



ΕΝΩΣΗ ΕΠΙΣΤΗΜΟΝΙΚΟΥ ΠΡΟΣΩΠΙΚΟΥ
ΝΟΣΟΚΟΜΕΙΟΥ “Ο ΕΥΑΓΓΕΛΙΣΜΟΣ” (Ε.Ε.Π.Ν.Ε.)



ΚΛΙΝΙΚΟ ΦΡΟΝΤΙΣΤΗΡΙΟ
HANDS-ON COURSE
«Αναζωογόνηση σε μη τραυματία»

ΕΙΔΙΚΕΣ ΚΑΤΑΣΤΑΣΕΙΣ ΣΤΗΝ ΑΝΑΖΩΟΓΟΝΗΣΗ

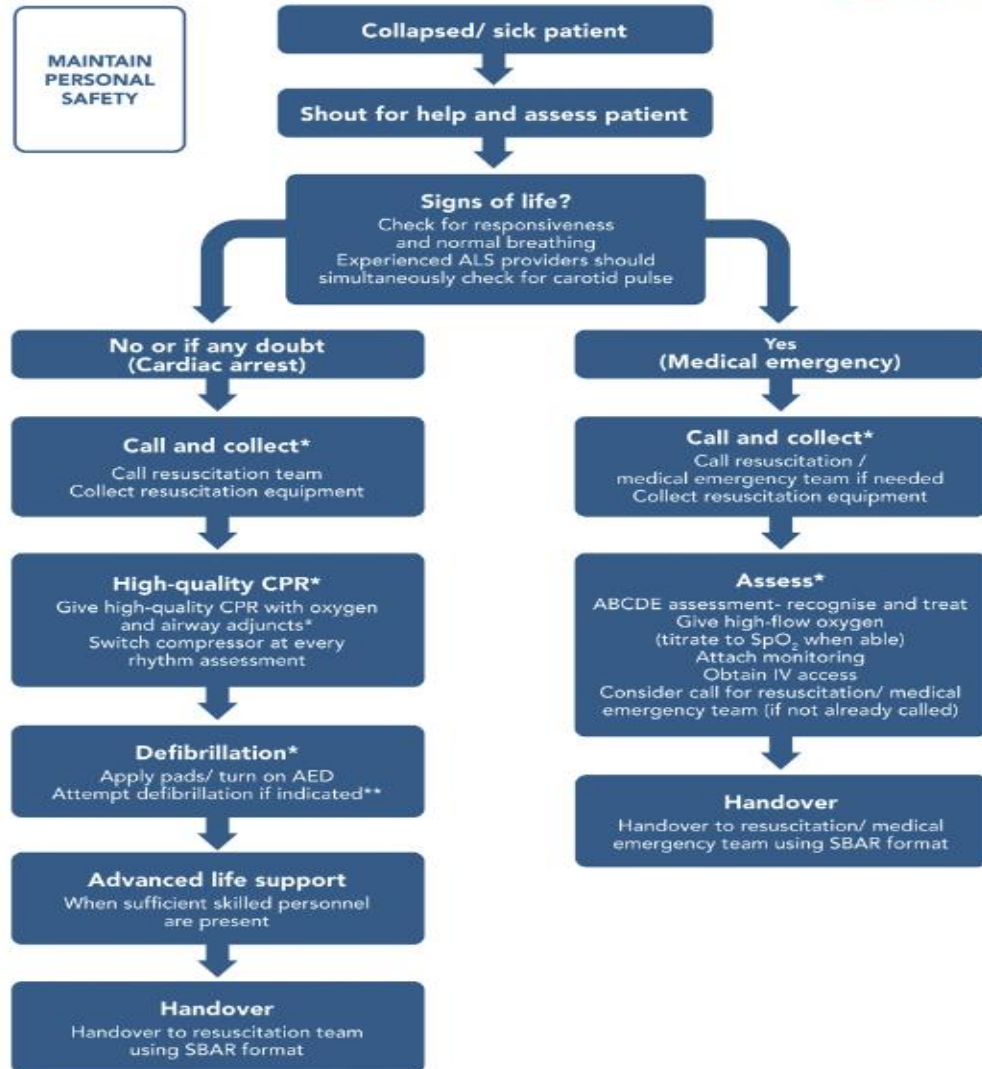
*Χρήστος Νίχλος
Παθολόγος/Εξειδικευόμενος Εντατικής Θεραπείας*

Γιατί μιλάμε για ειδικές καταστάσεις;



Γιατί μιλάμε για ειδικές καταστάσεις;

IN-HOSPITAL RESUSCITATION



SPECIAL CIRCUMSTANCES 2021



5 TOP MESSAGES

- 1. CHECK**
 - Follow the ABCDE approach
 - Take safety measures where needed

- 2. TREAT**
 - Follow the ALS algorithm
 - Minimise no-flow time
 - Optimise oxygenation
 - Use your resources

- 3. PRIORITISE**
 - Reversible causes
 - 4 Hs
 - 4 Ts

- 4. MODIFY**
 - Modify ALS algorithm
 - Special causes
 - Special settings
 - Special patient groups

- 5. CONSIDER**
 - Transfer
 - ECPR

Ηλικιωμένοι

- Ευθραυστότητα
- Συννοσηρότητες
- Πολυφαρμακία
- Ηθικά διλήμματα

Reviews in Clinical Gerontology 2010 20; 20–29

First published online 27 January 2010

© Cambridge University Press 2010 doi:10.1017/S0959259809990438

Cardiopulmonary resuscitation in older people – a review

R Lannon and ST O’Keeffe

Department of Geriatric Medicine, Galway University Hospitals, Ireland

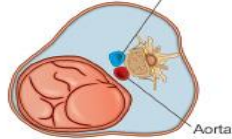
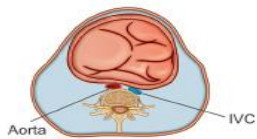
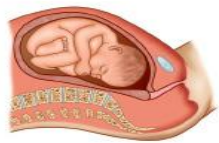
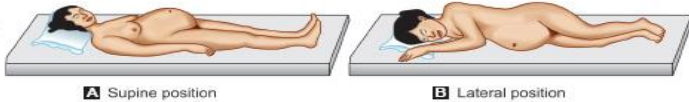
CLINICAL INVESTIGATIONS

Cardiopulmonary Resuscitation in Adults Over 80: Outcome and the Perception of Appropriateness by Clinicians

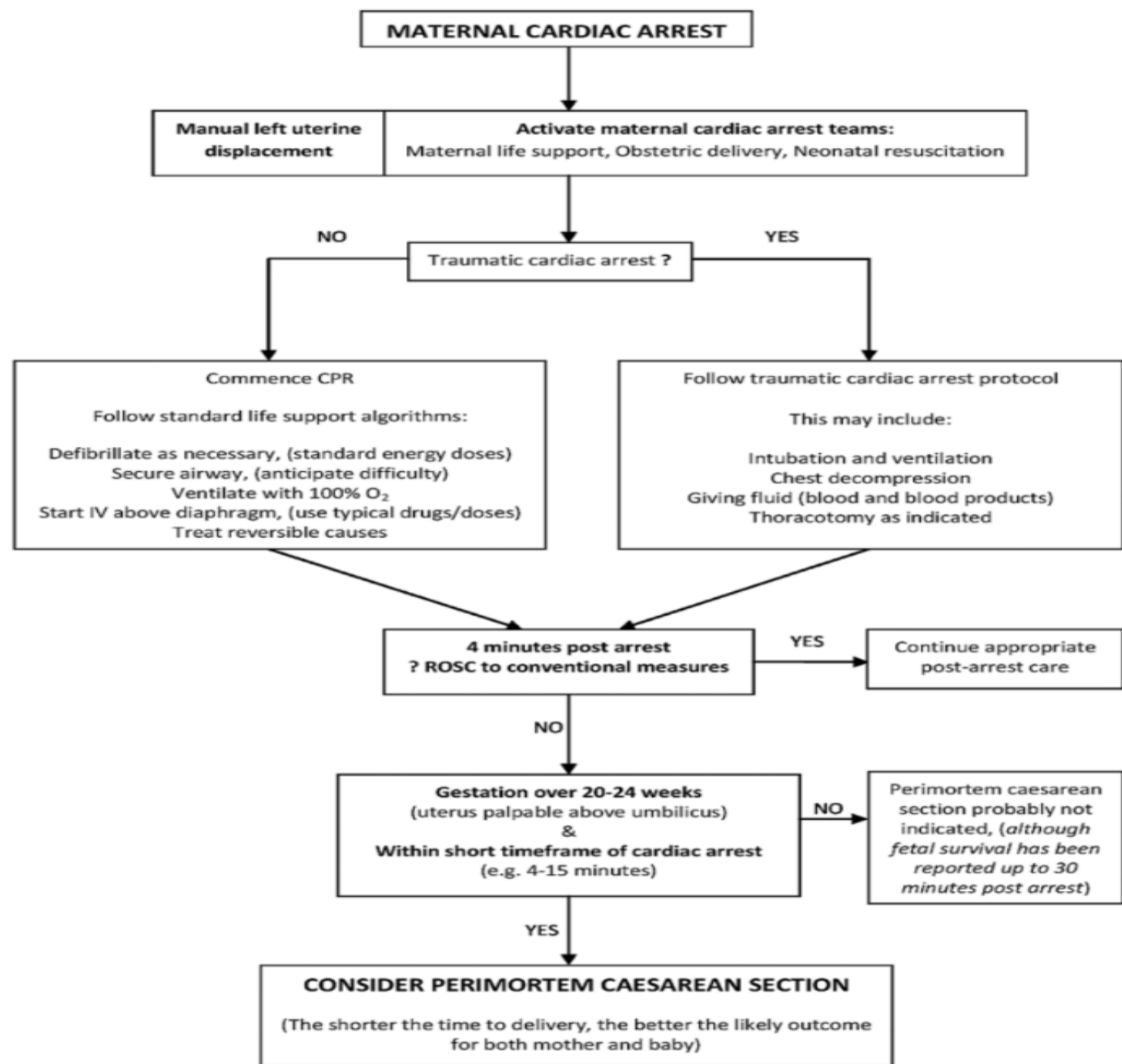
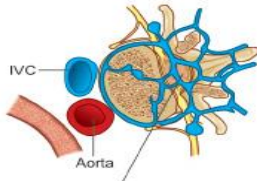
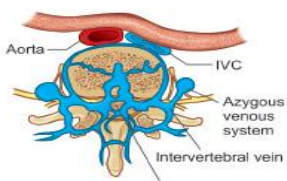
CONCLUSION: Our findings show that despite generally poor outcomes for older patients undergoing CPR, many emergency clinicians do not consider these attempts at resuscitation to be inappropriate. A professional and societal debate is urgently needed to ensure that first we do not harm older patients by futile CPR attempts. *J Am Geriatr Soc* 68:39–45, 2020.

