

# Rationale for IVUS guided abdominal aneurysm repair

## LINC 2019

Jörg Tessarek MD

Vascular Center Emsland

Bonifatius Hospital Lingen

Germany

# Disclosure

Speaker name:

.....Jörg Tessarek MD.....

I have the following potential conflicts of interest to report:

- Consulting: Abbott, AB medica, Phillips Volcano, Taryag medical
- honoraria : Abbott, AB medica, Phillips Volcano, Medtronic, Terumo aortic
- research grants : Abbott

# strong rationale for IVUS instead of angiographic guidance aorto-iliac procedures

## Iodinated contrast media

- Kidney function impairment
- Contrast induced nephropathy (0-44%)
- Allergic reactions
- Thyreoidal disorders
- Bubbles/ stroke
- High energy radiation

## IVUS

- None
- None
- None
- None
- None
- None

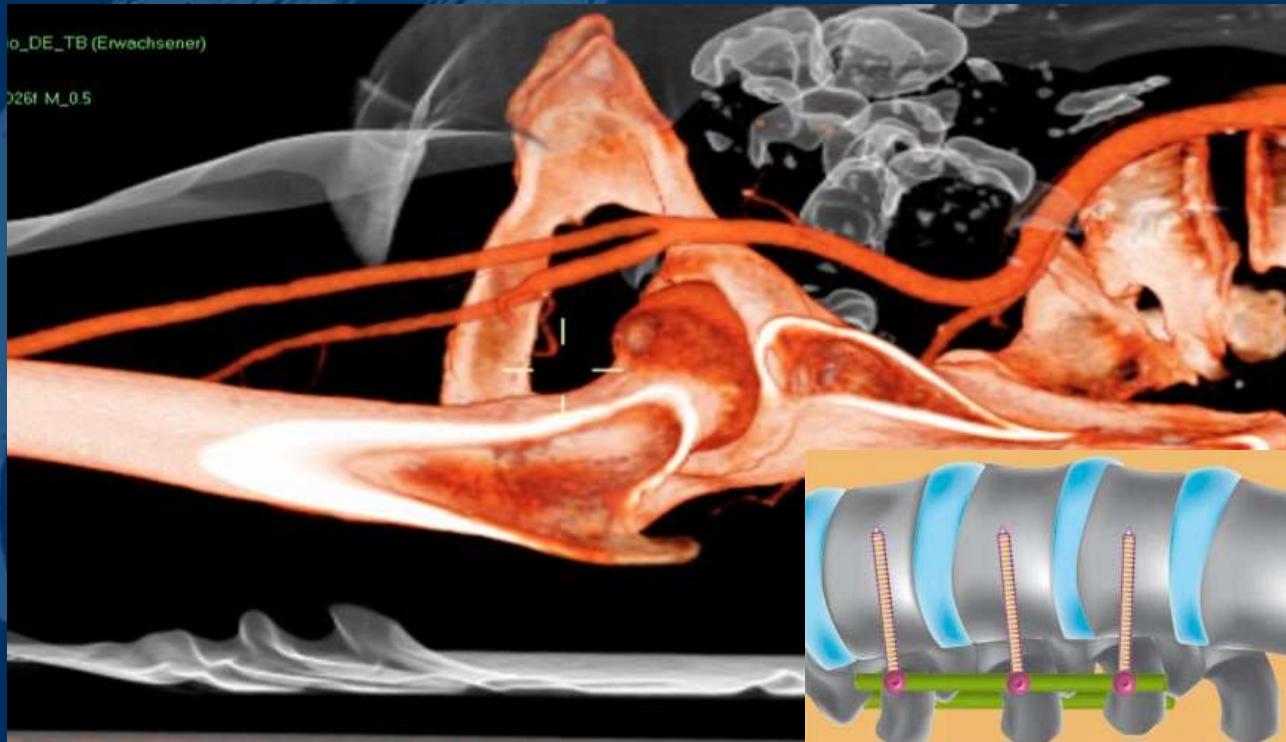
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1D imaging

