XIII congresso nazionale

simeu

GENOVA 30 MAG - 1 GIU 2024

IL PAZIENTE CRITICO
SHOCK

Emanuele Pivetta
Peiman Nazerian
Gabriele Valli

REGIONE TOSCANA

DISCLOSURE STATEMENT

No Conflict of Interest

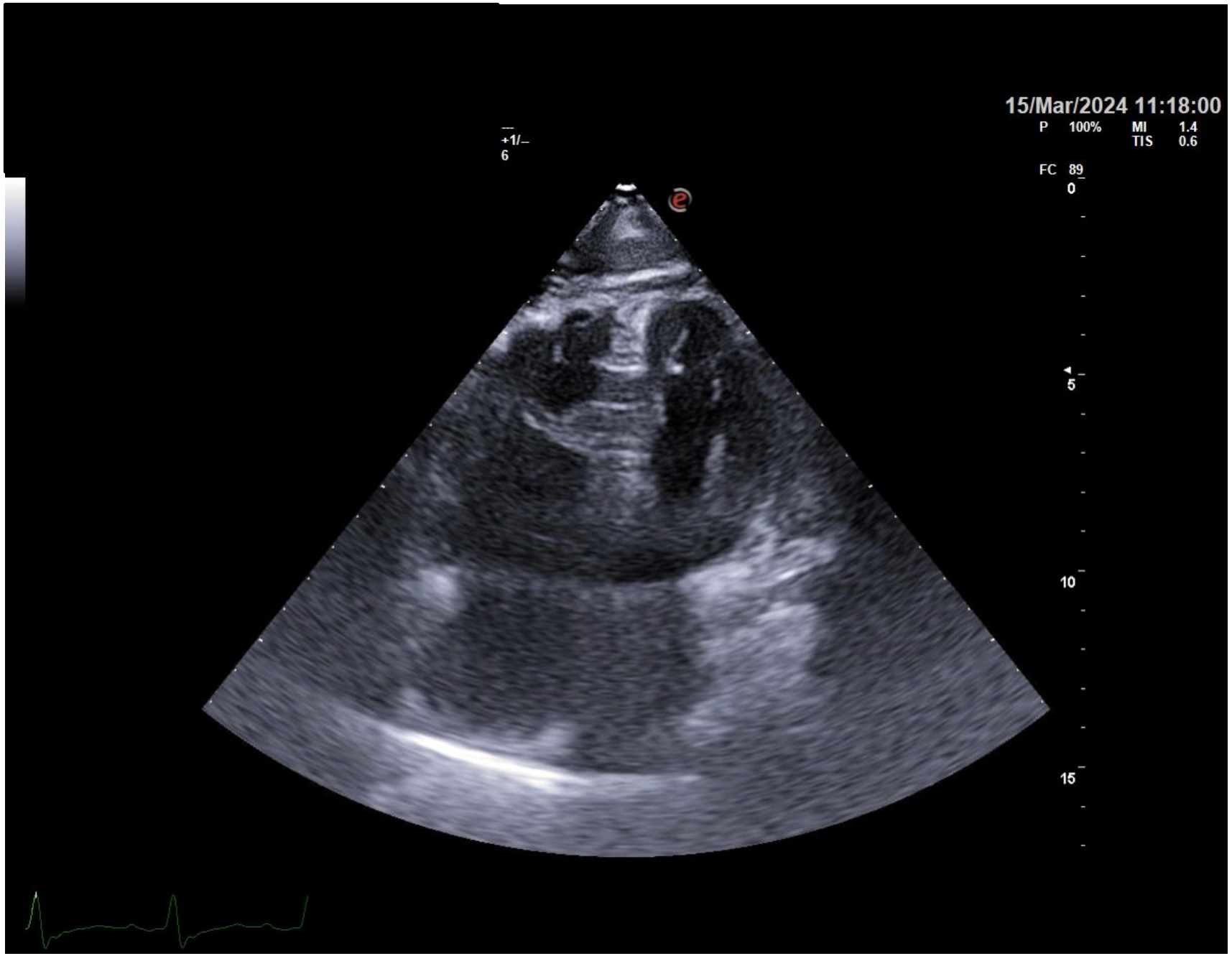
F, 78 aa. Dispnea acuta e dolore epigastrico. Inviata da 112 per sospetta SCA

In anamnesi ipertensione, DM, pregresso STEMI, disturbo bipolare

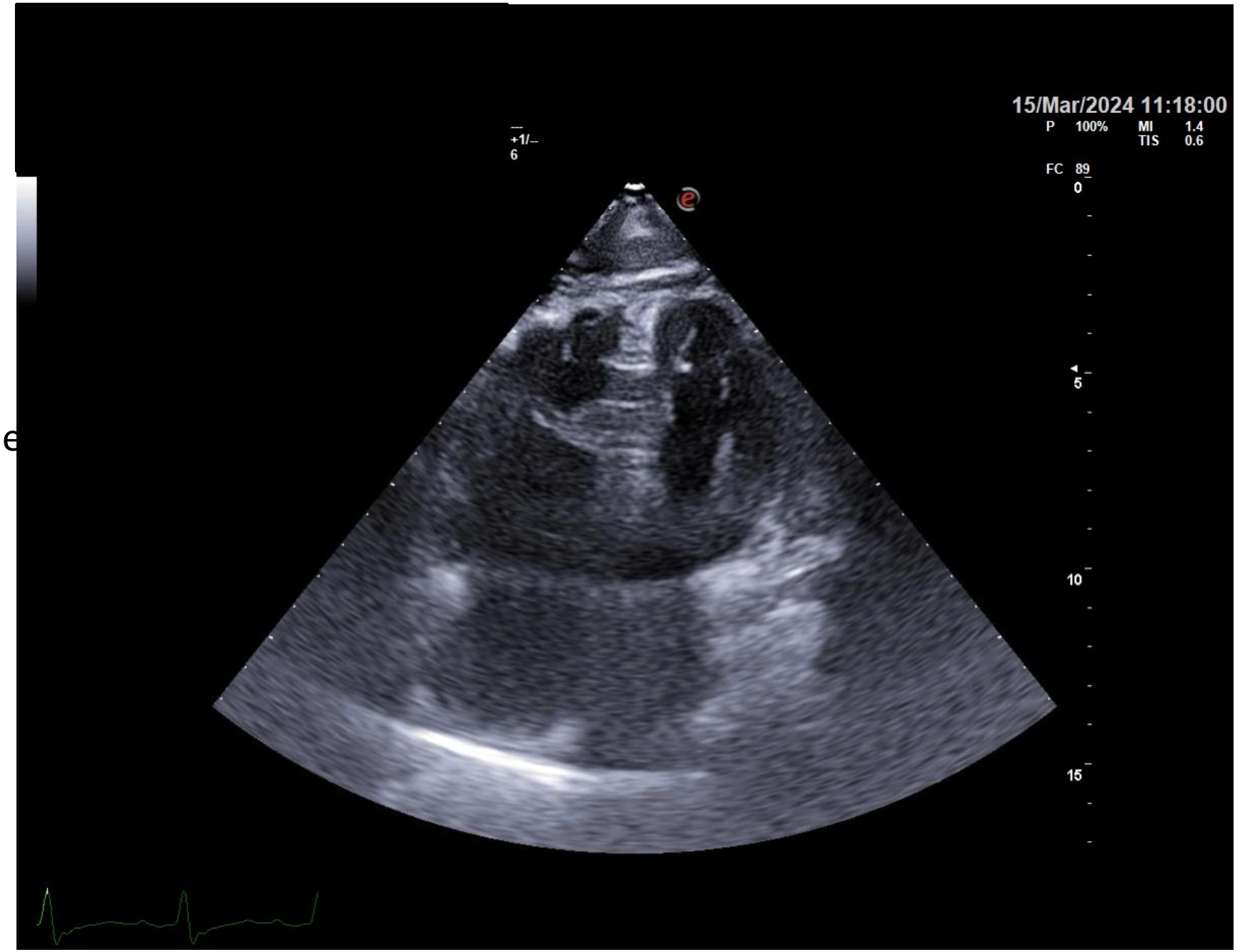
Allergia a MDC

- A: Giugulari distese
- B: **SpO2 80%, FR 30 min**. MV presente bilateralmente, non rumori patologici aggiunti

  EGA pO2 50, pCO2 25, Lac 4.7
- C: **PA 80/40 mmHg, FC 105/min R, Refill capillare 4s. Mottling score 2, Shock index 1.3**
- ECG tachicardia sinusale
- D: GCS 15 Non deficit di lato
- E: TC 35 °C, non edema degli arti inf


15/Mar/2024 11:18:00
P 100%
MI 1.4
TIS 0.6
FC 89
0
5
10
15

- VD>VS
- McConnel sign
- D-Shape (systole and diastole
- TAPSE 8 mm



Diagnostic accuracy of focused cardiac and venous ultrasound examinations in patients with shock and suspected pulmonary embolism (105 pts)

	Sensitivity % (95% CI)	Specificity % (95% CI)	PPV % (95% CI)	NPV % (95% CI)
Cardiac US	91% (80-97)	87% (80-91)	83% (74-88)	93% (86-98)
Venous CUS	56% (46-61)	95% (88-99)	89% (72-97)	76% (70-78)
Neg cardiac or venous CUS	95% (85-99)	79% (72-82)	76% (68-79)	96% (88-99)
Pos cardiac and venous CUS	51% (43-51)	100% (94-100)	100% (83-100)	75% (70-75)

Nazerian et al, Inter Emerg Med

Diagnostic Accuracy of a Bespoke Multiorgan Ultrasound Approach in Suspected Pulmonary Embolism

OPEN ACCESS

Authors
Casper Falster[1, 2, 3], Gro Egholm[4], Rune Wiig[2], Mikael Kjær Poulsen[4], Jacob Eifer Møller[4], Stefan Posth[5], Mikkel Brabrand[5], Christian Borbjerg Laursen[1, 2]

The following multiorgan approach was formulated based on the recent meta-analysis

1. Clinical suspicion of PE confirmed in the case of ≥ 1 of the following ultrasound findings

1. Visible proximal deep venous thrombus
2. ≥ 2 hypoechoic pleural-based lesions with a diameter of ≥ 0.5 cm
3. Visible RV thrombus
4. 60/60-sign
5. McConnell's sign or D-sign present in both systole and diastole in the absence of known pulmonary hypertension (PH), interstitial lung disease (ILD), pulmonary valve stenosis, or COPD

All 100% specificity

2. Further radiation-based diagnostic imaging required in the case of ≥ 1 of the following ultrasound findings

1. 1 hypoechoic pleural-based lesion with a diameter of ≥ 0.5 cm
2. Pleural effusion not explained by other cause
3. Basal RVEDD/LVEDD > 1.0 or RV visibly larger than the LV
4. TAPSE < 17 mm
5. McConnell's or D-sign in the presence of known PH, ILD, pulmonary valve stenosis, or COPD

