



Tricuspid Valve Repair: Predictors of Late Failure

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No conflicts of interest

Background

- TR is associated with bad outcome.
- Outcome and predictors of failure following TV repair are unclear.
- McCarthy et al. Cleveland. JTCVS 2004
 - 3+ TR in 14% postop with no change over time
- Fukuda et al. Cleveland. Circulation 2005
 - Identified age, leaflet tethering >0.8 cm and severity of preop TR to predict postop TR
- Fukuda et al. Cleveland. Circulation 2006
 - Leaflet tethering >0.8 cm and postop TR predict 1 year TR

Background

- **Tang et al. Toronto. Circulation 2006**
 - Ring is superior to no ring
 - 5 years survival was ~ 90%
 - 5 years freedom from TR ~ 90%
- **Guenther et al. Munich. ATS 2008**
 - 5 years survival of 65%
 - 5 years freedom from reoperation 90%
- **Moroca et al. St. Louis. ATS 2009**
 - 5 years survival of 72%

Background

- **Fukuda et al. Cleveland. JASE 2007**
 - Suggests a new 3D ring (MC3)
 - Nevertheless, leaflet tethering height predicted postop TR
- **Dreyfus et al. Harefield. EJCTS 2008**
 - 15-30% TR recurrency
 - Ant. leaflet augmentation in patients with leaflet tethering

Aim of the Study

**To identify risk factors for failure
following TV repair**

Methods

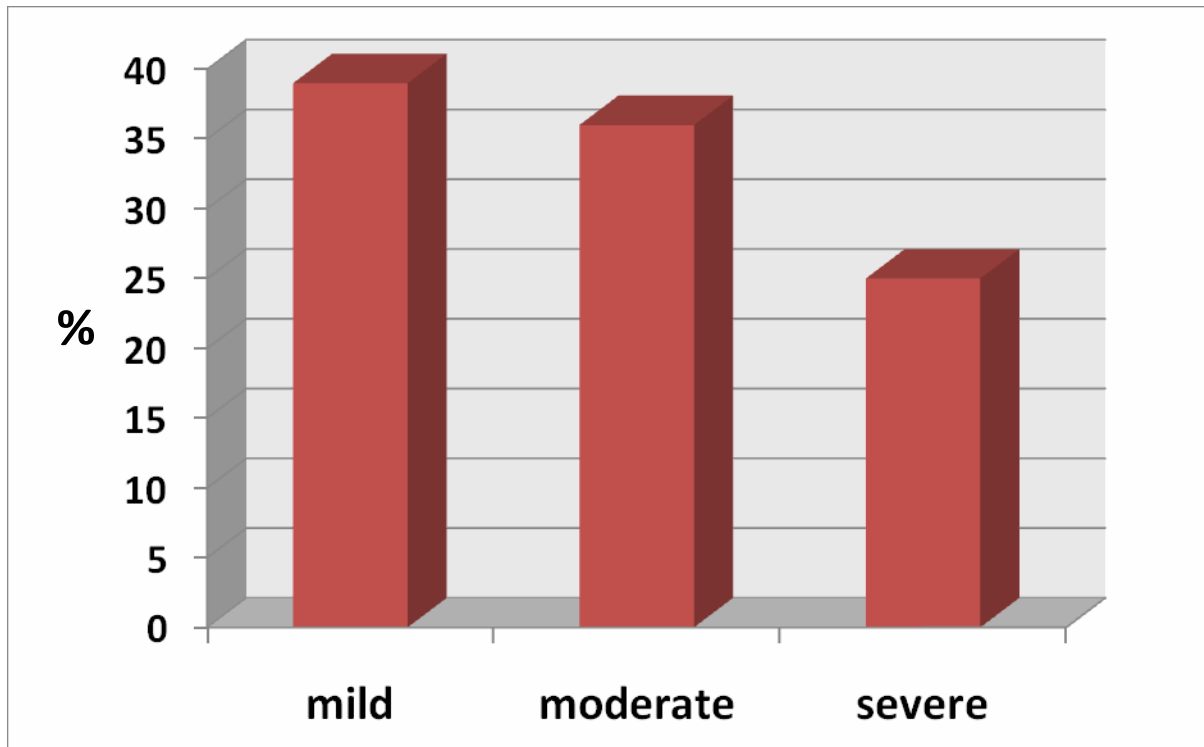
- **211 patients (1/00 – 12/09) had TV repair**
- **Age 63 ± 12 years**
- **TV repair with or without additional surgery**
- **All had Preoperative and postoperative echo.**
- **Follow-up echo was available for 150 patients in an interval of 18 ± 18 months**