3D imaging

# Independant from artefacts

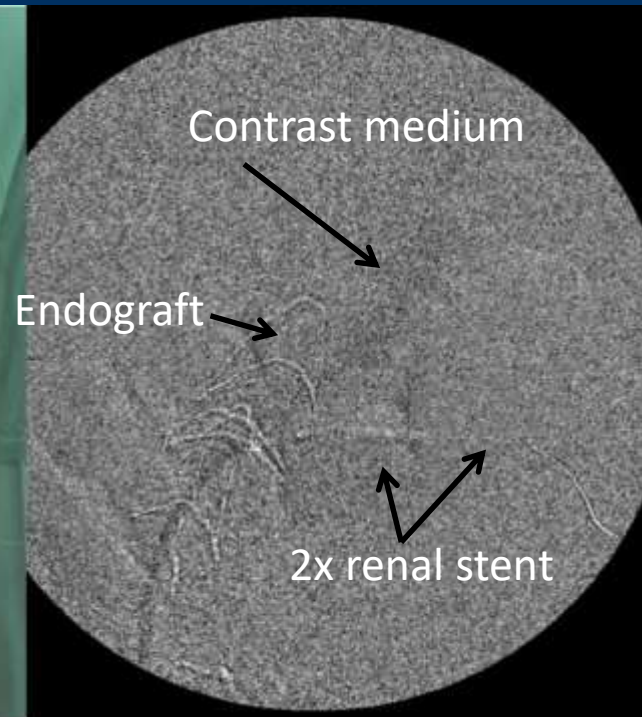
- Bowel gas, bowel motility, residuals from previous examinations, Onyx...



- Vertebral implants, OR associated artefacts such as cables, any kind of contrast giving material

# Independant from artefacts and imaging quality

- Soft tissue ...



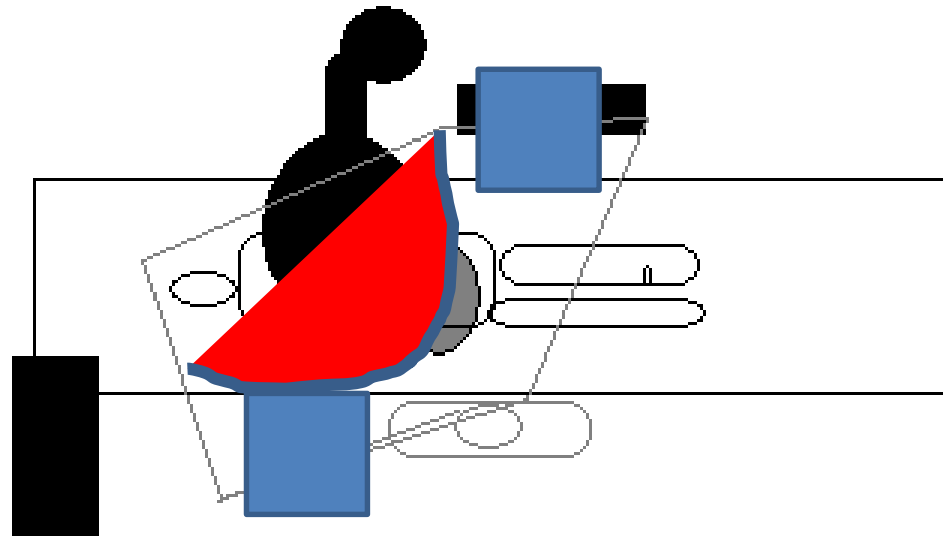
- Limited imaging quality ...



Active radiation protection: optimal workflow without oblique projections maintaining the table position (with a single Angiorun ??)

