Title

Single or Dual Antiplatelet Therapy Improves One-Year Arteriovenous Graft Patency and Overall Survival

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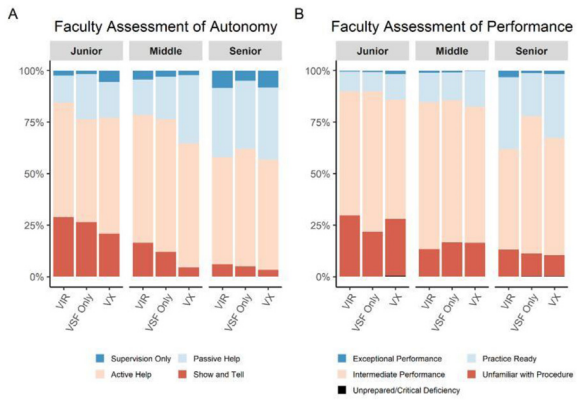
rates with VSF ($p<0.001$) (Figure 1). However, self-perception of autonomy and performance was highest among GSR at programs with VX compared to VIR and VSF ($p<0.001$).

Conclusions: The presence of VIR was associated with higher achievement of 'practice ready' competency and higher levels of operative autonomy among senior GSR performing vascular procedures. Shared learning among peers and faculty expertise in teaching resident-level trainees may contribute to this finding.

Figure 1. Faculty Assessment of Autonomy and Performance at Programs with VIR, VSF and VX for Residents at Each Training Level



Abbreviations: VIR = Vascular Integrated Residency, VSF = Vascular Surgery Fellowship, VX = No Subspecialty Vascular Training; Junior = Residents at PGY 1 and PGY 2, Middle = Residents at PGY 3, Senior = Residents at PGY 4 and PGY 5.

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ALLOGENIC VERTEBRAL BODY ADHERENT MESENCHYMAL STROMAL CELLS PROMOTE MUSCLE RECOVERY IN DIABETIC MOUSE MODEL OF LIMB ISCHEMIA

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Introduction and Objectives: Chronic limb threatening ischemia (CLTI) is a severe limitation in perfusion of the lower extremities. CLTI carries a significant risk for amputation especially in diabetic patients with poor options for revascularization. Phase I trials have demonstrated efficacy of allogeneic mesenchymal stromal cells (MSC) in treating diabetic CLTI. Vertebral body adherent mesenchymal stromal cells (vBA-MSC) are derived from vertebral bodies of deceased organ donors which offer the distinct advantage of providing a 1,000x greater yield compared to that of living donor bone aspiration. This study describes the effects of intramuscular injection of allogenic vBA-MSC in promoting limb perfusion and muscle recovery in a diabetic CLTI mouse model.

Methods: A CLTI mouse model was created through unilateral ligation of the femoral artery in male polygenic diabetic TallyHo mice. Treated mice were injected with vBA-MSC into the gracilis muscle of the ischemic limb 7 days post ligation. Gastrocnemius or tibialis muscle was assessed post-mortem for fibrosis by collagen staining, capillary density via immunohistochemistry and mRNA by quantitative real time PCR. Laser Doppler perfusion imaging and plantar flexion muscle testing were performed to quantify changes in limb perfusion and muscle function.

Results: Compared to vehicle control, treated mice demonstrated indicators of muscle recovery including decreased fibrosis, increased perfusion, muscle torque, and angiogenesis. PCR analysis of muscle obtained 7- and 30-days post vBA-MSC injection showed an upregulation in expression of MyoD1 and MyH3 mRNA representing muscle regeneration, VEGF-A signifying angiogenesis as well as IL-10, T regulatory cell marker Foxp3, and M2-biased macrophage marker Mrc1 (CD206). vBA-MSC treatment additionally decreased expression of NADPH oxidase subunit $p47^{phox}$, suggesting decreased oxidative stress.

Conclusions: These findings indicate human allogeneic vBA-MSC ameliorate ischemic muscle damage and rescues muscle function. Thus, injection of allogeneic MSC may be a viable therapy to restore muscle function in diabetic CLTI patients.

