

Outcomes Following Unilateral Axillofemoral versus Crossover Femoro-femoral Bypass in Chronic Limb-Threatening Ischemia (CLTI)

Introduction

- Extraanatomical bypasses: alternative in the management of aorto-iliac occlusive disease leading to chronic limb-threatening ischemia (CLTI)
 - in patients who cannot tolerate aortic cross clamping necessary for anatomical reconstruction
 - in patients with a hostile abdomen
- Due to infrequent use, direct comparisons between unilateral axillofemoral bypass (AxFB) versus crossover femoro-femoral bypass (FFB) for CLTI remain scarce

Methods

Study Design

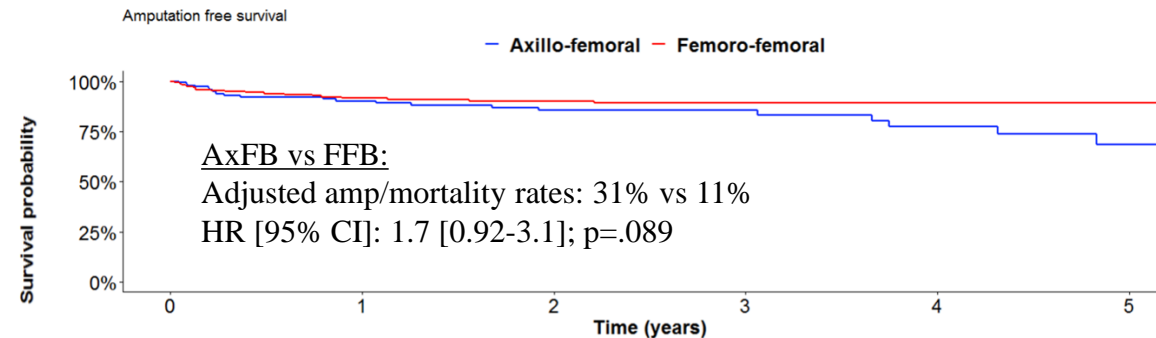
- We identified patients undergoing elective/semi-urgent unilateral AxFB and FFB in the VQI linked to Medicare claims between 2014-2019
- Excluded procedures with other concomitant bypasses/interventions
- We performed 1:2 (AxFB:FFB) propensity matching based on demographics, comorbidities, urgency, ipsilateral and contralateral presentation (rest pain vs ulcer/gangrene), and prior interventions/bypass procedures

Outcomes and Analysis

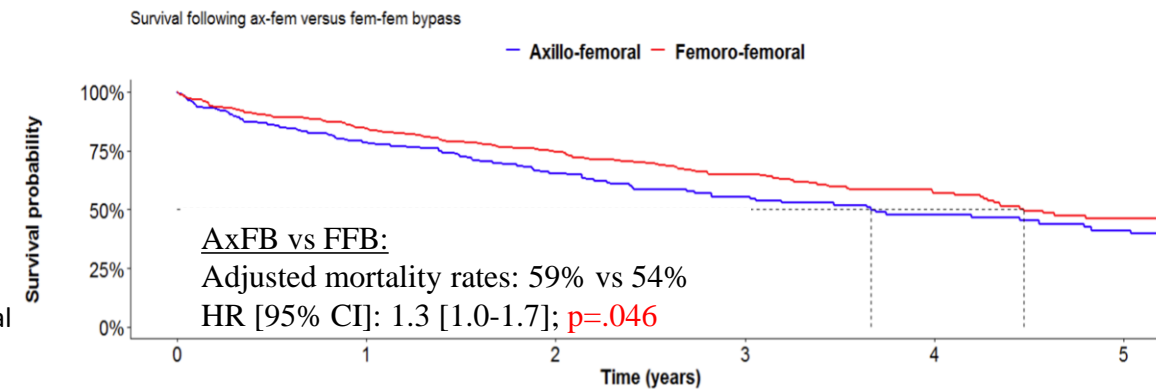
- Primary outcomes: 5-year amputation free survival, 5-year overall survival, 5-year reintervention free survival → Multivariable Cox-regression analysis
- Secondary outcomes: Perioperative mortality and postoperative complications → Chi-square test

Results

Figure: Kaplan Meier Curves showing amputation free survival and overall survival following axillo-femoral versus femoro-femoral bypass for CLTI in 1:2 matched cohorts*



	0	1	2	3	4	5
Axillo-femoral	154	88	59	40	23	13
Femoro-femoral	229	148	98	60	34	14



	0	1	2	3	4	5
Axillo-femoral	224	149	102	65	41	29
Femoro-femoral	374	275	202	131	77	32

*Matched for age, gender, race, comorbidities (hypertension, diabetes, prior MI, prior CHF, smoking, COPD, renal dysfunction, anemia, obesity), medication use (aspirin, statins, anticoagulants, betablockers, other antiplatelet agents, ACEi/ARBs), symptom status, prior revascularization or amputation, urgency (elective/semi-elective)

	Axillo-femoral	Femoro-femoral	Hazard Ratio (CI)	P-value
5-yr Reintervention/mortality	49%	45%	0.86 [0.59-1.2]	.40

Results

1,185 patients (320, 27% AxFB) → 224 AxFBs and 374 FFBs

	AxFB (N=224)	FFB (N=374)	P-value
Perioperative mortality	15%	10%	.12
Any complication	30%	15%	<.001
Amputation ipsilateral			.049
Below knee	1.8%	0.5%	
Above knee	5.4%	2.4%	
Graft infection	0.9%	0.8%	1
Wound complications	5.8%	1.6%	.012
Limb ischemia	3.6%	1.3%	.084
Reintervention	13%	7.2%	.040
Postop vasopressors	14%	5.9%	.002
ICU LOS	1.6 ± 3.2	1.0 ± 2.8	<.001
Postop LOS	6.9 ± 5.3	6.2 ± 20	<.001
Patency at discharge			.10
Primary	95%	97%	
Prim-Assisted	0.9%	1.6%	
Secondary	0.4%	0%	
Occluded	1.8%	0.3%	
Non-home discharge	43%	32%	.066

Conclusions

- Unilateral AxFB for CLTI was associated with higher postoperative complications when compared with FFB
- AxFB was also associated with lower amputation free survival and overall survival at 5-years
- Our findings suggest that unilateral AxFB maybe reserved for patients with aorto-iliac occlusive disease causing CLTI who are not candidates for FFB
- However, despite matching, residual selection bias was present due to variable that were unavailable in the database