RISK FOR DEEP VEIN THROMBOSIS AND PULMONARY EMBOLISM AFTER HEART TRANSPLANTATION: CHARACTERIZATION OF AN OLD PROBLEM

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Background: Deep vein thrombosis following heart transplant (HTx) appears to be a common complication due to need for repeated access for heart biopsies. In addition, many of these patients require several central line placements and prolonged bed rest pre-transplant, and therefore the risk of deep vein thrombosis remains high into the post-transplant period. Deep vein thrombosis carries a risk for pulmonary embolus (PE) and increased mortality. We sought to identify the true incidence of deep vein thrombosis in our patient population.

Methods: Between January 1994 and August 2011 we evaluated 1,258 HTx patients for development of deep vein thrombosis in both upper (UE) and lower (LE) extremities. The UE deep veins included subclavian and internal jugular veins. The incidence of PE was recorded.

Results: We found 117 (9.3%) HTx patients with deep venous thrombosis, of whom 24 (1.9%) experienced PE. While the number of UE and LE deep vein thrombosis was comparable (54.7% vs 45.3%; p=NS), the incidence of PE was greater for those with LE deep vein thrombosis vs UE deep vein thrombosis (23.4% vs 7.5%; p=0.02). 7/24 (29.2%) patients with PE died of whom 4 had LE deep vein thrombosis and 3 had no deep vein thrombosis identified. 41/64 (64.1%) of patients with LE deep vein thrombosis were treated with either warfarin (64.1%) or IVC filter (20.3%). UE deep vein thrombosis was treated with warfarin in 41/53 (77.4%) patients. Of note, 10 patients with UE deep vein thrombosis were not treated with warfarin. None of these patients developed PE.

Conclusions: The risk of both UE and LE deep vein thrombosis remains high in heart transplant patients. LE deep vein thrombosis particularly poses a risk for PE and death. The absolute need for anticoagulation with UE deep vein thrombosis in HTx patients needs to be determined. Careful prophylaxis, surveillance and aggressive therapy for deep vein thrombosis (especially LE deep vein thrombosis) should be pursued in all heart transplant recipients.