



The Anticoagulation Strategy in Minimal Invasive Mitral Valve Surgery



Ayşen Yaprak KAPKIN¹, Serkan ERTUGAY¹, Dilek ERDİNLİ¹, Tahir YAĞDI¹, Tanzer ÇALKAVUR¹, Mustafa ÖZBARAN¹

¹Ege University School of Medicine Cardiovascular Surgery Department, Izmir, TURKEY

Background

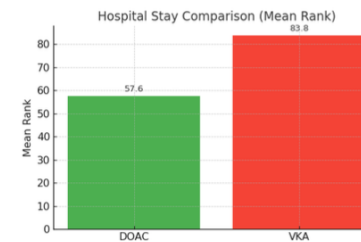
The choice of anticoagulant therapy remains a critical consideration in valve surgery due to the potential complications it may cause or prevent. Direct oral anticoagulants (DOACs) have emerged as a promising alternative to traditional agents; however, their use in patients with valvular pathology remains controversial due to limited clinical data. This study aims to compare the length of hospital stay between patients receiving DOACs and those treated with vitamin K antagonists (VKAs) following minimally invasive mitral valve surgery.

Methods

A total of 145 patients who underwent minimally invasive mitral valve surgery between 2022 and 2024 were retrospectively analyzed. Patients were categorized into two groups based on their postoperative anticoagulation therapy: DOACs or VKAs. Demographic and perioperative variables—including age, gender, LVEF, atrial fibrillation rate, CPB and cross-clamp durations, and drainage—were recorded. ICU and hospital stay were compared between groups using statistical analysis.

Results

60 patients received DOACs and 85 received warfarin. The DOAC group had a higher male ratio (63.3% vs. 32.9%) and a slightly older median age (60.5 vs. 56). ICU stay was similar ($p=0.882$), but hospital stay was significantly longer in the VKA group (mean range 83.8 vs. 57.6, $p<0.001$).



Parameter	DOAC	VKA
Median Age	60.5 (24-77)	56 (26-76)
Male (%)	63.3%	32.9%
LVEF (%)	51.6%	51.2%
Atrial Fibrillation (%)	20%	20.6%
CPB Time (min)	143.8	150.4
X-Clamp Time (min)	94.4	94.4
Drainage (mL)	285	305
ICU Stay	Similar	Similar
Hospital Stay (Mean Rank)	57.6	83.8

Discussion

Minimally invasive mitral valve surgery is associated with shorter recovery, yet VKAs may limit these benefits due to complex monitoring. DOACs, with simpler dosing and no INR need, may support earlier discharge. These findings suggest DOACs as a safe and effective alternative when no contraindications exist. The 2020 ACC/AHA guidelines suggest that DOACs are acceptable alternatives to VKAs in patients with AF and bioprosthetic valves beyond three months post-surgery, provided there are no contraindications. DOACs offer benefits such as fixed dosing, fewer dietary restrictions, and no need for routine INR monitoring, potentially facilitating earlier discharge and improved patient compliance. The observed shorter hospital stays in the DOAC group underscore the potential for DOACs to enhance postoperative recovery and resource utilization in MIMVS patients.

Conclusion

Minimally invasive mitral valve surgery offers reduced hospital stay. However, VKAs may prolong hospitalization due to their pharmacological profile. DOACs can be considered a favorable alternative in suitable patients. In patients undergoing MIMVS, DOAC therapy was associated with shorter hospital stays compared to VKA therapy, without compromising safety. DOACs may be considered a viable alternative to VKAs in appropriate patients post-MIMVS, aligning with evolving guidelines and clinical evidence.

References

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