Echo

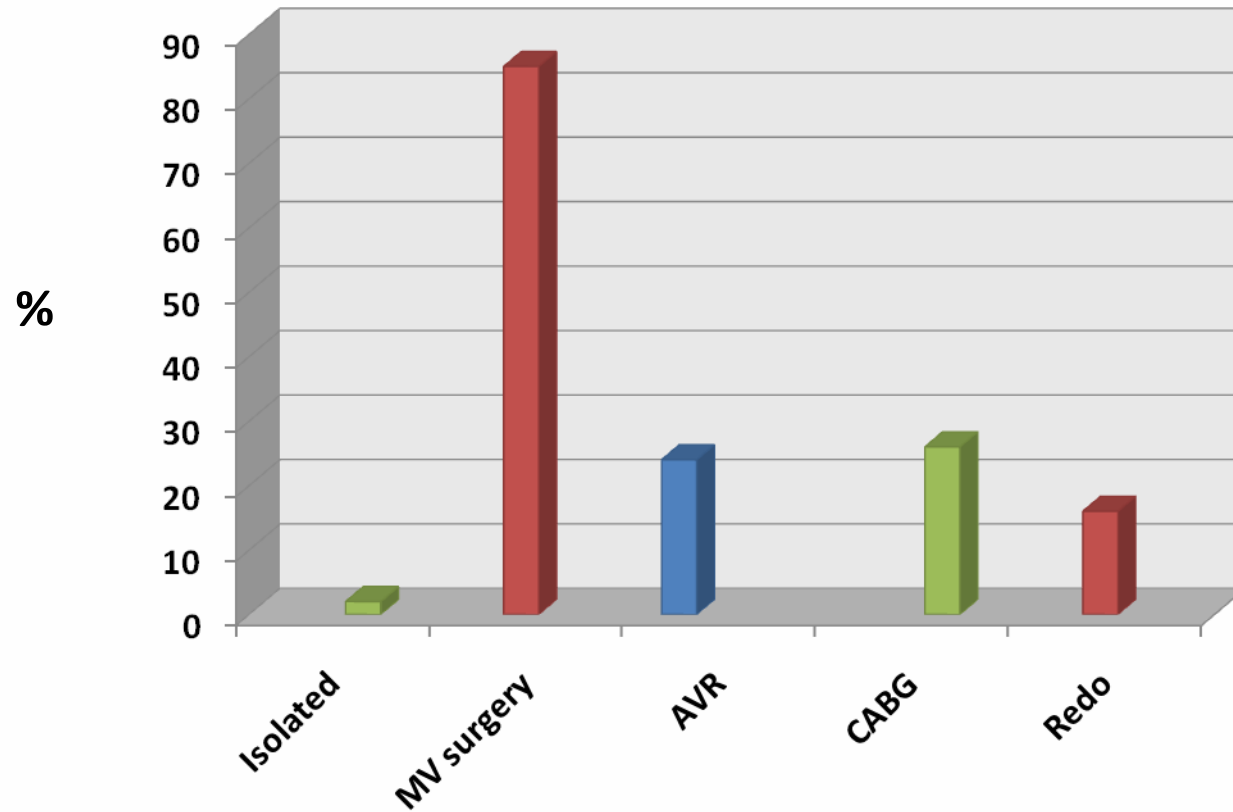
- **TR grade (mild, moderate, severe)**
- **TR gradient**
- **RV function (mild, moderate, severe)**
- **Leaflet tethering and tethering area (n=46)**

Indication for TV repair

- At least moderate TR, or
- Less than moderate TR in the presence of annular diameter > 35 mm