3. Clinical suspicion of PE dismissed in the case of ≥ 1 of the following ultrasound findings:

1. No DVT, no pleural consolidation or effusion, no signs of RV strain or thrombus
2. Obvious differential diagnosis demonstrated on ultrasound, i. e., pneumonia, pneumothorax, or newly discovered significant disease of the left ventricle

Sensitivity of 95%

evidence of an alternative diagnosis was associated with a sensitivity of 100 %

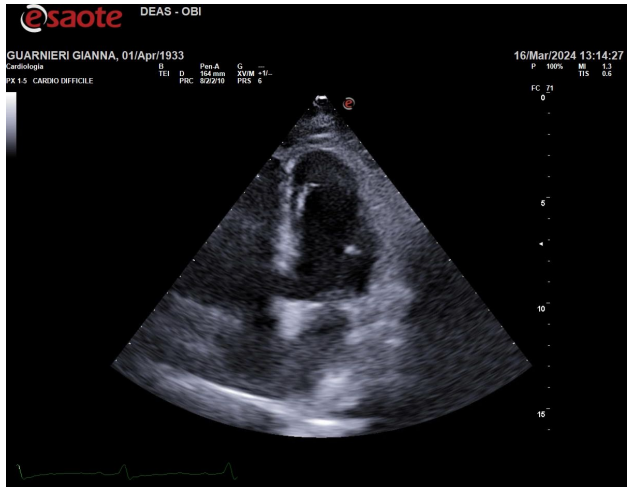
CT or scintigraphy could be safely avoided in 70 % of cases

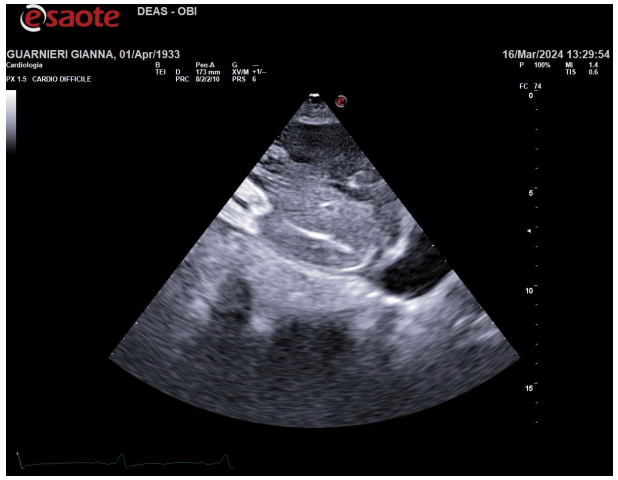
POCUS CUS lower limbs

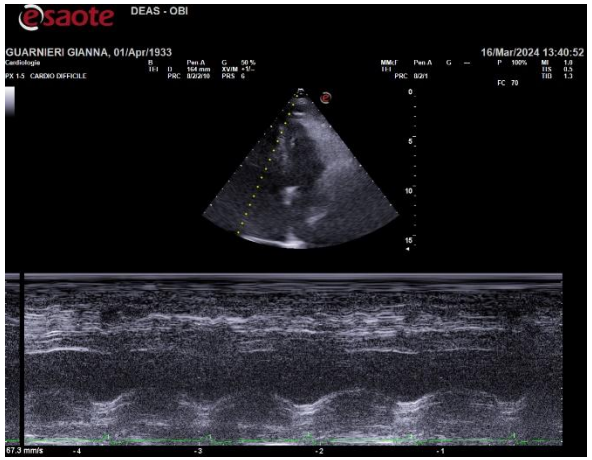
Rt-PA 10 mg in bolo + 40mg in 1 ora

Rivalutazione clinico-ecografica

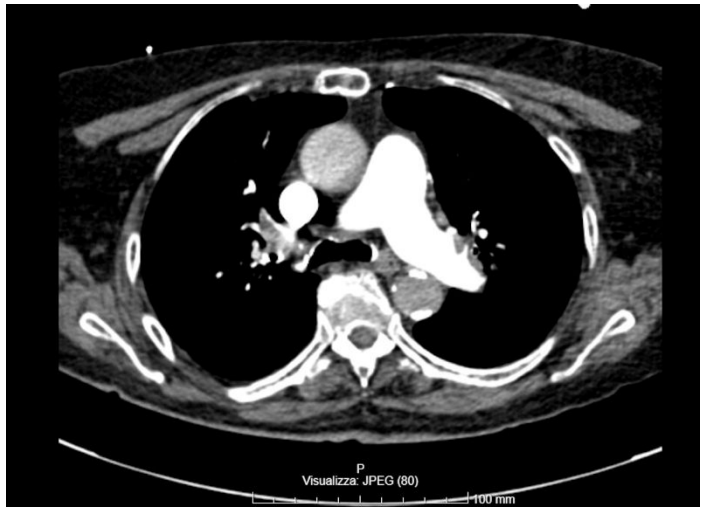
PA 120/75 mmHg
FC 85 min,
SpO2 99 in 2 l/min
Can. arteriosa: lac neg







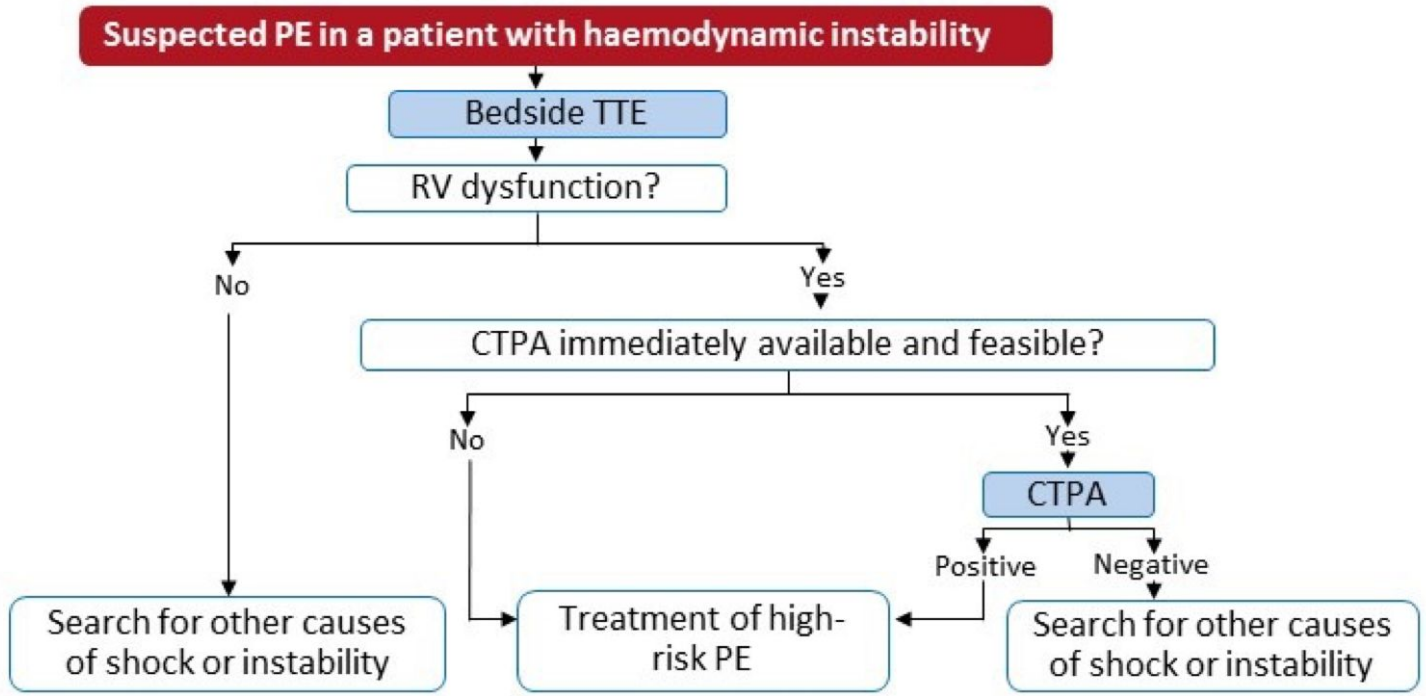
Continua rt-PA + 50mg in 1 ora



OBI: LMWH > DOAC
dimissione dopo 72 ore
followup amb. EP a 1 mese

2019 ESC Guidelines on the diagnosis and management of acute pulmonary embolism

Figure 3 Diagnostic algorithm for suspected high-risk PE

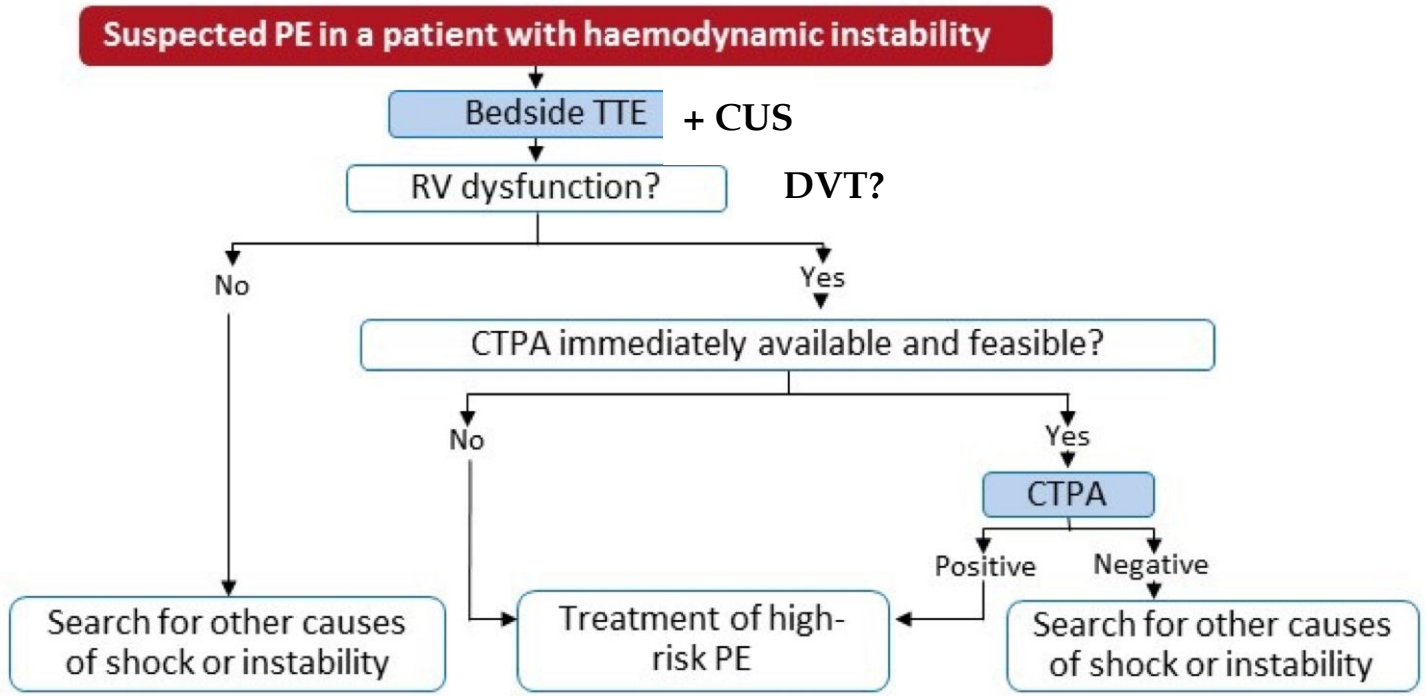


CTPA = computed tomography pulmonary angiography; RV = right ventricular; TTE = transthoracic echocardiography

