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Introduction

- Lower extremity bypass utilized for chronic limb threatening ischemia (CLTI)
- Cryopreserved vein grafts are an alternative when autogenous vein is inadequate for an infrainguinal bypass
- Cryopreserved vein has decreased primary patency
- Anticoagulation has been advocated to improve outcomes, but data is unclear

Objective

- Our goal was to assess the association of anticoagulation on outcomes after infrainguinal bypass for CLTI with cryopreserved vein.

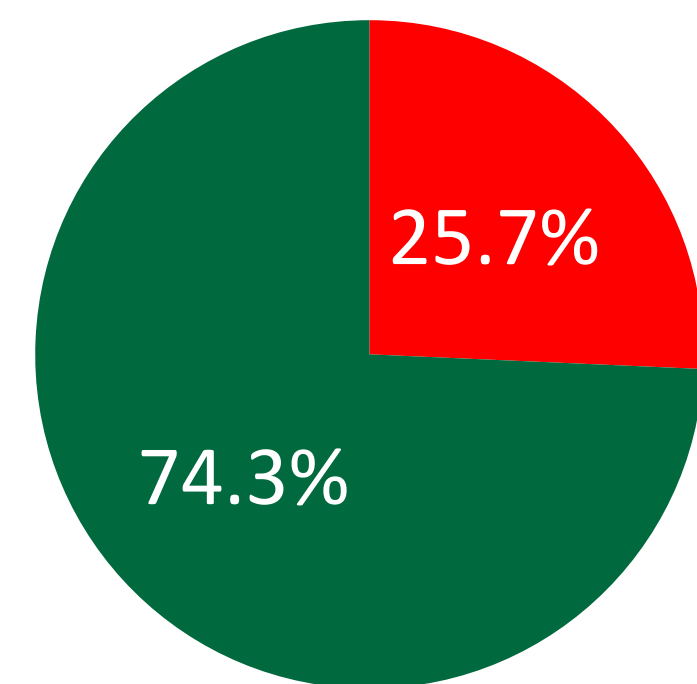
Methods

- Vascular Quality Initiative
- 2003-2022
- Infrainguinal bypass with cryopreserved vein graft for CLTI
- Included rest pain or tissue loss
- Excluded acute limb ischemia, aneurysm, and concomitant suprainguinal bypass
- Compared those discharged with or without anticoagulation
- Primary outcomes at 1 year:
 - Loss of primary patency/death
 - Major amputation/death
 - Reintervention/major amputation/death (MALE)
 - Death

Results

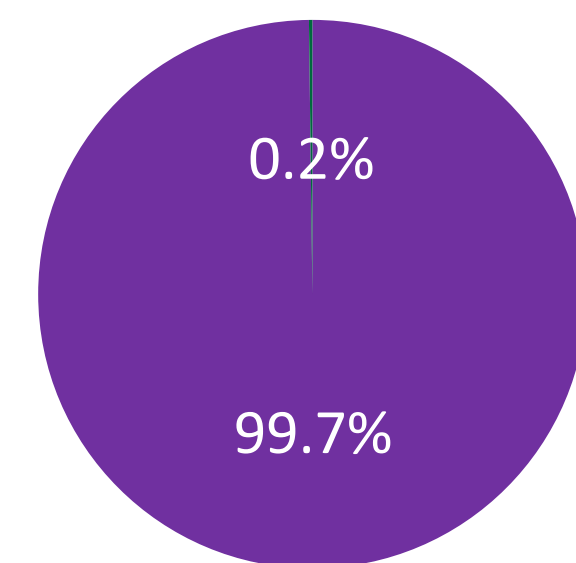
- 2336 infrainguinal bypasses with cryopreserved vein
- 1104 (47.2%) with postoperative anticoagulation
- Mean age 70.6 years
- 63.5% male
- 29.9% current smokers
- 25.7% obese

