

**Online Supplementary Data for the following article:**

**Forward Left Ventricular Ejection Fraction: A Simple Risk Marker in Patients with Primary Mitral Regurgitation**

Marlène Dupuis; Haïfa Mahjoub, MD, PhD; Marie-Annick Clavel, DVM, PhD; Nancy Côté, PhD; Oumhani Toubal, MD; Lionel Tastet, MSc; Jean G. Dumesnil, MD; Kim O'Connor, MD; Abdellaziz Dahou, MD, MSc; Christophe Thébault, MD; Catherine Bélanger, DVM; Jonathan Beaudoin, MD; Marie Arsenault, MD; Mathieu Bernier, MD; Philippe Pibarot, DVM, PhD

**Online Table 1:** Univariable predictors of Clinical Events, Mortality, and Mortality under Conservative Management

Variable	Increment	MV surgery or mortality		All-cause mortality		All-cause mortality under medical treatment	
		HR (95% CI)	p Value	HR (95% CI)	p Value	HR (95% CI)	p Value
<b>Age</b>	1 year Increase	1.02 (1.00-1.03)	0.006	1.10 (1.07-1.13)	<0.0001	1.11 (1.07-1.15)	<0.0001
<b>Male</b>		1.62 (1.16-2.28)	0.005	1.04 (0.64-1.70)	0.89	1.11 (0.64-1.94)	0.71
<b>Hypertension</b>		1.19 (0.85-1.66)	0.31	1.74 (1.04-3.00)	0.03	1.60 (0.89-2.97)	0.12
<b>Diabetes</b>		1.33 (0.72-2.27)	0.34	2.27 (1.25-4.37)	0.04	2.26 (0.92-4.71)	0.07
<b>Dyslipidemia</b>		1.12 (0.80-1.56)	0.49	1.91 (1.16-3.16)	0.01	1.57 (0.88-2.79)	0.13
<b>History of smoking</b>		1.08 (0.75-1.54)	0.66	2.08 (1.24-3.49)	0.006	1.96 (1.08-3.55)	0.03
<b>Coronary artery disease</b>		1.71 (1.20-2.41)	0.003	3.28 (1.96-5.50)	<0.0001	3.92 (2.15-7.22)	<0.0001
<b>Atrial fibrillation</b>		1.45 (0.99-2.08)	0.06	2.44 (1.44-4.03)	0.001	2.67 (1.46-4.78)	0.002
<b>Charlson index</b>		0.51 (0.32-0.82)	0.006	0.03 (0.01-0.07)	<0.0001	0.02 (0.001-0.06)	<0.0001
<b>ACE inhibitors</b>		1.64 (1.17-2.28)	0.005	2.05 (1.24-3.38)	0.005	2.32 (1.30-4.12)	0.005
<b>ARB</b>		0.87 (0.55-1.32)	0.53	0.94 (0.46-1.73)	0.85	1.09 (0.51-2.10)	0.81
<b>β-Blockers</b>		1.26 (0.87-1.80)	0.21	2.42 (1.45-3.97)	0.0008	2.12 (1.17-3.76)	0.01
<b>Diuretics</b>		1.15 (0.81-1.63)	0.43	4.16 (2.51-7.00)	<0.0001	4.17 (2.33-7.73)	<0.0001
<b>LV end-diastolic diameter</b>	5 mm Increase	1.47 (1.27-1.71)	<0.0001	0.93 (0.76-1.14)	0.49	0.94 (0.74-1.22)	0.67