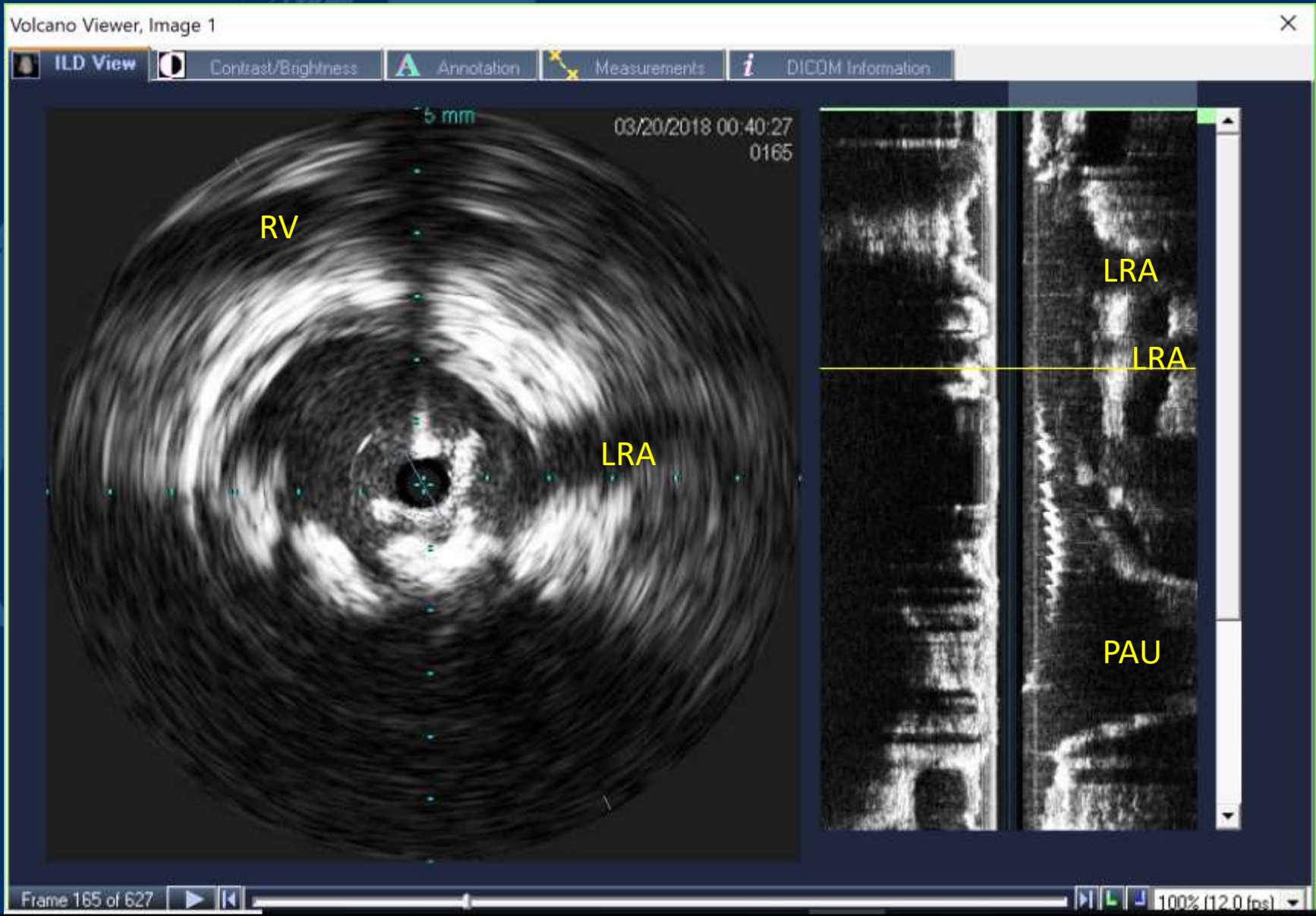


IVUS fits to all settings: 80x80cm console with single table/ c-arm position and optimal radiation protection



