SMARTBAND

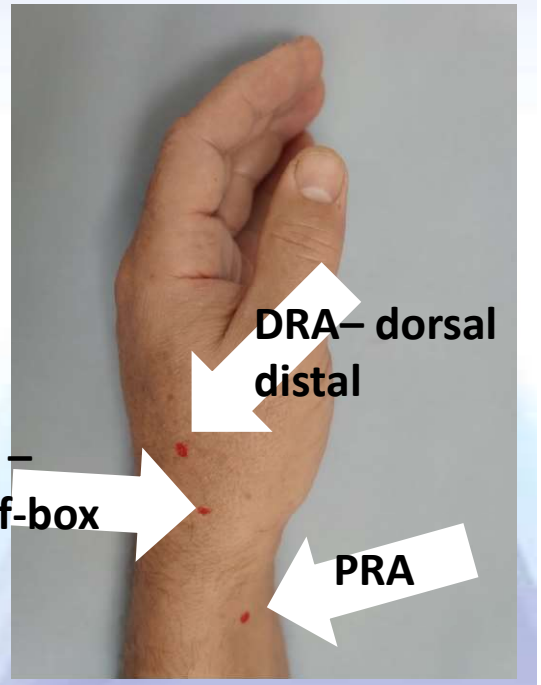
Feasibility **S**tudy of Invasive Blood Pressure **M**onitoring **A**fter Proximal and Distal Trans**R**adial Cardiac Catheterization and Intervention Via an Arterial Cannula Inserted Under the **TR Band**

Štěpán Jirouš, I. Bernat, A. Buchnerová, J. Pešek, J. Koza, D. Slezák, J. Bis, R. Rokyta

University Hospital Pilsen

Background I

- proximal (**PRA**; IA in ESC GL) and distal radial approach (**DRA**) via snuff-box (*SB*) or dorsal distal radial approach (*DDRA*)
- standard compression with TR Band
- RA commonly used for invasive pressure monitoring in intensive care (dominantly proximal)
- STEMI / NSTEMI with ongoing ischemia (incl. shock, OHCA) don‘t have blood pressure invasively monitored for a certain time interval after the TR intervention and during RA compression



