

# Current Status of Mitral -TEER in Korea : AMC Experience

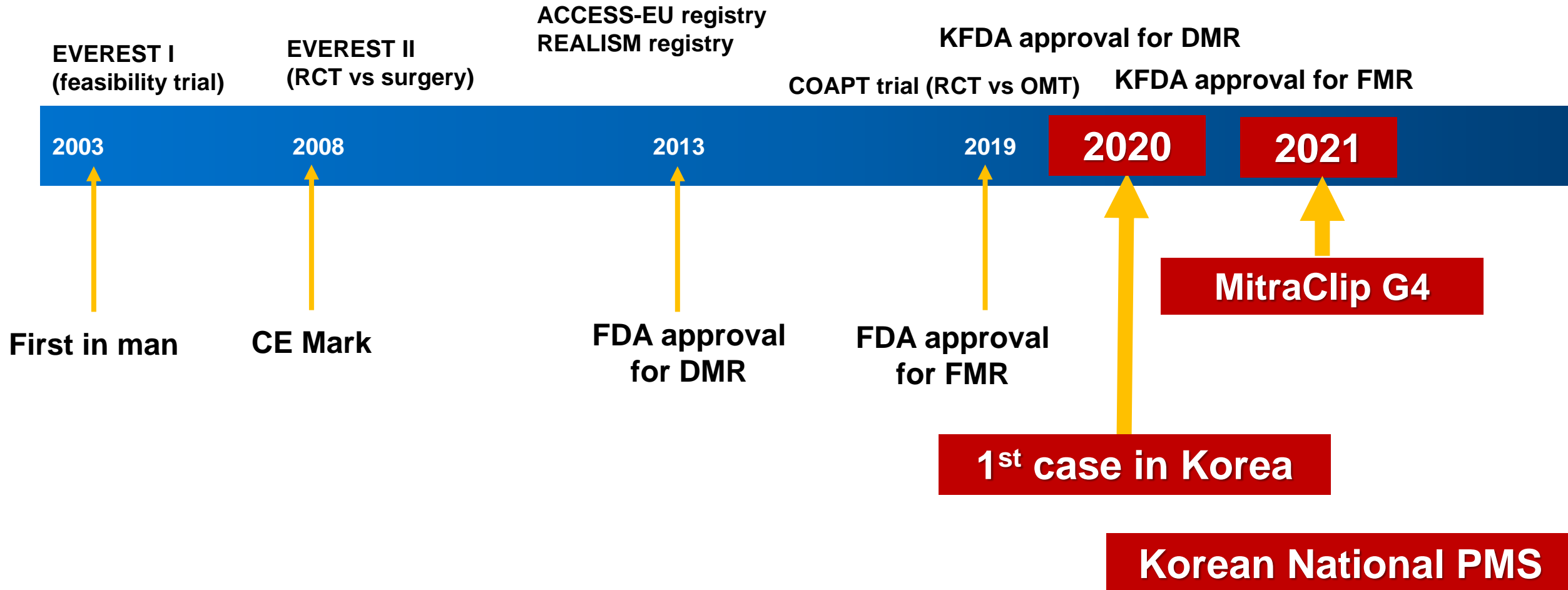
**Do-Yoon Kang, MD, PhD**

**Division of Cardiology, Asan Medical Center,  
University of Ulsan College of Medicine, Seoul, Korea**

# Disclosure

- I, Do-Yoon Kang, DO NOT have any relevant financial relationships to disclose.

