

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

Adrián Angel Inchauspe

Adrián Angel Inchauspe, Scientific Department, Argentina Acupuncture Society, Medical Sciences Faculty, La Plata University, La Plata, 1884 Buenos Aires, Argentina

Adrián Angel Inchauspe, the Argentina Resuscitation Council, 1884 Buenos Aires, Berazategui, Argentina

Adrián Angel Inchauspe, the Investigation Department, HINEA y C. "Dr. Alejandro Korn", 1884 Buenos Aires, Berazategui, Argentina

Adrián Angel Inchauspe, Chronic and Acute Care Neuropsychiatric Hospital Interzonal "Dr. Alejandro Korn", Melchor Romero, 1884 Buenos Aires, Berazategui, Argentina

Author contributions: Inchauspe AA solely contributed to this manuscript.

Correspondence to: Dr. Adrián Angel Inchauspe, Chronic and Acute Care Neuropsychiatric Hospital Interzonal "Dr. Alejandro Korn", Melchor Romero, Calle 14 N° 4079, 1884 Buenos Aires, Berazategui, Argentina. adrian.inchauspe@yahoo.com.ar
Telephone: +54-11-42561616 Fax: +54-11-42561616

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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) ($|PA - PB| = |0.48 - 0.84| = 0.36 < SE (0.0076) \times$

A Cardiac Arrest Data Collection Form

Date of arrest: YYYY/MM/DD

Patient Identifier: (first name, last name, or ID Number)

Sex: _____

Age: _____ year (estimated) OR Date of Birth: YYYY/MM/DD

Cardiac arrest determined by _____

Cause of arrest _____

Treatment before EMS arrival _____

Bystander CPR

Defibrillation by bystander ☐ or implanted defibrillator ☐

Resuscitation attempted by EMS

Location of arrest: _____ out of hospital _____ in hospital

Witnessed _____ If witnessed, time of arrest HH:MM

Initial rhythm _____

Chest compressions _____

Defibrillation attempt _____

Ventilation _____

Drugs _____

Time of collapse HH:MM

Time of call receipt HH:MM

Time vehicle stop HH:MM

Time of first rhythm analysis HH:MM

Spontaneous circulation (on arrival in ED) _____

Hospital admission _____

Hospital discharge _____

Date of hospital discharge (or year) YYYY/MM/DD

Neurologic status of at discharge (CPC) _____

Revised Utstein cardiac arrest data collection form

B K1 - Yongquan protocolization into the different stages of the CPR sequence

ADDITIONAL MANEUVER RESUSCITATION OVER POINT K-1 YONGQUAN FORM FOR DATA COLLECTION

Whichever protocol you use to record cardiac arrest data, add the following data

Full Name: _____

Date: _____

No. Clinical History: _____

PROBABLE CAUSE OF CARDIAC ARREST: _____

Cardiac arrest / Stroke / Trauma / Choking / Poisoning / Other _____

Underlying disease: _____

INDICATIONS OF THE USE OF INTEGRATED K-1 YONGQUAN TO THE SEQUENCE OF CPR

PRIOR TO THE IMPLEMENTATION OF THE RCP → IMPOSSIBILITY TO APPLY CPR

- wrecked vehicle } Patient extrication by firemen/paramedics is required

- overturned vehicle }

- collapse }

- No. Massive victims → Physical impossibility to apply CPR, insufficient number of rescuers

DURING THE IMPLEMENTATION OF CPR

BASIC CPR (CAB) → application of the maneuver by a third rescue

Defibrillation (shock) → prior application of needles on the R-1 of each foot Yongquan

BASIC AND ADVANCED CPR FAILURE → R-1 Yongquan Stimulation

Start Time of complementary maneuver on R-1: _____

Duration (or application) of the maneuver: _____

CONSEQUENCES OF MANEUVER

A) Effect on heart rate (pulse, ECG) _____

B) Effect on recovery of consciousness _____

C) Final result _____

Time or completion of the life support maneuvers: _____

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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.

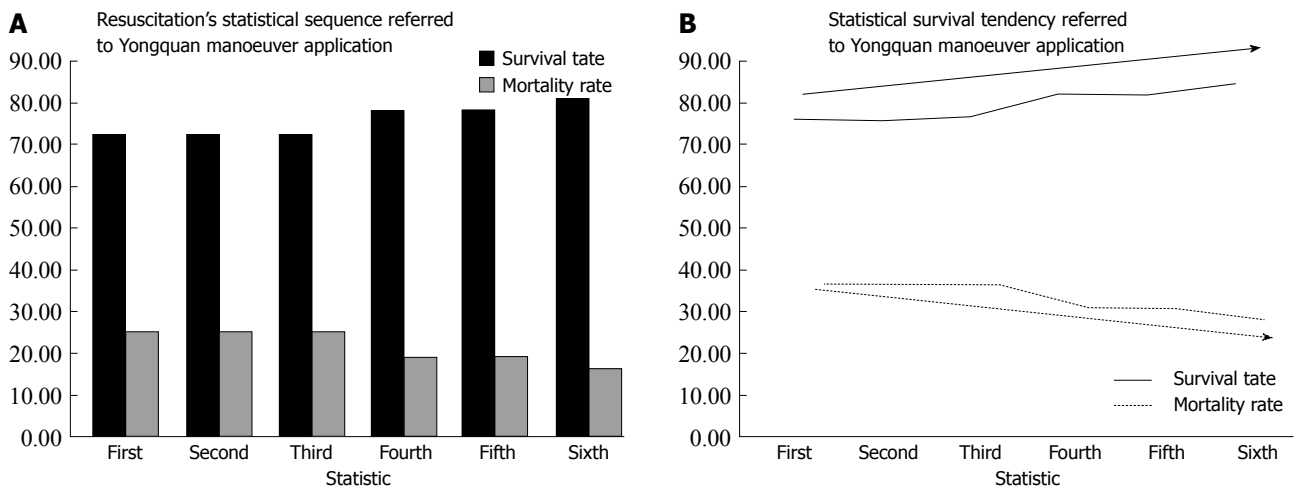


Figure 2 Progression of the presented statistics. A: Survival statistics; B: Tendency.

