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Outcomes of Transcatheter Balloon Valvuloplasty for Mitral Valve

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ABSTRACT

Objective: To evaluate the effectiveness of transcatheter balloon valvuloplasty (TBV) in patients with mitral valve stenosis by assessing post-procedural expansion of the mitral valve area.

Materials and Methods: From March 2023 to March 2024, 16 patients diagnosed with mitral valve stenosis were evaluated at the International Cardiology Center. Among them, 15 patients underwent TBV. The study included patients aged 37 to 69 years with no prior history of TBV. The cohort comprised 11 females (68.75%) and 5 males (31.25%). Diabetes mellitus was present in 3 patients (18.75%).

Results: TBV was successfully performed in all 15 patients, achieving a 100% procedural success rate. The mitral valve area increased from 1.20 ± 0.4 cm^2 to 2.90 ± 0.9 cm^2 post-procedure. Sinus rhythm was restored in 6 of 7 patients undergoing cardioversion. No in-hospital mortality or major complications occurred within the 30-day follow-up period.

Conclusion: TBV is an effective minimally invasive alternative to surgical valve replacement, providing significant improvements in hemodynamic parameters and clinical outcomes.

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Introduction and Literature Review

Mitral stenosis (MS) remains a significant global health concern, primarily caused by rheumatic heart disease, especially in developing countries. Severe MS, where the mitral valve area (MVA) is reduced to ≤1.5 cm^2, necessitates intervention to prevent hemodynamic compromise and clinical deterioration.

Surgical mitral valve replacement (MVR) has long been the standard treatment for severe MS. However, since the introduction of percutaneous transluminal balloon valvuloplasty (PTBV) in the 1980s, it has emerged as a less invasive alternative with lower morbidity and faster recovery. PTBV is recommended as the first-line therapy for patients with favorable valve morphology, no significant mitral regurgitation, and absence of left atrial thrombus [1-5].

Patient Characteristics

Parameter	Value
Age (years)	37-69 (mean 53.0)
Female (%)	68.75
Male (%)	31.25
Mean Mitral Valve Area before TBV (cm^2)	1.20
Mean Mitral Valve Area after TBV (cm^2)	2.90
Atrial Fibrillation (%)	43.75
Diabetes Mellitus (%)	18.75

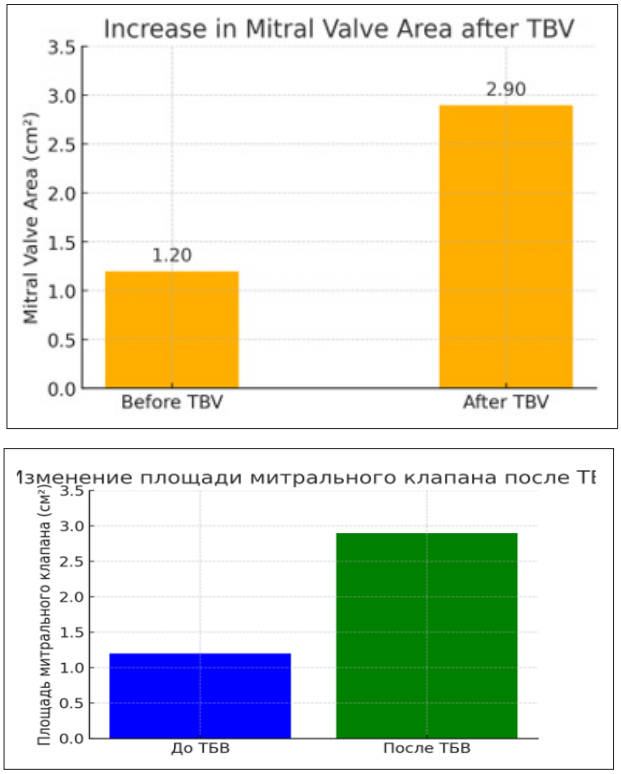

Figure 1: Increase in Mitral Valve area after TBV.