# Status of Mitraclip in Korea



# Current Situation in Korea, Apr 2024

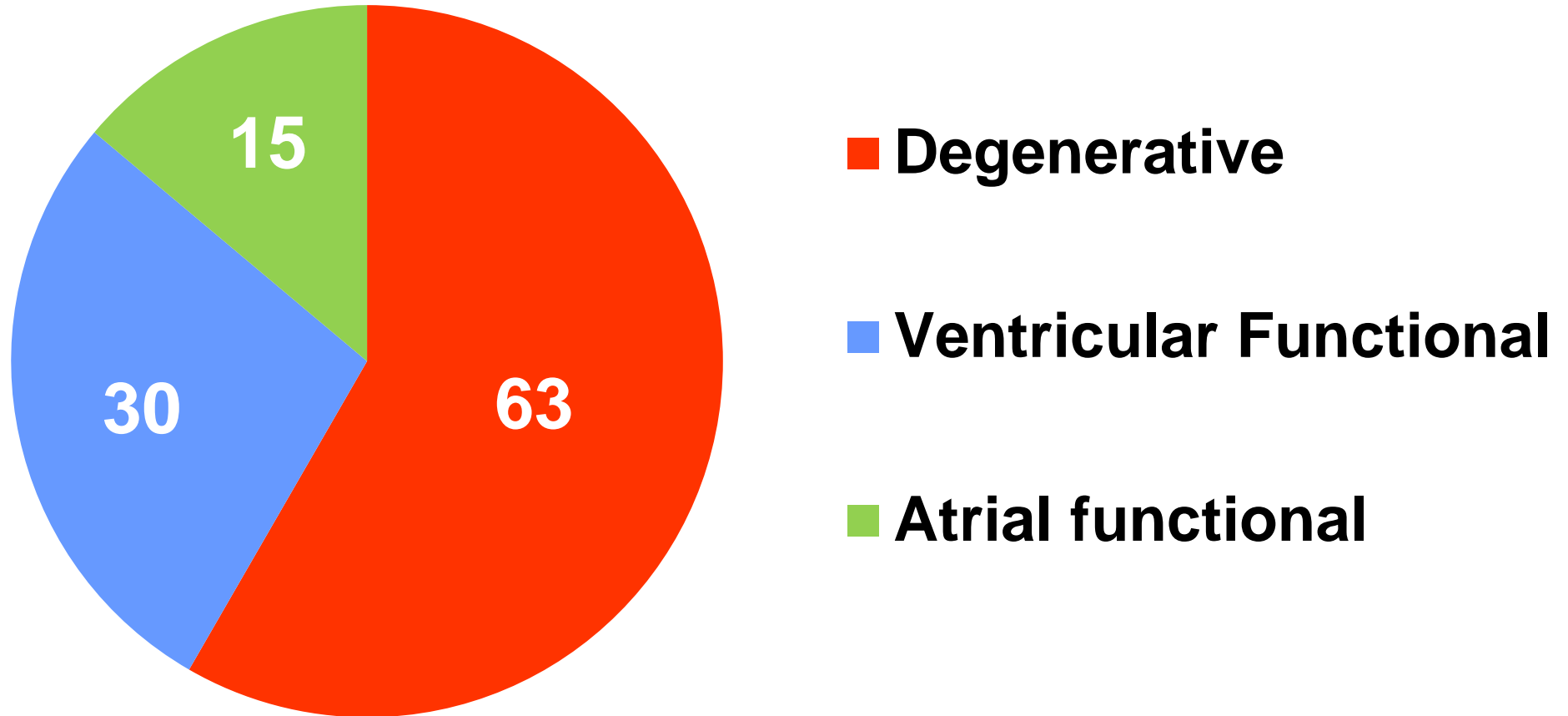


- 11 Centers perform TEER procedure
- Only Mitraclip (Abbott) is available yet.
- Still not covered by National Health Insurance (Total cost ~ 40,000 USD per patients)

# Current Situation in Korea (11 Centers)

	Case No
2020	34
2021	64
2022	91
2023	93
<b>Total</b>	<b>282</b>
DMR	51 %
FMR	49 %

