



Godino C, Munafo A, Scotti A, Estevez-Loureiro R, Hernandez AP, et al. MitraClip in secondary mitral regurgitation as a bridge to heart transplantation: 1 year outcomes from the International MitraBridge Registry. *J Heart Lung Transplant*. 2020 Dec;39(12): 1353-1362.

**Abstract:**

“BACKGROUND: Patients awaiting heart transplantation (HTx) often need bridging therapies to reduce worsening and progression of underlying disease. Limited data are available regarding the use of the MitraClip procedure in secondary mitral regurgitation for this clinical condition.

METHODS: We evaluated an international, multicenter (17 centers) registry including 119 patients (median age: 58 years) with moderate-to-severe or severe secondary mitral regurgitation and advanced heart failure (HF) (median left ventricular ejection fraction: 26%) treated with MitraClip as a bridge strategy according to 1 of the following criteria: (1) patients active on HTx list (in list group) (n = 31); (2) patients suitable for HTx but awaiting clinical decision (bridge to decision group) (n = 54); or (3) patients not yet suitable for HTx because of potentially reversible relative contraindications (bridge to candidacy group) (n = 34).

RESULTS: Procedural success was achieved in 87.5% of cases, and 30-day survival was 100%. At 1 year, Kaplan–Meier estimates of freedom from the composite primary end-point (death, urgent HTx or left ventricular assist device implantation, first rehospitalization for HF) was 64%. At the time of last available follow-up (median: 532 days), 15% of patients underwent elective transplant, 15.5% remained or could be included in the HTx waiting list, and 23.5% had no more indication to HTx because of clinical improvement.

CONCLUSIONS: MitraClip procedure as a bridge strategy to HTx in patients with advanced HF with significant mitral regurgitation was safe, and two thirds of patients remained free from adverse events at 1 year. These findings should be

considered exploratory and hypothesis-generating to guide further study for percutaneous intervention in high-risk patients with advanced HF. “

Comments by Barbara Wilkey, MD:

This is a very interesting cohort study evaluating the ability of MitraClip to improve outcomes in those with severe heart failure who are either listed for heart transplant, are in the decision phase, or who have a relative contraindication for heart transplant that may be reversible. Ejection fraction range in these 119 patients was from 20-32% with a median of 26%. Severe MR was present in 87.5% of patients and moderate to severe in 12.5%. Cardiac index ranged from 1.6-2.3 liter/min/m<sup>2</sup> with a median of 1.9. Thirty seven percent of patients were INTERMACS 3-4 and 43.5% INTERMACS 5-6. Many of these patients are a far cry from those in the Everest II trial where inclusion required an ejection fraction of 25% or greater. <sup>1</sup> How far we have come in such a short time! In this study there were zero deaths in the first 30 days, which is impressive when you think of the potential effects of sudden increase in afterload for patients with severely reduced left ventricular function. Indeed, only 21 of the 199 patients required urgent LVAD and 7 urgent heart transplant post MitraClip. Only 4.5% of these patients died within the first year after MitraClip. Of note, in 2019 the mortality on the Eurotransplant list was 13%. Though this is a small cohort study it does correlate somewhat to a finding in the COAPT trial, where it was noted that heart transplant and LVAD insertion was lower in the device group compared with the control group.<sup>2</sup> At the very least, a validation for this registry and further study of the role MitraClip in patients with severe heart failure is seen within the COAPT trial. There was no data regarding anesthetic management for these patients. When the role of MitraClip in these patients is studied further it would be prudent to see if and how anesthetic management plays a role in outcome as well.

References:

1. Feldman T, Foster E, Glower DD, Kar S, Rinaldi MJ, Fail PS, Smalling RW, Siegel R, Rose GA, Engeron E, Loghin C, Trento A, et al. for the EVEREST II Investigators. Percutaneous Repair or Surgery for Mitral Regurgitation. N Engl J Med 2011;364:1395-1406.
2. Stone GW, Lindenfeld J, Abraham WT, Kar S, Lim S, Mishell JM, Whisenant B, Grayburn PA, Rinaldi M, Kapadia SR, Rajagopal V, Sarembock IJ et al. for

the COAPT Investigators. Transcatheter Mitral-Valve Repair in Patients with Heart Failure. *N Engl J Med* 2018; 379: 2307-2318.