• No conflict of interest to declare
What should be the role of Mitraclip after TAVR.

- Patients with severe symptomatic aortic stenosis who also had severe mitral regurgitation (SMR) or severe tricuspid regurgitation (STR) were excluded from the major transcatheter aortic valve replacement (TAVR) trials since guidelines support correction at the time of SAVR.
Discharge Mitral Regurgitation Impacts Acute Heart Failure Readmission

Data from PARTNER I

\[ p\text{-value} < .0001 \]
Death (A) and cardiovascular death (B) at 1 year among patients with low EF and moderate/severe MR undergoing TAVR

3-fold higher mortality when MR is degenerative

Mitral Regurgitation Frequency is Higher at Baseline vs. Discharge

Data from PARTNER I

5.5% of none/mild MR pts at baseline deteriorated to moderate/severe MR at discharge

46% of moderate/severe MR pts at baseline improved at discharge to none/mild MR
MR Improvement after TAVR

More Improvement in functional MR

Kiramiyan S et al, Am J Cardiol 2016
Core Valve Expanded Use Severe MR/TR

Study Design:

• CoreValve US Expanded Use is a prospective, non-randomized, single-arm study that evaluated the safety and efficacy of self-expanding TAVR in complex subsets of patients with symptomatic severe aortic stenosis deemed at extreme risk for surgery including those with severe mitral regurgitation (SMR) or severe tricuspid regurgitation (STR) at baseline.

• Patient eligibility was reviewed by a National Screening Committee comprising cardiac surgeons and interventional cardiologists.

• Primary endpoint was all-cause mortality or major stroke at 1 year.

Reardon, Maini et al: Submitted for publication
Summary and Conclusions

At 1 year, for patients with symptomatic severe AS and SMR or STR;

• TAVR had similar survival to those without SMR or STR.
• **MR improved in 72.7% of SMR patients.**
• TR improved in 61.8% of STR patients.
• Early survival was not affected by change in regurgitation.
• Medical benefits in patients with SMR or STR were similar to extreme-risk patients.
TAVR & TMVR
CLINICAL HISTORY

• 80 years old
• 2000: CABG x 3: LIMA-LAD, RIMA-IM, RADIAL-CX/OM
• SEVERE SOB – NYHA III
ECHO

- LVH
- INFEROSEPTAL HYPOKINESIS – EF 40%
- SEVERE AS
  - PG max=73mmHg, Pg mean = 44 mmHg,
  - AVA = 0.64
- SEVERE MR type I/IIib
- SEVERE PHT (70 mmHg)
LHC

• PATENT GRAFTS
• NO SEVERE STENOSES RCA
PLAN

- EUROSCORE 35.6%
- TAVI – EVOLUT R 29mm
- ? MITRAL CLIP
SEVERE AS
LHC

- Patent LIMA
- Patent RCA
- Patent SVG Cx
SEVERE FMR
SEVERE FMR
TAVI – EVOLUT R 29mm
TAVI – EVOLUT R 29mm
TAVI – EVOLUT R 29mm
TAVI – EVOLUT R 29mm
FINAL RESULT
TAVI – EVOLUT R 29 mm
TAVI – EVOLUT R 29 mm
FMR still persisting
4 months later
FMR still persisting – NYHA II-III
4 months later
FMR still persisting – NYHA II-III

3 D TOE – incomplete leaflet aposition

TAVI very good result
RESHAPE TRIAL – MITRAL CLIP

3 D – incomplete coaptation

3 D COLOR – severe MR
RESHAPE TRIAL – MITRAL CLIP

transeptal

transeptal
RESHAPE TRIAL – MITRAL CLIP

2 D color

3 D color
RESHAPE TRIAL – MITRAL CLIP
RESHAPE TRIAL – MITRAL CLIP
RESHAPE TRIAL – MITRAL CLIP
RESHAPE TRIAL – MITRAL CLIP

2\textsuperscript{nd} clip

![Image of echocardiogram showing mitral clip placement.]

2\textsuperscript{nd} clip

![Another image of echocardiogram showing mitral clip placement.]
RESHAPE TRIAL – MITRAL CLIP
3 MONTHS LATER

patient NYHA I-II

TAVI short axis

TAVI short axis colour
3 MONTHS LATER

patient NYHA I-II

TAVI

TAVI colour
3 MONTHS LATER
patient NYHA I-II

Mitral clip 2D

Mitral clip 2D colour
Conclusion

- Combination therapies in TAVR pts with moderate/severe MR can be performed in the same session, if MR after TAVR leads to hemodynamic compromise.
- Otherwise staged procedure, in case MR is persistent at FU.
### Indications for intervention in severe primary mitral regurgitation (continued)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitral valve replacement may be considered in symptomatic patients with severe LV dysfunction (LVEF &lt;30% and/or LVESD &gt;55 mm) refractory to medical therapy when likelihood of successful repair is low and comorbidity low.</td>
<td>IIb</td>
<td>C</td>
</tr>
<tr>
<td>Percutaneous edge-to-edge procedure may be considered in patients with symptomatic severe primary mitral regurgitation who fulfil the echocardiographic criteria of eligibility and are judged inoperable or at high surgical risk by the Heart Team, avoiding futility.</td>
<td>IIb</td>
<td>C</td>
</tr>
</tbody>
</table>
Indications for mitral valve intervention in chronic secondary mitral regurgitation (continued)

<table>
<thead>
<tr>
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<th>Class</th>
<th>Level</th>
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<tbody>
<tr>
<td>When revascularization is not indicated, surgery may be considered in patients</td>
<td>IIb</td>
<td>C</td>
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<tr>
<td>with severe secondary mitral regurgitation and LVEF &gt;30%, who remain</td>
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<tr>
<td>symptomatic despite optimal medical management (including CRT if indicated)</td>
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<td>and have a low surgical risk.</td>
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<tr>
<td>In patients with severe secondary mitral regurgitation and LVEF &lt;30%</td>
<td>IIb</td>
<td>C</td>
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<tr>
<td>who remain symptomatic despite optimal medical management (including CRT if</td>
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<td>indicated) and who have no option for revascularization, the Heart Team may</td>
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<tr>
<td>consider percutaneous edge-to-edge procedure or valve surgery after careful</td>
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<td>evaluation for ventricular assist device or heart transplant according to</td>
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<td>individual patient characteristics.</td>
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### Chronic Primary Mitral Regurgitation: Intervention (cont.)

<table>
<thead>
<tr>
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<th>LOE</th>
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<td>Role of Mitraclip Therapy after TAVR</td>
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