Withdrawal of Life-Sustaining Therapy after Cardiac Arrest

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Nederlandse Reanimatie Raad

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medisch centrum
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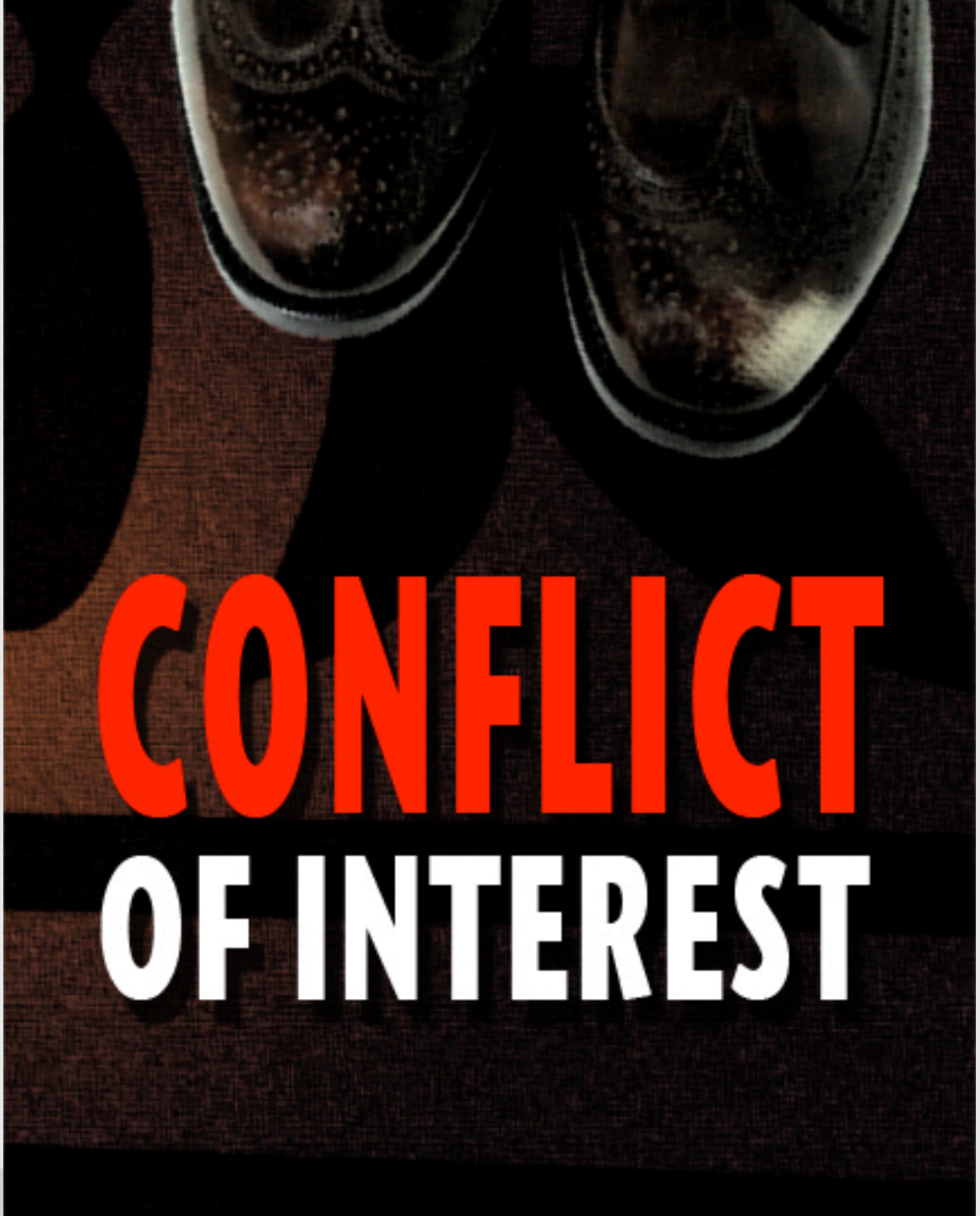

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International Liaison Committee on Resuscitation

ILCOR

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NEDERLANDSE TRANSPLANTATIE STICHTING

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Stopping treatment

- Withdrawal of life-sustaining treatment
- This may be the part of treatment with the most practice variation between countries, hospitals, departments and physicians
- And we hardly research it, nor it’s effects

Outcome after cardiac arrest

- Most papers report about 5-10% of survival after cardiac arrest worldwide
- And only 2-5% with good neurological outcome
- Is this still true?