# TEER indication in Asan Medical Center (n=108)



# Clinical Characteristics

	Overall (n=94)	Primary MR (n=56)	Ventricular FMR (n=25)	Atrial FMR (n=13)	P- value
Age, years	77.7±6.6	79.2±6.1	<b>74.0±7.1</b>	78.6±4.8	<b>0.004</b>
Women	56 (59.6%)	33 (58.9%)	16 (64.0%)	7 (53.8%)	0.82
BMI	23.1±3.3	23.2±3.3	22.6±3.4	23.4±2.9	0.70
NYHA III~IV	64 (68.1%)	35 (62.5%)	19 (76.0%)	10 (76.9%)	0.37
Atrial fibrillation	48 (51.1%)	22 (39.3%)	13 (52.0%)	<b>13 (100%)</b>	<b>&lt;0.001</b>
Hypertension	54 (57.4%)	36 (64.3%)	12 (48.0%)	6 (46.2%)	0.26
Diabetes mellitus	17 (18.1%)	6 (10.7%)	<b>9 (36.0%)</b>	2 (15.4%)	<b>0.02</b>
CKD	37 (39.4%)	17 (30.4%)	12 (48.0%)	8 (61.5%)	0.07
Prior Cardiac surgery	8 (8.5%)	2 (3.6%)	4 (16.0%)	2 (15.4%)	0.11
Prior MI	15 (16.0%)	0 (0%)	<b>14 (56.0%)</b>	1 (7.7%)	<b>&lt;0.001</b>
Prior PCI	19 (20.2%)	4 (7.1%)	<b>14 (56.0%)</b>	1 (7.7%)	<b>&lt;0.001</b>

# Echocardiographic Characteristics

	Overall (n=94)	Primary MR (n=56)	Ventricular FMR (n=25)	Atrial FMR (n=13)	P- value
LV EF, %	56.5±15.3	64.7±8.3	<b>37.9±12.8</b>	56.8±11.6	<b>&lt;0.001</b>
LV ESD, mm	37.7±10.4	32.4±7.3	<b>49.6±8.8</b>	37.7±4.6	<b>&lt;0.001</b>
LV EDD, mm	56.4±7.6	53.7±7.1	<b>61.6±6.9</b>	57.9±5.5	<b>&lt;0.001</b>
LVESV, mL	61.6±40.6	43.4±21.6	<b>105.5±47.6</b>	55.8±21.9	<b>&lt;0.001</b>
LVEDV, mL	132.9±47.6	119.9±42.8	<b>164.0±51.3</b>	129.5±33.0	<b>&lt;0.001</b>
LA Size, mm	52.3±10.9	49.6±8.0	51.8±5.5	<b>66.1±19.3</b>	<b>&lt;0.001</b>
MV Area, cm <sup>2</sup>	5.6±1.9	5.4±1.0	5.5±2.9	6.3±1.3	0.39
3+/4+ TR	35 (37.2%)	16 (28.6%)	8 (32.0%)	<b>11 (84.6%)</b>	<b>&lt;0.001</b>
TR Vmax, m/s	3.2±0.6	3.1±0.6	3.3±0.6	3.3±0.5	0.40



# Procedural Characteristics

	Overall (n=94)	Primary MR (n=56)	Ventricular FMR (n=25)	Atrial FMR (n=13)
Number of Clips	1.73±0.50	1.68±0.51	1.79±0.41	1.83±0.58
First Clip in G4 device				
NT	2	2	0	0
NTW	13	10	2	1
XT	12	<b>10</b>	1	1
XTW	<b>45</b>	<b>17</b>	<b>19</b>	<b>9</b>
Second Clip in G4 device				
NT	12	4	<b>7</b>	1
NTW	12	5	<b>7</b>	0
XT	9	6	2	1
XTW	<b>17</b>	<b>10</b>	1	<b>6</b>

# Procedural Outcomes

	<b>Overall (n=94)</b>	<b>Primary MR (n=56)</b>	<b>Ventricular FMR (n=25)</b>	<b>Atrial FMR (n=13)</b>
MR grade 3+/4+	12 (12.8%)	7 (12.5%)	3 (12.0%)	2 (15.4%)
Failed TEER	3 (3.2%)	1	1	1
<b>Device-related adverse events</b>				
SLDA		1		
<b>30-Day Clinical Outcomes</b>				
Death			1 (Post-MI Acute MR)	
CVA		2		