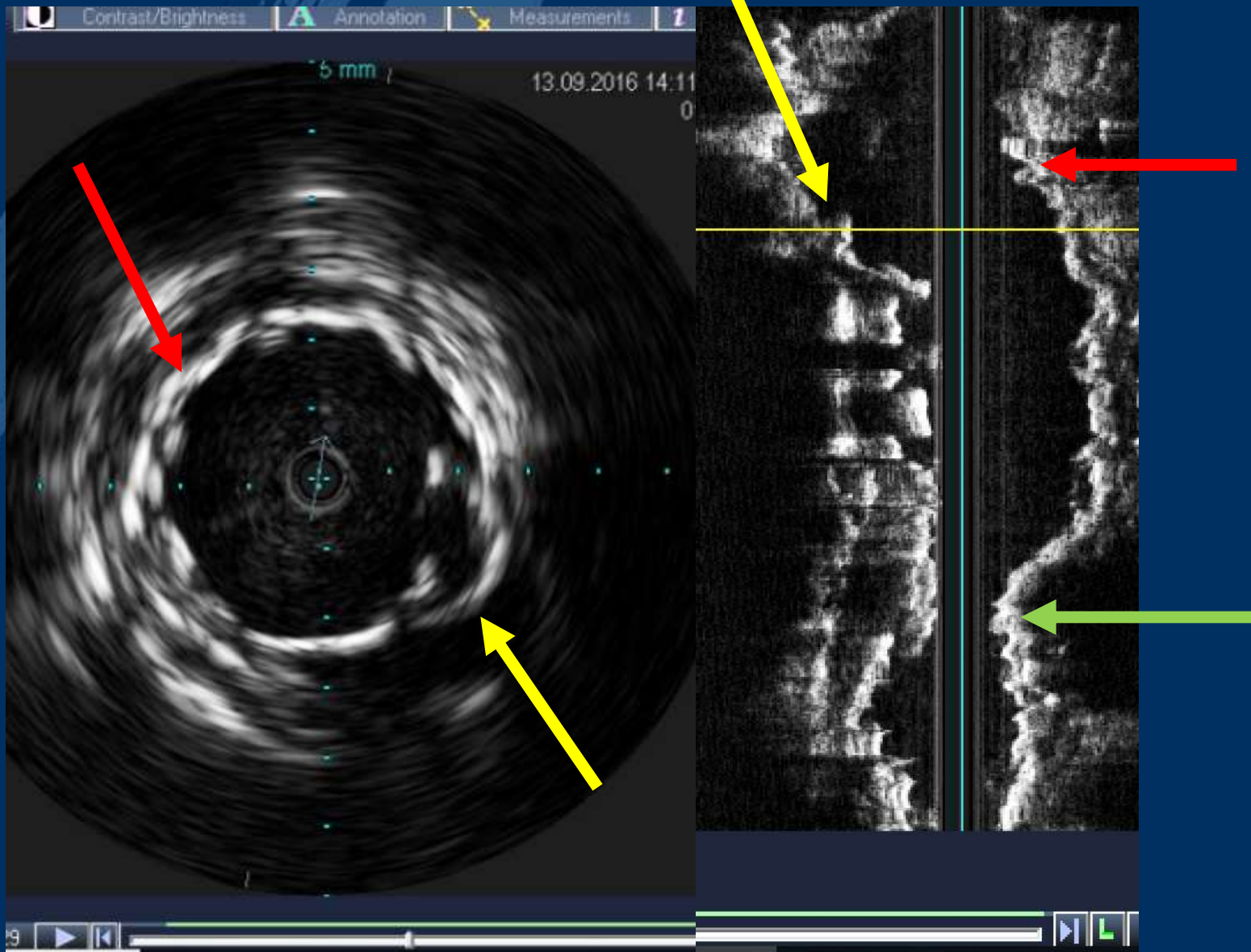
UrSource: MAVIG Website 2019

# Life 3D imaging for PAU

