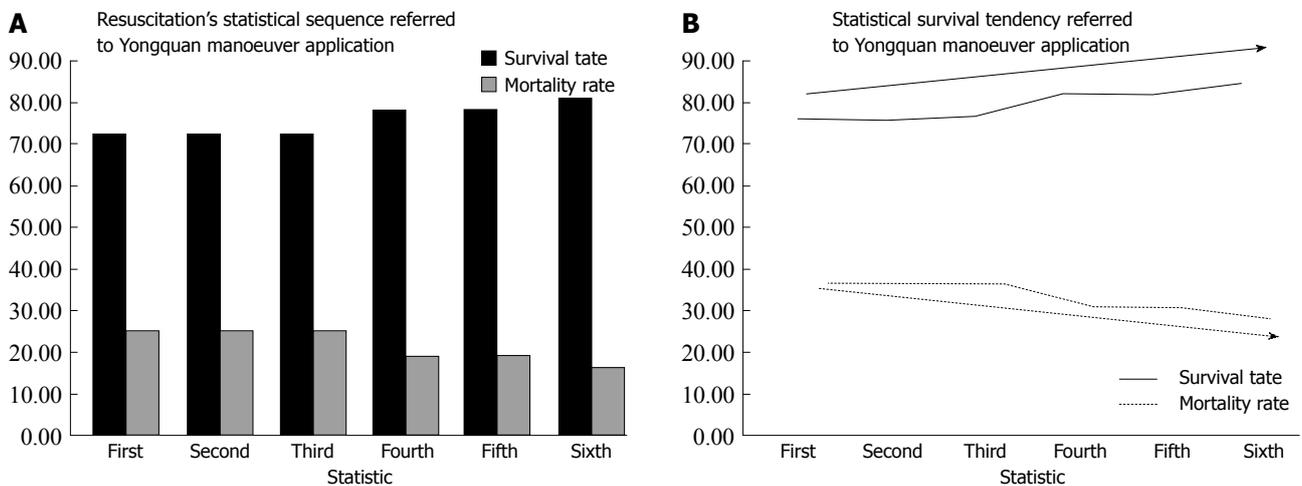


Figure 2 Progression of the presented statistics. A: Survival statistics; B: Tendency.

1.96 = 0.0148). $|PA - PB| = 0.36$ is greater than 0.0148. The difference here is also confirmed to be statistically significant; thus, all of the considerations from the previous example are valid, demonstrating once more the comparative value of the Yongquan method.

RESULTS

Progression of the presented statistics

This progression was introduced as a Section C Poster Presentation (No.0100) during the 9th International Brain Injury Association Congress^[4], Edinburgh, March 23-26, 2012: first statistic: November 2005 (50th Argentina Acupuncture Society Congress 19, patients-five deaths, survival rate: 73.68%); second statistic: November 2009 (Lazarus Effect Video, 27 cases-seven deaths, survival rate: 74.07%); third statistic: January 2010 (Resuscitation Journal^[1], 30 cases-eight deaths, survival rate: 73.33%); fourth statistic: 8th IDDST Congress, Beijing^[7], 39 cases-eight deaths, survival rate: 79.48%; fifth statistic: InTech's,

44 cases-nine deaths^[3], survival rate: 79.53%; and sixth statistic: 9th International Brain Injury Congress^[4], 52 cases-nine deaths, survival rate: 82.69% (Figure 2).

The trial published in "resuscitation" four involved 30 patients treated with K-1 Yongquan stimulation after CPR protocol failure^[1-4,7,8]. After its application, approximately 79% survived, demonstrating that the protocol yields valuable results when there are no other options.

Today, 58 patients survived, yielding an 84.48% survival rate. This result indicates a consequent improvement of the survival tendency.

Despite a "non-resuscitation order", based on the law of each country, the Yongquan resuscitation maneuver will be useful as long as it is promptly applied, with the following considerations: (1) currently, approximately 95% of individuals undergoing cardiac arrest worldwide die before the arrival of assistance (an ambulance never takes less than 12 min to reach the accident site); (2) nearly 8000000 individuals worldwide die suddenly each year (neither earthquakes, tsunamis^[11], volcano eruptions, nuclear leaks, epidemics, nor pandemic diseases could

match this mortality rate)^[12,13]; (3) so-called “Cardiac Chaos” affects 1000 victims per day, and there were 350000 reported cases in the United States last year^[12,14]; (4) in Argentina, two people per hour (that is, 54 per day and more than 20000 per year) will experience sudden death; and (5) in infants, the sudden death mortality is over 98%^[15].

In conclusion, the Torsadogenic Index was recently introduced as a management tool for risk against pharmacologically induced sudden death due to torsadogenic drugs, whereas the K-1 Yongquan resuscitation complementary manoeuvre is a contingency measure against basic or advanced CPR failure. Both costless strategies, once universally implemented, can definitely improve survival rates after cardiac arrest. The Yongquan resuscitation manoeuvre is a non-invasive, non-tiring, costless, and easy-to-apply procedure that provides a second chance when other options fail.

COMMENTS

Background

As a result of 25 years of experience in the “Lazarus Effect” of acupuncture, a formalised protocol project is demonstrated for integrating this manoeuvre into the cardiopulmonary resuscitation (CPR) sequence.

Research frontiers

Actuarial statistics are presented to draw attention to the enormous mortality from cardiac arrests, without visible improvements due to classical CPR applications (less than 19% overall survival after cardiac arrest). This protocol increases the survival rate: over 84% resuscitation success. After the ILCOR protocol sequence’s failure, in the absence of additional options from current science, the Yongquan resuscitation manoeuvre has become the “gold standard” for improving survival rates after an unsuccessful CPR rescue.

Innovations and breakthroughs

The K-1 Yongquan manoeuvre does not replace or interrupt any CPR protocol but, rather, offers an alternative to improve the mortality rates from cardiac arrest when the ILCOR-CPR method has failed.

Applications

Considering the lack of time for a successful rescue, K-1 Yongquan manual praxis is proposed for conditions in which application of the ILCOR-CPR manoeuvres is impossible. Only in situations of entrapment (landfalls or accidents with crashed or overturned cars), the K-1 Yongquan manoeuvre is suggested while waiting for firefighters to address the trauma scenario. During chest massage, a third rescuer can assist in stimulating the heart to bring victims back to life. For cases in which defibrillation is indicated (and prior to shock), needles positioned over the Yongquan points will provide additional power from the electric current to activate the point.

Peer review

It is interesting to clinicians if the protocol can be validated to a large number of the sample at multi-center setting.

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