

#### 4. **Long-Term Complication and Patency Rates of Vectra and IMPRA Carboflo Vascular Access Grafts with Aggressive Monitoring, Surveillance and Endovascular Management**

Dimitrios Topalidis, MD, Stavros K. Kakkos, MD, Roger Haddad, MD and Georges K. Haddad, MD

*From: Surgery, Division of Vascular Surgery, Henry Ford Hospital, Detroit, MI*

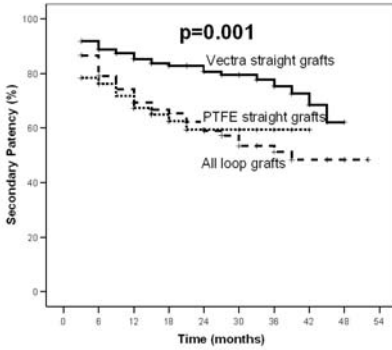
**OBJECTIVES:** To compare infection, pseudoaneurysm formation (anastomotic and at the needle stick site) and patency rates during long term follow up of polyurethane and PTFE vascular access grafts.

**METHODS:** During a 34 month period, 239 polyurethane Vectra Vascular Access Grafts (C. R. Bard, Inc., Murray Hill, NJ) and 125 PTFE carbon-impregnated IMPRA Carboflo Vascular Grafts (C. R. Bard, Inc.) were placed in 324 consecutive patients. There were 96 forearm, 261 upper arm (configuration: straight, n=244 or loop, n=17) and 7 thigh loop grafts. Aggressive graft monitoring and surveillance using clinical and hemodialysis parameters, respectively, to detect a failing/failed graft was followed by endovascular treatment (percutaneous mechanical thrombectomy and/or angioplasty ± stenting of the anastomotic, graft, or remote lesion). All grafts had a minimum follow up of 15 months.

**RESULTS:** Twenty nine grafts were either ligated/removed (for venous hypertension, steal syndrome or infection, n=10, 2.7%) or developed non-salvageable perioperative thrombosis (n=19, 5.2%) and 5 patients (1.4%) moved out of the area or died, before graft use; the remaining 330 grafts (90.7%) were released for use. Usage rate of Vectra grafts (94%) was higher than PTFE grafts (84%, p=0.002, odds ratio 3.1). During follow up, 36 patients (9.9%) developed a pseudoaneurysm (anastomotic, infected, n=4, non infected, n=2 or at the needle stick site, infected, n=4, non infected, n=26). An additional 19 patients (5.2%) required graft excision for infection. Infection and pseudoaneurysm formation rates at 3 years were not significantly different between the two study groups; however patency was significantly better for the Vectra grafts (Table). Straight upper arm Vectra grafts had the best secondary patency compared to their PTFE counterparts and loop (Vectra & PTFE) grafts (p=0.001, Figure); however loop configuration was the single predictor of worse secondary patency on multivariate analysis (p=0.009, RR 1.7).

**CONCLUSIONS:** Long term secondary patency of vascular access grafts, maintained with contemporary endovascular methods, is satisfactory. In the subgroup of grafts placed in the upper arm, Vectra grafts had better patency than PTFE grafts. Further follow up is necessary to compare late infection and pseudoaneurysm formation rates.

Secondary Patency of Vectra and PTFE grafts



Long-term device complication and patency rates of Vectra and PTFE grafts			
	Three year actuarial rates		
	Vectra graft	PTFE graft	p value
Graft infection	11%	8%	0.61
Pseudoaneurysm at needle stick site	17%	23%	0.72
Primary patency	15%	11%	0.004
Primary assisted patency	39%	27%	<0.001
Secondary patency	69%	57%	0.012
Functional secondary patency	61%	46%	0.002

**NOTES**