Improving Outcomes Of Treatment For Major Trauma With Aortic Balloon Control And Over The Wire Endovascular Techniques: The REBOA Registry And How Aortic Balloon Control Should Work

EndoVascular and Hybrid Trauma Management - EVTM

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And the ABOTrauma Registry group

Conflict of interest

• Honorarium by Medtronic/Covidien

Endo and Hybrid for rAAA

• 100% EVAR for rAAA (from 2009)
• 30d mortality: 27% (17/64) with a very low exclusion rate (4-9%)
• Achieved by complementary methods (e.g. access, chimney, snorkels, sandwich, uni-puncture, Onyx embolization etc)
• Applicable in iliac and thoracic ruptures
• Postpartum, gastrointestinal and iatrogenic


EVTM EndoVascular and Hybrid Trauma Management

• Early femoral vascular access (ER!-A A B C D E)
• Early multidisciplinary approach
• Permissive hypotension
• ABO/REBOA if needed
• CTA
• Surgery on Angio/sliding table – always!
• Hybrid set of mind - can ”endo” help?

Hörer et al 2015 Eu J Trauma/CE

Aortic Balloon Occlusion (ABO)/REBOA


ABO/REBOA highly dependent on ACCESS!
Partial ABO/REBOA (pABO) already from the ER!

- Not only the aorta!
- Only over the wire! get’s you to the target vessel
- Bridge to definitive treatment (surgery/embolization/hybrid)
- Highly dependent on vascular access!

Artery Balloon Occlusion (ABO)

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


Open Multicenter Study - 31 centers - one year results

n=61
mean age 44y (20-82)
male/female 44/17

Retrospective n=44 Prospective n=17

Blunt trauma 47
Penetrating trauma 14

Prospective n=17
Mean ISS 40

ABO trauma registry group: Sadeghi, Skoog, Pirouzram, Toivola, Fujita, Nilsson, Larzon, Smart, Hohboller, Noss, Mahamoudi, Magnotti, Xue, Tang, Mahamoudi, Karppiska, Hohboller, Bostrom, Miskin et al.

1y results

- ACCESS
  - Blind 37 (60%)
  - Ultrasound 5 (15%)
  - Fluoroscopy 2 (3%)
  - Combined 12 (20%)
  - Combined 7 (11%)

- BP (mean)
  - Before ABO: 48 mmHg
  - 107 mmHg (50% augmentation)
  - 39 (60%) more stable

- PROCEDURES
  - Thoracotomy 11 (18%)
  - Laparotomy 20 (32%)
  - Emboilization 10 (16%)

- MORTALITY
  - All 32/61 (52%)
  - Penetrating 3/14 (21%)

- ZONEs
  - Zone I 48 (78%)
  - Zone II 2 (3%)
  - Zone III 3 (5%)
  - Combined 8 (13%)

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  - Cut-down 12 (20%)
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Summary

• Still not enough data for firm conclusions
• ABO/REBOA role in trauma is unclear (when?)
• It’s not the ABO/REBOA - it’s all about the access!
• EVTM concept doable - paradigm shift
• pABO?
• Education