Εγκυμοσύνη

- heart disease (23%), thromboembolism (16%),e bleeding (8%), cancer (4%) and pre-eclampsia (2)
- Υψηλός κίνδυνος εισρόφησης
- Αιμορραγίες: ectopic pregnancy, placental abruption
- Προθρομβωτική κατάσταση, ΠΕ
- Προ-/εκλαμψία
- Εμβολή αμνιακού υγρού
- Συμπίεση ΚΚΦ και αορτής
- Περιθανάτια καισαρική τομή



Cross sections



Παχυσαρκία

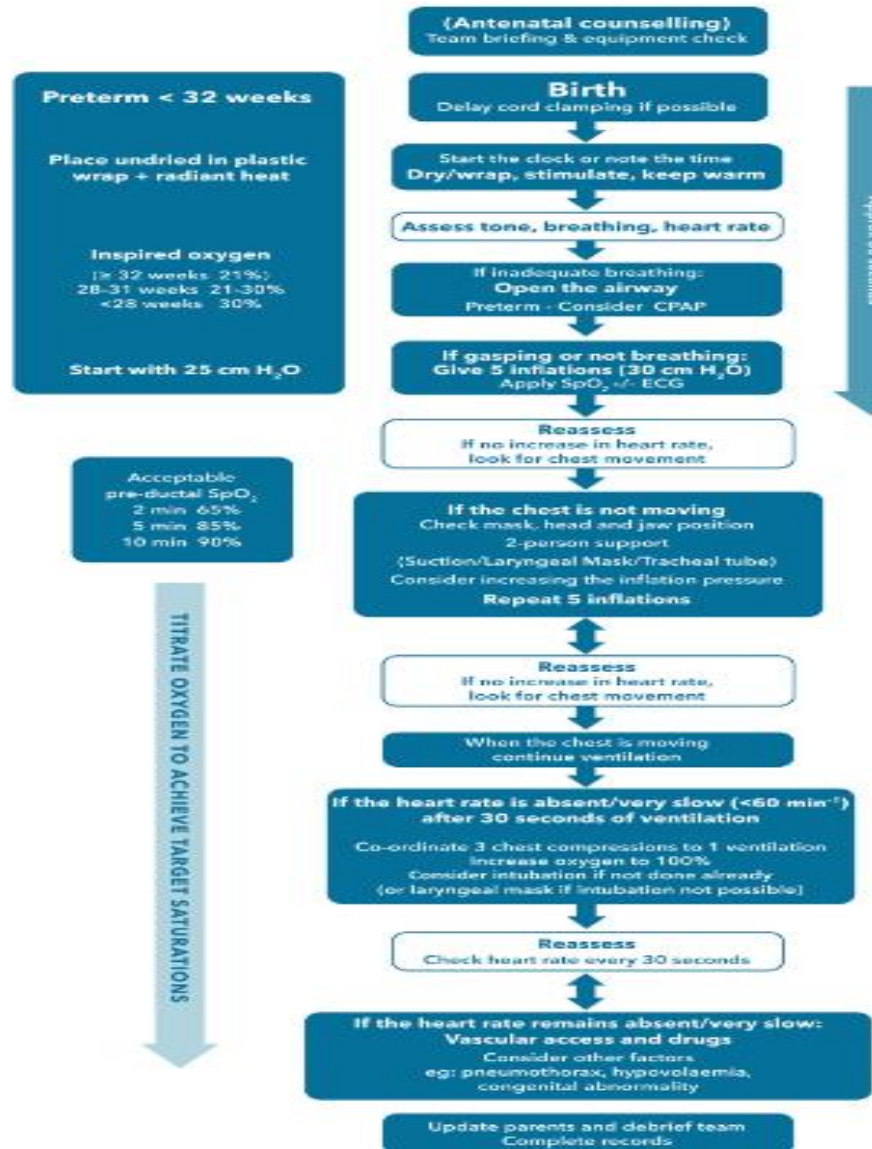
- Δύσκολος αεραγωγός, δύσκολος αερισμός, υψηλός κίνδυνος εισρόφησης
- Δύσκολη αγγειακή προσπάθεια
- Συμπιέσεις εως 6cm, συχνότερες αλλαγές
- Paddles αντί για pads και πίεση

Βρέφη-Παιδιά



EUROPEAN
RESUSCITATION
COUNCIL

PAEDIATRIC BASIC LIFE SUPPORT



SAFE? - SHOUT 'HELP'

Unresponsive?

Open airway

Absent or abnormal breathing

5 rescue breaths

Unless clear signs of life

15 chest compressions

2 breaths
further alternating
15 compressions : 2 breaths

SECOND RESCUER:

- Call EMS / ALS team (speaker function)
- Collect & apply AED (if accessible)

- If competent, use bag-mask ventilation (2-person), with oxygen
- If unable to ventilate, perform continuous compressions; add rescue breaths as soon as possible

SINGLE RESCUER:

- Call EMS / ALS team (speaker function)
- Collect & apply AED in case of sudden witnessed collapse (if accessible)

Υποξία

Table 1 – Causes of asphyxial cardiac arrest.

Trauma

Hanging

Chronic obstruction pulmonary disease

Asthma

Airway obstruction, soft tissues (coma), laryngospasm, aspiration

Drowning

Central hypoventilation – brain or spinal cord injury

Impaired alveolar ventilation from neuromuscular disease

Traumatic asphyxia or compression asphyxia (e.g. crowd crush), tension pneumothorax