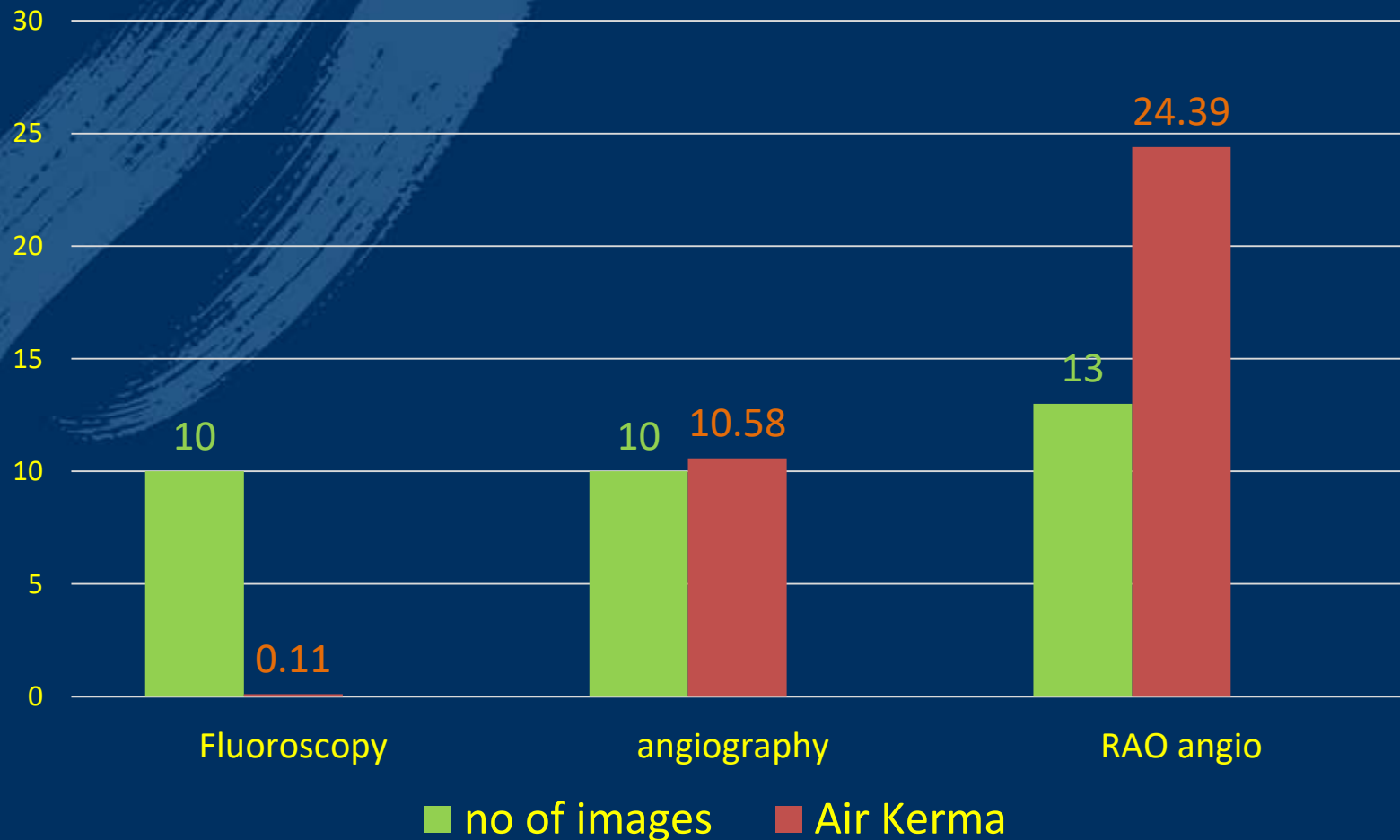




After placement: wall apposition, crimping, stenosis...

