



SOCIETA LIGURE DI CHIRURGIA


# EMERGENZA EMORRAGICA POST PARTUM

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Ospedale Villa Scassi  
S.C. Chirurgia Generale  
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- 
- F 32 aa
  - III gravidanza alla 39+2, diabete gestazionale e macrosomia fetale
  - T.C . urgente per sofferenza fetale acuta:  
emorragia profusa  
Isterectomia parziale

- 
- Trasferimento in CR

- 
- Trasferimento in CR
  - Shock emorragico PA 60/40 mmHg

- 
- Trasferimento in CR
  - Shock emorragico PA 60/40 mmHg
  - Ipotermia

# CID

- Plt 51....13....11  $10^3$ /ul
- PT 1.85....2.09..
- APTT 121.3....87.2....49.7 sec
- Fibrinogeno 67....62....89 mg/dl
- D-dimero 99500 ng/ml
- LDH 700 U/l



# EGA

- pH: 6.94
- Hb: 6.1
- BE: -23

T: 29° C

Table II. ISTH Diagnostic Scoring System for DIC.

**Scoring system for overt DIC**

**Risk assessment:** Does the patient have an underlying disorder known to be associated with overt DIC?

If yes: proceed

If no: do not use this algorithm

**Order global coagulation tests** (PT, platelet count, fibrinogen, fibrin related marker)

**Score the test results**

- Platelet count ( $>100 \times 10^9/l = 0$ ,  $<100 \times 10^9/l = 1$ ,  $<50 \times 10^9/l = 2$ )
- Elevated fibrin marker (e.g. D-dimer, fibrin degradation products) (no increase = 0, moderate increase = 2, strong increase = 3)
- Prolonged PT ( $<3$  s = 0,  $>3$  but  $<6$  s = 1,  $>6$  s = 2)
- Fibrinogen level ( $>1$  g/l = 0,  $<1$  g/l = 1)