<b>Indexed LV end-diastolic diameter</b>	1mm/m <sup>2</sup> Increase	1.09 (1.04-1.13)	0.0006	1.03 (0.96-1.10)	0.36	1.08 (1.00-1.17)	0.06
<b>LV end-systolic diameter</b>	5 mm Increase	1.33 (1.14-1.55)	0.0003	1.09 (0.88-1.34)	0.43	1.11 (0.84-1.47)	0.46
<b>Indexed LV end-systolic diameter</b>	1mm/m <sup>2</sup> Increase	1.09 (1.03-1.14)	0.002	1.08 (1.01-1.15)	0.03	1.14 (1.04-1.24)	0.007
<b>LA diameter</b>	5 mm Increase	1.35 (1.23-1.48)	<0.0001	1.31 (1.16-1.48)	<0.0001	1.37 (1.17-1.59)	0.0003
<b>Indexed LA diameter</b>	1mm/m <sup>2</sup> Increase	1.09 (1.05-1.12)	<0.0001	1.12(1.07-1.17)	<0.0001	1.15 (1.09-1.20)	<0.0001
<b>Mild MR</b>		Ref		Ref		Ref	
<b>Moderate MR</b>		2.61 (1.73-4.00)	<0.0001	1.22 (0.69-2.16)	0.50	1.54 (0.79-3.53)	0.21
<b>Severe MR</b>		7.11 (4.48-11.39)	<0.0001	2.62 (1.38-4.93)	0.004	6.07 (2.88-12.75)	<0.0001
<b>LV stroke volume</b>	10 mL Decrease	1.14 (1.02-1.26)	0.02	1.32 (1.12-1.57)	0.0007	1.47 (1.22-1.78)	<0.0001
<b>Indexed LV Stroke volume</b>	5 mL/m <sup>2</sup> Decrease	1.20 (1.09-1.33)	0.0003	1.27 (1.09-1.49)	0.003	1.37 (1.15-1.63)	0.0003
<b>LV cardiac output</b>	0.2 L/min Decrease	1.81 (0.88-3.81)	0.11	5.38 (1.72-18.09)	0.004	12.35 (3.22-51.13)	0.0002
<b>Total LVEF (Simpson's method)</b>	5% Decrease	1.07 (0.89-1.28)	0.49	1.26 (0.96-1.68)	0.10	1.23 (0.91-1.72)	0.19
<b>Forward LVEF (Dumesnil method)</b>	5% Decrease	1.21 (1.14-1.29)	<0.0001	1.13(1.03-1.23)	0.008	1.19 (1.07-1.33)	0.0006
<b>Global longitudinal strain</b>	5% Increase	1.16 (0.76-1.75)	0.50	2.73 (1.39-5.34)	0.004	2.76 (1.32-5.79)	0.007
<b>Trans-tricuspid gradient</b>	5mmHg Increase	1.13 (1.05-1.22)	0.002	1.33(1.21-1.45)	<0.0001	1.31(1.17-1.45)	<0.0001

ACE= angiotensin converting enzyme inhibitors; ARB = angiotensin receptor blockers; LA= left atrial; LV = left ventricular; LVEF = left ventricular ejection fraction; MR = mitral regurgitation; MV = mitral valve

**ONLINE FIGURE LEGENDS****Online Figure 1:** Overall Survival in Patients with MR According to Baseline

Echocardiographic Parameters

*Caption:* This figure shows the overall survival curves according to various echocardiographic parameters of MR severity and LV function.

Abbreviations: LA = Left atrial; LVES = Left Ventricular End-Systolic; LVEF = Left Ventricular Ejection Fraction; LVSV= Left Ventricular Stroke Volume; MR = Mitral Regurgitation.

**Online Figure 2:** Survival Under Conservative Management in Patients with MR According to Baseline Echocardiographic Parameters

*Caption:* This figure shows the survival under conservative management curves according to various echocardiographic parameters of MR severity and LV function.