Pneumonia

High altitude

Avalanche burial

Anaemia

Υπο

- Διάρρ
- Αγγειο
- Χορήγ

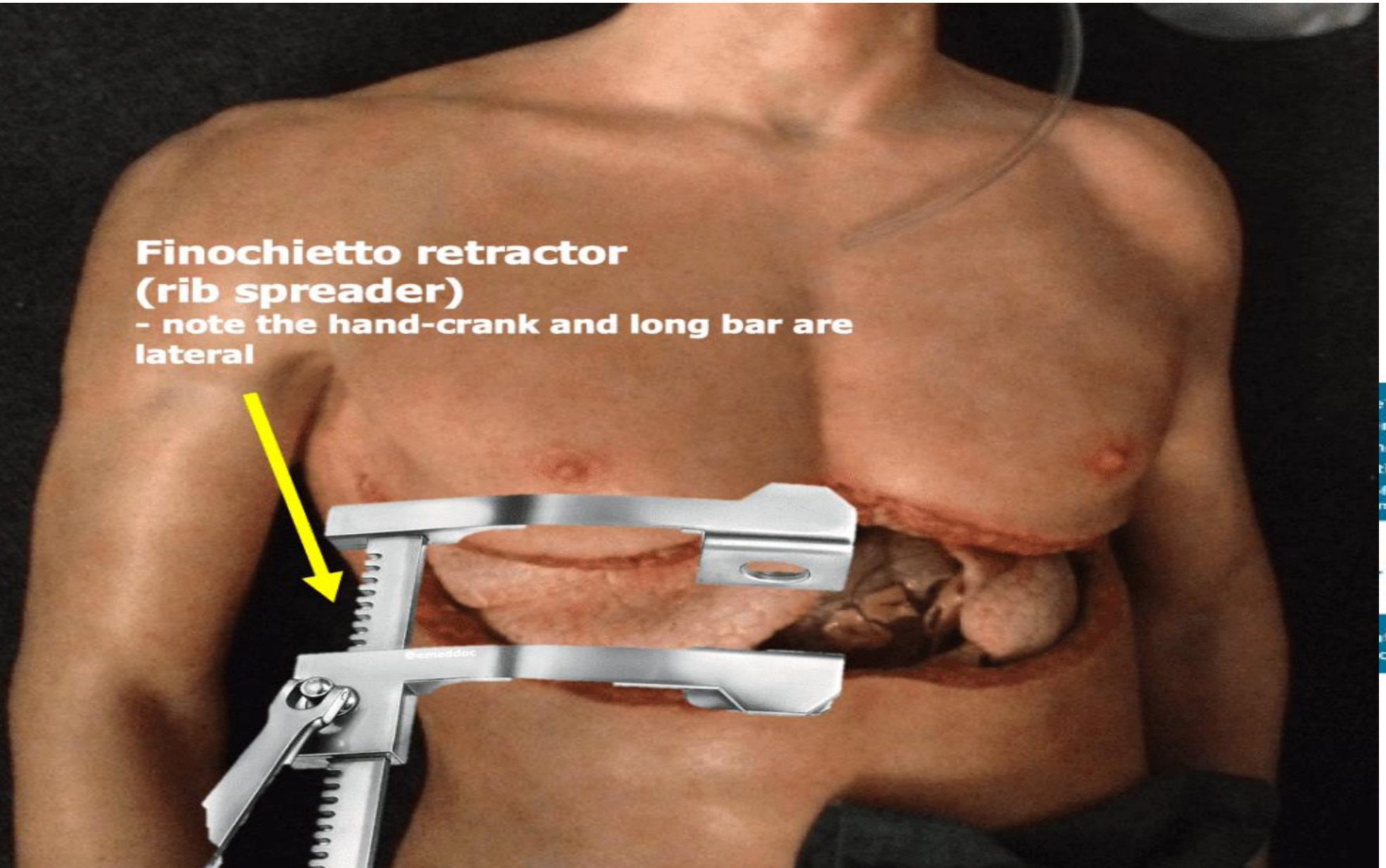
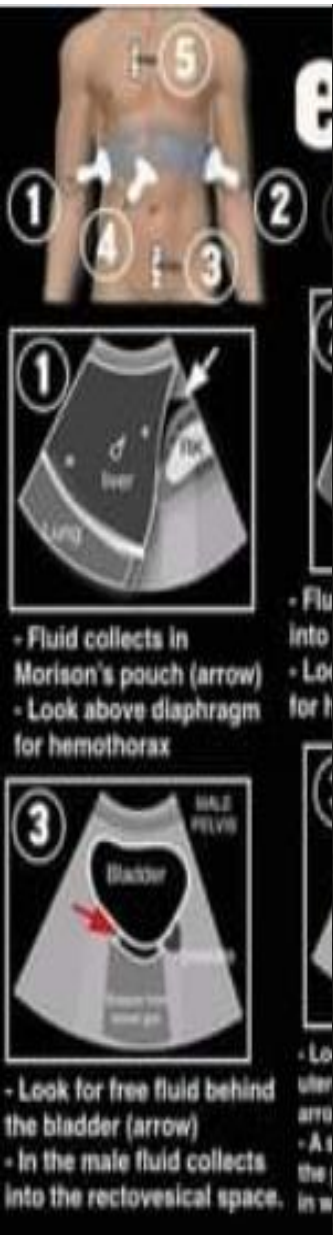


- Διόρθ
- Αιμορ
περιο
αντιπ



Τραύμα

TRAUMATIC CARDIAC ARREST/ PERI-ARREST ALGORITHM



What is the time of vital signs?

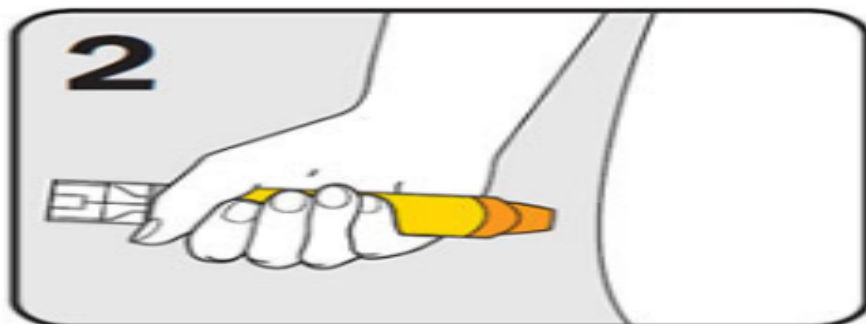
What is the time of vital signs?

Πώς χορηγούνται οι αυτοενέσεις αδρεναλίνης (επινεφρίνης) EpiPen® ή οι EpiPen® Jr

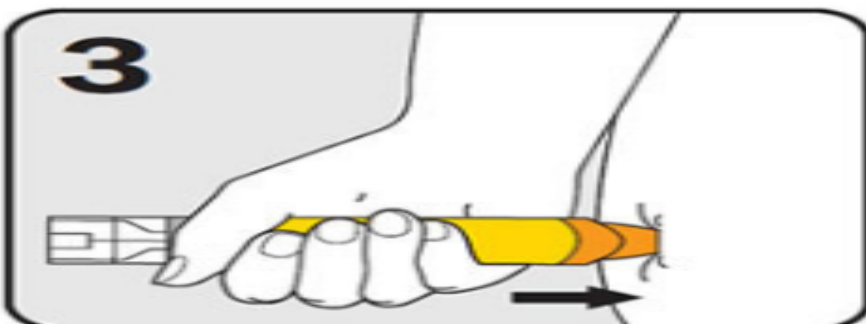
(How to give EpiPen® or EpiPen® Jr adrenaline (epinephrine) autoinjectors)



1. Σχηματίστε γροθιά γύρω από το EpiPen® και ΑΦΑΙΡΕΣΤΕ ΤΟ ΜΠΛΕ ΚΑΠΑΚΙ ΑΣΦΑΛΕΙΑΣ



2. Κρατείστε το πόδι ακίνητο και ΤΟΠΟΘΕΤΗΣΤΕ ΤΟ ΠΟΡΤΟΚΑΛΙ ΑΚΡΟ στο μέσο του εξωτερικού μηρού (με ή χωρίς ρούχα).



3. ΠΙΕΣΤΕ ΠΡΟΣ ΤΑ ΜΕΣΑ ΣΘΕΝΑΡΑ μέχρι να ακούσετε ή να αισθανθείτε ένα «κλικ» και κρατείστε το εκεί για 3 δευτερόλεπτα
ΑΦΑΙΡΕΣΤΕ το EpiPen®

Σημείωση: Όλα τα EpiPen® θα πρέπει να κρατούνται στο σημείο ένεσης για 3 δευτερόλεπτα ανεξάρτητα των οδηγιών στην ετικέτα της συσκευής

Σήψη

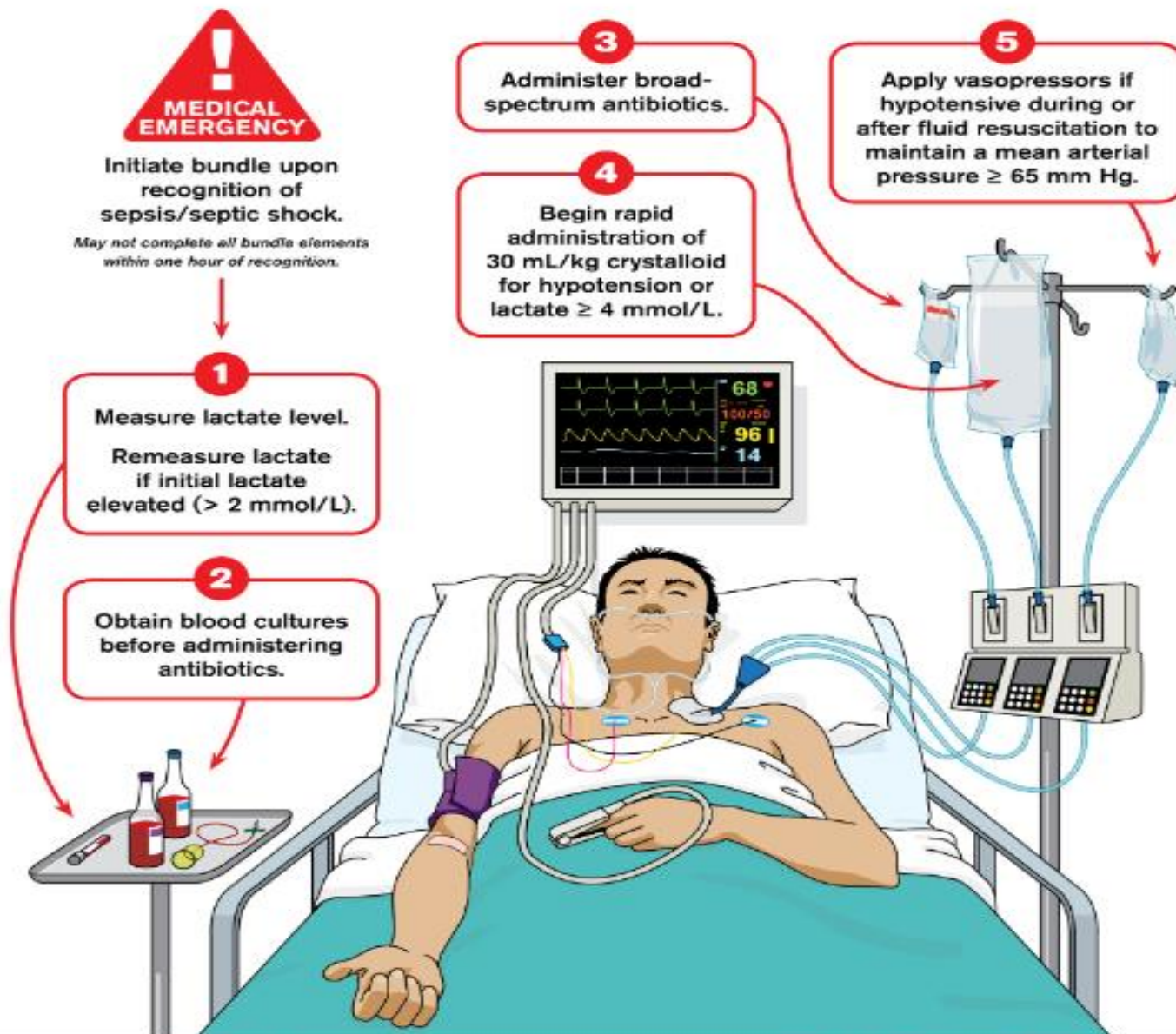
qSOFA



Hour-1 Bundle

Initial Resuscitation for Sepsis and Septic Shock

Surviving Sepsis Campaign



Υπερκαλιαιμία

Protect the heart



Shift K⁺ into cells

- D/W 35% 10ml x7 + 10 IU Insulin iv
- NaHCO₃ 8.4%
- Aerolin 5mg x2-4

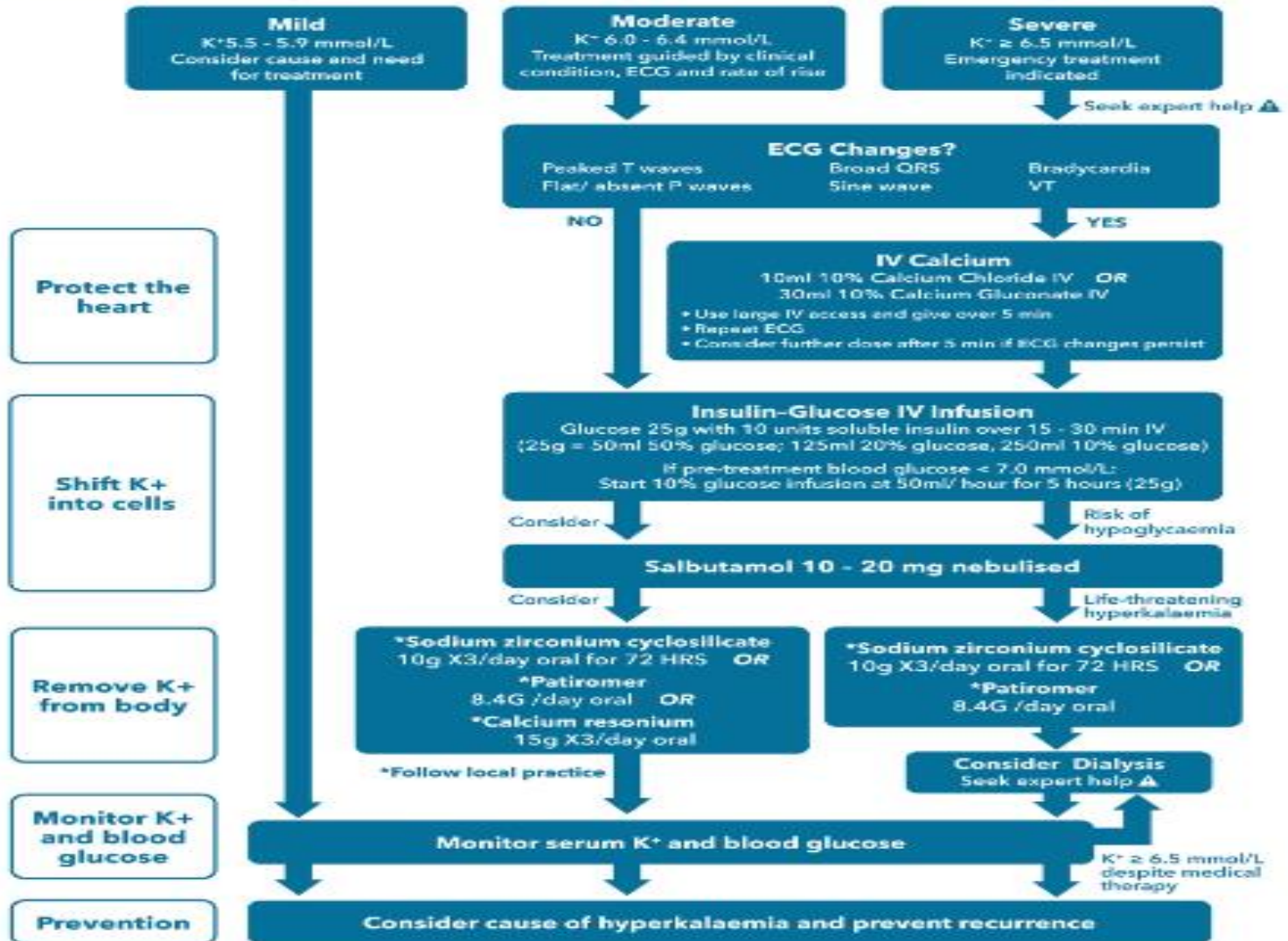
Remove K⁺ from body



EMERGENCY TREATMENT OF HYPERKALAEMIA



- Assess using ABCDE approach
- 12-lead ECG and monitor cardiac rhythm if serum potassium (K⁺) ≥ 6.5 mmol/L
- Exclude pseudohyperkalaemia
- Give empirical treatment for arrhythmia if hyperkalaemia suspected



Emergency treatment of hyperkalaemia. ECG - electrocardiogram; VT - ventricular tachycardia.

Table 2 – Calcium and magnesium disorders with associated clinical presentation, ECG manifestations and recommended treatment.

Disorder	Causes	Presentation	ECG	Treatment
Hypercalcaemia Calcium >2.6 mmol/l	Primary or tertiary hyperparathyroidism	Confusion	Short QT interval	Fluid replacement IV
	Malignancy	Weakness	Prolonged QRS interval	Furosemide 1 mg/kg IV
	Sarcoidosis	Abdominal pain	Flat T waves	Hydrocortisone 200–300 mg IV
	Drugs	Hypotension	AV block	Pamidronate 30–90 mg IV
		Arrhythmias	Cardiac arrest	Treat underlying cause
		Cardiac arrest		
Hypocalcaemia Calcium <2.1 mmol/l	Chronic kidney disease	Paraesthesia	Prolonged QT interval	Calcium chloride 10% 10–40 ml IV
	Acute pancreatitis	Tetany		
	Calcium channel blocker overdose	Seizures	T wave inversion	Magnesium sulphate 50% 4–8 mmol IV (if necessary)
	Toxic shock syndrome	AV-block		
	Rhabdomyolysis	Cardiac arrest	Heart block	
	Tumour lysis syndrome		Cardiac arrest	
Hypermagnesaemia Magnesium >1.1 mmol/l	Renal failure Iatrogenic	Confusion	Prolonged PR and QT intervals	Consider treatment when magnesium >1.75 mmol/l: Calcium chloride 10% 5–10 ml IV repeated if necessary Saline diuresis –0.9% saline with furosemide 1 mg/kg IV Haemodialysis Ventilatory support if necessary
		Weakness	T wave peaking	
		Respiratory depression	AV block	
		AV-block	Cardiac arrest	
		Cardiac arrest		
Hypomagnesaemia Magnesium <0.6 mmol/l	GI loss	Tremor	Prolonged PR and QT intervals	Severe or symptomatic: 2 g magnesium sulphate 50% (4 ml; 8 mmol) IV over 15 min Torsades de pointes: 2 g magnesium sulphate 50% (4 ml; 8 mmol) IV over 1–2 min Seizure: 2 g magnesium sulphate 50% (4 ml; 8 mmol) IV over 10 min
	Polyuria	Ataxia	ST-segment depression	
	Starvation	Nystagmus	T-wave inversion	
	Alcoholism	Seizures	Flattened P waves	
	Malabsorption	Arrhythmias – torsade de pointes	Increased QRS duration	
		Cardiac arrest	Torsades de pointes	

Άσθμα

Features of acute severe asthma

- Peak expiratory flow (PEF) 33–50% of best (use % predicted if recent best unknown)
- Can't complete sentences in one breath
- Respiration ≥ 25 breaths/min
- Pulse ≥ 110 beats/min

Life-threatening features

- PEF $< 33\%$ of best or predicted
- $SpO_2 < 92\%$
- Silent chest, cyanosis, or poor respiratory effort
- Arrhythmia or hypotension
- Exhaustion, altered consciousness

Blood gas markers of a life-threatening attack:

- 'Normal' (4.6–6 kPa, 35–45 mmHg) $PaCO_2$
- Severe hypoxia: $PaO_2 < 8$ kPa (60 mmHg) irrespective of treatment with oxygen
- A low pH (or high H^+)

Near-fatal asthma

- Raised $PaCO_2$
- Requiring mechanical ventilation with raised inflation pressures

Features of acute severe asthma

- Peak expiratory flow (PEF) 33–50% of best (use % predicted if recent best unknown)
- Can't complete sentences in one breath
- Respiration ≥ 25 breaths/min
- Pulse ≥ 110 beats/min

Life-threatening features

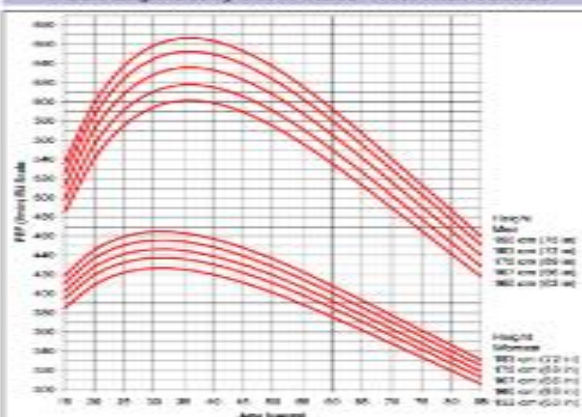
- PEF $< 33\%$ of best or predicted
- $SpO_2 < 92\%$
- Silent chest, cyanosis, or poor respiratory effort
- Arrhythmia or hypotension
- Exhaustion, altered consciousness

If a patient has any life-threatening feature, measure arterial blood gases. No other

Caution: Patients with severe or life-threatening attacks may not be distressed and may not have all these abnormalities. The presence of any should alert the doctor.

- Requiring mechanical ventilation with raised inflation pressures

Peak Expiratory Flow Rate - Normal Values



Management of acute severe asthma in hospital

IMMEDIATE TREATMENT

- Oxygen to maintain SpO_2 94–98%
- β_2 bronchodilator (salbutamol 5 mg) via an oxygen-driven nebuliser
- Ipratropium bromide 0.5 mg via an oxygen-driven nebuliser
- Prednisolone tablets 40–50 mg or IV hydrocortisone 100 mg
- No sedatives of any kind
- Chest X-ray if pneumothorax or consolidation are suspected or patient requires mechanical ventilation

IF LIFE-THREATENING FEATURES ARE PRESENT:

- Discuss with senior clinician and ICU team
- Consider IV magnesium sulphate 1.2–2 g infusion over 20 minutes (unless already given)
- Give nebulised β_2 bronchodilator more frequently eg salbutamol 5 mg up to every 15–30 minutes or 10 mg per hour via continuous nebulisation (requires special nebuliser)

SUBSEQUENT MANAGEMENT

IF PATIENT IS IMPROVING continue:

- Oxygen to maintain SpO_2 94–98%
- Prednisolone 40–50 mg daily or IV hydrocortisone 100 mg 6 hourly
- Nebulised β_2 bronchodilator with ipratropium 4–6 hourly

IF PATIENT NOT IMPROVING AFTER 15–30 MINUTES:

- Continue oxygen and steroids
- Use continuous nebulisation of salbutamol at 5–10 mg/hour if an appropriate nebuliser is available. Otherwise give nebulised salbutamol 5 mg every 15–30 minutes
- Continue ipratropium 0.5 mg 4–6 hourly until patient is improving

IF PATIENT IS STILL NOT IMPROVING:

- Discuss patient with senior clinician and ICU team
- Consider IV magnesium sulphate 1.2–2 g over 20 minutes (unless already given)
- Senior clinician may consider use of IV β_2 bronchodilator or IV aminophylline or progression to mechanical ventilation

MONITORING

- Repeat measurement of PEF 15–30 minutes after starting treatment
- Oximetry: maintain $SpO_2 > 94–98\%$
- Repeat blood gas measurements within 1 hour of starting treatment if:
 - initial $PaO_2 < 8$ kPa (60 mmHg) unless subsequent $SpO_2 > 92\%$ or
 - $PaCO_2$ normal or raised or
 - patient deteriorates
- Chart PEF before and after giving β_2 bronchodilator and at least 4 times daily throughout hospital stay

Transfer to ICU accompanied by a doctor prepared to intubate if:

- Deteriorating PEF, worsening or persisting hypoxia, or hypercapnia
- Exhaustion, altered consciousness
- Poor respiratory effort or respiratory arrest

DISCHARGE

When discharged from hospital, patients should have:

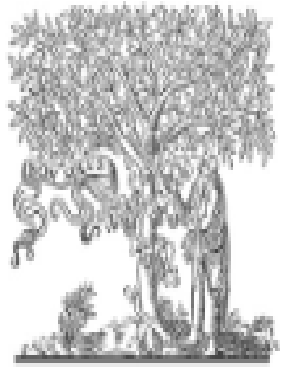
- Been on discharge medication for 12–24 hours and have had inhaler technique checked and recorded
- PEF $> 75\%$ of best or predicted and PEF diurnal variability $< 25\%$ unless discharge is agreed with respiratory physician
- Treatment with oral steroids (prednisolone 40–50 mg until recovery - minimum 5 days) and inhaled steroids in addition to bronchodilators
- Own PEF meter and written asthma action plan
- GP follow up arranged within 2 working days
- Follow-up appointment in respiratory clinic within 4 weeks

Patients with severe asthma (indicated by need for admission) and adverse behavioural or psychosocial features are at risk of further severe or fatal attacks.

- Determine reason(s) for exacerbation and admission
- Send details of admission, discharge and potential best PEF to GP

- Check for the presence of vital signs for up to one minute.

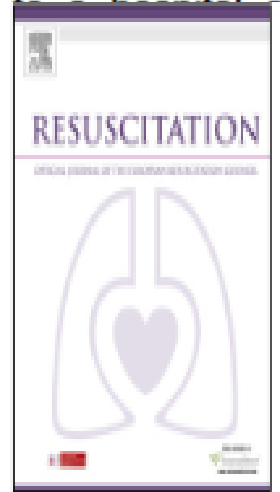
Contents lists available at [ScienceDirect](#)



ELSEVIER

Resuscitation

journal homepage: www.elsevier.com/locate/resuscitation



Clinical Paper

“Nobody is dead until warm and dead”: Prolonged resuscitation is warranted in arrested hypothermic victims also in remote areas – A retrospective study from northern Norway[☆]

Jonas Hilmo^{a,*}, Torvind Naesheim^{b,c,d,e}, Mads Gilbert^{c,d,f}



^a Post-resuscitation care

^b If ECLS not available within 6 hrs, CPR and non-ECLS rewarming in peripheral hospital
^c Rewarm to core temperature $\geq 32^{\circ}\text{C}$