**Calculate score:**

$\geq 5$  compatible with overt DIC: repeat score daily

$< 5$  suggestive for non-overt DIC: repeat next 1–2 d



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- 
- Arresto cardiaco




# Cosa fare?

- stabilità emodinamica?
- 



# Cosa fare?

- stabilità emodinamica?
  - Attivare protocollo trasfusione massiva?
- 



# INTERVENTO CHIRURGICO?

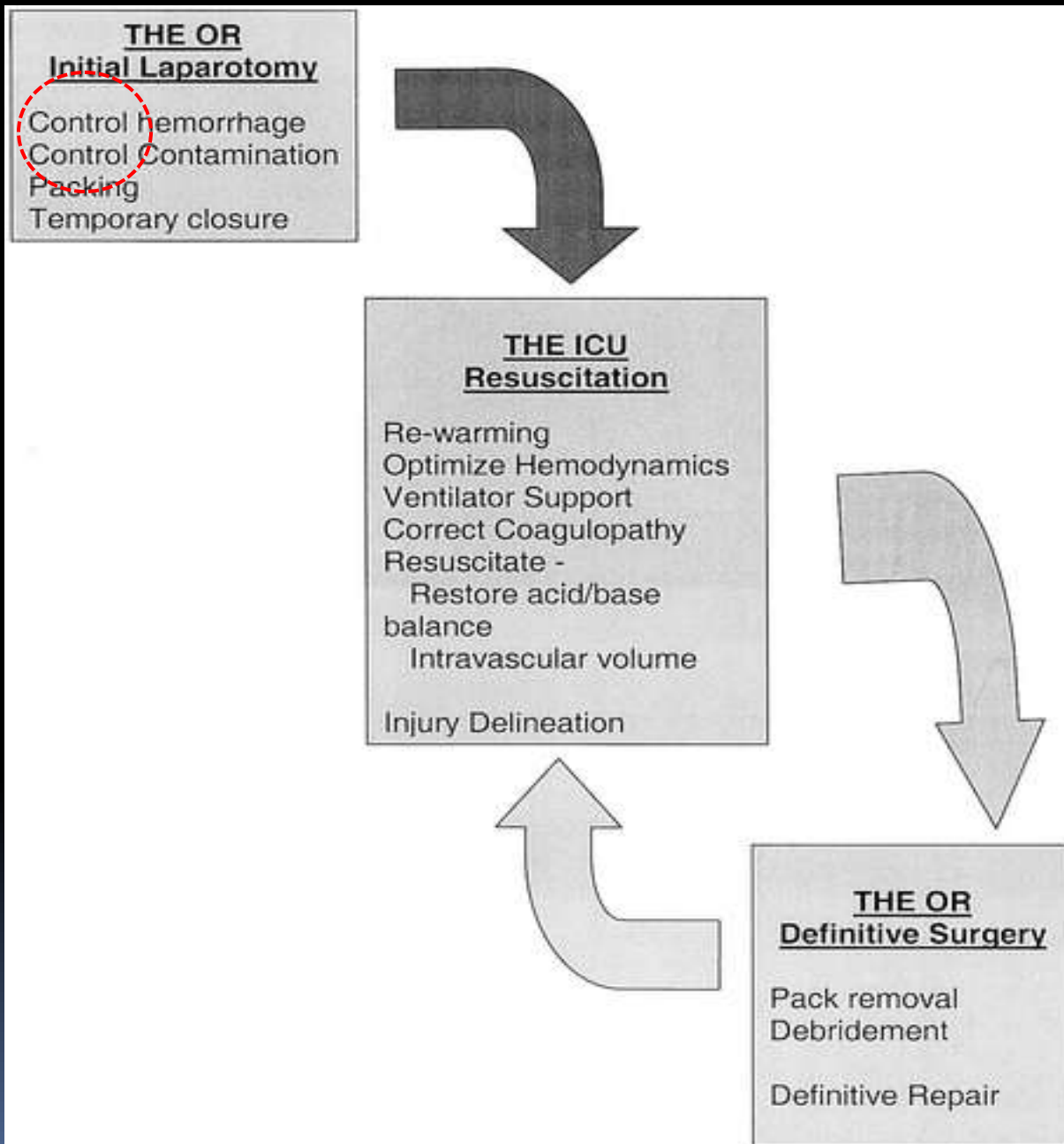


