pro-thrombotic by inducing tissue factor, the main trigger of coagulation and hereby involvement in arterial thrombus formation.

Summary: In conclusion, dissimulated amphetamine abuse might be a rare cause of recurrent LVAD pump thrombosis especially in young men. In view of otherwise unexplainable recurrent pump thrombosis, a drug screening test should be considered in young patients at an early stage especially in high risk regions for amphetamine consumption.

A Case of Reversible Pulmonary Hypertension: Culprit in the Kidney

Introduction: Large left to right shunts are correctable causes of pulmonary arterial hypertension (PH). We present an unusual case of severe pre-capillary PH due to a giant renal arteriovenous fistula (AVF).

Case Report: A 74-year-old woman with history of atrial fibrillation, hypertension and right ureteral surgery for recurrent urinary tract infections developed progressive abdominal distention, edema, and shortness of breath leading to hospitalization. Transthoracic echocardiography (TTE) showed severe right ventricular (RV) dysfunction, tricuspid annular plane systolic excursion of 10 mm, estimated pulmonary artery systolic pressure (PASP) of 70 mmHg, severely dilated inferior vena cava (5 cm), and normal left ventricular (LV) function. Right heart catheterization revealed right atrial pressure of 23 mmHg, pulmonary artery pressure (PAP) of 80/30 mmHg, wedge pressure of 15 mmHg, cardiac index of 3.4 L/min/m², and pulmonary vascular resistance of 5.6 WU. There was no intracardiac shunt, liver disease, anemia, chronic thromboembolic disease, or parenchymal lung disease. Due to the history of ureteral surgery and finding of elevated cardiac index, a right upper quadrant ultrasound was performed, which showed a large AVF in the right kidney. Magnetic resonance angiography confirmed the finding of a 10 x 6 cm renal AVF (Figure). A 22 mm Amplatzer Vascular closure device was successfully deployed in the inflow segment of the AVF. Post-intervention, PAP decreased to 66/15 mmHg. Systemic vascular resistance (SVR) increased from 587 to 1522 dyn·s·cm⁻⁵. LVEF by TTE on the following day was 25%, presumably due to the abrupt increase in SVR. TTE performed 21 days post-intervention showed normal LV and RV size and function with PASP of 25-30 mmHg, and the patient was NYHA class I.

Summary: Extracardiac shunts leading to PH are uncommon. Endovascular occlusion of the AVF is a minimally invasive and potentially curative procedure. In the presence of PH with increased cardiac output, extracardiac shunts should be considered in the differential.

Recipient-Donor Height Ratio and Outcomes in Pediatric Heart Transplantation

Purpose: Height matching in pediatric heart transplantation has been proposed as a better method of evaluating graft size compared to weight matching; however, no studies have shown a survival advantage for height-matched recipient-donor pairs. We hypothesized that pediatric patients with dilated cardiomyopathy (DCM) fare better with an oversized donor and aimed to define the optimal height ratio in this group of patients.

Methods: All pediatric primary heart transplant (HTx) recipients with DCM between 10/89 and 09/12 were identified in the OPTN database. Subjects were stratified into five recipient:donor height and weight ratio categories for analysis. 1- and 5-year survival between groups was compared via the Kaplan-Meier method and hazard ratios were generated using the Cox proportional hazards model.

Results: 2234 children with DCM underwent HTx during the study period. 1-year survival was worse for those recipients with a height ratio greater than 1.15, compared to those with less than a 5% difference in height [unadjusted p=0.01, HR 2.0 (95%CI 1.17-3.43)] (fig 1a). This difference was not present at 5-years post-HTx (p=0.60). When stratified by weight, no survival difference was found at one or five years post-HTx (p=0.28 and 0.40, respectively) (fig 1b).

Conclusion: Pediatric HTx recipients with DCM have worse short-term survival when they are > 15% taller than their donors compared to well-matched recipients, however this difference does not persist at five years.

Comparison of Transplant Waitlist Outcomes for Pediatric Candidates Supported By Ventricular Assist Devices vs. Medical Therapy Alone

Purpose: Pediatric ventricular assist devices (VAD) have gained popularity in the management of refractory heart failure in children. It is unknown whether outcomes with VAD are superior to medical therapy. Our primary aim was to compare the composite end-point of all cause pre-transplant mortality and loss of transplant eligibility in children who were treated with a durable VAD versus a medically managed cohort selected to represent a similar risk group.

Methods: Data were obtained from the UNOS Scientific Registry of Transplant Recipients (SRTR). The at-risk population (n=1406) was <18 yrs of age entering the waitlist from 1/1/2005 to 2/28/2013, while either on a VAD (630 cases) or meeting an equivalent-severity medically treated group (776 cases). The medical group (MED) had to meet all 3 of the following criteria: listed as status 1A, hospitalized in the intensive care unit, and use of either mechanical ventilation and/or more than one type of qualifying inotrope while listed status 1A. Patients supported with ECMO were excluded. The impact of VAD was estimated via Cox proportional hazards regression, dichotomizing one-year outcomes to “poor” (22% of cases: 195 deaths and 114 too sick) versus all others (961 successful transplants, 41 too healthy, and 95 censored), while adjusting for conventional risk factors.

Results: Among infants 0-12 months of age, VAD was associated with a higher risk of poor outcomes (VAD=136, MED=503, HR 2.1; 95% CI: 1.5-2.9; p<0.001). By contrast, VAD was protective for adolescents aged 12-18 (VAD=246, MED=877, HR 0.3; 95% CI: 0.1-0.6; p=0.001). For candidates aged 1-5 years (VAD=149, MED=136) and 6-11 years (VAD=99, MED=50), VAD had little effect (HR 0.9 and 1.1, p=0.58 and 0.9 respectively). The interaction between presence of VAD and age group was strongly significant (p<0.001). In addition, poor outcomes were strongly associated with congenital heart disease (HR 2.6, p<0.001) and higher baseline creatinine levels (HR 1.5 per doubling of creatinine, p<0.001).

Conclusion: This is the only comparative study of VAD versus medical therapy in children. Waitlist outcomes for children with end-stage heart failure supported by VAD are dependent on multiple risk factors. Of these, age is a significant modulator with the impact of VAD apparently more beneficial with increasing patient age.