Prevention of Postoperative Pericarditis After Robotic Mitral Valve Surgery

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INTRODUCTION

Pericarditis is a common occurrence after cardiac surgery, with an incidence of approximately **20-30%**,[1,2] including in our cohort of patients **undergoing robotic mitral valve surgery (RMVS)**.

Management aims to **suppress inflammation and reduce the risk of recurrence** through the use of anti-inflammatory medications such as colchicine, steroids, and NSAIDs.[3]

A **strategy to routinely prevent the development of pericarditis** after cardiac surgery, however, has yet to be definitively identified.

PURPOSE

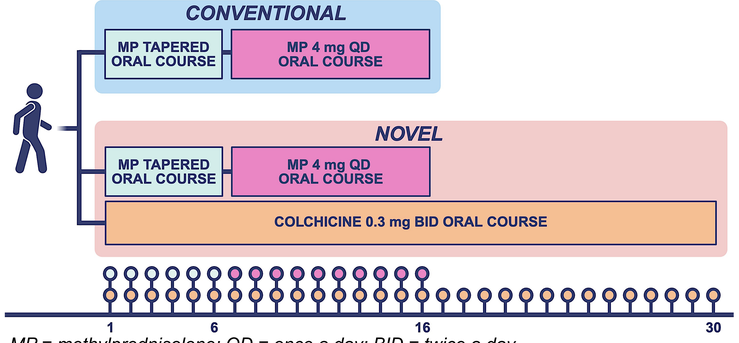
To evaluate the effectiveness of **a novel anti-inflammatory protocol** in the **prevention of postoperative pericarditis** after **robotic mitral valve surgery**.

METHODS

- The **"conventional"** protocol for postoperative pericarditis prophylaxis at our institution includes a **6-day pre-packaged, tapered oral course of methylprednisolone (MP), followed by 4 mg/day of oral MP for an additional 10 days**.
- The **"novel"** protocol includes the "conventional" protocol, with the **addition of colchicine 0.3 mg twice a day (BID) for a duration of 30 days** (**Figure 1**).

METHODS

Figure 1. Conventional and novel protocols to prevent pericarditis after RMVS.



MP = methylprednisolone; QD = once a day; BID = twice a day.

RESULTS

- 48.3% (42/87) of patients comprised the "conventional" population, and 51.7% (45/87) comprised the "novel" population.
- Both populations had similar demographics, comorbidities, and intraoperative characteristics, including concomitant procedures (**Table 1**).

Table 1. Pre- and intra-operative characteristics of conventional and novel populations.

	CONVENTIONAL (*n* = 42)	*NOVEL* (*n* = 45)	*p*-Value
Age (Years)	69 (58-74)	65 (57-72)	0.30
Male Sex	71.4% (30/42)	44.4% (20/45)	**0.01**
Aortic Occlusion Time (Mins)	157.5 (131.5-206.3)	154.0 (136.0-173.0)	0.32
Bypass Time (Mins)	222.0 (194.3-266.8)	226.0 (204.0-249.0)	0.67
Procedure(s)			
Mitral Valve Repair	100.0% (42/42)	88.9% (40/45)	0.06
Mitral Valve Replacement	0.0% (0/42)	11.1% (5/45)	0.06
LAA Closure	90.5% (38/42)	86.7% (39/45)	0.74
Cryoablation	9.5% (4/42)	8.9% (4/45)	1.00

LAA = left atrial appendage.

RESULTS

- 23.0% (20/87) of the total cohort developed pericarditis after RMVS (**Table 2**).
- **On multivariable regression analysis, the novel protocol was found to reduce the odds of pericarditis by 73%.**

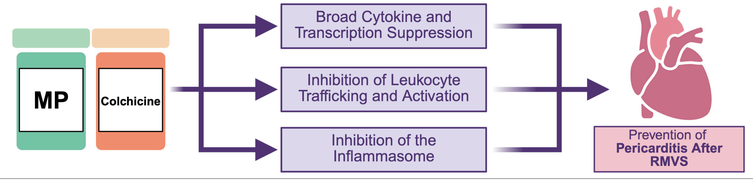
Table 2. Post-operative outcomes of conventional and novel populations.

	CONVENTIONAL (*n* = 42)	*NOVEL* (*n* = 45)	*p*-Value
Post-Op Pericarditis	31.0% (13/42)	15.6% (7/45)	0.09
	OR 0.27, 95% CI 0.10-0.88		**0.03**
Length of Stay (Days)	3.0 (3.0-5.5)	3.0 (3.0-5.0)	0.85
30-Day New-Onset AF	36.7% (11/30)	42.1% (16/38)	0.65
30-Day Mortality	2.5% (1/40)	2.2% (1/45)	1.00

OR = odds ratio; CI = confidence interval; AF = atrial fibrillation.

CONCLUSIONS

An **anti-inflammatory protocol** of oral methylprednisolone with a 30-day course of oral colchicine seems to **decrease the incidence of postoperative pericarditis after robotic mitral valve surgery.**



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