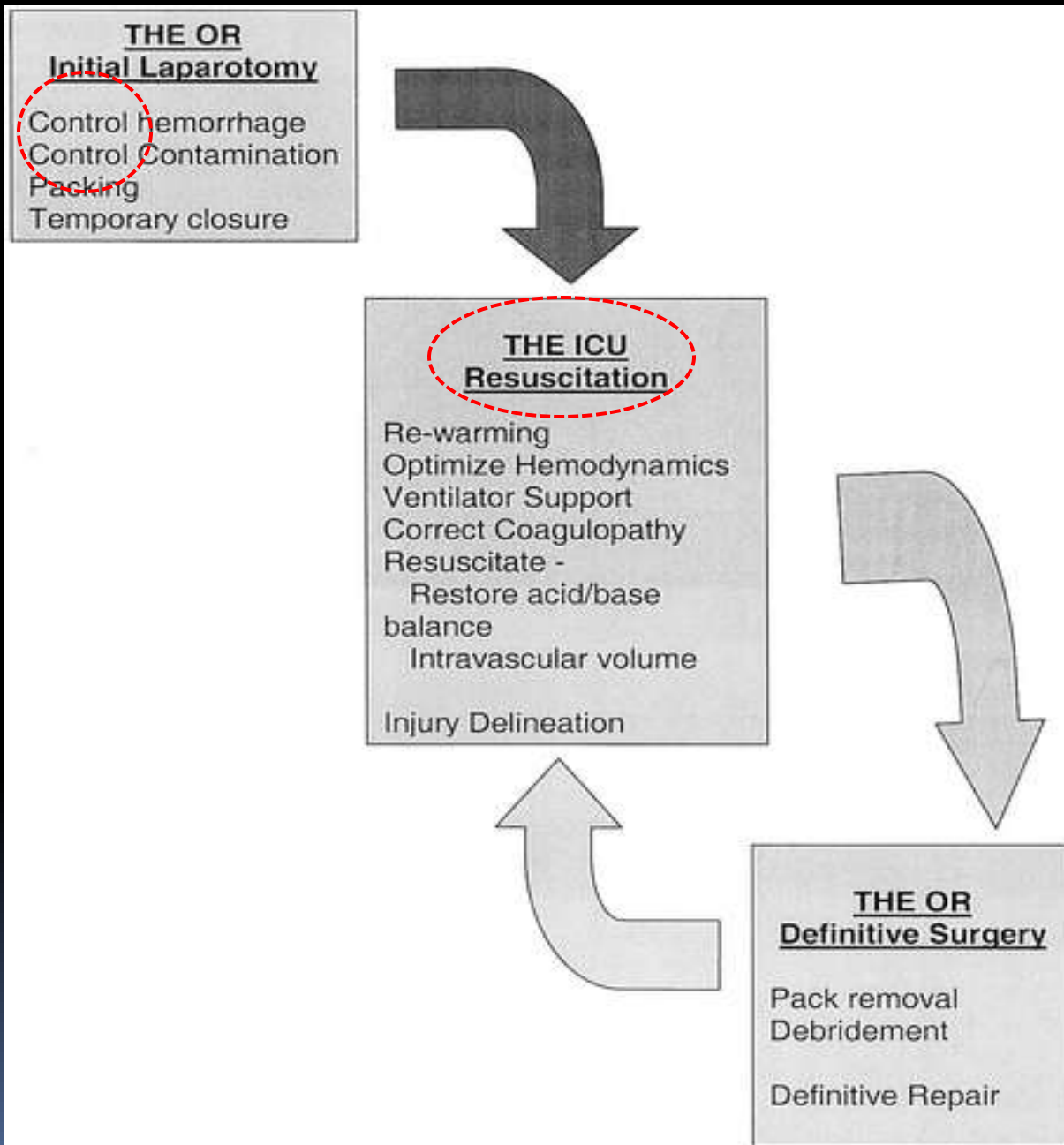
# *Quale strategia?*

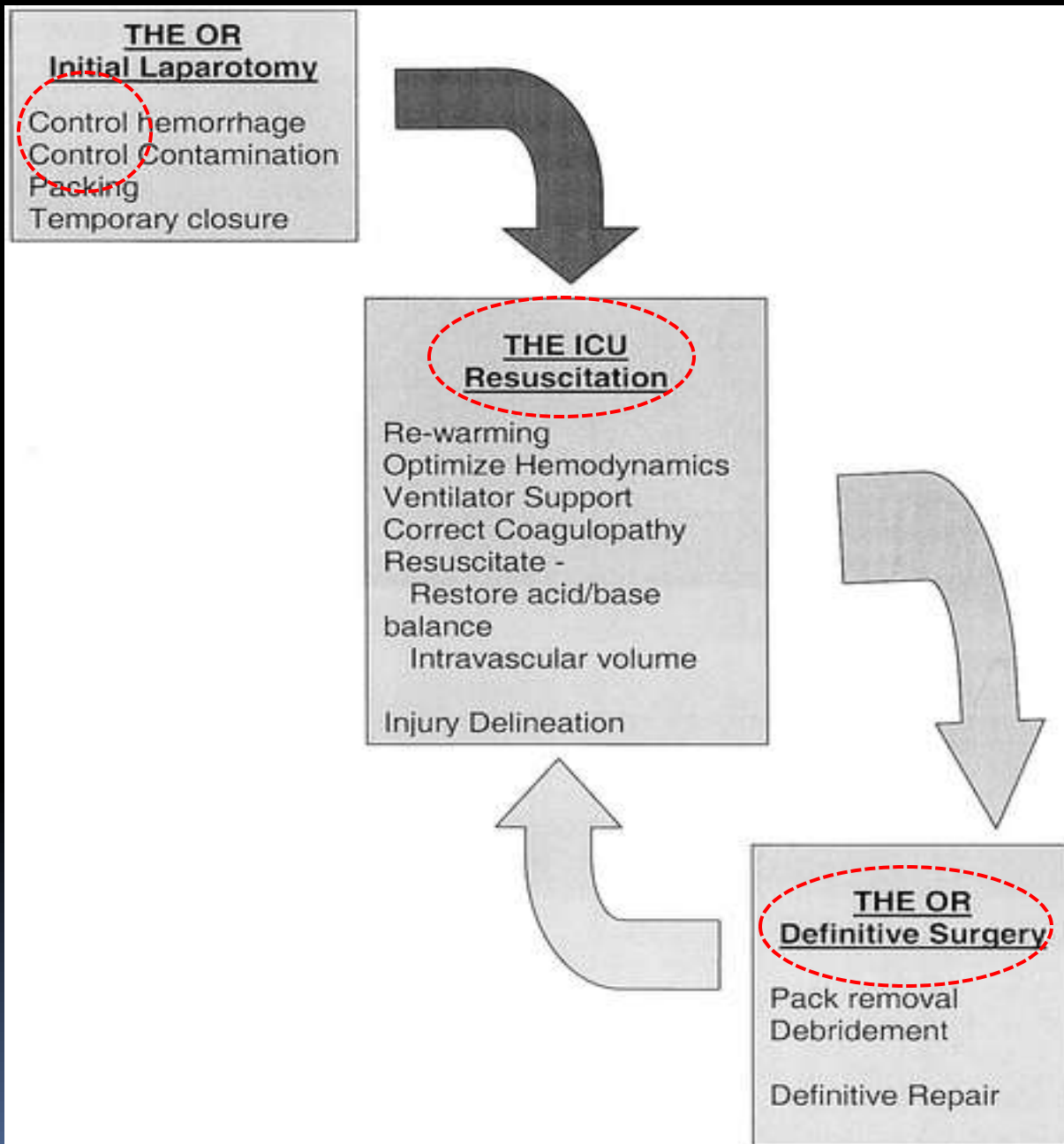
**Trattamento definitivo**

**Damage Control Surgery**







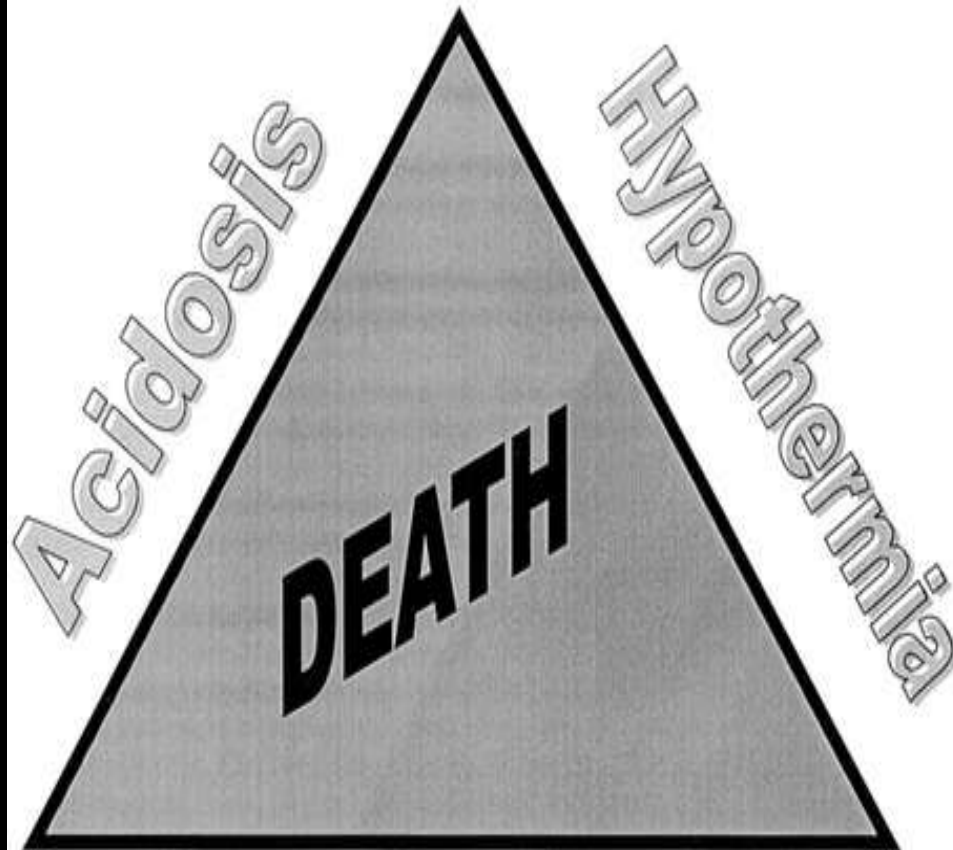


# Damage Control Surgery

... it is now well recognized that *multiple trauma patients are more likely to die from their intra-operative **metabolic failure** than from a failure to complete operative repairs*




The central tenet of damage control surgery is that patients die from a triad of ***coagulopathy, hypothermia and metabolic acidosis.***



Coagulopathy  
**The Triad of Death**



## Re-laparotomia per emorragia acuta:


- legatura aa. Ipogastriche
  - Packing pelvico
- 



Il gpo: Anuria

PA nella norma

No idronefrosi



Creatinina 2 → 2.9 mg/dl



DIALISI?