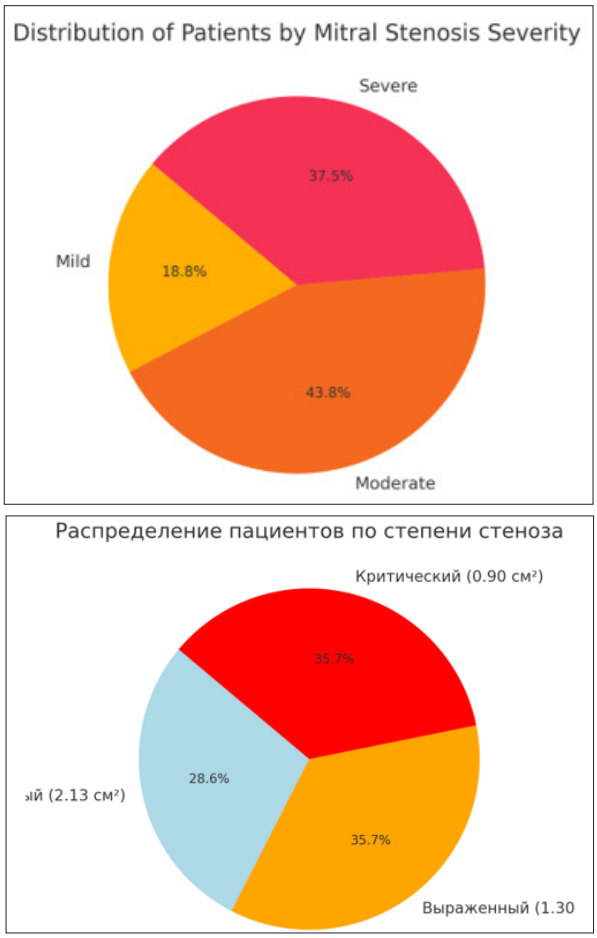

Figure 2: Distribution of patients by mitral stenosis severity.

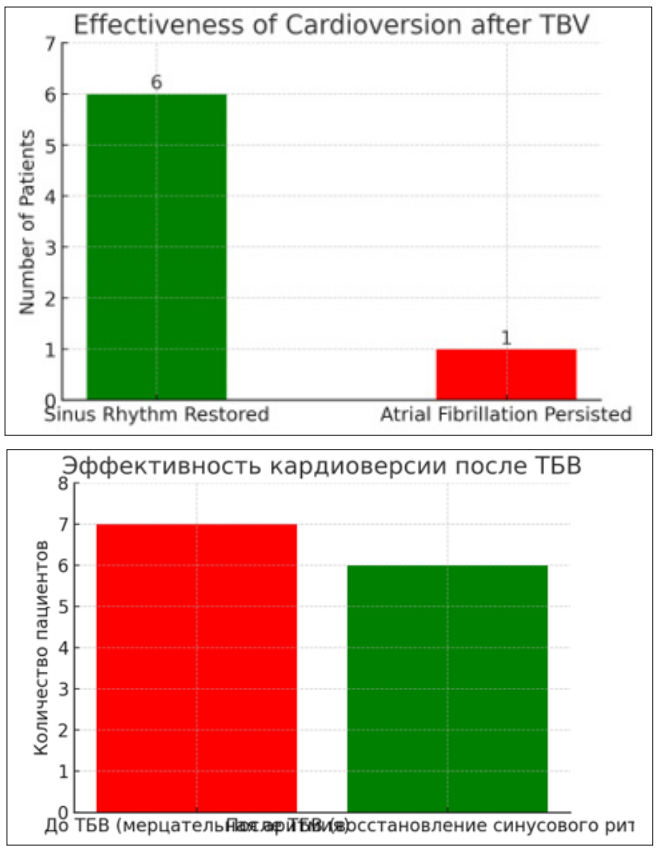

Figure 3: Effectiveness of Cardioversion after TBV.

References

1. Catherine M Otto, Rick A Nishimura, Robert O Bonow, Blase A Carabello, John P Erwin 3rd, et al. (2021) 2020 ACC/AHA Guideline for the Management of Patients With Valvular Heart Disease. Journal of the American College of Cardiology 77: e25-e197.
2. Alec Vahanian, Friedhelm Beyersdorf, Fabien Praz, Milan Milojevic, Stephan Baldus, et al. (2021) 2021 ESC/EACTS Guidelines for the Management of Valvular Heart Disease. European Heart Journal 43: 561-632.
3. Inoue K, Owaki T, Nakamura T (1987) Clinical results of catheter balloon valvuloplasty for mitral stenosis: Analysis of factors influencing outcome in 220 patients. Circulation 75: 778-785.
4. Palacios IF, Block PC, Wilkins GT, Weyman AE (1989) Follow-up of patients undergoing percutaneous mitral balloon valvotomy. Circulation 79: 573-579.
5. Wilkins GT, Weyman AE, Abascal VM, Block PC, Palacios IF (1988) Percutaneous balloon dilatation of the mitral valve: An analysis of echocardiographic variables related to outcome and the mechanism of dilatation. British Heart Journal 60: 299-308.