2019 ESC Guidelines on the diagnosis and management of acute pulmonary embolism
(European Heart Journal 2019 - doi/10.1093/eurheartj/ehz405)

2019 ESC Guidelines on the diagnosis and management of acute pulmonary embolism

Figure 3 Diagnostic algorithm for suspected high-risk PE



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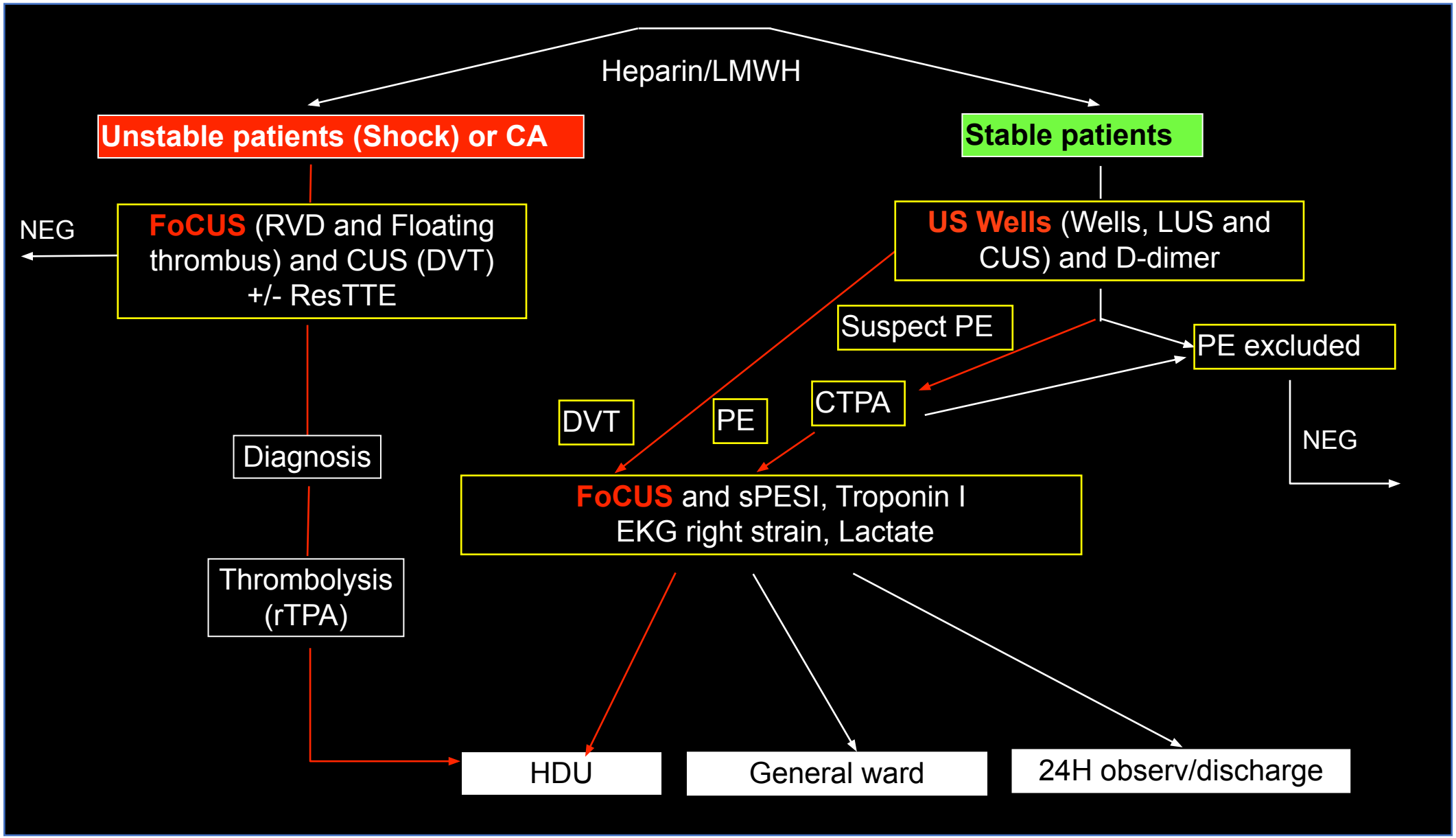
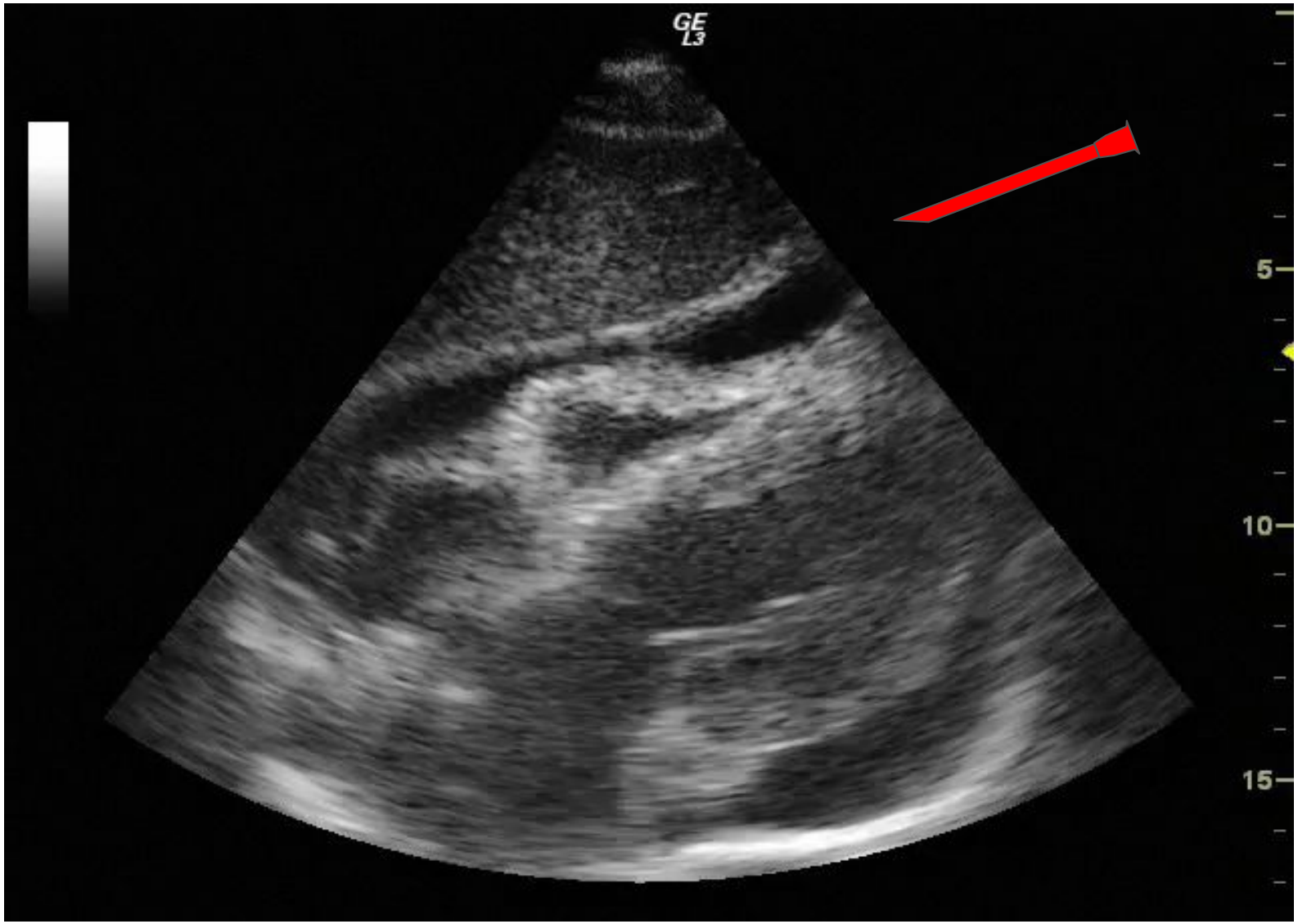
2019 ESC Guidelines on the diagnosis and management of acute pulmonary embolism
(European Heart Journal 2019 - doi/10.1093/eurheartj/ehz405)

PE management in the ED of Careggi University Hospital




GE
L3
5
10
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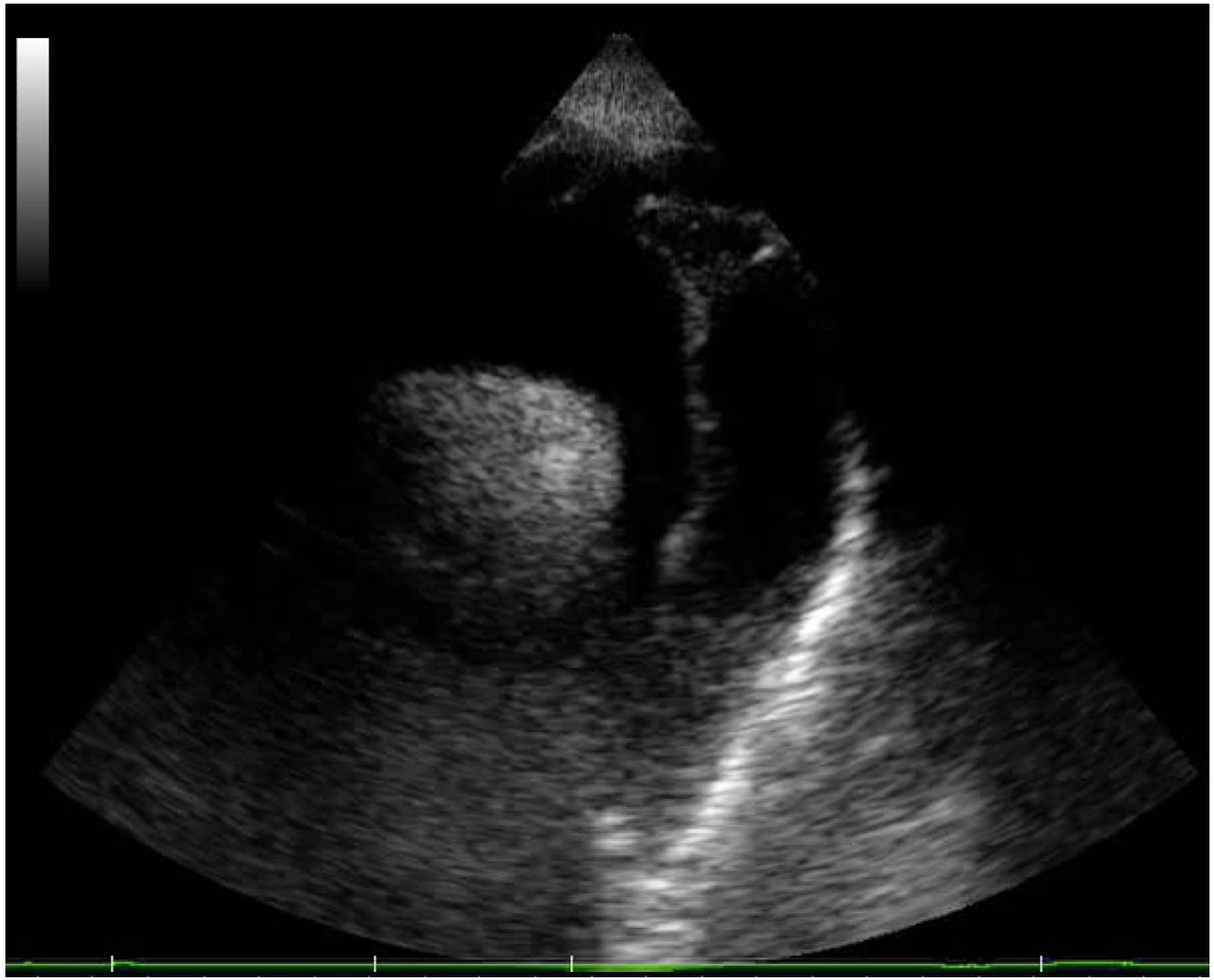


