

# EndoVascular resuscitation, bleeding and Trauma Management (EVTM)

## Hands-on Workshop



**Örebro, Sweden 2-3 May 2019**

*Endovascular and hybrid solutions* for the bleeding patient;  
Aortic balloon occlusion (*REBOA*) usage, Vascular Access,  
Embolization, Endografts and modern techniques in Resuscitation

### **EVTM instructors**

Thomas Larzon MD, PhD; Asko Toivola MD; Artai Pirouzram MD; Satoko Fujita MD, PhD;  
Rickard Lindgren MD, PhD; Per Skoog MD, PhD; Kristofer Nilsson MD, PhD and Tal Hörer MD, PhD

Dept. of Cardiothoracic and Vascular Surgery, Dept. of General Surgery, Dept. of Anesthesia and Intensive  
Care, Örebro University Hospital, Sweden

**Guest EVTM instructors** and in cooperation with the Japanese society of Diagnostic and Interventional  
Radiology in Emergency, Critical care and Trauma (DIRECT).

**Instructors:** Yousuke Matsamura (IR, JP), Gad Shaked (Surgery, Trauma, IL),  
Viktor Reva (Trauma, Vascular, RU), Ernest E Moore (Trauma, US), Frank Plani (Trauma, Surgery, ZA),  
Paul Rees (Resuscitation, Military, UK), Maria Ierardi (IR, IT), Chuck Fox (Vascular, Trauma, US),  
Melanie Hoehn (Vascular, Trauma, US), Fikri Abu-Zidan (Surgery, UAE) TBA

**Local assisting group:** Maria Wikström, David McGreevy, Carolina Nilsson, Monica Clomen, Nina Adolfsson,  
Jonas Berlin, Johan Josefsson.



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Dept. of Cardiothoracic and Vascular Surgery, Dr. Tal Hörer

DATE

2019-03-09

**Target:** Surgeons, IR, ED, Vascular and Intensivists with interest in trauma/bleeding/resuscitation, Emergency/pre-hospital teams, Military trauma teams

**Date:** 2-3 May 2019 at Örebro University Hospital Training Center and Animal Lab

**Workshop Director:** Dr. Tal Hörer MD, PhD, Associate Professor of Surgery

**Workshop Secretary / Registration:** Åsa Strandberg ([asa.strandberg@regionorebrolan.se](mailto:asa.strandberg@regionorebrolan.se))

**Cost** (cover expenses only): 600€, 500€ for EVTSM society members

**Partners:** Tokai Medical Products, REBOA Medical, Secma Medical Innovations, BK Medical, Ziehm Imaging, GORE, STILLE, Canon Medical Systems, Mentice, Vingmed, Örebro University Hospital. **TBA**

The aim of this WS is to stimulate discussion and practice EndoVascular resuscitation, bleeding and Trauma Management (EVTSM) using a multidisciplinary team approach. “No ego, just good science and cooperation” is the main motion of the workshop. We will together explore different methods for resuscitation, bleeding control and trauma management, some with great experience and some that have never been practiced before anywhere.

- Vascular access:
  - Different methods (blind, Doppler, ultrasound, fluoroscopy and cut down)
  - Its use in hemodynamic unstable patients
- Aortic Balloon Occlusion (REBOA) basic and advanced methods
- Basic and advanced endograft and embolization methods
- Damage control EVTSM and Bailout methods
- Basic and advanced postoperative considerations
- Up-to-date research and clinical experience
- ABOTrauma Registry cases; Own cases and participants cases
- Knowledge of basic material and new technologies on the market
- Intensive training on both dry models as well as live tissue.
- Basics for building a “REBOA / EVTSM service”
- Advanced experimental methods in resuscitation

The workshop is designed for experienced physicians but is individually tailored during the practical parts. Participants will get basic training and knowledge of REBOA placement as part of the EVTSM concept. The workshop has been certificated by the EUCME and acknowledged by the European Society for Trauma and Acute Care Surgery and in cooperation with other relevant societies.



## Day 1 (2<sup>nd</sup> May): Clinical Training Center (KTC), USÖ

- EVTm algorithm and up-to-date world experience
- Theory and methods for vascular access; Basic and advanced
- Practical physiology of REBOA/pREBOA/iREBOA and literature
- Use of access, aortic/arterial balloon occlusion, endografts, embolization and other tools for the bleeding and unstable patients
- Dry model training and simulator training
- Group discussion of participant cases and ABOTrauma Registry cases
- Building an EVTm service and initiating REBOA use per center
- Discussions/cases
- Current data updates
- New technologies in endo tools and imaging; what's hot, what's next?