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SINGLE OR DUAL ANTIPLATELET THERAPY IMPROVES ONE-YEAR ARTERIOVENOUS GRAFT PATENCY AND OVERALL SURVIVAL

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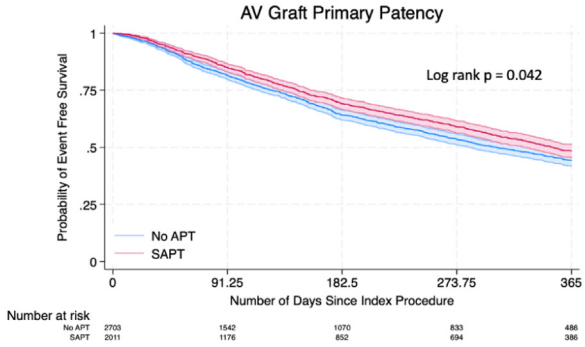
Introduction: Following new dialysis access creation there is no consensus on the optimal anti-thrombotic therapy. Recent studies have shown that single antiplatelet therapy may improve hospital mortality and patency. The aim of this study was to assess the role of different anti-thrombotic therapies on outcomes following access creation.

Methods: A retrospective study was conducted utilizing the Vascular Quality Initiative studying AV fistula (AVF) and AV graft (AVG) creation from 2011-2023. Patients who were antiplatelet and anticoagulation naive were separated into four cohorts: no antiplatelet (No APT),

single antiplatelet (SAPT), dual antiplatelet (DAPT), and aspirin with anticoagulation (ASA + AC). Univariate Kaplan-Meier (KM) and multivariable regression analyses were conducted for overall survival, primary patency, and secondary patency.

Results: 49,001 patients with AVF and 12,689 patients with AVG creation were identified. AVG patients had improved 1-year primary patency with SAPT compared to No APT (KM 48% vs 44%, p = 0.04). No difference on KM was observed for AVF. Regression analysis showed decreased risk of loss of primary patency for AVF (HR 0.90, CI 0.825-0.972, p = 0.009). AVG with SAPT showed decreased risk of mortality (HR 0.80, CI 0.646 - 1.00, p = 0.05) and risk of loss of primary patency (HR 0.79, CI 0.663-0.944, p = 0.009). DAPT also showed decreased risk of loss of primary patency for AVG (HR 0.65, CI 0.436-0.953, p = 0.028). Survival was worse for AVF and AVG with ASA + AC.

Conclusions: Single antiplatelet therapy improves primary patency and survival following creation of AVFs and AVGs. DAPT may further improve primary patency in those with AVGs. The use of anticoagulation shows no benefit, however likely reflects higher risk patients.



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SOCIOECONOMIC STATUS BASED ON AREA DEPRIVATION INDEX DOES NOT AFFECT POSTOPERATIVE OUTCOMES IN PATIENTS UNDERGOING ENDOVASCULAR AORTIC ANEURYSM REPAIR IN THE VA HEALTHCARE SYSTEM

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Introduction and Objectives: Research has validated the Area Deprivation Index (ADI) as a measure of socioeconomic disadvantage with a higher score associated with lower socioeconomic status. ADI has been scaled relative to geographic region: local ADI (L-ADI; score 1 to 10) and national ADI (N-ADI; score 1 to 100). We set forth to identify possible associations ADI score and post-operative outcomes after endovascular aneurysm repair (EVAR) in a VHA hospital.

