Tricuspid Regurgitation
What are the Challenges?

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Mayo Clinic, Rochester, MN,
75 yo Woman
Low activity level
Epigastric discomfort with walking
No murmur
HF with enlarged liver, HJR and cardiomegaly
Challenge #1
TR is frequent but clinically ignored
Managing TR starts with Imaging
Tricuspid Regurgitation
Challenging Imaging

ASE GUIDELINES AND STANDARDS

Recommendations for Noninvasive Evaluation of Native Valvular Regurgitation
A Report from the American Society of Echocardiography
Developed in Collaboration with the Society for Cardiovascular Magnetic Resonance

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The need for a new tricuspid regurgitation grading scheme

Rebecca T. Hahn¹ and Jose L. Zamorano²*

Table 1 Proposed expansion of the ‘Severe’ grade

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Massive</th>
<th>Torrential</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC (biplane)</td>
<td>&lt;3 mm</td>
<td>3-6.9 mm</td>
<td>7-13 mm</td>
<td>14-20 mm</td>
<td>≥21 mm</td>
</tr>
<tr>
<td>EROA (PISA)</td>
<td>&lt;20 mm²</td>
<td>20-39 mm²</td>
<td>40-59 mm²</td>
<td>60-79 mm²</td>
<td>≥80 mm²</td>
</tr>
<tr>
<td>3D VCA or quantitative EROA³</td>
<td>75-94 mm²</td>
<td>95-114 mm²</td>
<td>≥115 mm²</td>
<td></td>
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</tr>
</tbody>
</table>

¹ Mayo Clinic

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³ 3D VCA: 3D Visual Area; EROA: Effective Regurgitant Orifice Area
TR Quantitation
Challenge #2
TR assessment is often imprecise
Quantifying TR is crucial to appropriate Imaging
TR Clinical Outcome

Jayant Nath, MD,* Elyse Foster, MD, FACC,† Paul A. Heidenreich, MD*

Palo Alto and San Francisco, California

\[ P < .0001 \]

Days

0 100 300 500 700 900 1100 1300 1500

# at Risk

4105 3158 2298 1591 1043 573 183

No TR

Mild TR

Moderate TR

Severe TR
Tricuspid Regurgitation

Severe TR does not appear in a vacuum

Is it TR or is it the clinical context?

Heterogeneity
Challenge #3: TR is extremely heterogeneous

Clinical implications of TR may be surrogates of Low EF or PHTN
Clinical Outcome of Isolated Tricuspid Regurgitation

Yan Topilsky, MD,* Vuyisile T. Nkomo, MD,† Ori Vatury, MD,‡ Hector I. Michelena, MD,† Thierry Letourneau, MD,† Rakesh M. Suri, MD, DPhil,† Sorin Pislaru, MD,† Soon Park, MD,† Douglas W. Mahoney, MSc,§ Simon Biner, MD,* Maurice Enriquez-Sarano, MD†
Idiopathic TR

Survival (%)

Years

ERO ≥0.40 cm²

ERO <0.40 cm²

87±2%

66±6%

70±6%

38±7%

P<0.001
TR associated with LV dysfunction
TR complicating isolated LVD

P<0.05

LVD with TR $\text{ERO}<0.40 \ \text{cm}^2$

LVD with TR $\text{ERO}\geq 0.40 \ \text{cm}^2$
Challenge #4
TR is associated with poor clinical outcome independently of EF or PHTN undertreatment needs to be actively addressed.
TR Challenges and Solutions

1-TR is underdetected and undertreated: major unmet need for treatment requires improved imaging

2-TR Quantitation is strongly predictive of outcome

3-Severe TR is associated with poor outcome independently of Low EF or PHTN and is a natural target of treatment

4-”Moderate” TR: who warrants treatment?
THANK YOU