Supplementary Material

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Cost-effectiveness of Transcatheter Edge to Edge Repair in Secondary Mitral Regurgitation: A UK NHS Perspective

Supplementary Table A: Baseline Characteristics

	TMVr N = 302	**GRMT N = 312**	**P-Value**
Age (years)*	74 [65, 80]	74 [67, 81]	0.501
Men	201 (67%)	192 (62%)	0.195
STS Risk Score (%)*	7.0 [3.8, 10.5]	7.0 [4.0, 11.1]	0.308
Hypertension	243 (81%)	251(80%)	0.996
Hyperlipidaemia	166 (55%)	163 (52%)	0.498
Diabetes Mellitus	106 (35%)	123 (39%)	0.268
Coronary Artery Disease	218 (72%)	228 (73%)	0.804
Prior Myocardial Infarction	156 (52%)	160 (51%)	0.926
Prior PCI	130 (43%)	153 (49%)	0.136
Prior CABG	121 (40%)	126 (40%)	0.935
Prior Stroke or TIA	56 (19%)	49 (16%)	0.350
Peripheral Arterial Disease	52 (17%)	57 (18%)	0.733
Atrial Fibrillation/Flutter	173 (57%)	166 (53%)	0.309
COPD	71 (24%)	72 (23%)	0.899
Type of Cardiomyopathy			0.929
Ischemic	184 (61%)	189 (61%)	
Non-Ischemic	118 (39%)	123 (39%)	
LV Ejection Fraction (%)*	31 [24, 37]	30 [24, 37]	0.759
NYHA Class III or IV	172 (57%)	201 (65%)	0.051
Prior CRT therapy	115 (38%)	109 (35%)	0.418

Abbreviations: STS – Society of Thoracic Surgery; PCI – percutaneous coronary intervention; CABG – coronary artery bypass grafting; TIA – transient ischemic attack; COPD – chronic obstructive pulmonary disease; LV – left ventricular; NYHA – New York Heart Association; CRT – cardiac resynchronization therapy

* Continuous variables are summarised as median values and interquartile ranges

Supplementary Table B: In-Trial Utilities

Time Point	TMVr	GRMT	Mean Difference (95% Confidence Interval)	P-Value
Baseline	0.632 ± 0.108	0.619 ± 0.110	0.012 (-0.005 to 0.030)	0.162
1 Month	0.690 ± 0.115	0.629 ± 0.120	0.061 (0.042 to 0.080)	< 0.001
6 Months	0.687 ± 0.108	0.632 ± 0.115	0.055 (0.036 to 0.073)	< 0.001
12 Months	0.682 ± 0.107	0.647 ± 0.123	0.035 (0.014 to 0.056)	0.001
24 Months	0.683 ± 0.120	0.640 ± 0.116	0.043 (0.019 to 0.067)	< 0.001

Supplementary Table C: Projected Lifetime Costs, Life-years, and Incremental Cost-Effectiveness Ratios under Base Case Assumptions and Sensitivity Analyses

	Lifetime Costs			Life Years			ICER (£/LY)	Probability < £20,000 per LY	Probability < £30,000 per LY
	TMVr	GRMT	Δ	TMVr	GRMT	Δ			
Base Case	£51,029	£31,902	£19,128	5.18	4.06	1.11	£17,140	76%	96%
Discount Rate									
0%	£59,970	£37,990	£21,980	6.56	4.98	1.57	£13,973	92%	99%
5%	£47,966	£29,655	£18,311	4.70	3.72	0.98	£18,685	65%	94%
MitraClip Device Cost									
£0	£35,294	£31,902	£3,393	5.18	4.06	1.12	£3,040	100%	100%
£13,200 (-20%)	£47,882	£31,902	£15,981	5.18	4.06	1.12	£14,320	92%	99%
£19,800 (+20%)	£54,176	£31,902	£22,275	5.18	4.06	1.12	£19,960	53%	92%
Index Procedure Costs*									
↓ 50%	£49,786	£31,902	£17,885	5.18	4.06	1.12	£16,026	84%	98%
↑ 50%	£52,272	£31,902	£20,371	5.18	4.06	1.12	£18,254	67%	95%
Varying Benefit of TMVr									
"Best Case" Scenario†	£49,881	£31,902	£17,979	5.96	4.06	1.90	£9,468	99%	100%
"Worst Case" Scenario‡	£51,240	£31,902	£19,338	4.99	4.06	0.93	£20,816	46%	88%
Heart Transplant/LVAD = Death	£50,389	£30,862	£19,528	5.06	3.87	1.20	16,328	83%	98%
Excluding non-HF related costs in years of life added	£44,774	£31,902	£12,873	5.18	4.06	1.11	£11,535	92%	98%