author‘s photo; J.Koza‘s MD left hand; TRB

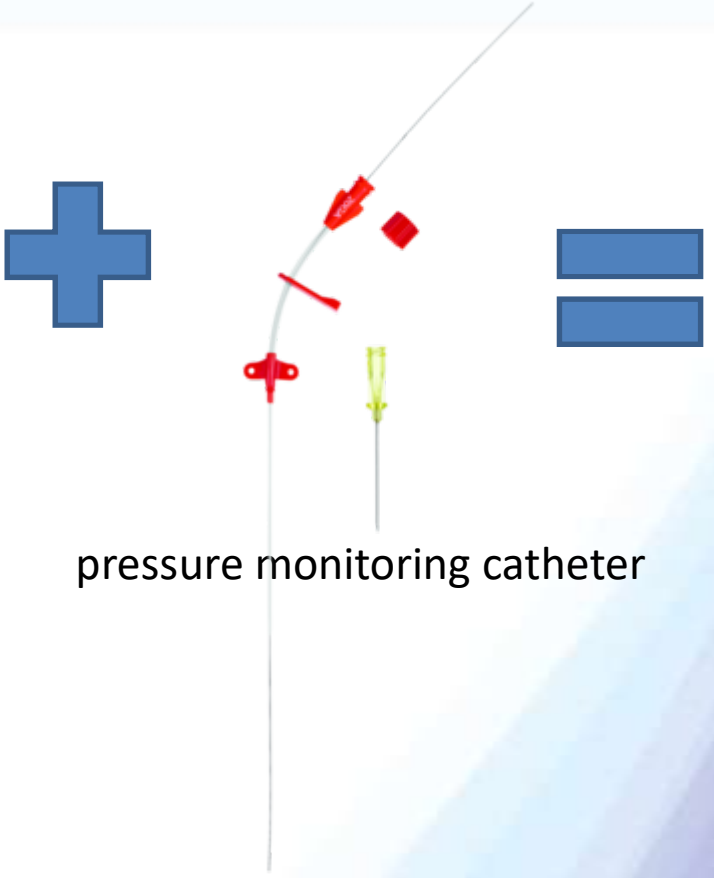
Background II

- **invasive monitoring of blood pressure** after PRA and DRA catheterization in critically ill patients via an arterial **cannula inserted under the TR Band** has not been systematically tested

- 15 pilot phase patients

Why SMARTBAND?

TR Band

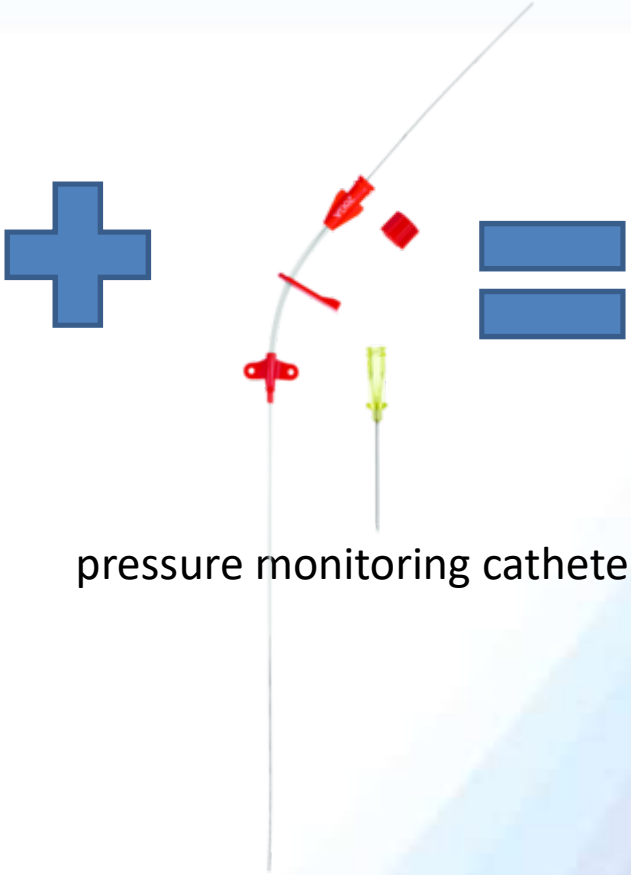


pressure monitoring catheter

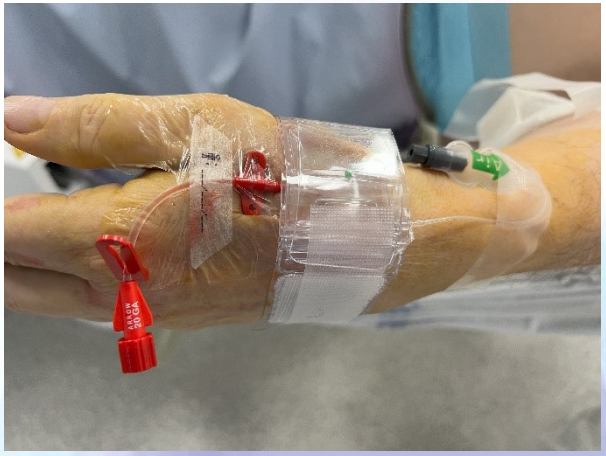
„SMARTBAND“

Why SMARTBAND?

