New Developments in Endovascular Treatment And Balloon Occlusion For Major Arterial Trauma: What is REBOA And Does Partial Aortic Balloon Occlusion Have Value?

EndoVascular and Hybrid Trauma Management - EVTM

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And the ABOTrauma Registry group

Conflict of interest

• None

REBOA
Resuscitative Endovascular Balloon Occlusion of the Aorta


REBOA in trauma

• Developing method in early trauma management – increasing usage “the new kid on the block”
  • Central mean arterial pressure
  • Stabilizes patients in hemorrhagic shock
  • Bridge to surgery/intervention
  • Ischemic burden? MOF?

• Developing now:
  - Partial REBOA
  - Intermittent REBOA
  - Transfer REBOA; Pre-hospital
  - Deflated REBOA etc


REBOA highly dependent on ACCESS!

But it’s not only REBOA!
Not only trauma!
Endo/hybrid set of mind!
EVTM
EndoVascular Hybrid Trauma and bleeding Management

- Early femoral vascular access (ERBAACDE)
- Early multidisciplinary approach
- Permissive hypotension
- REBOA if needed
- CTA
- Surgery on angiography table – always!
- Hybrid set of mind - can “endo” help?

Hörer et al | Trauma (UK) | Trauma 2015/16
Mayer et al (Örebro Zurich); Anadis Sang 2012; Larava J Cardioase 2014, Holcomb 2014 etc.

pREBOA - partial REBOA
Partial, intermittent inflation - target the desired SBP!
Hold, adjust and control!

Hörer et al 2016, Johnson AJVAC group 2016

pREBOA effect
Hörer et al 2016; Manuscript Sadeghi et al

pREBOA vs tREBOA
Manuscript Sadeghi et al
OPEN MULTICENTER STUDY - 2 years results

n=96
mean age 49y (20-82)
male/female 65/31

Retrospective n=45
Prospective n=51

Blunt trauma 64
Penetrating trauma 12
Median ISS 65.4

Retrospective n=45
Blunt trauma 24
Penetrating trauma 21
Median ISS 67.2

Prospective n=51
Blunt trauma 39
Penetrating trauma 12
Median ISS 56.8

Blunt trauma
Penetrating trauma

Median ISS

ACCESS
Blind 71 (83%)

ABO ZONES
Zone I 86 (94%); Combined 13%

MORTALITY
All 57%
pREBOA (19/42) 45%, p=0.035

Pre- and post-REBOA systolic blood pressure

Manuscript ABO trauma Registry group: Sadeghi, Huang, Pirouzram, Toivola, Fujita, Nilsson, Larzon, Kessel, Handolin, Reva, Matsumoto, Idoguchi, Kon, Orita, Matsumura, Caragounis, Falkenberg, Bertszel et al

Summary
• It’s not only the REBOA - it’s about the access and options!
• EVTM concept double - paradigm shift
• pREBOA
  - maintains blood flow
  - reduces ischemic burden
• Lower mortality and morbidity?
• Transfer/battlefield REBOA?
• pREBOA seems promising!

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