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RECURRENT PROSTHETIC MITRAL VALVE THROMBOSIS LINKED TO CARBAMAZEPINE : A CASE OF SUCCESSFUL FIBRINOLYTIC MANAGEMENT

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Background Mechanical prosthetic mitral valve thrombosis is a rare but serious complication, often linked to subtherapeutic anticoagulation. Drug interactions—particularly with carbamazepine, a potent cytochrome P450 inducer—can reduce warfarin effectiveness and increase thrombotic risk. Although surgery has traditionally been the standard treatment, lowdose slow and ultraslow alteplase regimens have become effective alternatives for haemodynamically stable patients with high surgical risk.

Methodology A 37yearold woman with a mechanical mitral valve and concurrent carbamazepine therapy presented with acute heart failure symptoms. Echocardiography, fluoroscopy, and transoesophageal imaging confirmed obstructive prosthetic mitral valve thrombosis. Due to prohibitive surgical risk, a multidisciplinary team selected thrombolysis. Ultraslow alteplase infusions (25 mg over 25 hours) were administered in three cycles, with therapeutic unfractionated heparin maintained between treatments.

Results Initial imaging showed severe obstruction with a mean gradient of 23 mmHg and restricted leaflet motion. Heparin alone produced no improvement. Ultraslow alteplase therapy progressively reduced gradients to 12 mmHg, then 8.7 mmHg, and finally 4.7 mmHg, with complete restoration of leaflet mobility. Warfarin requirements increased from 10 mg to 14 mg daily to maintain therapeutic INR, indicating a significant carbamazepine–warfarin interaction. The patient's symptoms resolved fully, and followup imaging confirmed sustained prosthetic valve function.

Conclusion This case underscores the importance of recognising druginduced reductions in warfarin effect as a contributor to prosthetic valve thrombosis. Ultraslow, lowdose alteplase is an effective, safe alternative to surgery in stable patients with high operative risk. Careful assessment of anticoagulation adequacy and drug interactions is essential to prevent recurrence.

Keywords: Prosthetic valve thrombosis, Mechanical mitral valve, Thrombolysis, Warfarin resistance