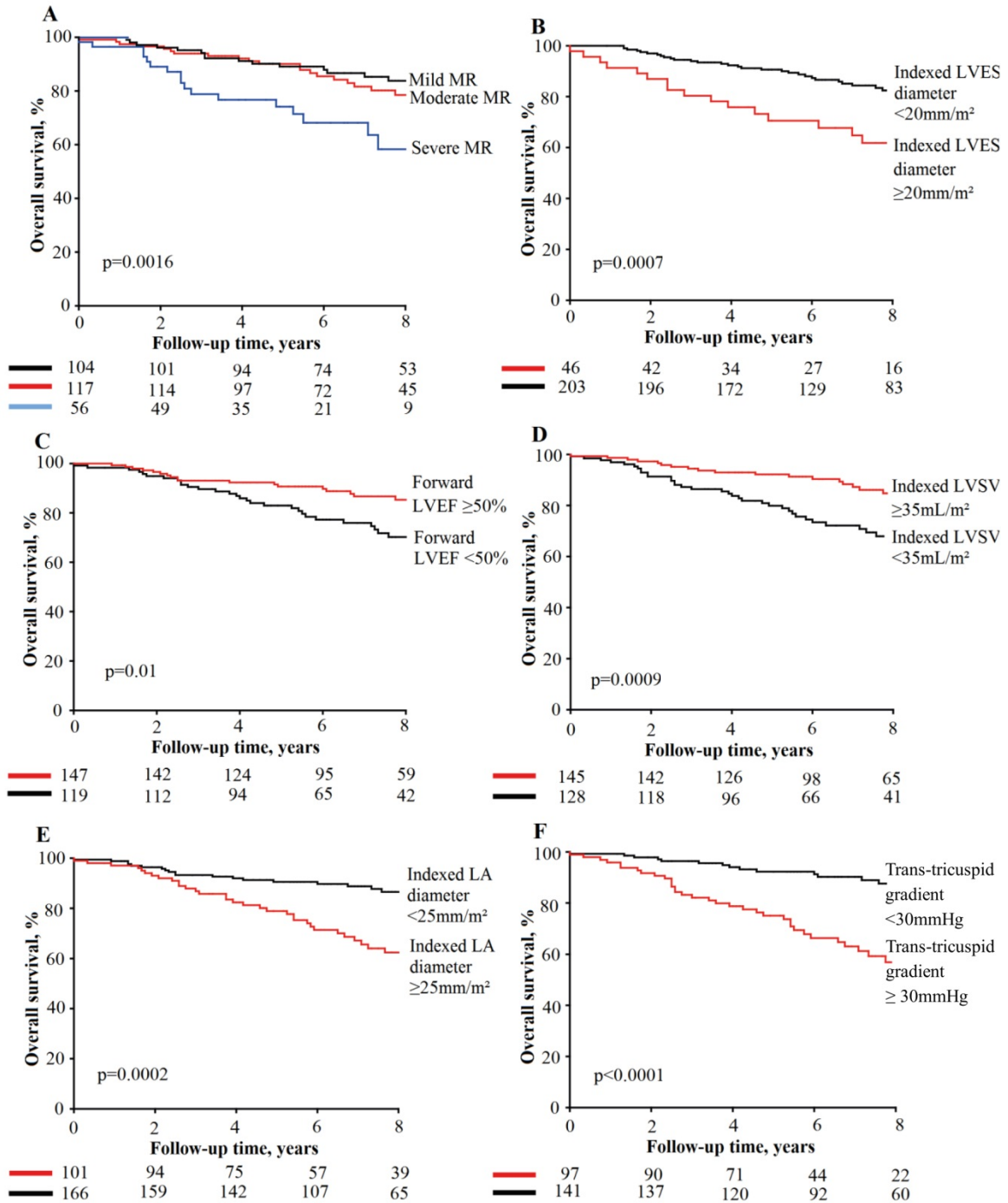
Abbreviations: LA = Left atrial; LVES = Left Ventricular End-Systolic; LVEF = Left Ventricular Ejection Fraction; LVSV= Left Ventricular Stroke Volume; MR = Mitral Regurgitation.