PoCUS to guide pericardial drenage in unstable pts with AAS and cardiac tamponade

In 18 pts with aortic dissection tipe A complicated by cardiac tamponade non responsive to IV fluids (1000 ml), that underwent controlled pericardial drenage (CPD) (medium volume aspiration 40ml)

- SAP increased 30mmHg post-procedure.
- All of the patients underwent aortic repair successfully.
- In-hospital mortality was 16.7%; however, there was no complications or mortality related to CPD.

Preoperative controlled pericardial drainage (CPD) with control of volume is a safe and effective procedure for acute type A aortic dissection complicated by critical cardiac tamponade

Hayashi T, Circulation 2012

Mortality in out of hospital CA pts per different causes

Table 2. Mortality associated with different causes of out of hospital cardiac arrest

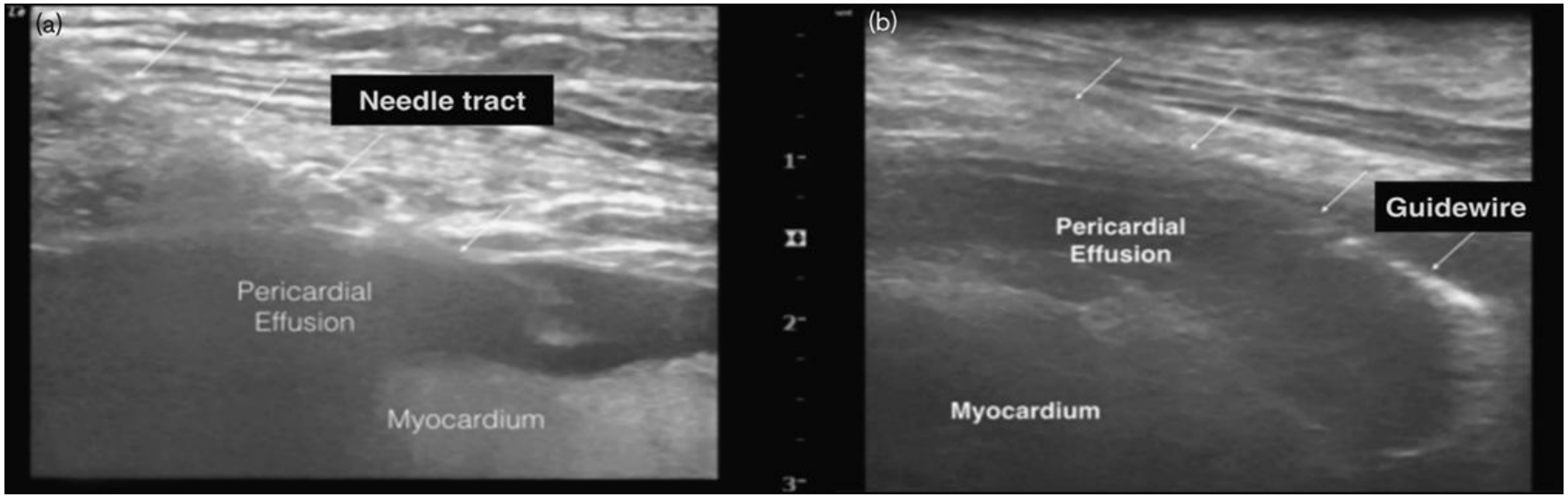
Causes of out of hospital cardiac arrest	N. of death / N. pts in the group (%)	% of death/ total cohort
Cardiac tamponade	2/2 (100)	0.7
Acute aortic syndrome	6/6 (100)	2.1
Pulmonary thrombosis	12/13 (92.3)	4.3
Acute brain injury	19/21 (90.5)	6.8
Hypoxemia	24/27 (88.9)	8.6
Hypovolemia	14/16 (87.5)	5.0
Undetermined	20/25 (80)	7.1
Hpo/hyperkalemia and other electrolyte disturbances	6/8 (75)	2.1
Coronary thrombosis and other cardiac diseases	81/157 (51.6)	28.9

Nazerian P et al, Am J Emer 2022

www.miur.it

Lo Specialista in Medicina d'Emergenza-Urgenza deve avere maturato conoscenze teoriche, scientifiche e professionali nei campi del primo inquadramento diagnostico (sia intra che extraospedaliero) e del primo trattamento delle urgenze mediche, chirurgiche e traumatologiche…..

….sapere eseguire pericardiocentesi



Parasternal in-plane medial-to-lateral approach, A. Osman Eur J Emerg Med. 2018 Oct;25(5)

2020-21: 103 drenaggi toracici

	Overall N =103	No complications N=79	Complications N=24	P-value
Clinicians				0.792
ED Consultant	32 (31%)	24 (30%)	8 (33%)	
ED Resident	17 (17%)	12 (15%)	5 (21%)	
Surgical Consultant	37 (36%)	30 (38%)	7 (29%)	
Surgical Resident	17 (17%)	13 (16%)	4 (17%)	

Aou Careggi, under pubblication

Bedside management of the cause of shock

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Bedside management of the cause of shock

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Fig. 5

….avere posizionato almeno 10 pace-makers esterni e **5 pace-makers transvenosi**

….avere eseguito almeno 20 cardioversioni e 20 defibrillazioni elettriche

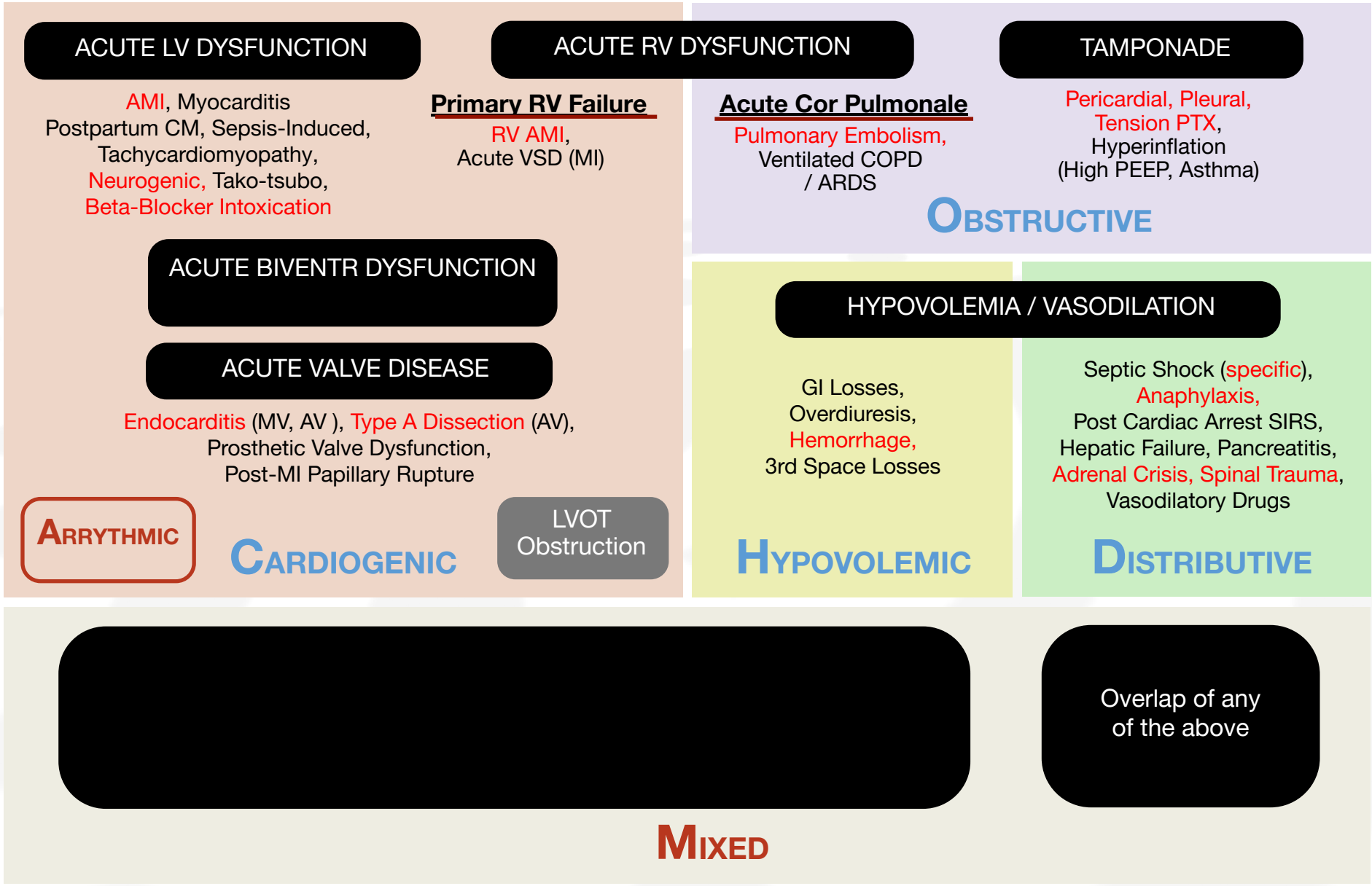
STUDIO SEED. Eventi avversi CVE
World SIVA-ISTF *[Br J Anaesth 2012;108:13-20]*