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.

REFERENCES

- 1 Inchauspe A. Traditional Chinese medicine K1 Yongquan and resuscitation: another kind of “Lazarus phenomenon”. *Resuscitation* 2010; **81**: 505-506 [PMID: 20083334 DOI: 10.1016/j.resuscitation.2009.12.009]
- 2 Inchauspe A. Fármaco Vigilancia y Muerte Súbita [Drug Vigilance and Sudden Death]. *Jornadas Multidisciplinares* del Hinea y C 2011; “Dr. Alejandro Korn”. Melchor Romero, La Plata
- 3 Inchauspe A. Traditional Chinese Medical Criteria about the Use of Yongquan as a Life Support Maneuver. In: *Recent Advances In theories and practice in Chinese Medicine*. Croatia: InTech, 2011: 362-366 [DOI: 10.5772/29138]
- 4 Inchauspe A. Traditional Chinese Medicine and Brain Protection: Can its principles be consistent with Western Science? In: *Poster Presentation for the 9th IBIA International Brain Injury Association Congress*. 2012 March 23-26; Edinburgh, Scotland
- 5 Origin and Gathering (Gen Jie). Huangdi Neijing Lingshu, 2002
- 6 Beginning and Ending (Zhong Zhui). Huangdi Neijing Lingshu, 2002
- 7 Inchauspe A. D-Phenylalanine injection over K-1 Yongquan: A theoretical way of upgrading survival rates in CPR. *Proceedings of BIT 8th Annual Congress of International Drug Discovery Science and Technology (IDDST)*. 2010 October 23-26; Beijing, China
- 8 Inchauspe A. Es realmente Yongquan el primer punto del meridiano del Riñón? [Is Yongquan really the first meridian point of the kidney?]. *Revista Internacional de Acupuntura* 2011; **5**: 111-113 [DOI: 10.1016/S1887-8369(11)70027-8]
- 9 Dessertenne F. [Ventricular tachycardia with 2 variable opposing foci]. *Arch Mal Coeur Vaiss* 1966; **59**: 263-272 [PMID: 4956181]
- 10 Lanzotti M, Citta N. Síndrome de QT Largo Adquirido: Torsade de Pointes [Acquired Long QT Syndrome: Torsade de Pointes]. *Arritmias y Electrofisiología* 2003; Univ. Buenos Aires-Universit degli Studi dell Insubria. Available from: URL: <http://www.fac.org.ar/tvcv/llave/c312/lazotti.PDF>
- 11 Szpilman D, Bierens JJ, Handley AJ, Orłowski JP. Drowning. *N Engl J Med* 2012; **366**: 2102-2110 [PMID: 22646632 DOI: 10.1056/NEJMra1013317]
- 12 Maron BJ, Estes NA. Commotio cordis. *N Engl J Med* 2010; **362**: 917-927 [PMID: 20220186 DOI: 10.1056/NEJMra0910111]
- 13 Jacobs I, Nadkarni V, Bahr J, Berg RA, Billi JE, Bossaert L, Cassan P, Coovadia A, D'Este K, Finn J, Halperin H, Handley A, Herlitz J, Hickey R, Idris A, Kloeck W, Larkin GL, Mancini ME, Mason P, Mears G, Monsieurs K, Montgomery W, Morley P, Nichol G, Nolan J, Okada K, Perlman J, Shuster M, Steen PA, Sterz F, Tibballs J, Timmerman S, Truitt T, Zideman D. Cardiac arrest and cardiopulmonary resuscitation outcome reports: update and simplification of the Utstein templates for resuscitation registries: a statement for healthcare professionals from a task force of the International Liaison Committee on Resuscitation (American Heart Association, European Resuscitation Council, Australian Resuscitation Council, New Zealand Resuscitation Council, Heart and Stroke Foundation of Canada, InterAmerican Heart Foundation, Resuscitation Councils of Southern Africa). *Circulation* 2004; **110**: 3385-3397 [PMID: 15557386 DOI: 10.1161/01.CIR.0000147236.85306.15]
- 14 Wang J. Cardiovascular Safety: How to Develop Risk Assessment. *Proceedings of the BIT 8th Annual Congress of International Drug Discovery and Technology (IDDST)*. 2010 October 23-26; Beijing, China
- 15 Berg MD, Schexnayder SM, Chameides L, Terry M, Donoghue A, Hickey RW, Berg RA, Sutton RM, Hazinski MF. Part 13: pediatric basic life support: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation* 2010; **122**: S862-S875 [PMID: 20956229 DOI: 10.1161/CIRCULATIONAHA.110.971085]

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