TR Band



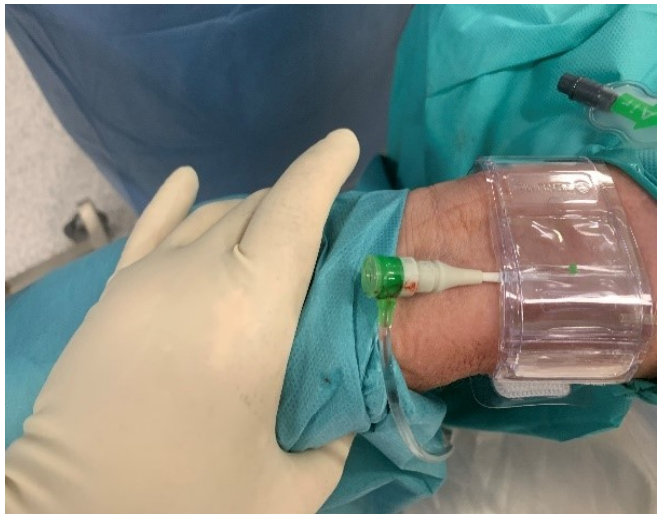
pressure monitoring catheter



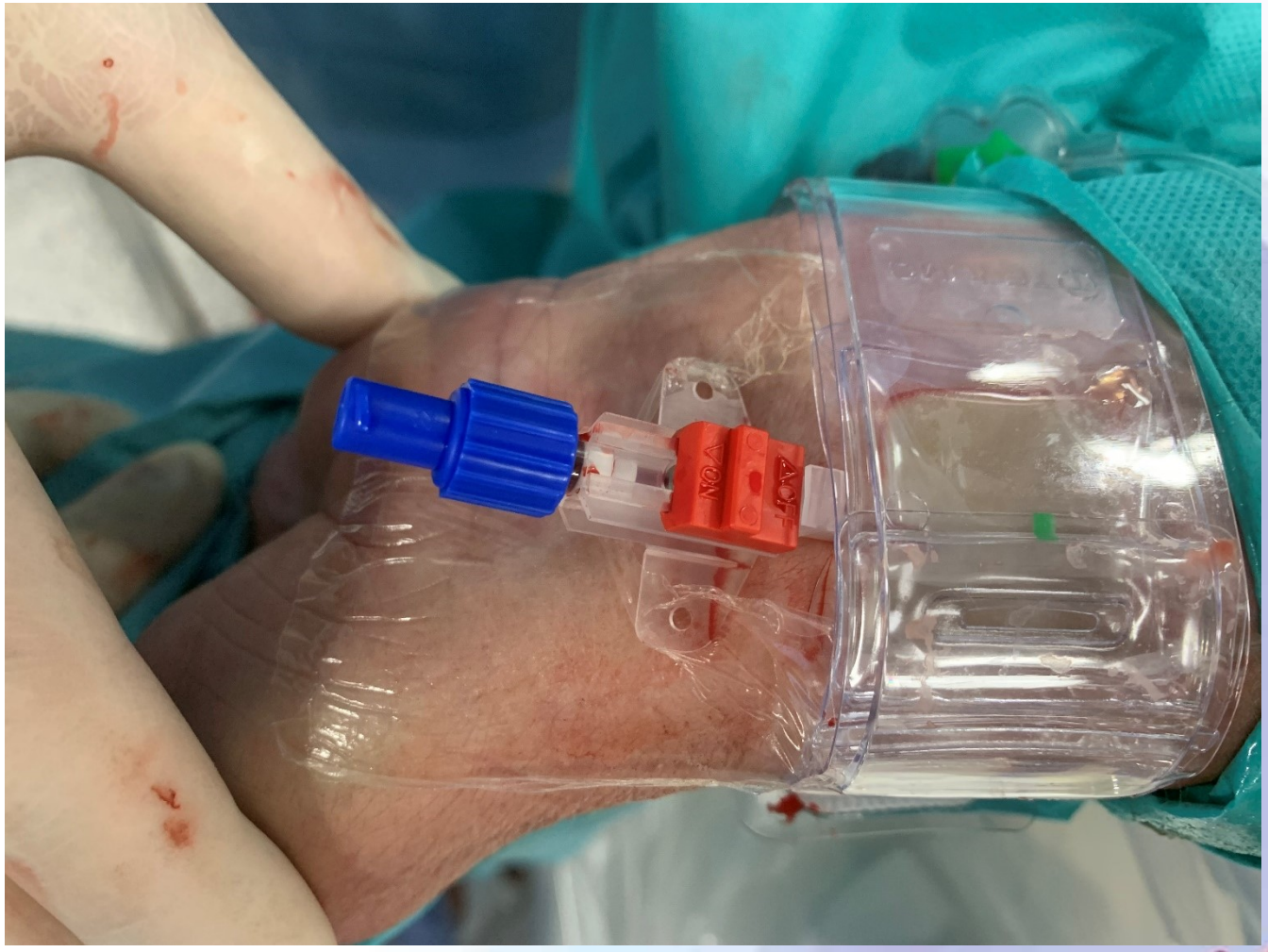
„SMARTBAND“

Cannula insertion procedure

Proximal radial approach



Proximal radial approach



Cannula insertion procedure

Distal radial approach via snuff-box

Distal radial approach via snuff-box

Pilot phase - 15 pts

➢ procedure of cannula insertion under the TR Band tested

- men 60% (9); age 71y (51-89y)
- HT 87% (13), HLP 60% (9), DM 40% (6) smoking 40% (6)
- CABG history 13% (2); prior PCI 15% (3)
- EF LV: 48 ± 15%

- **60% (9) proximal RA; 40% (6) distal RA**
- **27% (4) 5F GSS; 73% (11) 6F GSS**

- catheterization indications
  - 6 STEMI (2x with shock, 2x OHCA)
  - 5 NSTEMI (1x with shock)
  - 1 sustain VT
  - 1 complicated elective PCI
  - 2 TAVI

- type of procedure
  - 10 PCI
  - 3 CAG only
  - 2 TAVI

- antiagreggation + anticoagulation
  - 7 UFH + Aspirin + ticagrelor
  - 3 UFH + Aspirin + clopidogrel
  - 3 UFH + Aspirin
  - 2 UFH + Aspirin + cangrelor (+ ticagrelor)

Pilot phase: results

- **successful cannula insertion in cathlab: 100% (15)**
- monitoring time as planned: 87% (13) (2 pulled out while handling the patient!)

- **average i.a.BP monitoring time: 127 ± 71 min**
- total RA compression time: 235 ± 81 min
- **RA compression after cannula removal time: 117 ± 71 min**

- **RAO** (2nd day): **0**