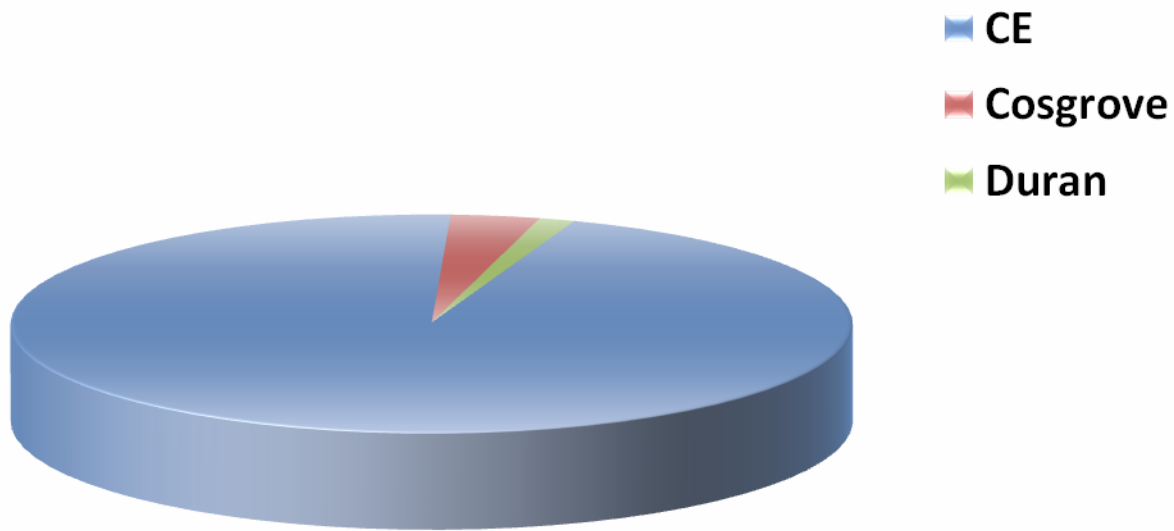


Concomitant Procedures



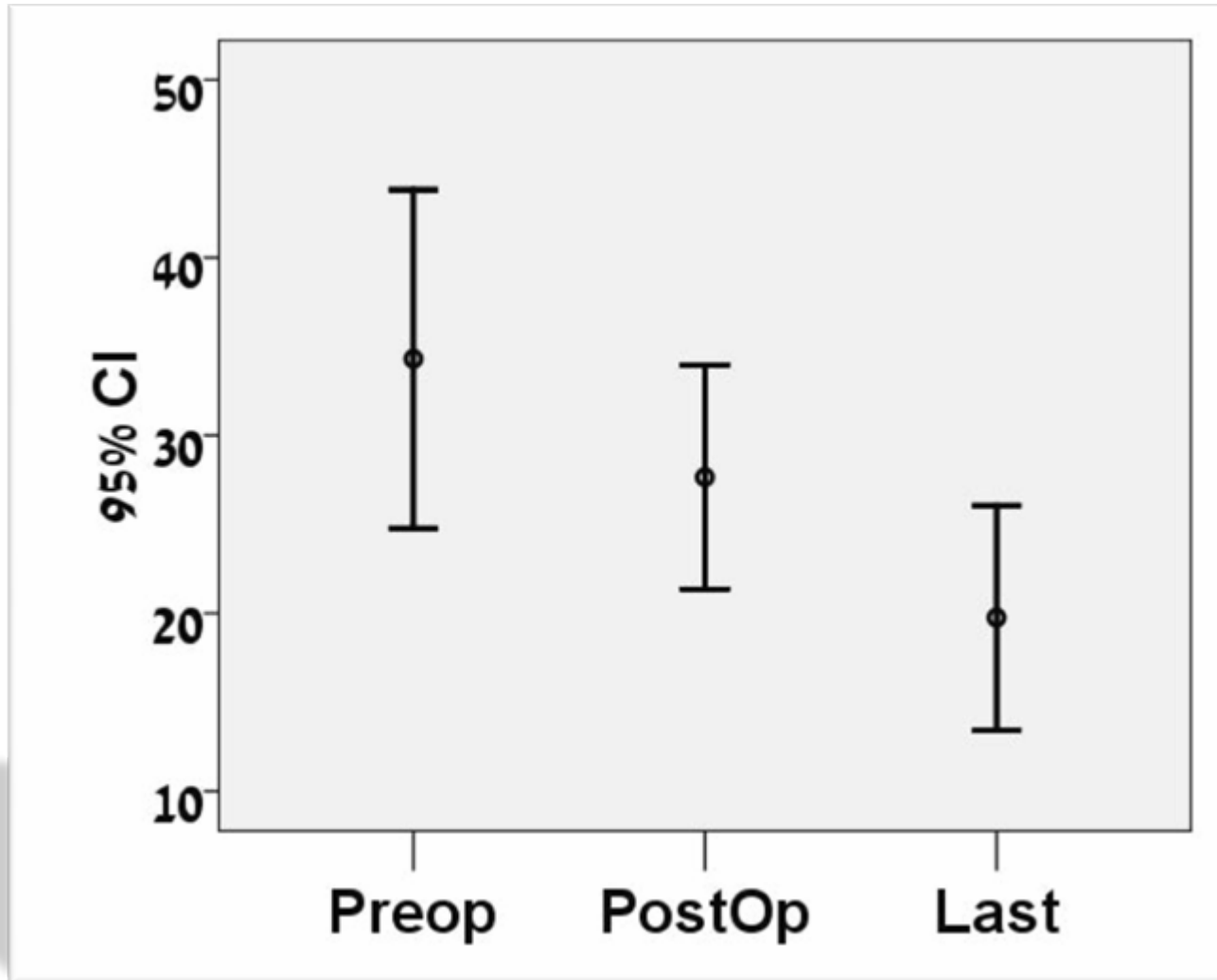
