What's New in MCS

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Reviews:


This article studied the association of hypoalbuminemia (<3.5 g/dl) with mortality in 272 patients undergoing left ventricular assist device implantation at a single institution. Survival after LVAD surgery was better in patients with normal albumin levels compared with those with hypoalbuminemia before surgery (3 and 12 months: 93.2% vs 82.4% and 88.4% vs 75.2%, respectively, p < 0.001). Multivariate analysis revealed that preoperative albumin was independently associated with mortality.

What is more interesting is how the authors analyzed the dynamics in postoperative albumin levels to investigate the effect of changes in albumin levels during LVAD support on post-LVAD survival. Patients with preoperative hypoalbuminemia and postoperative normalization of albumin levels (n = 81) showed improved survival compared with those who remained hypoalbuminemia (n = 44) or those who had decreasing albumin levels during LVAD support (n = 40; 3-month survival: 92.6% vs 63.6% and 65.0%; p < 0.01). In conclusion, preoperative hypoalbuminemia is associated with poor prognosis after LVAD surgery but what’s new is that postoperative normalization of albumin is associated with improved survival. Therefore albumin behaves like a biomarker and we must direct our attention to this easily determined parameter. Correcting nutrition, inflammation, and hepatic function could be an effective way to improve prognosis in patients evaluated for LVAD implantation or who are on LVAD support.


This study aimed to determine if the reduced pulse pressure that occurs in patients who receive prolonged continuous-flow ventricular support affects aortic wall morphology. Samples from the ascending aorta were obtained from 11 patients with severe heart failure at the time of LVAD implantation. Matched specimens from the distal ascending aorta, remote to the aortic anastomotic site were obtained at explantation after heart transplantation (n = 5) or autopsy(n = 6). The mean duration of support was 140 ± 136 days. The histologic evaluation and comparison of specimens obtained before and after LVAD support showed significantly increased foci of medial degeneration, smooth muscle cell depletion, elastic fiber fragmentation, medial fibrosis and atherosclerotic changes after LVAD support. Mean medial thickness was not significantly different after LVAD support.
These results give us an insight on how continuous flow LVADs can alter the aortic wall media. Given the fact that the use of LVADs as destination therapy is increasing, further studies are needed to determine the long-term functional consequences of continuous flow on the arterial wall.

**Journal of Heart and Lung Transplantation**


**Annals of Thoracic Surgery**


**Journal of Cardiac Surgery**


**American Journal of Cardiology**


Journal of the American College of Cardiology Cardiovascular Imaging


Pediatric Critical Care Medicine


European Journal of Cardiothoracic Surgery


International Journal of Artificial Organs


Artificial Organs

Annals of Cardiac Anaesthesia


ASAIO Journal

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