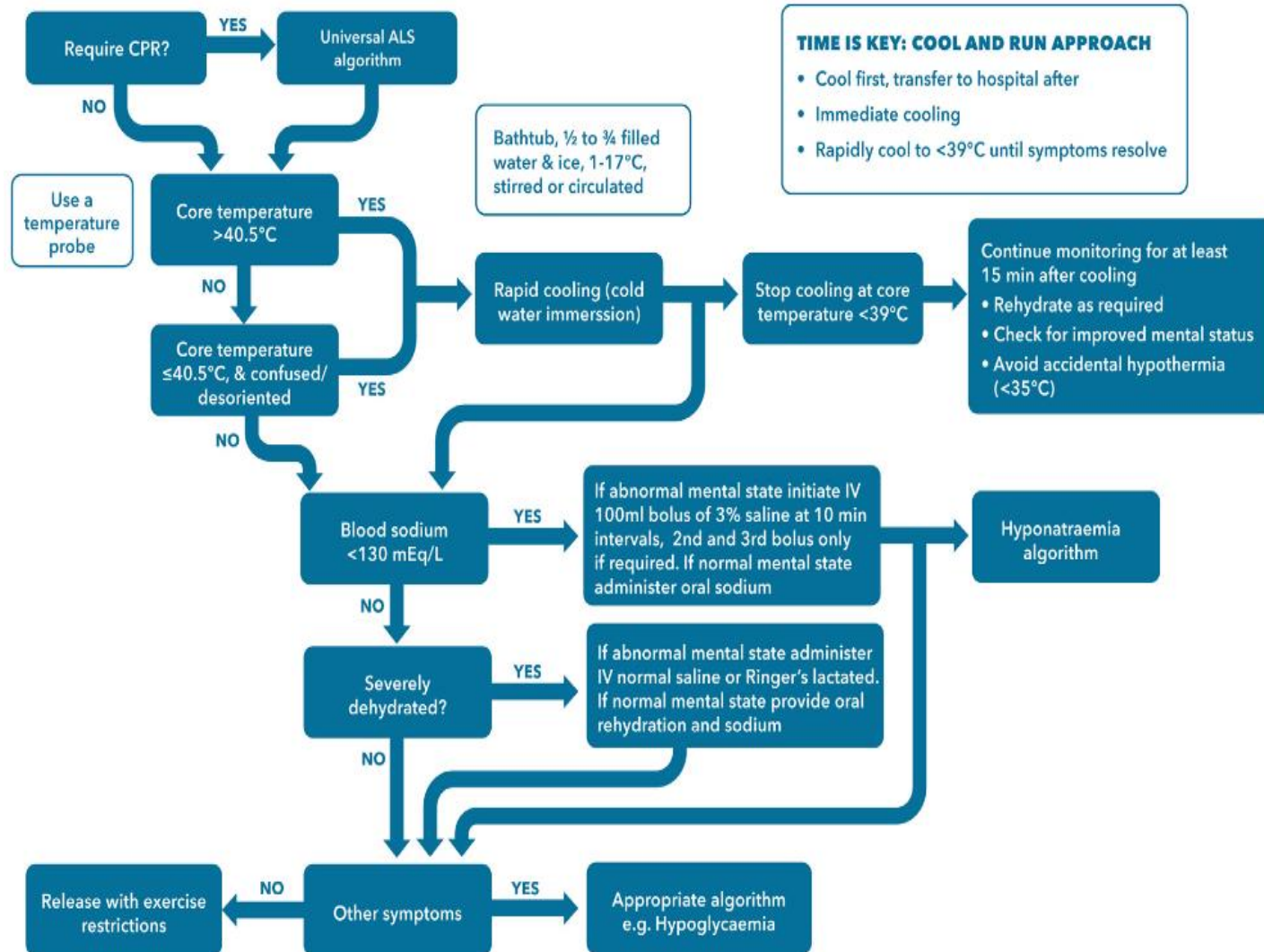
^d of CPR

^e narcotics etc.) independent of core temperature.

^f The risk of cardiac arrest increases $<32^{\circ}\text{C}$, older and sicker are at higher risk, alternative causes should be considered. Some still have vital signs $<24^{\circ}\text{C}$.¹⁷⁵

Υπερθερμία

HYPERTHERMIA



- Παιδιά/Ηλικιωμένοι, συννοσηρότητες, παχυσαρκία
- Θερμική συγκοπή-Θερμική εξάντληση-Θερμοπληξία
- Εμβύθιση σε κρύο νερό, περιβάλλον, κρύα υγρά, κρύα επιθέματα, τεχνικές εξάτμισης
- Κακοήθης υπερθερμία (πτητικά, Suic, MDMA), σύνδρομο υπερθερμίας
- charcoal filters, υπεραερισμός-αφαίρεση περίσσειας πτητικού-αλλαγή κυκλώματος/νατρ
- Δανδρολένη 2.5mg/kg (20mg/amp σε 60ml WF αραιώση 1mg/3ml) Περαιτέρω δόσεις 1 mg/kg κάθε 5 min μέχρι τα μεταβολικά σημεία (ταχυκαρδία, υπερκαπνία, $\uparrow \theta^{\circ}\text{C}$ να μειωθούν) και $\theta < 38,5^{\circ}\text{C}$

DOSING DANTROLENE

2.5mg/kg IV

10 VIALS PER DOSE IN AN 80KG PATIENT
DOSE MAY NEED TO BE REPEATED EVERY 10MINS



TriadApproach.org

1 VIAL PER MINUTE IN AN 80KG PATIENT

Πνιγμός

- Start resuscitation by giving 5 rescue breaths/ventilations using 100% inspired oxygen if available.
- Εξασφάλιση/απελευθέρωση αεραγωγού (Κίνδυνος λαρυγγόσπασμου)
- Τραύμα, ΚΕΚ
- Υποθερμία

Δηλητηρίαση

Resuscitation
Risk Assessment
Supportive care & monitoring
Investigations
Decontamination
Enhanced elimination
Antidotes
Disposition

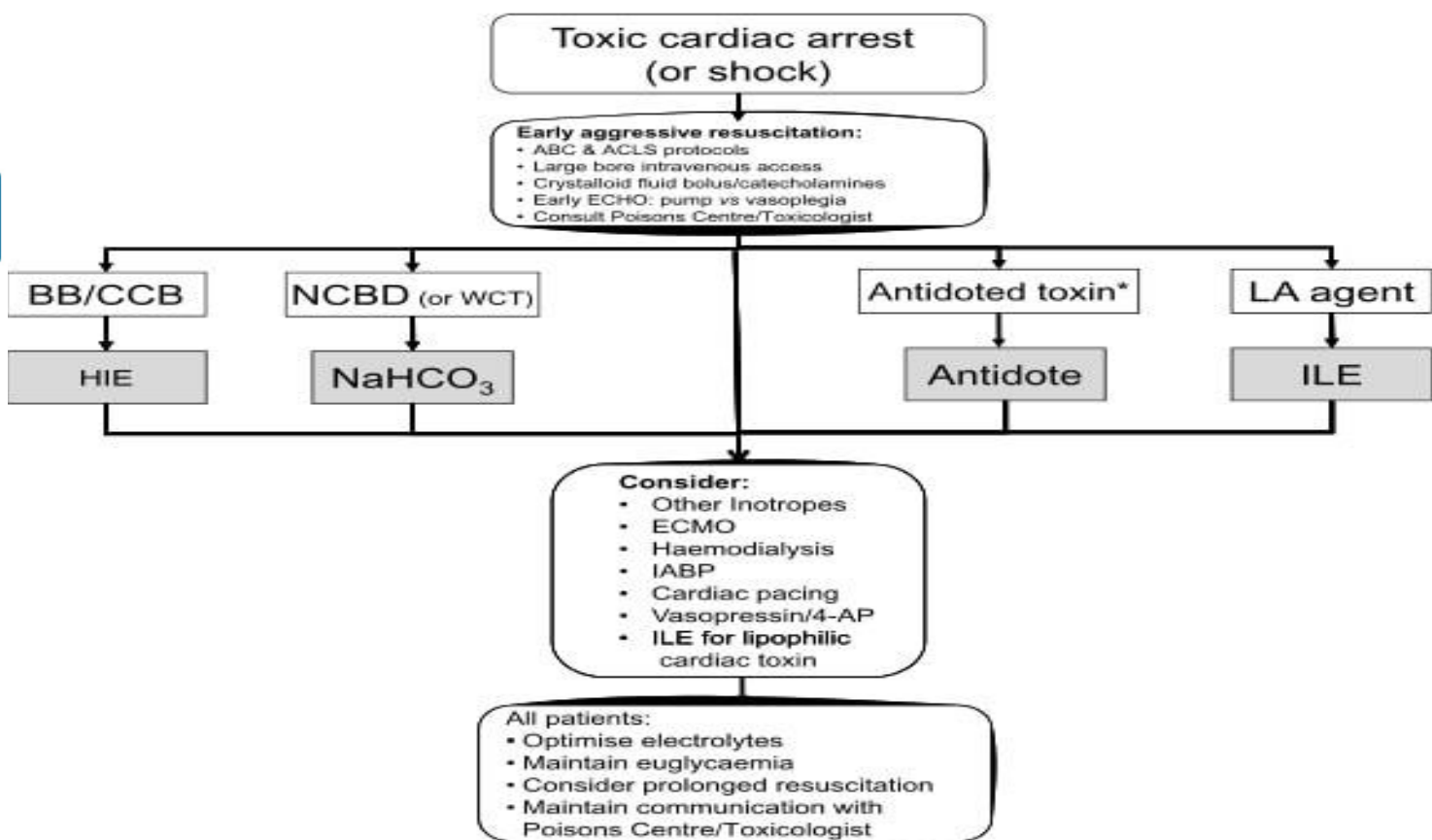
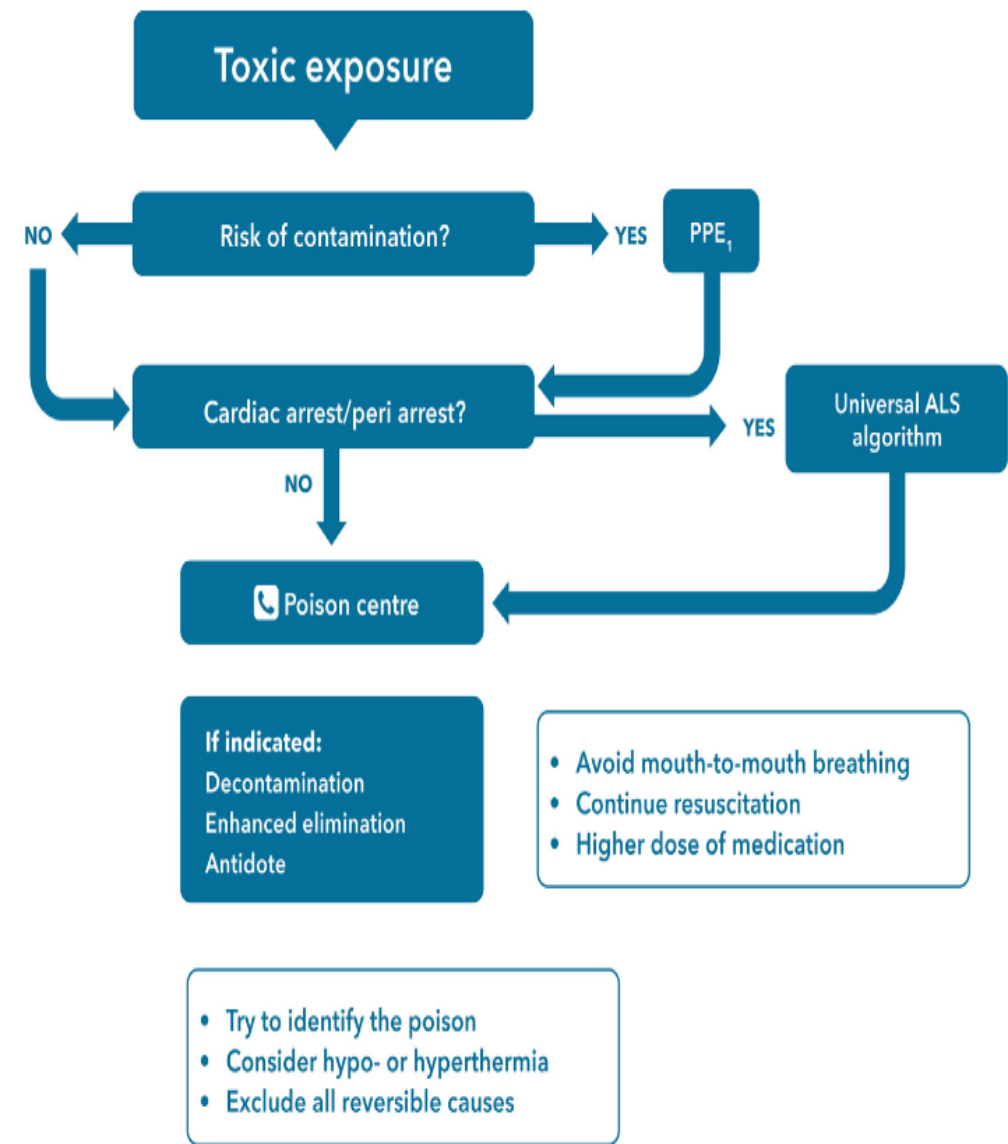