TV reair

Ring Annuloplasty in all

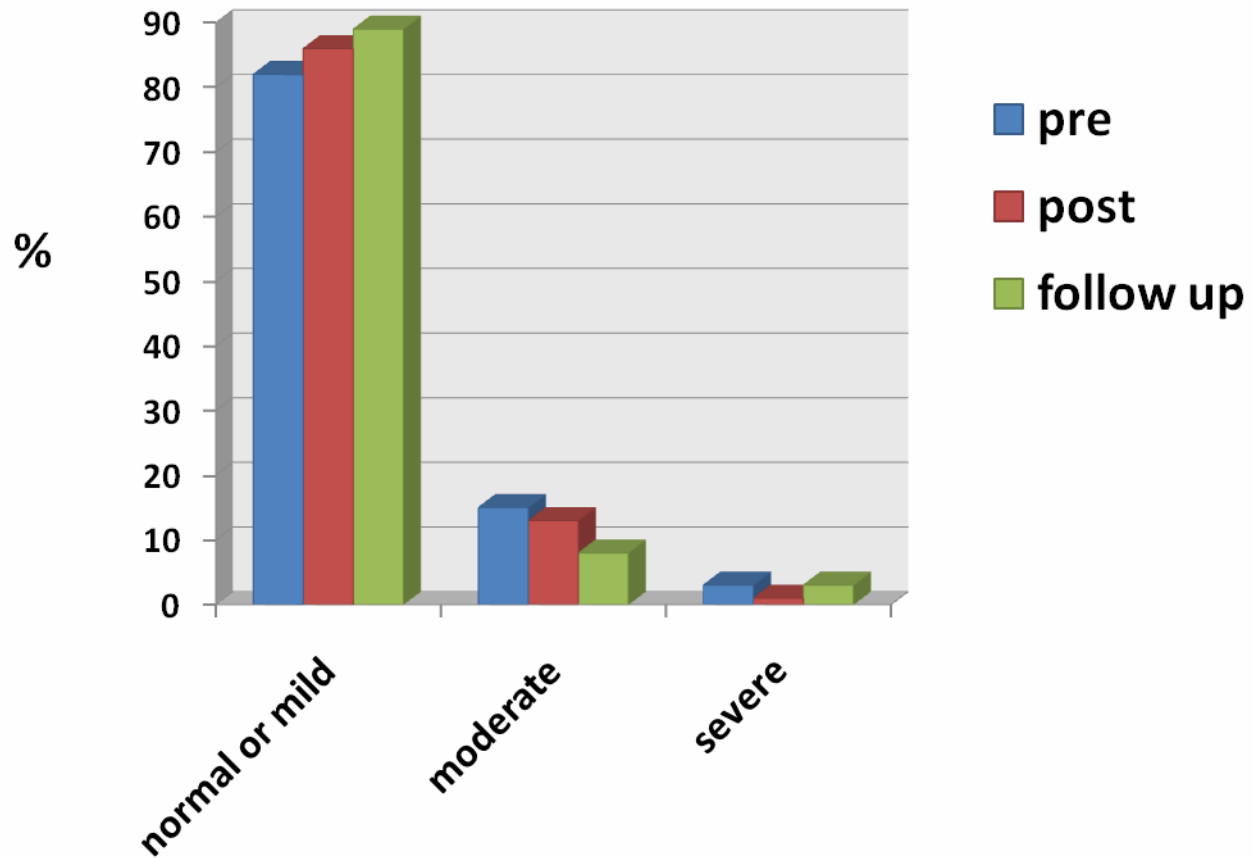


Median ring size = 32 (28 – 36)

