the MitraClip system has provided an additional armamentarium to the treatment of mitral valve disease.

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Commentary: Trends in mitral valve interventions: The good, the bad, and the ugly

Davide Pacini, MD, PhD, and
Giacomo Murana, MD, PhD

After the burden of transcatheter aortic valve implantation, mitral valve regurgitation has become the most common valve-related disease requiring surgical correction.¹ Two main innovations have dramatically changed the landscape of mitral valve intervention. The first, introduced in 1983, was the so-called French correction that represented the dawn of mitral repair. The second was the advent of the MitraClip device (Abbott Laboratories, Abbott Park, Ill) in 2013, leading to percutaneous mitral valve interventions that allow us to treat sicker patients. The evolution of this new concepts become an evident recommendation of the latest American Heart Association/American College of Cardiology guidelines² where mitral valve repair is the preferred technique when a successful and durable repair can be accomplished despite symptoms, age, or

The next frontier in mitral valve interventions: The good, the bad, and the ugly.

CENTRAL MESSAGE

Mitral valve interventions are associated with excellent surgical results making them the next frontier for percutaneous approaches.

comorbidities and a MitraClip is indicated (only in primary mitral regurgitation) in favorable anatomy when patients have prohibitive surgical risk.

Zhou and colleagues³ elucidate the trends and outcomes of 656,030 mitral valve interventions in 44 states participating in the Nationwide Inpatient Sample administrative database. They analyzed the trends in patient characteristics, focusing on comorbidities and, thus, on the preoperative risk. During the past 2 decades, the number of replacements decreased significantly by 5.6% per year, whereas repair increased by 8.4% per year and MitraClip

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procedures increased by 84.4% annually from 2013 to 2016. Despite comorbidities increased throughout the study for all groups, in-hospital mortality decreased from 8.5% to 3.7% for all interventions, with MitraClip having the most substantial decrease from 3.6% to 1.5%. The results depict how mitral valve interventions were associated with improved outcomes despite being applied to an increasingly sicker population. However, the main limitation of the current nonrandomized study was the lack of patient selection among treatments and collection of data from hospital discharge databases that are missing International Classification of Diseases diagnosis code (necessary to distinguish between primary and secondary mitral regurgitation), supply utilization (necessary to identify mini-thoracotomy or robotic surgery), and other clinical information such as regurgitation percentage and left ventricle dilation. Nevertheless, the possibility to treat patients in Heart Valve Centers of Excellence where successful outcomes are obtained across the spectrum of mitral valve pathologies with valve repair, replacement, or using catheter-based interventions mitigates these relevant drawbacks.⁴

The good news is that mitral valve interventions are effectively mostly reparative, are associated with improved outcomes despite being applied to an increasingly sicker population, and the possibility of a percutaneous intervention is a reality. The bad is that MitraClip device use is still limited on patient selection and robust midterm results are still lacking. The ugly is that MitraClip represents the only Food and Drug Administration-approved percutaneous mitral valve repair device and none of the actual devices provide the same treatment as conventional surgery.

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Commentary: What is now proved was once only imagined

Vito Domenico Bruno, MD, PhD

Mitral valve (MV) surgery has been a constantly evolving field since the beginning. From the first surgical series to these days, innovations¹⁻³ have been introduced in a continuous effort to improve the results and therefore enhance not only the life expectancy, but also the quality

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CENTRAL MESSAGE

Mitral valve surgery is a constantly evolving field and new technologies are helping us in improving outcomes.

of life of the patients. Multiple methods of treatment have been introduced over the years and different techniques and surgical approaches have been studied in numerous retrospective and prospective studies. Nowadays, we are