

# O-11

## Preventing Early Bioprosthetic Valve Deterioration in Carcinoid Heart Disease: A Case Series and Perioperative Management Strategy

Leslie Ammabel Ynalvez, Konstantinos Marmagkiolis, Mehmet Cililingiroglu, Kevin Honan, Arvind Dasari, Saamir Hassan, James Yao, Cezar A. Iliescu.

MD Anderson Cancer Center.

### BACKGROUND

Carcinoid heart disease (CHD), a fibrotic deterioration of primarily right-sided heart valves due to prolonged exposure to serotonin and other vasoactive substances, is a common complication in the presence of carcinoid syndrome (CS). While valve replacement improves symptoms and survival, early bioprosthetic valve deterioration has been observed in patients with persistently elevated serotonin levels. Strategies to reduce serotonin burden may prevent postoperative early complications.

### METHODS

This case series examines all patients with CHD who underwent surgical replacement of the tricuspid and pulmonic valves, treated with somatostatin analogs (lanreotide or octreotide). After one patient has experienced rapid deterioration of a newly implanted bioprosthetic pulmonic valve within first 4 weeks postoperatively, with significant thickening of the leaflets likely due to uncontrolled serotonin levels, we have implemented a more aggressive perioperative control of serotonin in patients with suboptimal control of the carcinoid syndrome (predominantly diarrhea). These strategies included the initiation of telotristat ethyl, hepatic tumor embolization or cytoreductive surgeries prior to cardiac surgery. Biomarkers including urinary 5-hydroxyindoleacetic acid (5-HIAA) and NT-proBNP were monitored pre- and post-operatively.

### RESULTS

Of 25 patients with CHD that underwent right-sided valve replacement, 6 patients underwent a serotonin reducing strategy before the cardiac surgery. One patient underwent hepatectomy, one patient underwent hepatic tumor embolization in addition to telotristat ethyl and four received telotristat ethyl (250 mg TID). Valve function remained intact on follow-up echocardiographic studies at 3, 6, 9 and 12 months.

### CONCLUSIONS

Increased serotonin level can contribute to early bioprosthetic valve failure in patients with CHD. This case series highlights the importance of aggressive perioperative serotonin reduction in patients undergoing valve surgery. The addition personalized serotonin reduction strategies can result in stable valve function and prevent further deterioration. These findings support an individualized multidisciplinary approach to optimize surgical outcomes in CHD.

**ABSTRACT ID 33497**