The Netherlands

- Every year there are about 7000 people with a circulatory arrest, followed by resuscitation.
- That is about 20 people per day
- Approximately 1500 people survive and go back home

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Cardiopulmonary resuscitation by bystanders with chest compression only (SOS-KANTO): an observational study

SOS-KANTO study group

Summary

Background Mouth-to-mouth ventilation is a barrier to bystanders doing cardiopulmonary resuscitation (CPR), but few clinical studies have investigated the efficacy of bystander resuscitation by chest compressions without mouth-to-mouth ventilation (cardiac-only resuscitation).

Methods We did a prospective, multicentre, observational study of patients who had out-of-hospital cardiac arrest. On arrival at the scene, paramedics assessed the technique of bystander resuscitation. The primary endpoint was favourable neurological outcome 30 days after cardiac arrest.

Findings 4068 adult patients who had out-of-hospital cardiac arrest witnessed by bystanders were included; 439 (11%) received cardiac-only resuscitation from bystanders, 712 (18%) conventional CPR, and 2917 (72%) received no bystander CPR. Any resuscitation attempt was associated with a higher proportion having favourable neurological outcomes than no resuscitation (5·0% *vs* 2·2%, p<0·0001). Cardiac-only resuscitation resulted in a higher proportion of patients with favourable neurological outcomes than conventional CPR in patients with apnoea (6·2% *vs* 3·1%; p=0·0195), with shockable rhythm (19·4% *vs* 11·2%, p=0·041), and with resuscitation that started within 4 min of arrest (10·1% *vs* 5·1%, p=0·0221). However, there was no evidence for any benefit from the addition of mouth-to-mouth ventilation in any subgroup. The adjusted odds ratio for a favourable neurological outcome after cardiac-only resuscitation was 2·2 (95% CI 1·2–4·2) in patients who received any resuscitation from bystanders.

Interpretation Cardiac-only resuscitation by bystanders is the preferable approach to resuscitation for adult patients with witnessed out-of-hospital cardiac arrest, especially those with apnoea, shockable rhythm, or short periods of untreated arrest.

Lancet 2007; 369: 920–26

Detroit, MI, USA

Outcomes from out-of-hospital cardiac arrest in Detroit☆

Robert B. Dunne[a,*], Scott Compton[a,b,c,d], R.J. Zalenski[b], Robert Swor[c], Robert Welch[d], Brooks F. Bock[d]

538 resuscitations

1 person survived to hospital discharge

Conclusions: In this urban setting, out-of-hospital cardiac arrest is an almost uniformly fatal event.

Resuscitation (2007) 72, 59–65

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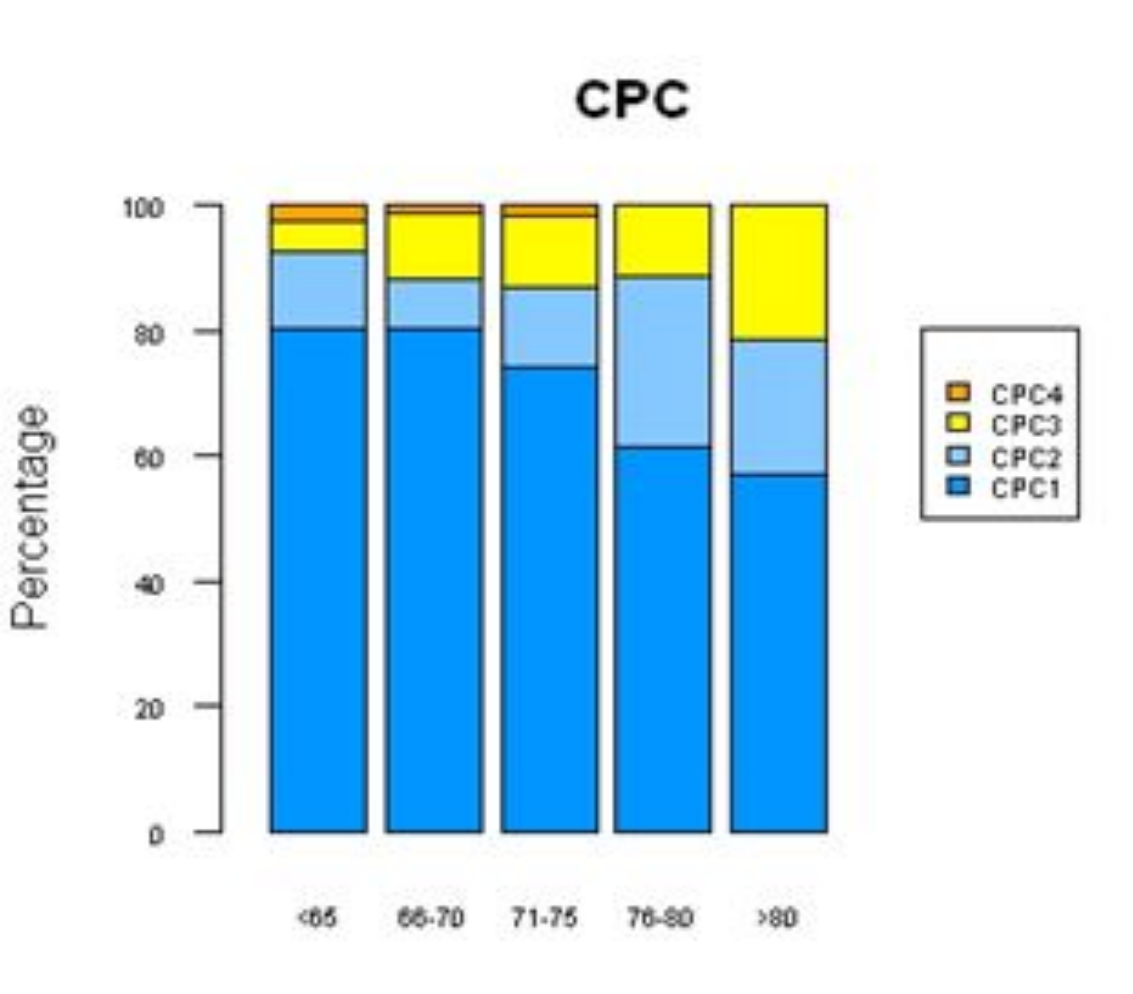
Outcome after Cardiac Arrest Netherlands, Japan and Detroit