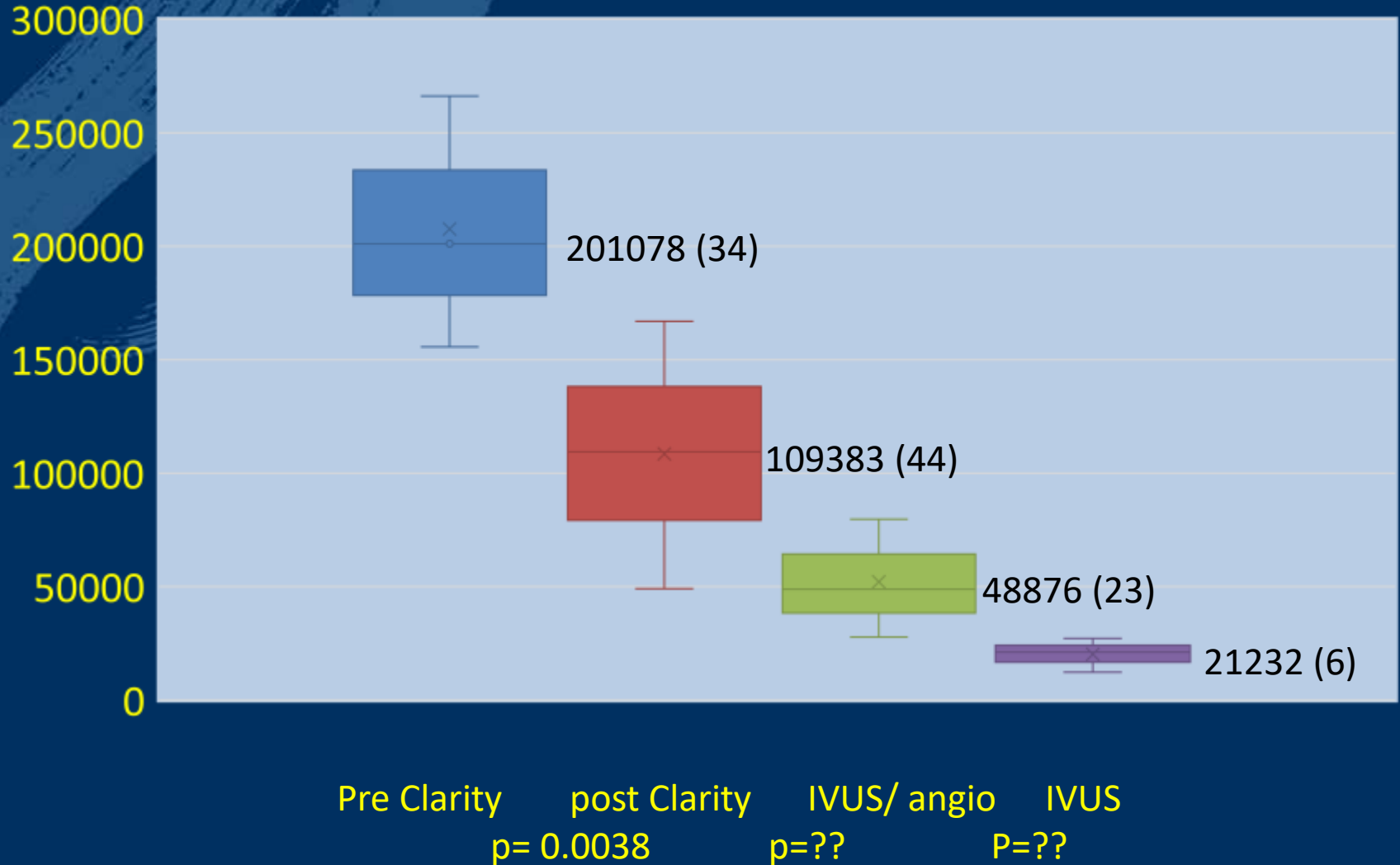


# Significant Reduction of Air Kerma (radiation pollution in the local setting, scattered radiation) in mGy



all data collected from a standard SID 105cm, C-arm position RAO 2°, caudal 2° and RAO 49°

# Significant Reduction of Dose Area Product mGy/cm<sup>2</sup>



# Strong rationale for IVUS instead of angiographic guidance (any kind of aortic procedure)

- IVUS is 3D imaging in a single projection
- reduction of contrast, DAP and Air Kerma (part of active radiation and kidney protection policy)
- fits to any workflow in the OR (hybrid/ mobile C-arm)
- For any kind of aortoiliac procedure
- Allows exact measurements / on table planning even with no flow (REBO) in the elective and emergency situation
- Well accepted as first line imaging tool in venous procedures

# Old fashioned technique from the 90`s: Safety? Reliability?

Segesser et al. EJVES (2002) 23; 537-542

- Prospective comparison of IVUS (n=49) vs. Angio (n=31)
- **Mortality 7% for angio, 0% for IVUS**
- **Contrast 190cc for angio, zero cc for IVUS**
- **IVUS for (standard) EVAR and TEVAR is safe, reliable and easy to use**
  - In most cases periprocedural angiography is not necessary
  - causes not more complications compared to x-ray guidance
  - Demands not more secondary interventions for EL...





Thank you for your attention

[joerg.tessarek@hospital-lingen.de](mailto:joerg.tessarek@hospital-lingen.de)

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