CRITERI		PAZIENTI	EVENTI AVVERSI (EA)				EA Totali		EA moderati	
Variabili	Categorie	N	Minimi	Minori	Moderati	Totali	%	p	%	p
	Tipo procedura	1349						NS		NS
	CVE	**894**	24	18	44	86	9,6%		**4,9%**	

OSPEDALE	REGIONE	LIVELLO DEA
Cuneo	Piemonte	2
Pinerolo	Piemonte	1
Torino Mauriziano	Piemonte	2
Torino Città Salute Scienza	Piemonte	2
Rivoli	Piemonte	1
Verduno	Piemonte	1
Torino San Giovanni Bosco	Piemonte	2
Aosta	Valle d'Aosta	2
Firenze	Toscana	2
Grosseto	Toscana	1
Ospedali con DEA livello 1		1
Ospedali con DEA livello 2		2
Tutti		

EVENTO	DATI CLINICI	INTERVENTI	ESITI
Sentinella	Desaturazione grave (<75%) o protratta (<90% per >60") Apnea protratta (>60") Collasso o shock (evidenza clinica di ipoperfusione) Arresto cardiaco	Massaggio cardiaco Intubazione tracheale Somministrazione di: bloccanti neuromuscolari, vasopressori o atropina (per bradicardia)	Aspirazione Deficit neurologico permanente Morte
Moderato		Posizionamento di via aerea artificiale oro-faringea, naso-faringea o sovra-glottica Ventilazione pallone-maschera CPAP Somministrazione di: antidoti, fluidi e.v. a bolo, anticonvulsivanti	Ricovero in ospedale non programmato o aumento livello intensità di cura
Minore	Desaturazione (75-90%) per <60" Apnea <60" Ostruzione vie aeree Sedazione fallita Reazione allergica (no anafilassi) Alterazione FC o PA >25% rispetto ai valori di base Convulsione	Riposizionamento di capo/collo per garantire pervietà delle vie aeree Stimolo tattile Somministrazione di antisialogoghi o di O_2 (o aumento del flusso o della FIO_2)	Nessuno
Minimo	Vomito o conati Depressione respiratoria sub-clinica (riscontro capnografico) Rigidità muscolare o mioclonie Ipersalivazione Risposta paradossa (agitazione) Agitazione post-sedazione Recupero ritardato (>2h)	Somministrazione di: antiemetici, antistaminici o sedativi aggiuntivi	Nessuno

Shock Types


ACUTE LV DYSFUNCTION
AMI, Myocarditis
Postpartum CM, Sepsis-Induced,
Tachycardiomyopathy,
Neurogenic, Tako-tsubo,
Beta-Blocker Intoxication
ACUTE RV DYSFUNCTION
Primary RV Failure
RV AMI,
Acute VSD (MI)
Acute Cor Pulmonale
Pulmonary Embolism,
Ventilated COPD
/ ARDS
TAMPONADE
Pericardial, Pleural,
Tension PTX,
Hyperinflation
(High PEEP, Asthma)
OBSTRUCTIVE
ACUTE BIVENTR DYSFUNCTION
ACUTE VALVE DISEASE
Endocarditis (MV, AV), Type A Dissection (AV),
Prosthetic Valve Dysfunction,
Post-MI Papillary Rupture
ARRYTHMIC
CARDIOGENIC
LVOT
Obstruction
HYPOVOLEMIA / VASODILATION
GI Losses,
Overdiuresis,
Hemorrhage,
3rd Space Losses
HYPOVOLEMIC
Septic Shock (specific),
Anaphylaxis,
Post Cardiac Arrest SIRS,
Hepatic Failure, Pancreatitis,
Adrenal Crisis, Spinal Trauma,
Vasodilatory Drugs
DISTRIBUTIVE
Overlap of any
of the above
MIXED

Santé et Services sociaux Québec

DT9262

LEVELS OF CARE AND CARDIOPULMONARY RESUSCITATION

The goals of care below are indicative and are intended to orient medically appropriate care.

Last name of user
First name
File number
Date of birth: Year Month Day
Sex: ☐ M ☐ F
Health insurance number

Institution name

Revise using a new form following any change in health status or at the request of the user or his/her representative.

Capacity to discuss levels of care

☐ Competent ☐ Incompetent: ☐ Homologated mandate ☐ Public/private curator; Name:
☐ Minor under 14 years old Name of tutor, relationship with user:

Previous advance wishes: ☐ None available ☐ Prior level of care form ☐ Advance medical directive ☐ Living will or other

Levels of care: check and provide details in the box below *(Explanatory notes on the reverse side)*

☐ Goal A: Prolong life with all necessary care
☐ Goal B: Prolong life with some limitations to care
☐ Goal C: Ensure comfort as a priority over prolonging life
☐ Goal D: Ensure comfort without prolonging life

Give details on specific interventions in the box below, as needed.

e.g., hemodialysis, blood transfusion, nutritional support (enteral or parenteral), preventive care, etc.

Cardiopulmonary resuscitation (CPR): check and provide details in the box below *(Explanatory notes on the reverse side)*

Cardiac (circulatory) arrest

☐ Attempt CPR
☐ Do NOT attempt CPR

Check if NOT desired, to guide prehospital care for goals B and C *(see reverse side)*

☐ NO emergency intubation (goals B and C only)
☐ NO assisted ventilation if unconscious (goal C only)

Explanatory notes on the discussion and instructions concerning specific interventions

Discussed with: ☐ User ☐ Representative | Name | Relationship

Contact information

Record the names of the participants as well as the words used during the discussion and all information that helps clarify the user's wishes.

Name of physician	Signature	Date (year, month, day)

Contact information

If a copy of this form is given to the user or his/her representative, it is signed by him/her so that paramedic ambulance technicians can follow the instructions on the form.

Name of user or representative	Signature	Date (year, month, day)

Explanatory notes

- **This form is not a substitute for consent to treatment, which must always be obtained** ***(except in certain emergency situations)*****.**
- **This form must be signed by a physician.**

Description of levels of care

The discussion about levels of care is carried out with the user or, in the case of incapacity, with his/her representative, in the spirit of shared decision-making about medically appropriate care. The explanations and examples provided in the following descriptions do not assume capacity on the part of the user, nor do they necessarily reflect his/her usual care setting.

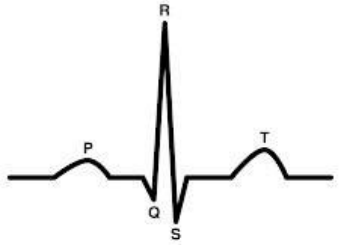
Goal A **Prolong life with all necessary care**	• Care includes all interventions that are medically appropriate and transfer[1] if the intervention is not available in the current setting. • All invasive interventions can be considered, including, for example, intubation and intensive care. ► **In the prehospital setting**, unless otherwise advised by the user or his/her representative, all protocols apply; intubation, assisted ventilation[2] and assisted respiration[3] are included when appropriate.
Goal B **Prolong life with some limitations to care**	• Care incorporates interventions with the aim of prolonging life, which offer the possibility of correcting deterioration in health status while preserving quality of life. • Interventions may lead to discomfort that is judged to be acceptable by the user or his/her representative acting in the sole interests of the user, given the circumstances and the expected outcomes. • Certain interventions are excluded since they are judged to be disproportionate[4] or unacceptable[4] by the user or his/her representative acting in the sole interests of the user, given the potential for recovery and undesired consequences *(e.g., short-term or long-term intubation, major surgery, transfer)*. ► **In the prehospital setting**, unless otherwise advised by the user or his/her representative, all protocols apply; assisted ventilation[2] and assisted respiration[3] are included; intubation is included unless indicated as not desired on the form (checked in the prehospital care box).
Goal C **Ensure comfort as a priority over prolonging life**	• The user's comfort is prioritized through the management of symptoms. • Interventions which may prolong life are used as needed in order to correct certain reversible health problems, by means judged acceptable by the user or his/her representative acting in the sole interests of the user *(e.g., oral or intravenous antibiotics to treat pneumonia)*. • Transfer to an appropriate care setting is considered only if care available locally is insufficient to ensure comfort *(e.g., for a hip fracture with significant discomfort or for respiratory distress at home)*. ► **In the prehospital setting**, unless otherwise advised by the user or his/her representative, all protocols apply; assisted respiration[3] is included; intubation and assisted ventilation[2] are included unless indicated as not desired on the form (checked in the prehospital care box).
Goal D **Ensure comfort without prolonging life**	• Care is exclusively aimed at maintaining comfort through the management of symptoms *(e.g., pain, trouble breathing, constipation, anxiety)*. • Interventions do not aim to prolong life; illness is left to its natural course. • A treatment that is usually given with curative intent may be used, but only because it represents the best option to relieve discomfort *(e.g., oral antibiotics for a lower urinary tract or C. difficile infection)*. • Transfer to an appropriate care setting is considered only if care available locally is insufficient to ensure comfort *(e.g., for a hip fracture with significant discomfort or for respiratory distress at home)*. ► **In the prehospital setting**, unless otherwise advised by the user or his/her representative, the following protocols apply: oxygenation, salbutamol, nitroglycerin (chest pain) and glucagon. For respiratory distress in a conscious user, assisted respiration[3] (CPAP) can be used unless refused. Intubation and assisted ventilation[2] are excluded. Manoeuvres to clear an obstructed airway in a living user can be carried out.