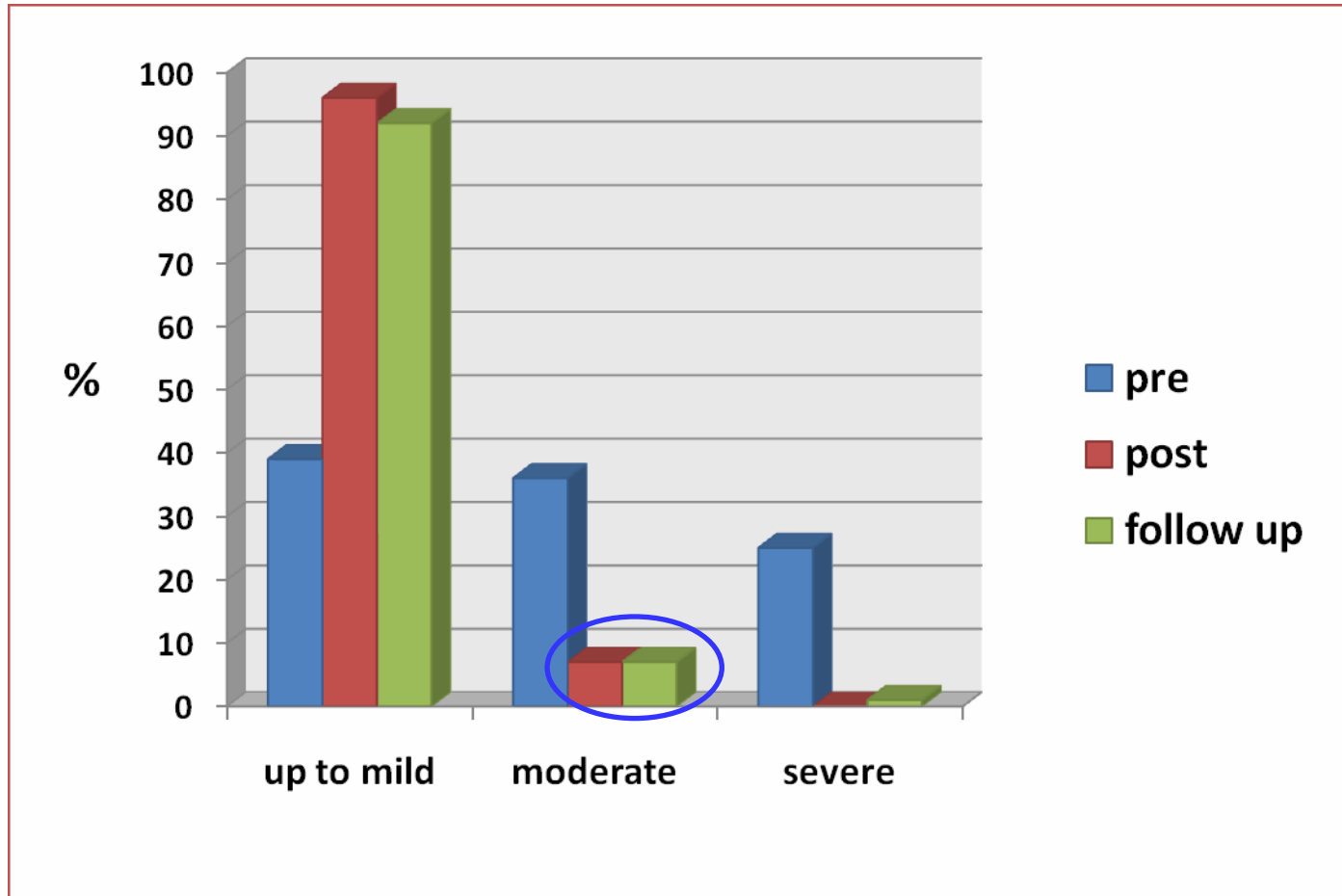
TR gradient *mmHg*



Progression of RV Function



Progression of TR



Progression of TR

Pre

Post

Follow up

Up to mild

Up to mild

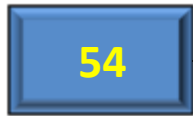
Up to mild



50

2

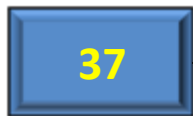
mod



53

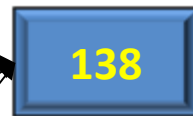
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sev



35

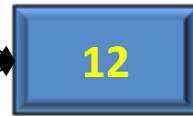
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3

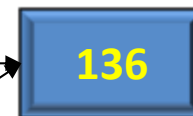
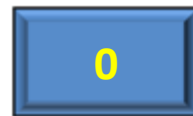
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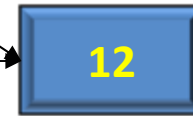
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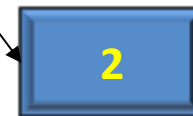
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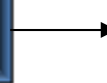
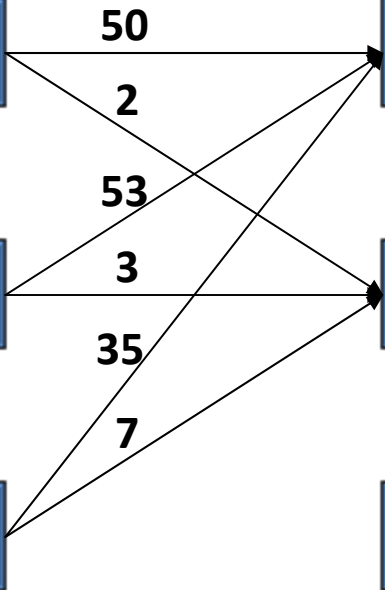
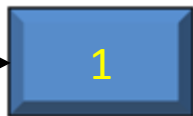
mod