# REVISIONE CHIRURGICA?



- Reintervento:

Rimozione packing

Isolamento e verifica integrità ureteri

Prova di riempimento vescicale





Ripristino volemia

Ripresa diuresi





Ecocardiogram transtoracico I gpo:


Ipocinesia diffusa ventricolo sin, FE 45%

Rivalutazione a 23 gg: FE 60%, cinesi regolare



VII gpo: stato confusionale

TC cranio : ematoma subdurale occipito-  
parietale bilaterale



# TRASFUSIONE MASSIVA

- (i) transfusion of  $\geq 10$  red blood cell (RBC) units, which approximates the total blood volume (TBV) (Table 1) of an average adult patient, within 24 h,
- (ii) transfusion of  $>4$  RBC units in 1 h with anticipation of continued need for blood product support, and
- (iii) replacement of  $>50\%$  of the TBV by blood products within 3 h.

**Table 1** TBV estimation: TBV for adults based on Gilcher's rule of five for blood volume (in ml kg<sup>-1</sup> body weight)

Patient	Fat	Thin	Normal	Muscular
Male	60	65	70	75
Female	55	60	65	70

## Update on massive transfusion

H. P. Pham<sup>1,2</sup> and B. H. Shaz<sup>1,3\*</sup>

# TRASFUSIONE MASSIVA

**Table 3** Sample adult MTP. Modified from Table 2 in Cushing and Shaz,<sup>44</sup> with permission from Minerva Anestesiologica, Edizioni Minerva Medica S.p.A. RBC, red blood cell; SDP, single-donor platelets; Cryo, cryoprecipitate; rFVIIa, recombinant activated factor VII; AB, blood type AB

Study	Package 1	Package 2	Package 3	Comments
Cotton and colleagues <sup>43</sup>	10 RBC units 4 AB plasma units 2 SDP units	6 RBC units 4 plasma units 2 SDP units	Repeat package 2	Cryo will be given upon physician's request
Dente and colleagues <sup>45</sup>	6 RBC units 6 AB plasma units	6 RBC units 6 plasma units 1 SDP unit	6 RBC units 6 plasma units 10 cryo units	rFVIIa will be considered upon physician's request
O'Keeffe and colleagues <sup>47</sup>	5 RBC units 2 AB plasma units	5 RBC units 2 plasma units 1 SDP unit	5 RBC units 2 plasma units 10 cryo units rFVIIa	
Nunez and colleagues <sup>46</sup>	10 RBC units 6 AB plasma units 2 SDP units	Repeat package 1	Repeat package 1	
Riskin and colleagues <sup>48</sup>	6 RBC units 4 plasma units 1 SDP unit	Repeat package 1	Repeat package 1	rFVIIa will be considered after 2 rounds of blood products given


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# TROMBOELASTOGRAMMA

Misura l'intera coagulazione e riflette l'attività e l'interazione tra i fattori della coagulazione, le PLT e il fibrinogeno laddove i parametri standards della coagulazione ne forniscono solo una misura quantitativa.





# Applicazioni TEG

Nella CID esistono tre stadi ben definiti

- I Fase protrombotica
- II Fase di fibrinolisi secondaria
- III Coagulopatia da consumo

la precoce diagnosi e trattamento della I fase può impedire l'evoluzione della patologia

# L'uso della TEG consente

- La monitorizzazione di tutte le fasi dell'emostasi dalla formazione del coagulo alla lisi
- Misura il rischio emorragico pre-intra e post-operatorio discriminando tra sanguinamento chirurgico e non
- Diminuisce la somministrazione di sangue omologo ed emoderivati