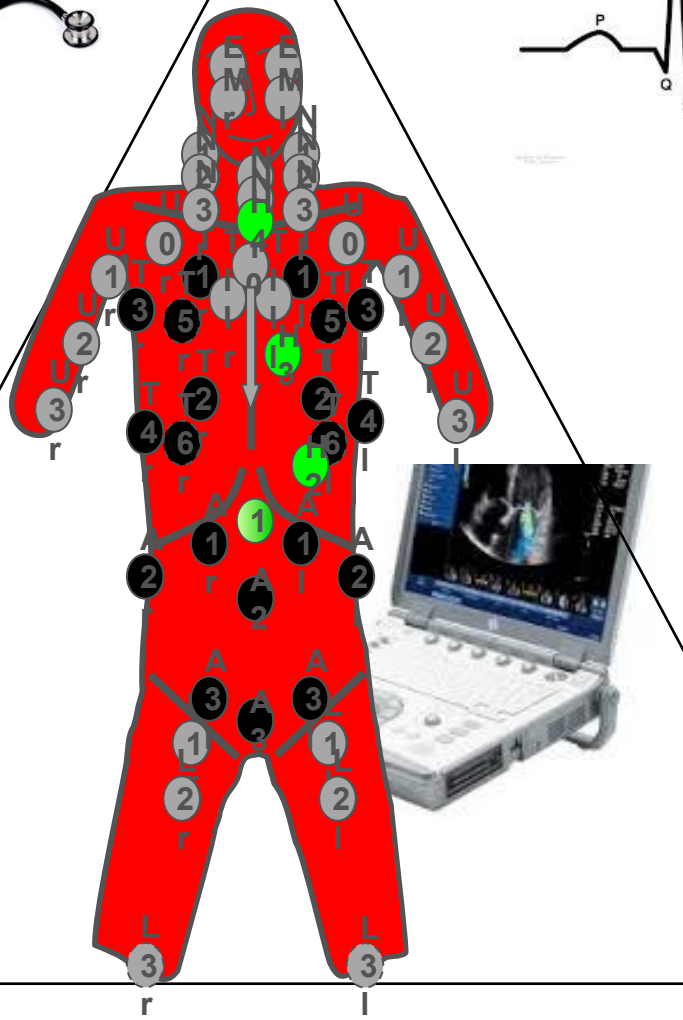
Cardiopulmonary resuscitation (CPR)

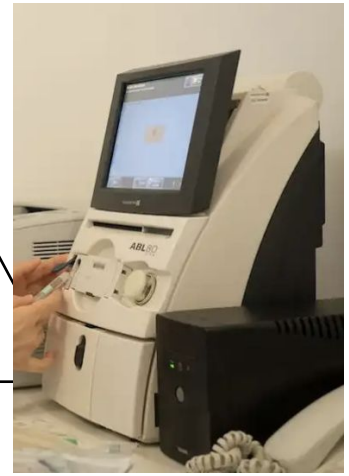
CPR is part of the same discussion as levels of care. The decision is specified in a distinct manner to allow rapid decisions in the case of cardiorespiratory arrest. A CPR decision is only applicable in the case of a cardiac arrest with arrest in circulation. In the case that a CPR attempt is desired, measures available on site will be deployed while awaiting the arrival of emergency medical services, according to the situation.

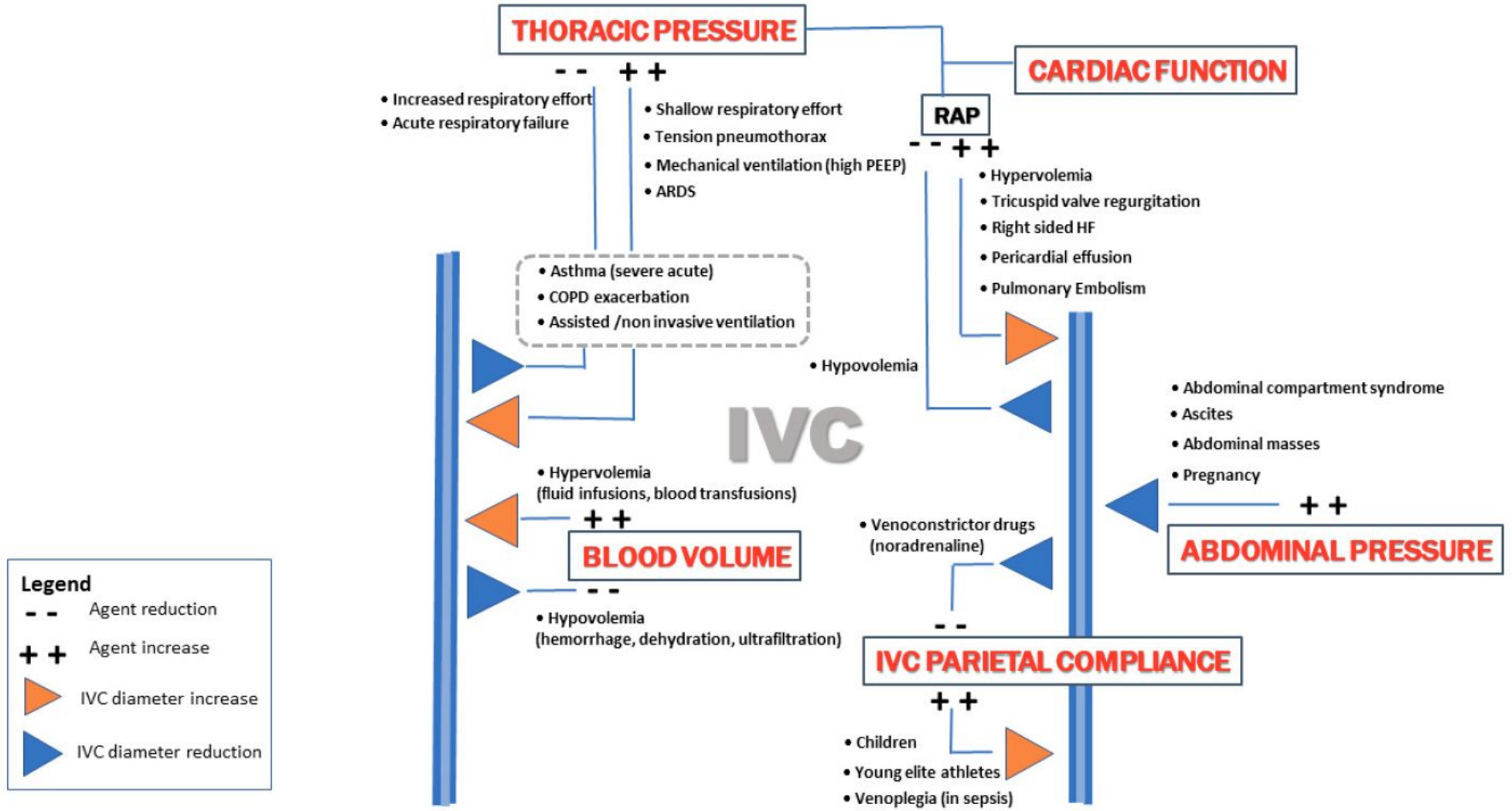
[1] The term **"transfer"** implies moving the user to a setting that is different from his/her current environment (leaving his/her home, inter-institutional or intra-institutional transfer, etc.). If a transfer is not being considered, a care goal other than A must be selected.
[2] **Assisted ventilation** is carried out via non-invasive techniques (bag-valve-mask, Oxylator) in an unconscious user.
[3] **Assisted respiration** is carried out via non-invasive techniques (CPAP) in a conscious user.
[4] The sense of the terms **"disproportionate"** or **"unacceptable"** is based on subjective perceptions and values that vary from person to person and across time. The words used by the user or his/her representative are important to record in the box provided for this purpose.

Bedside diagnosis of shock









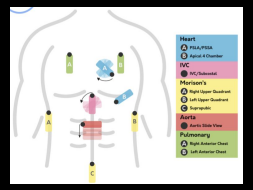
Inferior Vena Cava Ultrasonography for Volume Status Evaluation: An Intriguing Promise Never Fulfilled.
Di Nicolò P, Tavazzi G, Nannoni L, Corradi F.J Clin Med. 2023

Diagnostic Accuracy of PoCUS in Shock

Systematic Review and Meta-Analysis of studies on diagnostic accuracy for shock subtypes of PoCUS protocol (RUSH). Four studies (**357 patients**, except obstructive, 239 pts. and mixed-etiology, 332 patients).

REFERENCE STANDARD = Medical Chart Review

RUSH Exam
Ultrasound Protocol



Pooled sensitivities, specificities, and likelihood ratios by shock subtype

Shock Type	Sensitivity (%)	95% CI	Specificity (%)	95% CI	(+) LR	95% CI	(-) LR	95% CI
Hypovolemic	81	73–88	91	87–94	8.25	3.29–20.69	0.19	0.07–0.50
Cardiogenic	83	71–92	97	95–99	24.14	12.43–46.86	0.24	0.12–0.49
Obstructive	93	68–100	98	96–99	40.54	12.06–136.28	0.13	0.04–0.48
Distributive	64	56–72	95	91–98	17.56	3.46–89.19	0.30	0.11–0.79
Mixed	75	53–90	80	73–85	12.91	0.84–198.84	0.32	0.16–0.62

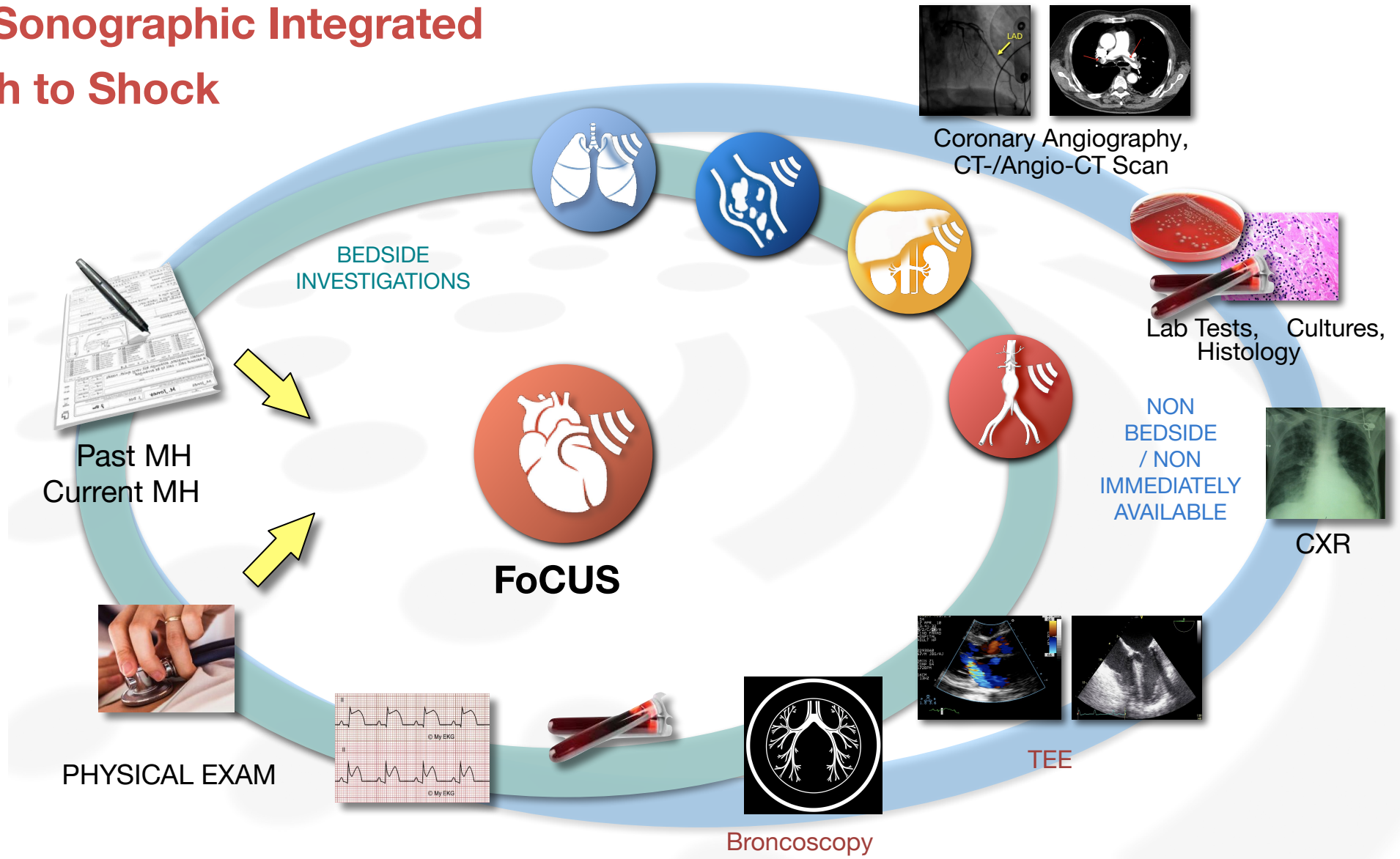
POSITIVE PoCUS exam: good RULE-IN TOOL for any shock subtype but the mixed one