sev



Reop



Progression of TR

Pre

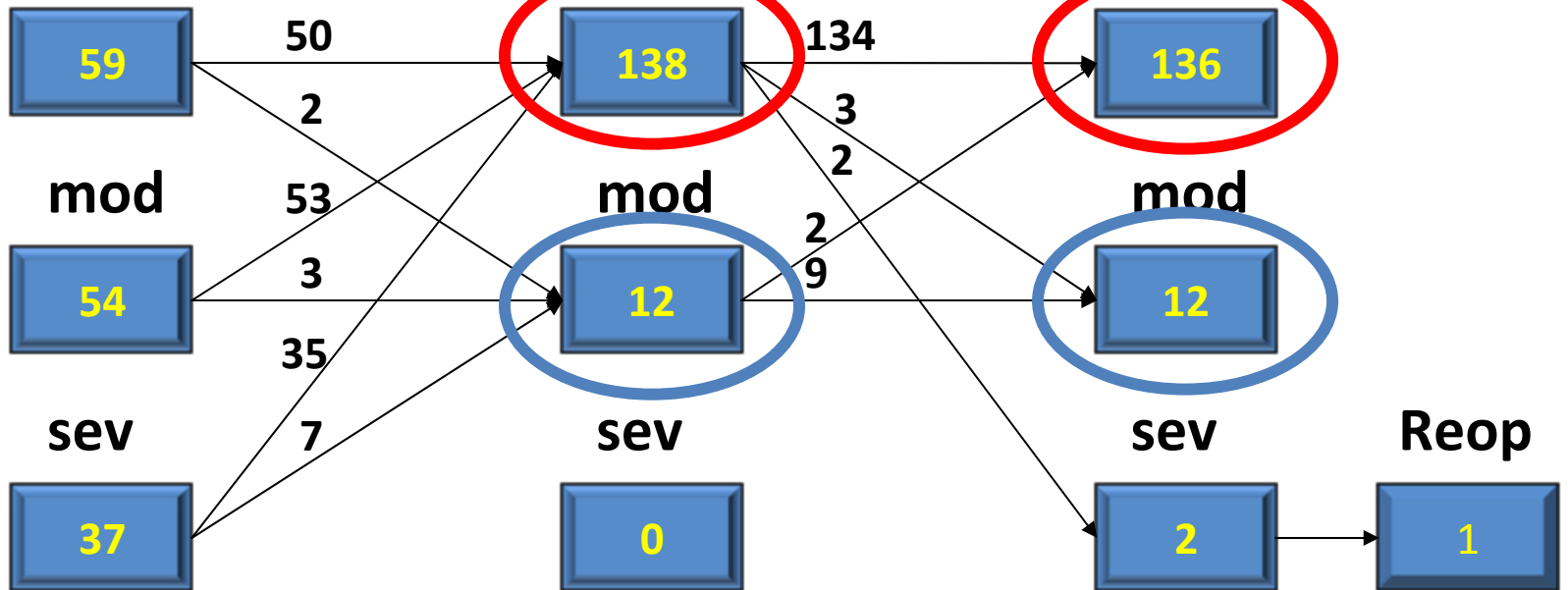
Post

Follow up

Up to mild

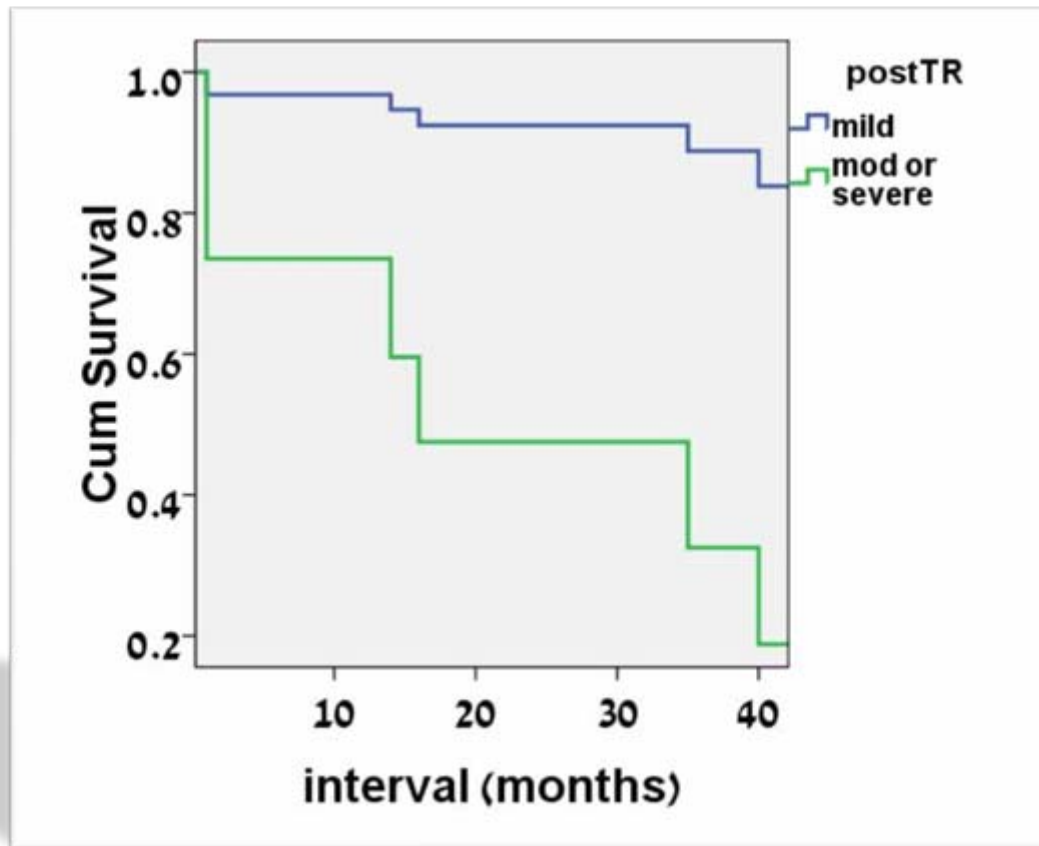
Up to mild

Up to mild