# Immediate Post-TEER Echocardiographic Results

	Overall (n=90)	Primary MR (n=55)	Ventricular FMR (n=23)	Atrial FMR (n=12)	P- value
LV EF, %	52.4±12.7	58.7±7.6	<b>37.4±11.8</b>	52.2±9.2	<b>&lt;0.001</b>
LV ESD, mm	36.0±10.3	31.2±6.6	<b>47.4±10.8</b>	36.6±4.6	<b>&lt;0.001</b>
LV EDD, mm	51.6±7.6	48.8±6.2	<b>57.9±8.3</b>	52.4±4.5	<b>&lt;0.001</b>
LVESV, mL	56.1±36.7	40.2±18.0	<b>97.1±45.0</b>	50.2±20.5	<b>&lt;0.001</b>
LVEDV, mL	110.6±43.9	96.0±31.4	<b>148.9±52.4</b>	104.3±32.5	<b>&lt;0.001</b>
LA Size, mm	48.8±9.8	46.5±8.4	48.3±4.7	<b>59.8±15.1</b>	<b>&lt;0.001</b>
MVA, cm <sup>2</sup>	2.4±0.7	2.6±0.7	<b>2.0±0.5</b>	2.5±0.8	<b>0.003</b>
Mean MPG, mmHg	4.5±2.1	4.2±1.9	5.2±2.4	4.5±1.6	0.16
TR Vmax, m/s	3.3±3.4	3.1±2.7	2.9±0.5	5.1±7.2	0.15

# Immediate Post-TEER Echocardiographic Results

	Overall (n=90)	Primary MR (n=55)	Ventricular FMR (n=23)	Atrial FMR (n=12)	P- value
$\Delta$ LV EF, %	-4.3 $\pm$ 7.9	-6.2 $\pm$ 7.1	<b>-0.2<math>\pm</math>8.5</b>	-3.5 $\pm$ 8.0	<b>0.008</b>
$\Delta$ LV ESD, mm	-1.7 $\pm$ 5.0	-1.3 $\pm$ 4.6	-2.9 $\pm$ 6.6	-1.5 $\pm$ 2.6	0.43
$\Delta$ LV EDD, mm	-4.8 $\pm$ 4.6	-4.9 $\pm$ 4.3	-4.7 $\pm$ 5.7	-4.6 $\pm$ 3.3	0.97
$\Delta$ LVESV, mL	-5.4 $\pm$ 20.4	-3.0 $\pm$ 14.8	-10.5 $\pm$ 31.5	-6.6 $\pm$ 14.7	0.33
$\Delta$ LVEDV, mL	-22.3 $\pm$ 30.5	-23.7 $\pm$ 29.8	-18.1 $\pm$ 36.8	-23.3 $\pm$ 18.3	0.76
$\Delta$ LA Size, mm	-2.9 $\pm$ 4.9	-2.9 $\pm$ 4.9	-3.7 $\pm$ 3.9	-1.8 $\pm$ 6.1	0.57
$\Delta$ TR Vmax, m/s	0.17 $\pm$ 3.4	0.01 $\pm$ 2.7	-0.4 $\pm$ 0.7	1.8 $\pm$ 7.1	0.17

# 1-Year Clinical Outcomes

	<b>Overall (n=94)</b>	<b>Primary MR (n=56)</b>	<b>Ventricular FMR (n=25)</b>	<b>Atrial FMR (n=13)</b>
All-cause death	4 (4.3%)	2 (3.6%)	2 (8.0%)	
CV Death	2 (2.1%)	1 (1.8%)	1 (4.0%)	
CVA	3 (3.2%)	2 (3.6%)		1 (9.1%)
Rehospitalization of cardiac cause	12 (12.8%)	6 (10.7%)	5 (20.0%)	
Open heart surgery	2 (2.1%)	2 SLDA at day #9 MR progression at day #140		

# Conclusion

- Patients underwent TEER had distinct clinical and echocardiographic characteristics by the etiology of MR.
- TEER showed favorable echocardiographic and clinical benefit for high-risk patients in the early experience of Asan Medical Center.
- Korean nationwide prospective registry is not recruiting the patients who underwent TEER patients.