Update And Results Of The REBOA Ongoing Trials In Europe, Japan And The US

Tal Hörer, MD PhD
Associate Prof of Surgery
Vascular / EVT team Örebro
Dept. of Cardiothoracic and Vascular Surgery, Dept of Surgery
Örebro University Hospital & University, Sweden

www.jenvtm.com and EVTm society

Conflict of interest

• None

"No ego, just good science and cooperation"

World REBOA end 2016

Current situation

• REBOA is increasing, not only in trauma
• Mainly case series/observation/retrospective studies/cases
• Smaller sheaths and dedicated balloons
• Indications/contra-indications?
• "new methods" - pREBOA/iREBOA are in use! Better?
• Total REBOA ischemia burden is more clear than ever
• More complications than reported ("my view")
• REBOA as a resuscitation tool and part of EVTM

REBOA - What do we know?

• Case series (Martineli, Gupta, Brenner, Irhara, Saito, Norii, Moore, Hörer et al)
• Reviews (Qasim, Biffl, Morrison, Bernard, Fox, Ramirez, Scalea/Brenner, Gamberini et al 17, Van Dongen et al 18)
• Animal studies (Russo, Long, Hörer et al, Williams, Morrison, Markov, Reva)
• Pelvic guidelines (world surgery society 17; DSTC manual 19).
• Registry data ABOTrauma, AORTA, JABOp, UKREBOA

Human data suggests

• > 300 centers REBOA use in trauma
• Battlefield (ca 34 cases) + non-trauma…(?)
• Doable - SBP
• Doable from pre-hospital to the ICU
• "Mortality probably not worse than thoracotomy"
• Relatively few complications if used correctly (3-5%) (?)
• Severe metabolic effect in prolonged REBOA (iREBOA)!!!
• Indications? Contra-indications?
ABOTrauma Registry

Start 2013; Current numbers: >211 pat.
To join, E-mail tal.horer@regionorebro.se

2y results (n=98)

ACCESS
Blind 67%
62% 1-3 attempts

ISS median 41
Pelvic 70 patients
Blunt 87%
Zone I 82%

Survival ED 82%
30d survival 43%

Sadeghi et al 2017; McGreevy et al submitted; Presented at EVTM, Veith, ESTES/ECTES

ABOTrauma Registry 3y results (n=138)

McGreevy et al Manuscript

UKREBOA trial

- Prospective randomized trial
- Bayesian model
- 8 centers (+3)
- Training process (one day)
- Current (Nov 2018) n=24 (?)
AORTA Study Design

- **Objective**
  - Examine REBOA and RT use in a select population of AORTA patients

- **Inclusion Criteria**
  - AO at Zone 1 (descending thoracic aorta) only
  - AO in ED only

- **Exclusion criteria**
  - Penetrating thoracic injury, chest AIS > 2
  - Incomplete survival or outcome data

Results AORTA 2

- AO at Zone 1 (descending thoracic aorta) only
- AO in ED only

\[ N = 285 \]

**Survival beyond ED**

RT = 44.1% (89/202), REBOA = 62.7% (52/83) \[ p = 0.004 \]

**Survival to discharge**

RT = 2.5% (5/202), REBOA = 9.6% (8/83) \[ p = 0.023 \]

AORTA

- Improved outcomes for patients receiving REBOA
- Particularly if REBOA is performed prior to arrest

- REBOA as a procedure
  - Is being adopted by Acute Care Surgeons safely at a rapid rate
  - Complications are not insignificant

Clinical trials problems..

- Non-homogenous
- Time frames/injury/use of REBOA
- Problem with randomization
- Different populations/countries/way to use REBOA
- Correct registration?

- Would a solution be an interventional study in a virgin territory? Or maybe will just never know…?

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Tal.horer@regionorebrolan.se