Freedom from at least mod TR

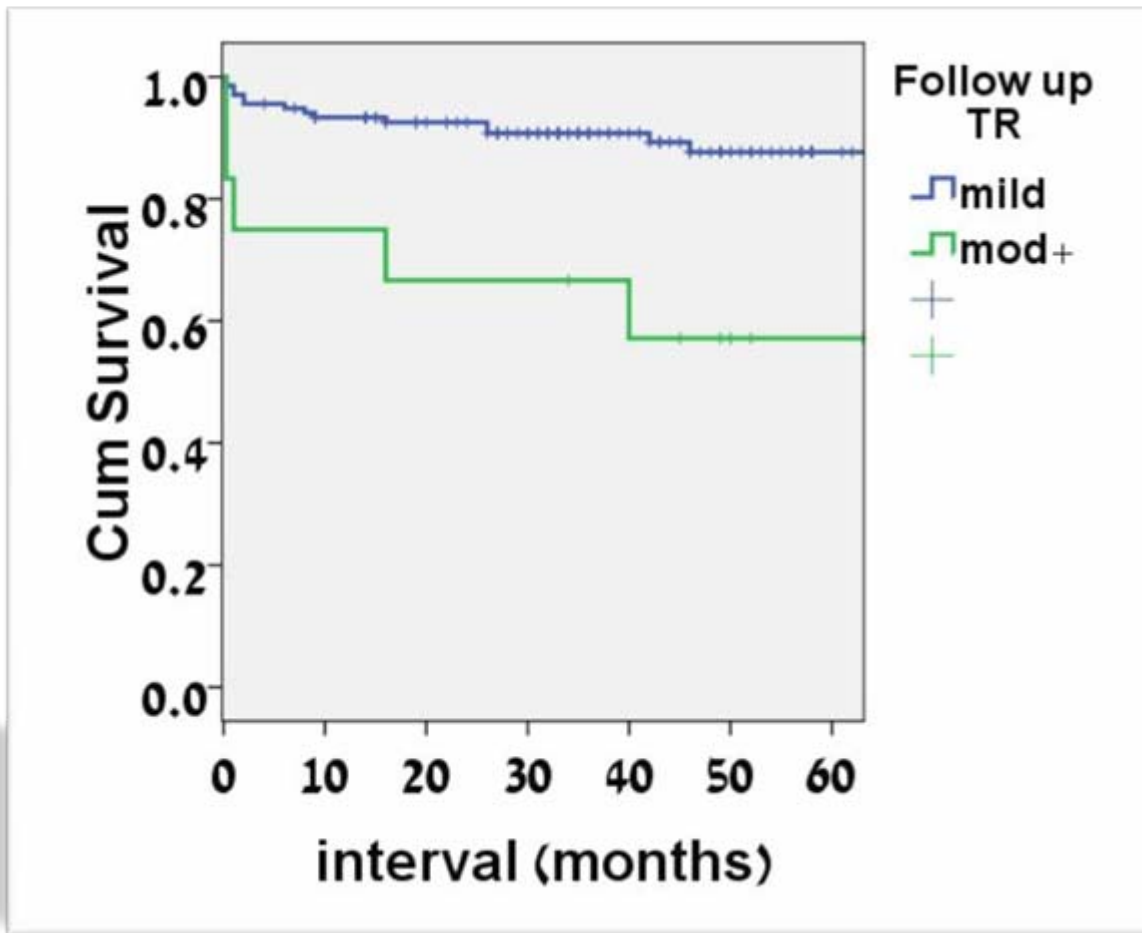
- No risk factors for post op TR were identified
- **Post op TR** was identified as an independent risk factor for follow up TR