11:45 Gathering at the Clinical Training Center (2<sup>nd</sup> floor)

12:00-12:30 Lunch, welcome and general information (Tal H)

12:40-16:30 **8-minute presentations** and short discussions (coffee served during sessions)  
Minor changes may follow. TBA

Bleeding control in vascular surgery - developments and trends (Endografts) – T. Larzon (SE)

Bleeding control, my experience, my practical tips – EE. Moore (USA)

Vascular access practical points; from basics - M. Ierardi (IT)

Complications of vascular access, from basic, how to think, how to avoid - A. Pirouzram (SE)

Endovascular methods for bleeding control; How to do; my praxis? – C. Fox (USA)

REBOA/EVTm; When? - Senior surgeon view – F. Abu-Zidan (UEA)

REBOA up-to-date; experience and a residents practical view – M. Hoehn (USA)

Discussion pause/clarifying discussion on Access, REBOA and more - T. Hörer (SE)

My tips and tricks REBOA; when, how - F. Plani (ZA)

My tips and tricks REBOA; when, how – G. Shaked (IL)

Military REBOA; experience, tips – V. Reva (RU)

Bleeding control data and practical tips - Y. Matsamura (JP) TBA



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Endovascular resuscitation, prehospital issues and military aspects, my view - P. Rees (UK)

Embolization- What can be done, how? Limitations; tips – P. Skoog (SE)

Basics on vessel closure methods; Tips - C. Fox (USA)

Registry data; Impending Cardiac Arrest and REBOA - D. McGreevy (SE)

Investigational/animal data and practical use of EVTm - Nilsson/Hörer **TBA**

Ca 16:45-19:00 Practical discussions/exchange of information and training in stations and cases with scenario training on model.

### **Practical scenarios on training models**

- Aorta 3D models
- C-arm usage; Angiography table
- Endo-simulator
- Access and REBOA stations
- Practical training and discussion with instructors in groups; individual level
- Material for endo-trauma and hybrid management
- The “EVTm REBOA trolley”
- Over the wire methods (Seldinger) on dry model
- Blind and ultrasound guided access
- Introducers and upgrading; endo-shunts

Around 19:00 Departure to dinner (TBA; walk together from the hospital)

## **Day 2 (3<sup>rd</sup> May): Animal lab training & research center, USÖ**

07:00 Gathering/changing at the Clinical Training Center (2<sup>nd</sup> floor)

07:15-08:40 “EVTM anatomical review - what can we do?” REBOA practice (Cadaver)  
(Preliminary - if available, to be announced the day before)

08:40-09:15 Breakfast with the industry (Clinical Training Center); Clinical Cases

09:20-14:30 Hands-on animal lab including:

Every station is led by a highly experienced instructor with one-to-one training on live tissue as well as group scenario discussions. (Lunch and coffee will be served in the lab) Changing stations according to interest is encouraged.

### **Practical training points in the animal lab:**

1. Material usage in bleeding patients, general considerations. The trauma-bay kit.
2. Vascular Access
  - Basic principles
  - Cut down techniques
  - Endoshunts (and shunts)
  - Hybrid procedures
  - Puncture methods
  - Seldinger technique
  - The failing access - alternatives
  - Venous access
3. Upgrading/introducers/guide wires
4. REBOA
  - Material and REBOA kit
  - Practical deployment
  - Deflation and re-positioning
  - Intermittent/Partial inflation with MAP as target (iREBOA/pREBOA)
  - Ongoing bleeding practice
  - CPR procedures and pending arrest

As times allows and based on individual level:

5. Balloon in alternate locations (Iliac, Subclavian, Brachiocephalic trunk/Zone 1 neck)
6. Aortography and Angiography considerations (type, volume etc.)
7. Embolization of target vessels: Material, Access, Coils, Onyx/Phil. Endograft deployment (basic/advanced issues), Pelvic bleeding
8. Bleeding management scenarios on live tissue will be incorporated.

14:30 -15:00 End of workshop and evaluation

The workshop is designed for mutual learning and sharing of experiences! It is built on individual professional level and experience.

“No ego, just good science and cooperation”