Detroit 2 in 1000

Japan 20-50 in 1000

Netherlands >200 in 1000

Outcome TTM-study



Mortality and neurological outcome in the elderly after target temperature management for out-of-hospital cardiac arrest. Winther-Jensen M, Pellis T, Kuiper M, et al. Resuscitation. 2015 Jun;91:92-8.

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70 years and older

Comorbidity and favorable neurologic outcome after out-of-hospital cardiac arrest in patients of 70 years and older☆

Stefanie G. Beesems[a,*,1], Marieke T. Blom[a], Martine H.A. van der Pas[c], Michiel Hulleman[a], Esther M.M. van de Glind[b], Barbara C. van Munster[b,d], Jan G.P. Tijssen[a], Hanno L. Tan[a], Johannes J.M. van Delden[c], Rudolph W. Koster[a]

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Resuscitation 94 (2015) 33–39

90 out of 100 go back home

Table 2
Survival per stage and neurologic outcome at hospital discharge.

Survival per stage	All patients ≥70 years *N* = 1332
To ER, *n* (%)	736 (55)
Admission to hospital, *n* (%)	464 (35)
Survival to discharge, *n* (%)	156 (12)
CPC score of surviving patients to discharge, *n* (%)	
CPC 1	100 (64)
CPC 2	41 (26)
CPC 3	11 (7)
CPC 4	0 (0)
CPC unknown	4 (3)
1-year survival, *n* (%)	137 (10)

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1000 Cardiac Arrests and CPR

- 1000 Cardiac Arrests and CPR
- Of these1000 people, about 500-600 come to the hospital
- And of these 500-600 people, over 400 go to the Intensive Care
- Ultimately over 200 people survive to hospital discharge
- Of these, over 180 people go back home

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Back to work

- About 60% of people surviving a cardiac arrest and who were working at that time, go back to work
- More often part-time
- That is more than of the general ICU population

Prognostication

- Why do we want to be so certain?
- Why after cardiac arrest?
- And why not after sepsis or pneumonia?

Focus of today

- The patients whom we consider to have a poor prognosis and in whom we will discontinue treatment
- Almost all of these patients will die
- As a result? Or would they have died anyway?

What is the effect of prognosis?

- Or perhaps better: what is the effect of WLST?

- And how big is this effect?

Propac II

- 149 died in 1st week
- 62% WLST
- 26% treatment limitation

GOS, n (%)	1 month	6 months
1) Dead	187 (48)	199 (51)
2) Vegetative state	3 (1)	0
3) Severely disabled	40 (10)	9 (2)
4) Moderately disabled	121 (31)	49 (12)
5) Good recovery	35 (9)	124 (32)
Missing values	5 (1)	10 (3)

Prognosis very likely poor

- What does that mean?
  - Death?
  - Unresponsive wakefulness?
  - Severely disabled?

What are we afraid of?

- And what are we trying to prevent?