Table 6 – Specific toxic agents.

Drugs	First Line	Consider	Avoid
Cardiovascular and neurological medication			
Digoxin	Lidocaine – ventricular arrhythmias	Digoxin-Fab 80 mg, repeated as required ^{308,309}	Calcium channel blockers Class 1a antiarrhythmic drugs
Calcium channel blockers	IV calcium 1–2 g every 10–20 min/ 0.02–0.04 g/kg/h High-dose insulin euglycemic therapy Catecholamines Atropine ^{308,310–323}	Pacing VA-ECMO Intravenous lipid emulsion ^{324,325}	
Beta-blockers	High-dose insulin euglycemic therapy Catecholamines ^{326–328}	Glucagon Intravenous lipid emulsion phosphodiesterase inhibitors ^{329–332}	
Tricyclic antidepressants	Sodium bicarbonate - broad complex ventricular arrhythmias: 1-2 mmol kg ⁻¹ , target pH 7.45–7.55 ^{333–339}	Intravenous lipid emulsion ³³⁰	
Neuroleptics	Sodium bicarbonate - broad complex ventricular arrhythmias: 1–2 mmol kg ⁻¹ Dantrolene, Bromocriptine - neuroleptic malignant syndrome ³⁴⁰		Dopamine Adrenaline Dobutamine ³⁴¹
Anticonvulsants	Sodium bicarbonate - broad complex ventricular arrhythmias: 1–2 mmol kg ⁻¹ Dantrolene Carnitine, Naloxone – valproic acid ³⁴²	Haemodialysis ECLS – carbamazepine ^{343,344}	
Benzodiazepines		Flumazenil ^{345,346}	
Local anaesthetics	Intravenous lipid emulsion: 20% lipid emulsion, 1.5 ml kg ⁻¹ over 1 min followed by an infusion at 0.25 ml kg ⁻¹ min ⁻¹ for up to 60 min, 2 bolus repetitions, max cumulative dose 12 ml kg ⁻¹ ^{350,347–353}		
Drugs of abuse			
Opioids	Naloxone 0.4–2 mg, repeat every 2–3 min (strong recommendation, very low- quality evidence) ^{354,355}		
Cocaine	Benzodiazepines - seizure control ^{356,357}	Alpha-blockers, calcium channel blockers, nitro-glycerine – hypertension ^{358–361}	Beta-blockers not as first line management ^{362–364}
Amphetamines	Benzodiazepines - seizure control	Cyproheptadine, chlorpromazine, ziprasidone – serotonin-ergic syndrome ^{365–368}	
Systemic asphyxiants			
Cyanide	Hydroxycobolamin 70 mg/kg/1–3 min ^{369,370}	Sodium thiosulfate ³⁷¹	Amyl nitrite, sodium nitrite – avoid if smoke inhalation ^{372,373}
Carbon monoxide	Oxygen	Hyperbaric oxygen ^{374–378}	
Hydrogen sulphide	Nitrite Hydroxycobolamin ^{380–384}		
Local asphyxiants (irritant gases)		N-Acetylcysteine – phosgene ³⁸⁵	
Organic solvents and halogenated hydrocarbons		Beta-blockers – arrhythmias N-Acetylcysteine – hepato-toxicity ^{386,387}	
Biotoxins			
Botulinum toxin	Antitoxin ^{388,389}		
Viper envenomation	Antivenom	Polyvalent immune Fab ³⁹⁰	
Marine biotoxins	Antivenom, magnesium – jellyfish ³⁹¹		

Table 7 – Common causes of patient deterioration after cardiac surgery and management.

Haemorrhage • "Medical" bleeding: post-operative coagulopathy • "Surgical" bleeding: operative trauma	• Correct hypothermia and hypertension, avoid haemodilution • Consider blood products transfusion and use of haemostatic agents guided by haematological tests • Check drains to detect active bleeding and perform echocardiography to exclude cardiac tamponade; consider early re-operation if suspected
Low cardiac output state • Inadequate preload • Excessive afterload • Decreased ventricular contractility • Diastolic dysfunction	• Perform echocardiography to assess ventricular function • Ensure adequate ventricular filling • Correct systemic vasoconstriction • Maintain atrioventricular coordination • Correct metabolic disturbances and hypocalcaemia • Consider inotropic or mechanical circulatory support
Graft or valve failure	• Check for ECG abnormalities • Perform echocardiography • Consider percutaneous intervention or re-operation
Arrhythmias	• Correct electrolytic disturbances • Consider antiarrhythmic, electrical cardioversion or pacing
Vasodilation • Rewarming • Analgesics/sedatives • Sepsis • Anaphylaxis • Adrenal insufficiency • Vasoplegic syndrome	• Correct specific underlying causes • Consider haemodynamic-guided IV fluid therapy • Consider vasopressor support

1. Prevent and be prepared

- Ensure adequate training of the staff in technical skills and ALS
- Ensure availability and well-functioning of emergency equipment
 - Use safety checklists

2. Detect cardiac arrest and activate cardiac arrest protocol

- Identify and manage deterioration in the post-operative cardiac patient
 - Consider echocardiography
- Confirm cardiac arrest by clinical signs and pulseless waveforms
 - Shout for help and activate cardiac arrest protocol

3. Resuscitate and treat possible causes

VF/pVT	Asystole / extreme bradycardia	PEA
↓	↓	↓
Defibrillate (apply up to 3 consecutive shocks)	Apply early pacing	Correct potentially reversible causes Turn off pacing
↓	↓	↓