NEGATIVE PoCUS exam: as standalone test, INADEQUATE TO EXCLUDE any shock subtype but the obstructive one

Stickles PS. CAN J EM MED 2019

NO COOK BOOK RECIPES

Clinical-Sonographic Integrated Approach to Shock



https://www.winfocus.org/winfocus-international-campus/

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WINFOCUS International Campus

An immersive experience on whole-body Point of Care Ultrasound
with some of the world's foremost PoCUS experts

October 29-30, 2024

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Rita Bertuetti
Brescia
ITALY

Gian Cibinel
Pinerolo
ITALY

James Connolly
Newcastle
UK

Francesco Corradi
Pisa
ITALY

Luna Gargani
Pisa
ITALY

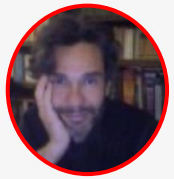
Gianfranco Giannasi
Firenze
ITALY

Chiara Lazzeri
Firenze
ITALY

Peiman Nazerian
Florence
ITALY

Niccolò Parri
Firenze
ITALY

Emanuele Pivetta
Torino
ITALY



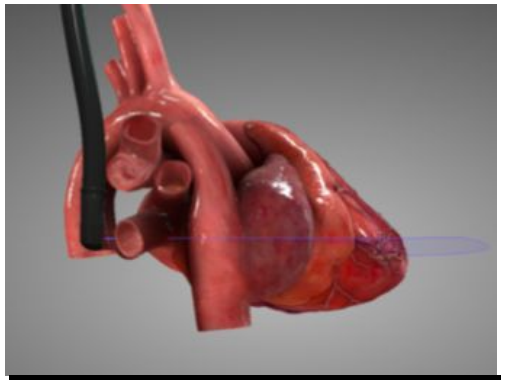
Simone Vanni
Firenze
ITALY

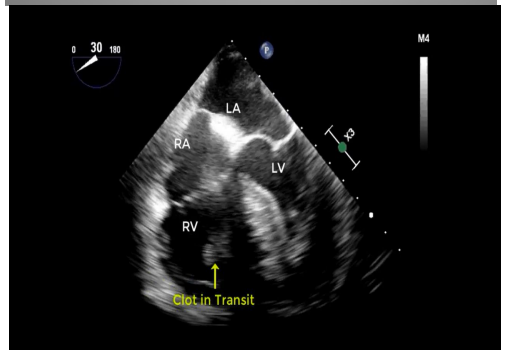
Gabriele Via
Lugano
SWITZERLAND

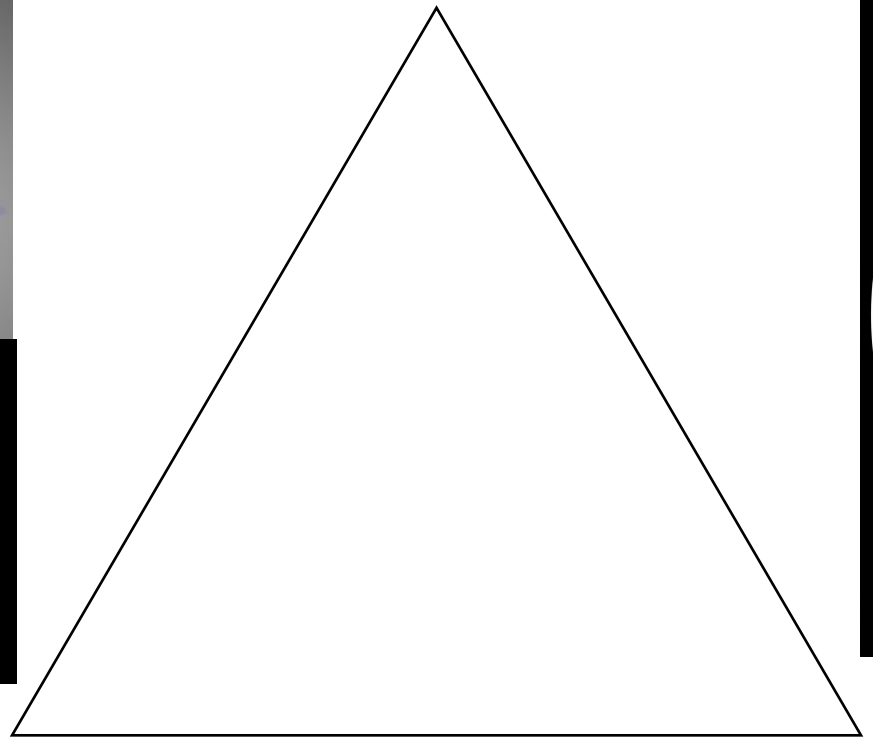
Giovanni Volpicelli
Torino
ITALY

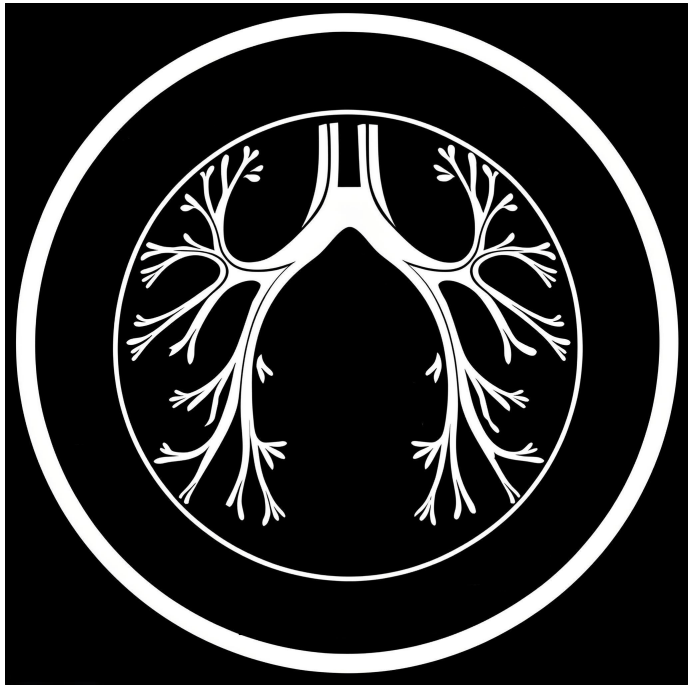
Adrian Wong
London
UK

Advanced evaluation of shock in selected pts

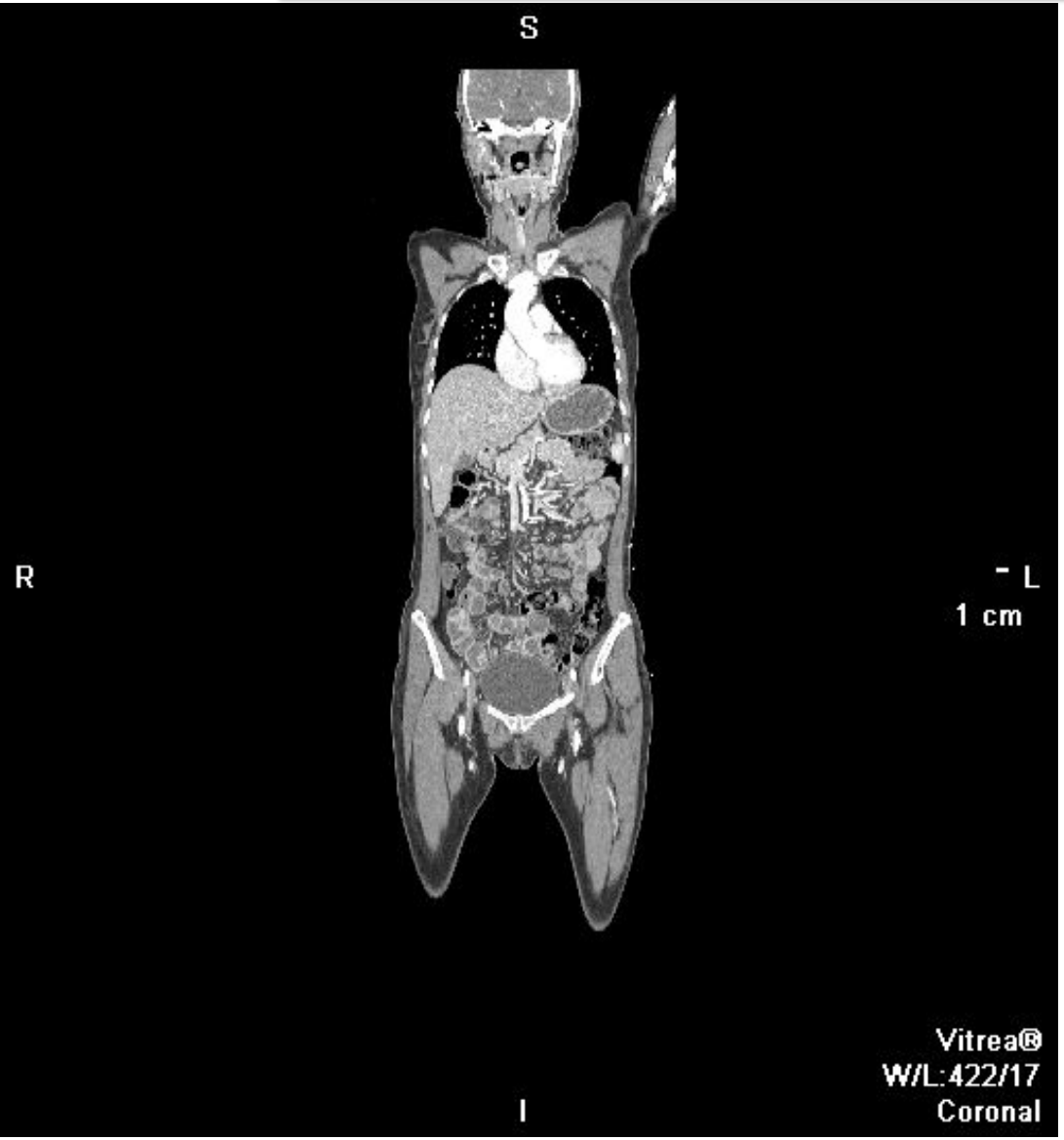








TC TB con MDC



Polmonite, empiema pleurico
Mediastinite
Embolia polmonare
Calcolo ureterale
Rottura spontanea di arteria splacnica
Infarto renale o splenico
Ascesso intra addominale
Ischemia intestinale
Perforazione intestinale
Occlusione intestinale