	1st Quintile n=7	2nd Quintile n=33	3rd Quintile n=63	4th Quintile n=70	5th Quintile n=68	p
Local Area Deprivation Index (L-ADI)						
Length of stay	2.7 +/- 1.1	2.6 +/- 2.8	3.2 +/- 3.9	2.5 +/- 2.0	2.8 +/- 2.9	0.87**
Readmission	1 (14.3%)	6 (18.2%)	6 (9.5%)	7 (10%)	4(5.9%)	0.49*
Wound infection	1 (14.3%)	8 (24.24%)	6 (9.5%)	9 (12.9%)	9 (13.2%)	0.39*
Return to OR	0	2 (6.0%)	4 (6.3%)	2 (2.9%)	5 (7.4%)	0.75*
Re-Intervention (Open +/- Endo)	0	8 (25%)	9 (17.3%)	10 (16.7%)	18 (26.5%)	0.16*
1-year Mortality	0	0	3 (4.8%)	6 (8.6%)	5 (7.4%)	0.43*
Lost to Follow Up	2 (28.6%)	1 (3%)	8 (12.7%)	8 (11.4%)	9 (13.2%)	0.33*
	1st Quintile n=13	2nd Quintile n= 47	3rd Quintile n= 67	4th Quintile n= 67	5th Quintile n= 47	p
National Area Deprivation Index (N-ADI)						
Length of stay	2.4 +/- 1.1	3.6 +/- 4.4	2.5 +/- 2.0	2.8 +/- 3.0	2.45 +/- 2.3	0.90**
Readmission	3 (23.1%)	9 (19.2%)	5 (7.5%)	4 (6.0%)	3 (6.4%)	0.06*
Wound infection	4(30.8%)	5 (10.6%)	7 (10.4%)	9 (13.4%)	8 (17.0%)	0.33*
Return to OR	0	5 (10.6%)	2 (3%)	4 (6.0%)	2 (4.3%)	0.38*
Re-Intervention (Open +/- Endo)	0	12 (25.5%)	12 (17.9%)	10 (14.9%)	11 (23.4%)	0.19*
1-year Mortality	0	2 (4.2%)	5(7.5%)	4 (6.0%)	3 (6.4%)	0.85*
Loss to Follow Up	3 (23.1%)	4 (8.5%)	5(7.5%)	7 (10.4%)	9 (19.2%)	0.21*

Table 1: Comparison of postoperative outcomes utilizing local (L-ADI) and national (N-ADI) area deprivation index scores as well as quintile groupings for the 241 patients undergoing EVAR. Fisher's Exact* and ANOVA** were utilized to statistically examine the groups.

Methods: Retrospectively analysis of EVAR patients from January 2010 to 2022. L-ADI and N-ADI were calculated with further stratification into quintile groupings. Patients clinical course was confirmed to account for percentage of loss to follow-up, 30-day and 1-year mortality.

Results: 242 patients underwent EVAR over this period. 57.3% (n=138) and 47.3% (n= 114) of patients were in 4th of 5th L-ADI and N-ADI quintiles respectively. National ADI percentiles placed 47.3% (n= 114) in quintiles 4 and 5. Patient demographics, post operative complications, readmission rates and 1-year mortality did not statistically differ between local and national ADI scores nor among quintile groupings (Table 1). 30-day mortality was statistically higher within the highest quintile L-ADI group (p=0.03**) but not for the same quintile N-ADI group (p=0.31**). Binary Logistic Regression showed no difference between the groups (Table 2).

	1st Quintile n=7	2nd Quintile n=33	3rd Quintile n=63	4th Quintile n=70	5th Quintile n=68
Local Area Deprivation Index (L-ADI)					
		OR (95TH CI)	OR (95TH CI)	OR (95TH CI)	OR (95TH CI)
Readmission	Control	1.33 (0.13-13.23)	0.63 (0.07-6.62)	0.67 (0.007-6.37)	0.38 (0.04-3.92)
Any Complication	Control	5.65 (0.61-52.22)	2.22 (0.25-19.79)	2.4 (0.27-21.22)	2.5 (0.28-22.12)
	1st Quintile n=13	2nd Quintile n= 47	3rd Quintile n= 67	4th Quintile n= 67	5th Quintile n= 47
National Area Deprivation Index (N-ADI)					
		OR (95TH CI)	OR (95TH CI)	OR (95TH CI)	OR (95TH CI)
Readmission	Control	0.79 (0.28-3.47)	0.27 (0.05-1.30)	0.21 (0.41-1.90)	0.23 (0.40-1.29)
Any Complication	Control	1.28 (0.34-4.77)	0.83 (0.23-3.02)	0.96 (0.26-3.47)	1.06 (0.28-3.98)

Table 2: Binary Logistic Regression of hospital readmissions and the overall rate of postoperative complications across local (L-ADI) and national (N-ADI) area deprivation index quintile groupings for the 241 patients when compared to L-ADI and N-ADI first quintile as control.