No ROSC

- Initiate compressions and ventilation
- Perform **early re sternotomy** (<5 min)
- Consider circulatory support devices and extracorporeal-CPR

assess rhythm

ventricular fibrillation or tachycardia	asystole or severe bradycardia	pulseless electrical activity
↓	↓	↓
DC shock (3 attempts)	pace (if wires available)	

start basic life support

amiodarone 300mg via central venous line	consider external pacing	if paced, turn off pacing to exclude underlying VF
↓	↓	↓

prepare for emergency re sternotomy

continue CPR with single DC shock every 2 minutes until re sternotomy	continue CPR until re sternotomy	continue CPR until re sternotomy
↓	↓	↓

airway and ventilation

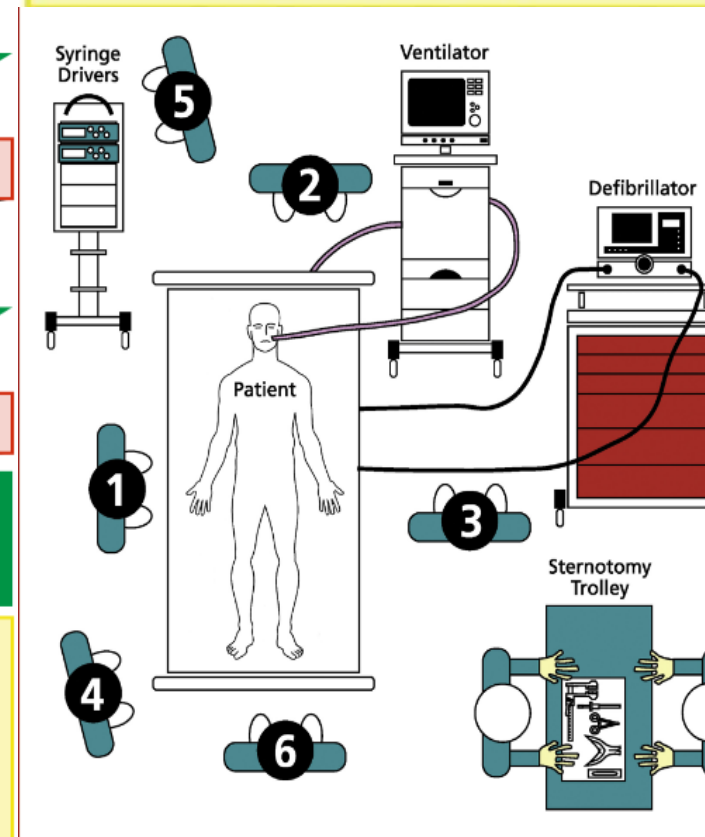
- If ventilated turn FiO₂ to 100% and switch off PEEP.
- Change to bag/valve with 100% O₂, verify ET tube position and cuff inflation and listen for breath sounds bilaterally to exclude a pneumothorax or hemothorax.
- If tension pneumothorax suspected, immediately place large bore cannula in the 2nd rib space anterior mid-clavicular line.

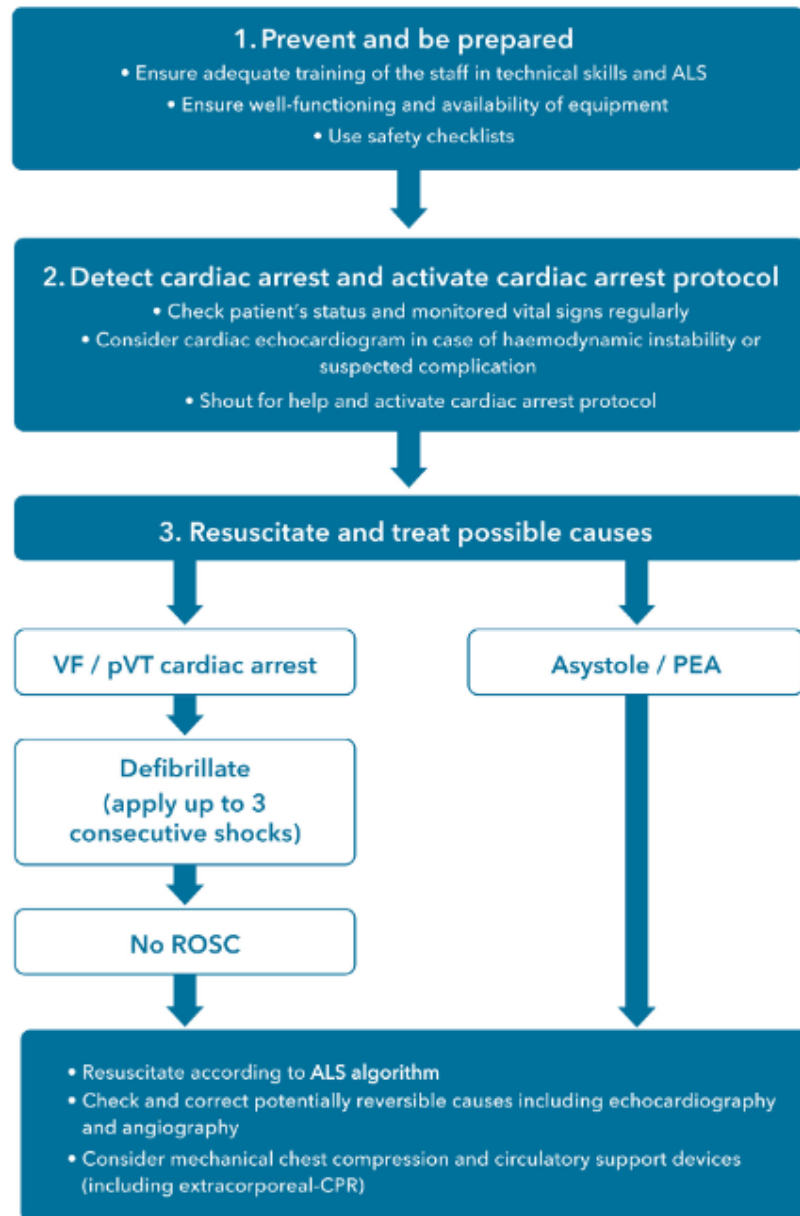
DO NOT GIVE EPINEPHRINE unless a senior doctor advises this.
If an IABP is in place change to pressure trigger.

Do not delay basic life support for defibrillation or pacing for more than one minute.

Six key roles in the cardiac arrest:

1. External cardiac massage
2. Airway and breathing
3. Defibrillation
4. Team leader
5. Drugs and syringe drivers
6. ICU co-ordinator





Dialysis unit

- Follow the universal ALS algorithm.
- Assign a trained dialysis nurse to operate the haemodialysis (HD) machine.
- Stop dialysis and return the patient's blood volume with a fluid bolus.
- Disconnect from the dialysis machine (unless defibrillation-proof) in accordance with the International Electrotechnical Committee (IEC) standards.
- Leave dialysis access open to use for drug administration.
- Dialysis may be required in the early post resuscitation period.
- Provide prompt management of hyperkalaemia.
- Avoid excessive potassium and volume shifts during dialysis.

Dentistry

- Causes of cardiac arrest usually relate to pre-existing comorbidities, complications of the procedure or allergic reactions.
- All dental care professionals should undergo annual practical training in the recognition and management of medical emergencies, including the delivery of CPR, incl. basic airway management and the use of an AED.
- Check patient's mouth and remove all solid materials from the oral cavity (e.g. retractor, suction tube, tampons). Prevention of foreign body airway obstruction should precede positioning.
- Recline the dental chair into a fully horizontal position. If reduced venous return or vasodilation has caused loss of consciousness (e.g. vasovagal syncope, orthostatic hypotension), cardiac output can be restored.
- Place a stool under the backrest for stabilisation.
- Start chest compressions immediately while patient lying flat on the chair.
- Consider the over-the-head technique of CPR if access to either side of chest is limited.
- Basic equipment for a standard CPR including a bag-valve-mask device should be available immediately.

To take home...

- Σε όλους του βαρέως πάσχοντες χρησιμοποιούμε τον αλγόριθμο **ABCDE**
- Σε περίπτωση ανακοπής εφαρμόζουμε τον αλγόριθμο της **KARPPA**
- Παράλληλα σκεφτόμαστε τις αναστρέψιμες αιτίες ανακοπής (**4H-4T**)
- Σε συγκεκριμένες υποομάδες ασθενών υπάρχει διαφοροποίηση του αλγορίθμου της **KARPPA**
- Πρέπει να έχουμε υπόψιν τα ιδιαίτερα χαρακτηριστικά κάθε ασθενούς κατά την αναζωογόνηση



«Κάλλιον το προλαμβάνειν
ἢ το θεραπεύειν»

Ιπποκράτης, 460-370 π.Χ.



ΕΥΧΑΡΙΣΤΩ
ΓΙΑ ΤΗΝ
ΥΠΟΜΟΝΗ ΣΑΣ