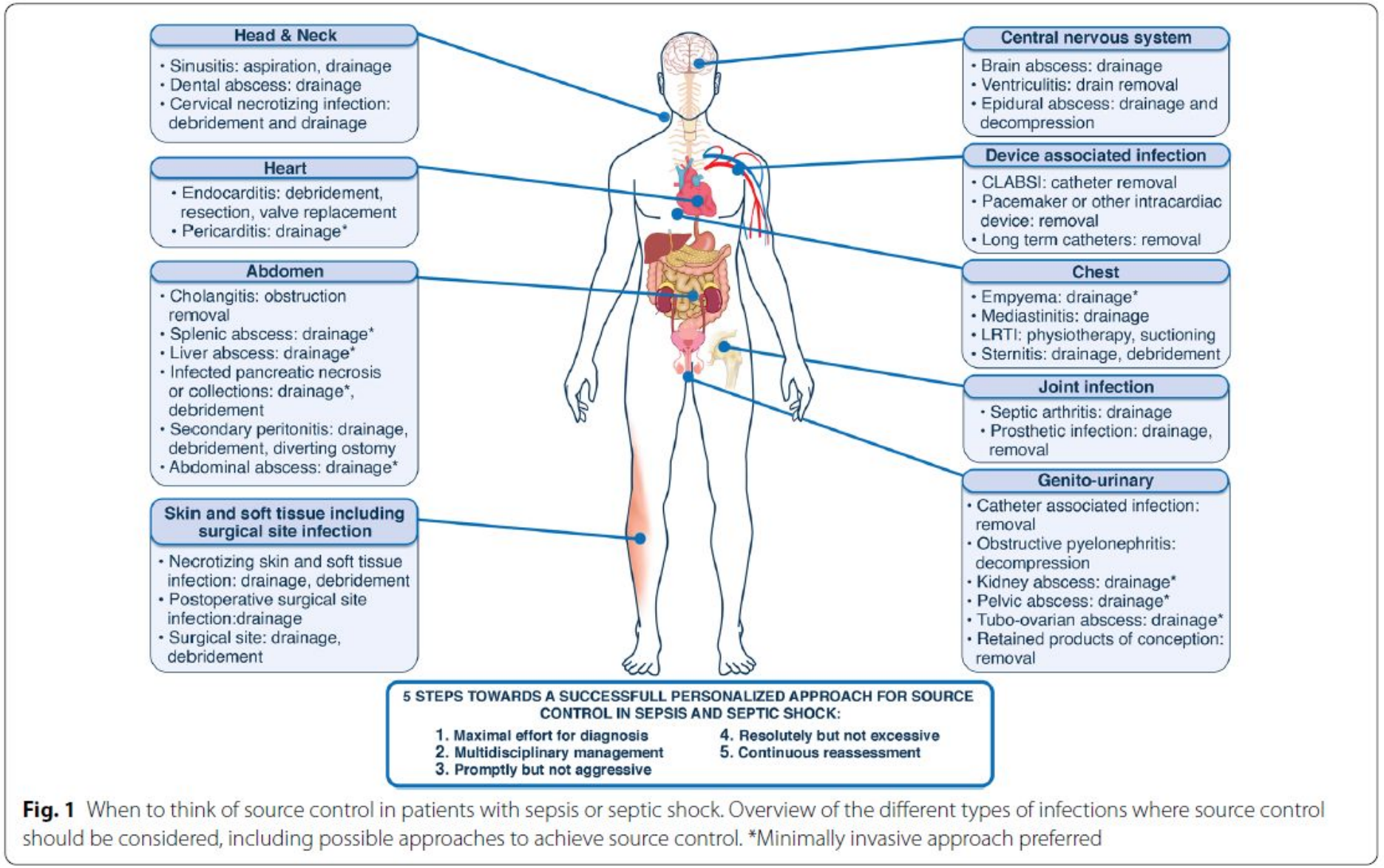


Fig. 1 When to think of source control in patients with sepsis or septic shock. Overview of the different types of infections where source control should be considered, including possible approaches to achieve source control. *Minimally invasive approach preferred

UNDERSTANDING THE DISEASE Source control in the management of sepsis and septic shock
intensive Care Med (2022) 48:1799–1802

Transesophageal echocardiography in cardiocirculatory arrest. Results of hands-on training of a simplified protocol

Conclusions

EPs can successfully learn and maintain skills needed to use a simplified ResTEE protocol through a 10 h theoretical-practical course and 2 h retraining every 12 weeks. Midesophageal 4 chamber, midesophageal long axis, bicaval and aorta views are the primary views to include in a simplified protocol and can add important information for the management of patients in ED.

Nazerian P et al, The Journal of Ultrasound 2020

44 aa, donna

Accede in DEA per comparsa di distress respiratorio e sopore

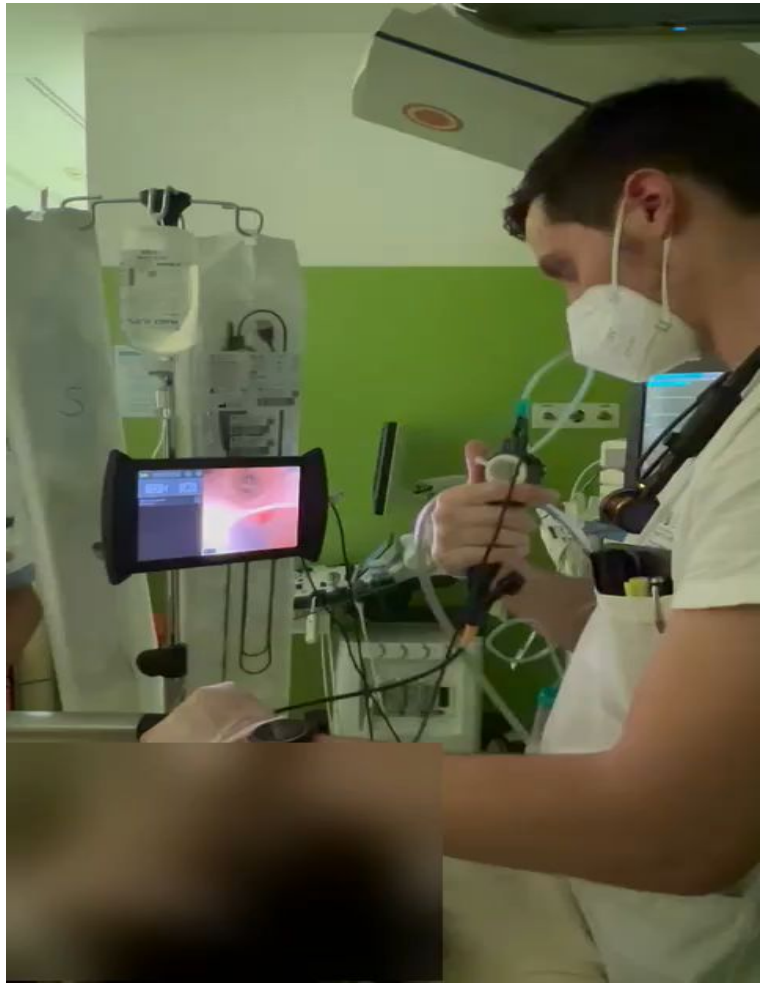
Esame obiettivo

B: SpO2 90% in CPAP 10/100%, FR 37
Crepitii diffusi
C: PA 80/37 mmHg, FC 110, Refill >2 s
D: GCS 11 (E3, V3, M5),

LUS: Pattern Bc-Bnc diffuso e consolidazione basale dx

EGA in NIV (IPAP 16, EPAP 8, FiO2 100): pH 7,28, pCO2 59,1, pO2 54,3, Lac 2,4, HCO3- 24,6. **P/F 54**

The Emergency Department Bronchoscopy Project



Progetti di ricerca:

- **HCAPPED-I**: *HCAP – Pcr in Emergency Department. Early multiplex PCR on respiratory samples from patients with pneumonia: A new diagnostic pathway for guiding antimicrobial therapy in patients with pneumonia ED*

- BAL-LUS: *BronchoAlveolar Lavage and Lung UltraSound: correlation between ultrasonographic appearance and etiological agent in pneumonia*

- HCAPPED-II*: Comparison between a group of patient undergone to BAL and film array and retrospective group of patients treated in traditional way*

- FBS-ASaP: *Fibrobronchoscopy in ASpiration Pneumonia in the ED*

Risultati

Studio	
HCAPPED I	Arruolati 72/93: Film Array Polmoniti su BAL positivo nel 90% (65/72), flora multimicrobica nel 63,8% (46/72) e geni di resistenza a ATB nel 36,1% (26/72). Una modifica della terapia ATB rispetto a linee guida internazionali e aziendali si è avuta nel 66,6% (48/72) dei pazienti con film array positivo (di cui il 66,6% una escalation e 33,4% una de-escalation)
BAL-LUS	63 Arruolati: Le polmoniti virali sono associate al coinvolgimento di più di 4 campi polmonari (90%) ed ad un prevalente interessamento da sindrome interstiziale (75% dei campi polmonari patologici). Al contrario le polmoniti batteriche sono solitamente associate più frequentemente al coinvolgimento da 1 a 3 campi polmonari (69%) ed alla presenza di un pattern con broncogramma aereo dinamico (84%). Nei pazienti con versamento pleurico questo è tipicamente associato a polmoniti batteriche (34% vs 13%, $p<0.05$).
HCAPPED II	72 pazienti sottoposti a BAL e Film array (arruolati prospetticamente) vs 436 pazienti trattati in maniera standard e arruolati retrospettivamente. Età media 70,88 ±14,2 vs 76,55 ± 13,22. P/F 244 ± 80 vs 251 ± 93. Durata media del ricovero 14,2 vs 11,9. La mortalità è risultata sovrapponibile nei 2 gruppi: 19,9% (87/436) vs 19,4% (14/72).
FBS-ASaP	Arruolati 100/100: 50 sottoposti ad aspirazione con SNG e 50 con SNG + FBS. Mortalità ed una permanenza intraospedaliera sovrapponibile nei due gruppi. I pazienti sottoposti ad aspirazione con FBS hanno ottenuto un migliore incremento della paO2 post aspirazione con un Δ 15,2 ± 6,3 vs 7,4 ± 6,3 ($p<0.05$)

F, 74 aa. Trasferita da una clinica convenzionata dove era stata ricoverata 2 gg prima per polmonite a focolai multipli.
In anamnesi ipertensione arteriosa

All’ingresso in PS sat86% in ventimask 50%
Fr 35, GCS 15 …..