Abbreviations: TMVr – transcatheter mitral valve repair; GRMT – guideline directed medical therapy; Δ – Difference; ICER – incremental cost-effectiveness ratio; LY – life year.

* Excluding the cost of the MitraClip device

† Best Case Scenario: Survival benefit, health status benefit and cost benefit observed at 2 years remains constant throughout patient's lifetime

‡ Worst Case Scenario: No further survival benefit, health status benefit or cost benefit after 2 years (i.e., hazard ratio = 1; Δ cost = 0; Δ utilities = 0)

Supplementary Table D: Subgroup Analyses (Benefit in Life Years)

	Lifetime Costs			Life Years			ICER (£/LY)	Probability < £20,000 per LY	Probability < £30,000 per LY
	TMVr	GRMT	Δ	TMVr	GRMT	Δ			
Base Case	£51,029	£31,902	£19,128	5.18	4.06	1.11	£17,140	76%	96%
Age									
< 75 (n=323)	£66,282	£45,729	£20,553	7.33	5.62	1.71	£12,026	95%	99%
≥ 75 (n=291)	£34,804	£15,977	£18,827	2.89	2.26	0.63	£30,123	7%	49%
Sex									
Male (n=393)	£45,915	£26,980	£18,935	4.37	3.36	1.01	£18,822	58%	90%
Female (n=221)	£61,341	£39,777	£21,564	6.81	5.18	1.63	£13,213	87%	95%
STS Risk score									
< 8 (=352)	£62,115	£40,875	£21,240	6.74	5.22	1.52	£13,974	92%	98%
≥ 8 (n=262)	£35,679	£20,289	£15,390	3.01	2.56	0.45	£34,124	10%	40%
Aetiology of Cardiomyopathy									
Ischaemic (n=373)	£43,221	£26,635	£16,586	4.23	3.56	0.67	£24,792	30%	66%
Non-Ischaemic (n=241)	£63,215	£39,994	£23,221	6.65	4.82	1..83	£12,710	92%	98%
Baseline LVEF									
< 30% (n=274)	£55,549	£34,046	£21,504	5.76	3.79	1.97	£10,932	100%	100%
≥ 30% (n=301)	£47,761	£30,143	£17,618	4.82	4.28	0.54	£32,386	17%	45%
Baseline Mitral Regurgitation									
3+ (n=320)	£50,443	£32,168	£18,275	5.26	4.33	0.92	£19,800	52%	80%
4+ (n=293)	£51,651	£31,431	£20,220	5.11	3.69	1.42	£14,209	87%	96%
Baseline Tricuspid Regurgitation									
Moderate or Severe (n 98)	£48,181	£28,198	£19,982	5.14	2.71	2.43	£8,240	99%	100%
Mild or less (n=501)	£51,444	£32,436	£19,008	5.17	4.27	0.90	£21,027	44%	81%
NYHA Class									
I or II (n=240)	£55,016	£34,940	£20,076	5.59	4.46	1.13	£17,766	61%	82%
III (n=322)	£46,750	£30,301	£16,449	4.78	3.92	0.86	£19,171	53%	79%
IV (n=51)	£58,186	£29,001	£29,185	5.45	3037	2.08	£14,058	73%	83%

Abbreviations: TMVr – transcatheter mitral valve repair. GRMT – guideline directed medical therapy. Δ – Difference. NYHA - New York Heart Association. LY – life year. ICER – incremental cost effectiveness ratio. LVEF – left ventricular ejection fraction.