- **hematomas**:
  - <5cm (grade I EASY): 4 (27 %)
  - grades II-IV EASY: 0
- death during hospitalization: 3

SMARTBAND study plan

Feasibility **S**tudy of Invasive Blood Pressure **M**onitoring **A**fter Proximal and Distal Trans**R**adial Cardiac Catheterization and Intervention Via an Arterial Cannula Inserted Under the **TR Band**

- 100 pts
- inclusion criteria
  1. consecutive patients in University hospital Pilsen who underwent catheterization via **proximal or distal radial** approach
  2. the condition of the patient **after the procedure** (at the time when the standard sheath would be removed and the TR Band applied) **requiring invasive pressure monitoring**
     a) acute heart failure with or without ACS, including cardiogenic shock
     b) cardiac arrest with or without ACS
     c) TAVIs
     d) other conditions requiring invasive pressure monitoring immediately after the catheterization

Study aims

- **primary endpoints**
  1. success of cannula insertion
  2. i.a.BP monitoring time
  3. total RA compression time
  4. RA compression after monitoring time
- **secondary endpoints** - local complications
  1. radial artery occlusion (2nd day)
  2. local hematomas (EASY classification)

- all parameters will be studied both in patients catheterized via prox. and dist. (via SB and DDRA) TRA

Thank you for your attention