Survival

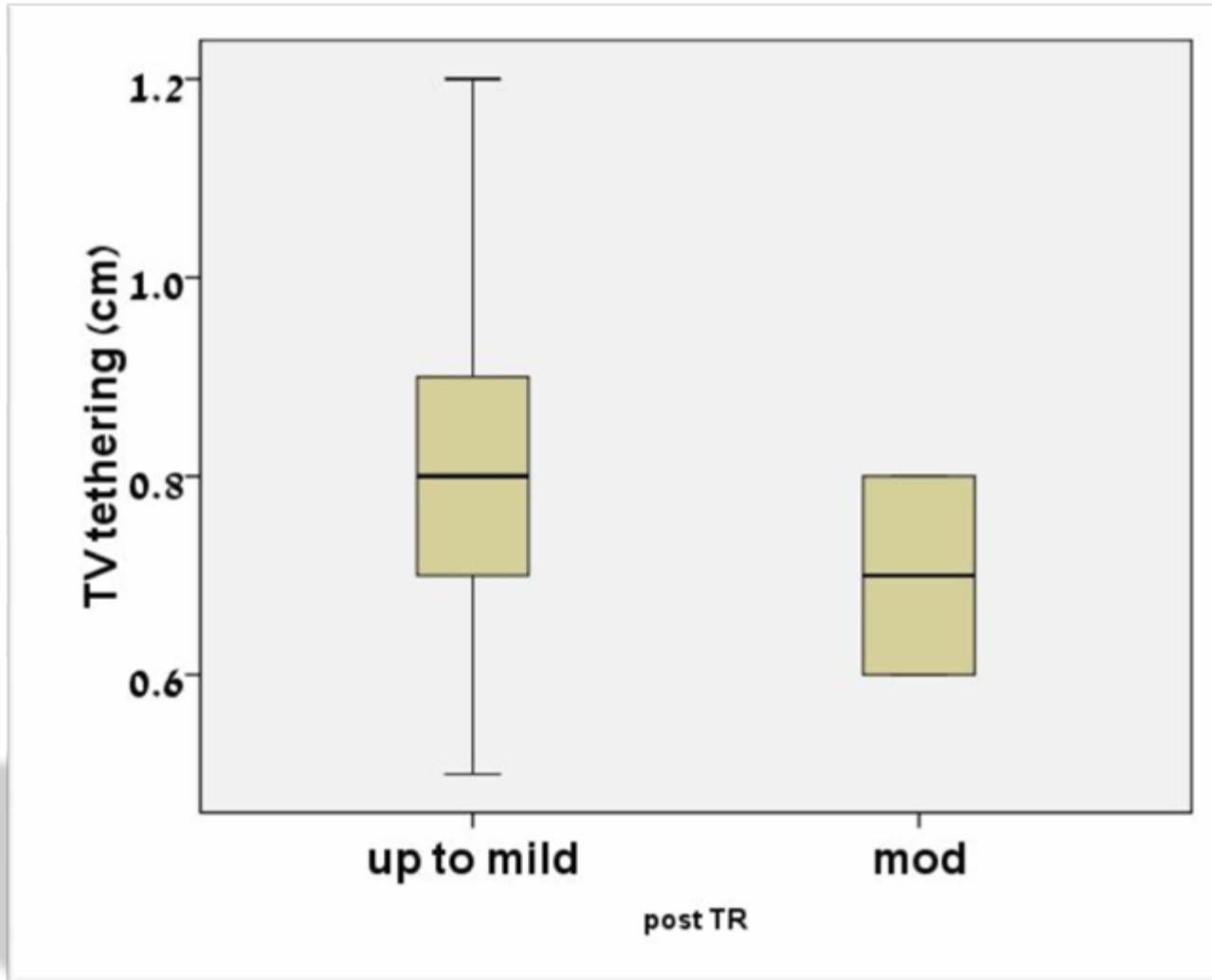
follow up of 3.3±1.7 years

- **Follow up TR** was identified as an independent risk factor for late mortality



Pre op Leaflet Tethering

N=46



Conclusion

- **Residual significant TR is associated with worse outcome**
- **All measures should be applied to have no or minimal TR at the end of surgery**