Indication



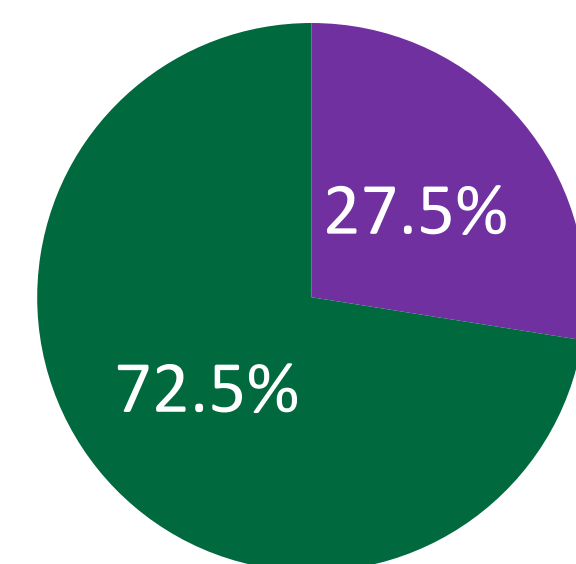
■ Rest pain ■ Tissue loss

Bypass Origin



■ Femoral/popliteal ■ Tibial

Bypass Target



■ Femoral/popliteal ■ Tibial

Procedure Details

Characteristics	Anticoagulation (N = 1104)	No Anticoagulation (N = 1232)	P-value
Tissue loss	794 (71.9%)	942 (76.5%)	.01
Femoral/popliteal bypass origin	1100 (99.7%)	1230 (99.8%)	.57
Tibial bypass target	865 (78.4%)	827 (67.2%)	<.001
Concomitant bypass	21 (1.9%)	30 (2.5%)	.37
Concomitant PVI	95 (8.6%)	101 (8.2%)	.73
Concomitant endarterectomy	307 (27.8%)	421 (34.2%)	.001
Estimated blood loss (mean ± SD)	290 ± 367.4	273.6 ± 315.3	.25
Procedure time (mean ± SD, mins)	235.1 ± 108.4	219.9 ± 99.1	<.001

Abbreviations: PVI – percutaneous vascular intervention, SD – standard deviation

Discharge Medications

Medication	Anticoagulation (N = 1104)	No Anticoagulation (N = 1232)	P-value
Aspirin	809 (73.3%)	1061 (86.1%)	<.001
P2Y12 inhibitor	329 (29.9%)	736 (59.7%)	<.001
Statin	922 (84%)	1006 (82%)	.21

Perioperative Outcomes

Outcome	Anticoagulation (N = 1104)	No Anticoagulation (N = 1232)	P-value
30-day death	6 (.5%)	45 (3.7%)	<.001
Return to OR	191 (17.3%)	209 (17%)	.81
Return to OR for bleeding	18 (1.6%)	17 (1.4%)	.62
Return to OR for thrombosis	48 (4.4%)	32 (2.6%)	.02
Cardiac complication	88 (8.0%)	125 (10.2%)	.07
Stroke	3 (.3%)	6 (.5%)	.4
Pulmonary complication	25 (2.3%)	43 (3.5%)	.08
Renal insufficiency	52 (4.7%)	71 (5.8%)	.25
Wound complication	30 (2.7%)	43 (3.5%)	.29

Abbreviations: OR – operating room

Results

Anticoagulation versus No anticoagulation

1 year	HR	95% CI	P-value
Loss of primary patency/death	.95	.83 – 1.09	.48
Major amputation/death	.88	.74 – 1.05	.15
MALE	.93	.79 – 1.08	.33
Death	.59	.46 – .74	<.001

Postoperative Aspirin Use

1 year	HR	95% CI	P-value
Loss of primary patency/death	.95	.83 – 1.09	.48
Major amputation/death	.88	.74 – 1.05	.15
MALE	.93	.79 – 1.08	.33
Death	.59	.46 – .74	<.001

Postoperative P2Y12 Use

1 year	HR	95% CI	P-value
Loss of primary patency/death	.78	.68 – .9	.001
Major amputation/death	.75	.63 – .9	.002
MALE	.78	.67 – .91	.001
Death	.61	.48 – .77	<.001

Kaplan Meier Analysis at 1 year

Anticoagulation versus No anticoagulation

- Freedom from loss of primary patency/death: 28.9% vs. 34.3% (P=.13)
- Freedom from major amputation/death: 62.3% vs. 63.8% (P=.68)
- Freedom from reintervention/major amputation/death: 50.6% vs 53.8% (P=.28)
- Survival: 85.1% vs 81.7% (P=.031)

Conclusion

- Overall patency and limb salvage rates at 1 year were poor
- Anticoagulation was not associated with patency or limb salvage
- Antiplatelet agents were associated with improved outcomes
- Alternative revascularization options should be considered