Unresponsive wakefulness

The Vegetative State: Prevalence, Misdiagnosis, and Treatment Limitations

Willemijn S. van Erp MD [a,b,*], Jan C.M. Lavrijsen MD, PhD [a], Pieter E. Vos MD, PhD [c], Hans Bor BSc [a], Steven Laureys MD, PhD [b,d,e], Raymond T.C.M. Koopmans MD, PhD [a,f]

W.S. van Erp et al. / JAMDA 16 (2015) 85.e9–85.e14

Unresponsive wakefulness "Vegetative"

Basic Characteristics of Patients With Verified Vegetative State/Unresponsive Wakefulness Syndrome

Sex, n (%)	Female: 12 (50) Male: 12 (50)
Age, y Mean (SD)	51 (13)

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Unresponsive wakefulness

Causes of hypoxic encephalopathy (n = 12) (includes patient with both traumatic and nontraumatic etiology)	Cardiogenic shock: 7 Septic shock: 2 Hypovolemia: 1 Accidental asphyxia: 1 Unknown: 1

It’s the image!

- Patients that die will be buried
- Most patients that survive do well
- No post-cardiac arrest patient-group
- Few patient with bad outcome dominate our view of outcome after cardiac arrest

Ethical Principles

- Beneficence (‘do good’)
- Non-maleficence (‘do no harm’)
- Autonomy
- Distributive justice

Ethical Principles

- How come we sometimes reach different conclusions using the same ethical principles?

- Has this to do with the weighing of the principles?

What does withdrawal of life-sustaining therapy entail?

- Stopping mechanical ventilation and inotropes?
- Stopping MV, inotropes and all other medication and therapy?
- Stopping MV and inotropes etc and start sedation/analgesia?

Consent of family?

- Does the family need to consent to WLST?

- Consensus without consent

Withhold vs Withdraw

- Ethically there is no difference
- However, many physicians feel there is a difference

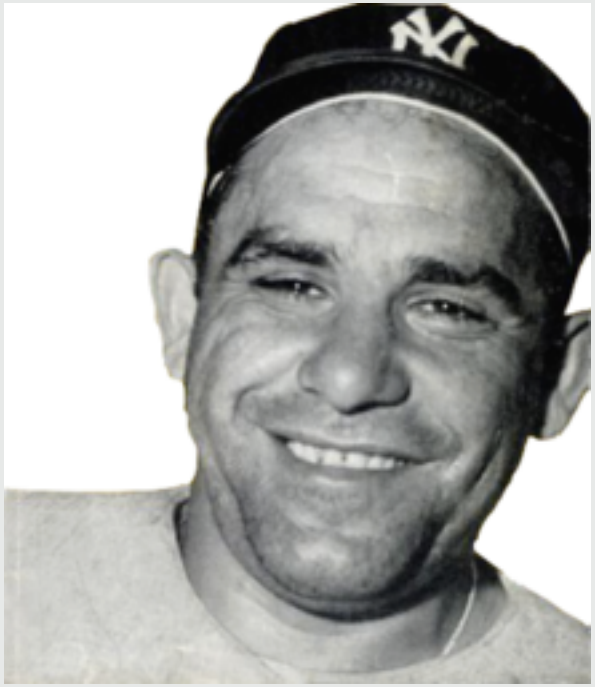
Withdrawing Care

- Withdrawing and withholding treatment are equally justifiable, ethically and legally.
- Do not withhold Rx because of the mistaken fear that if they are started, they cannot be withdrawn. → This practice would deny patients potentially beneficial therapies.
- Instead, use a time-limited trial of therapy to clarify the patient's prognosis. At the end of the trial, you can hold a conference to review and revise the treatment plan
- Some health care workers or family members may be reluctant to withdraw treatments even when they believe that the patient would not have wanted them continued → You as a physician should try to prevent/ resolve these situations by addressing with families their feelings of guilt, fear, and concern that the patient may suffer as life support is withdrawn.

On theory vs practice…

- “In theory, there is no difference between theory and practice; in practice however there is”

- Yogi Berra



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Use of Analgo-sedation

- Necessary?
- Ethically correct?
- Hastening death?

Ethicus study

- “Active shortening of the dying process”
- Interestingly, doctors claiming to give medication to hasten death, gave the same doses of opiates as doctors claiming to relief pain and suffering
- Intent vs actions

Semantics

- ‘Withdrawing Care’
- ‘Euthanasia’
- ‘Physician assisted or mediated dying’
- ‘Pulling the plug’

‘Pulling the plug’

- Allowing natural death

Euthanasia

- A word not to be used in end-of-life conversations

Organ donation

- Brain death (DBD)
- Circulatory death (DCD)

Conclusion

- Treatment may stop but care continues!