**Online Figure 3:** Total LVEF, Forward LVEF and GLS before and following MV surgery

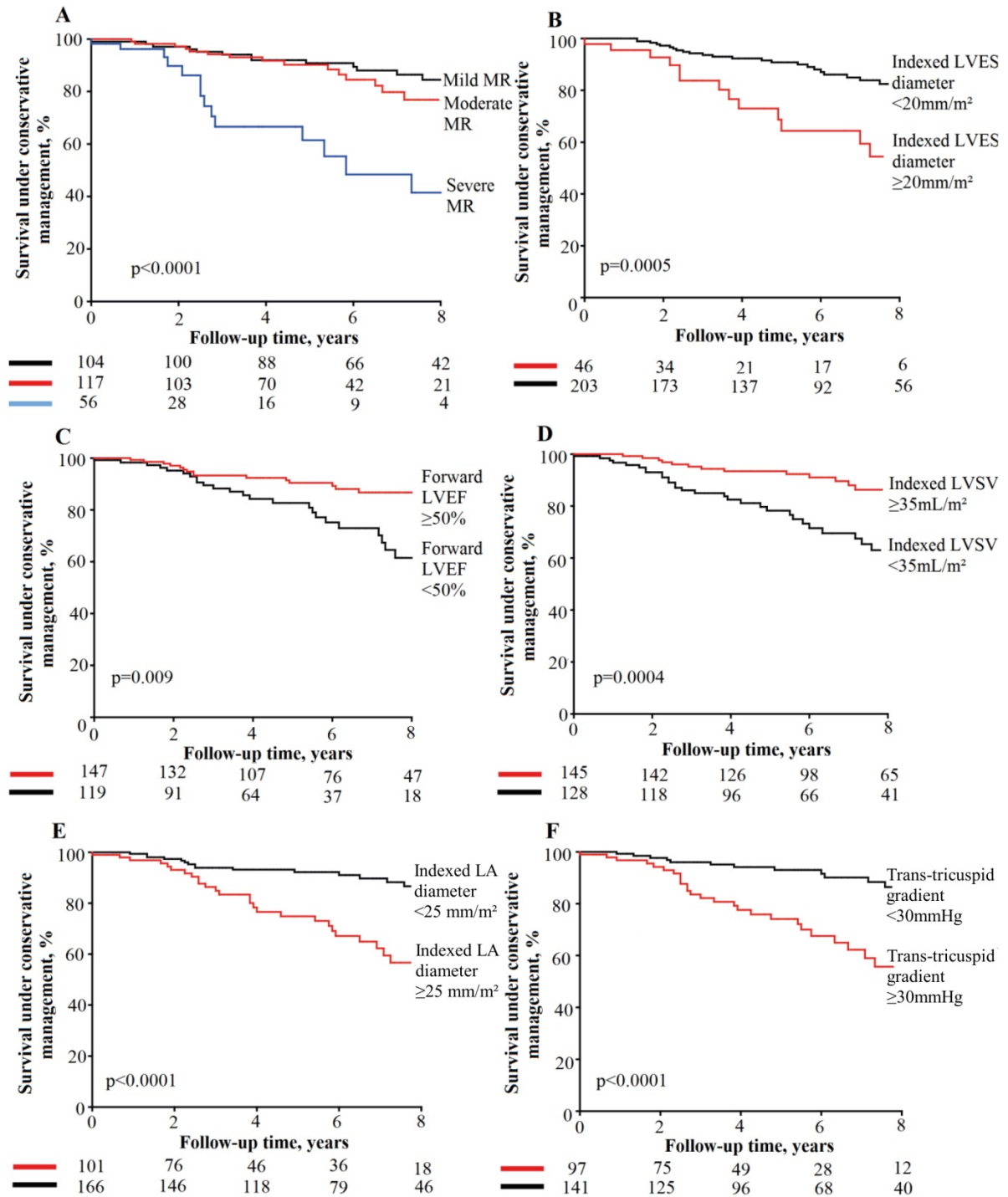
*Caption:* This figure shows the changes in total LVEF, forward LVEF and GLS between before the surgery and after the surgery.

Abbreviations: GLS = global longitudinal strain; LVEF = left ventricular ejection fraction

**Online Figure 1:**



Online Figure 2:



Online Figure 3:

