Comparative Outcomes of Open Mesenteric Bypass after Prior Failed Endovascular or Open Mesenteric Revascularization for Acute and Chronic Mesenteric Ischemia

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DIVISION OF VASCULAR SURGERY AND ENDOVASCULAR THERAPY

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Disclosures

- None

Introduction

- Open mesenteric bypass (OMB) for acute or chronic mesenteric ischemia (AMI/CMI) can be technically demanding and is associated with significant morbidity and mortality.

- Increasingly, patients present after failed endovascular intervention or prior OMB with recurrent symptoms; however, little is known about outcomes with repeat OMB after prior mesenteric revascularization.

Objective

- *Purpose:*
  - Analyze outcomes of OMB after prior failed endovascular or open mesenteric artery revascularization.

Study Design

- Single-center, retrospective study
  - Prospectively collected institutional database
  - All AMI/CMI patients undergoing OMB
- Patients with prior mesenteric revascularization (both open and endovascular) undergoing open "redo" bypass vs. primary mesenteric bypass
  - N = 185 total procedures
- Study period: 2002-2018

Study End-points

- Primary End-point:
  - In-hospital mortality

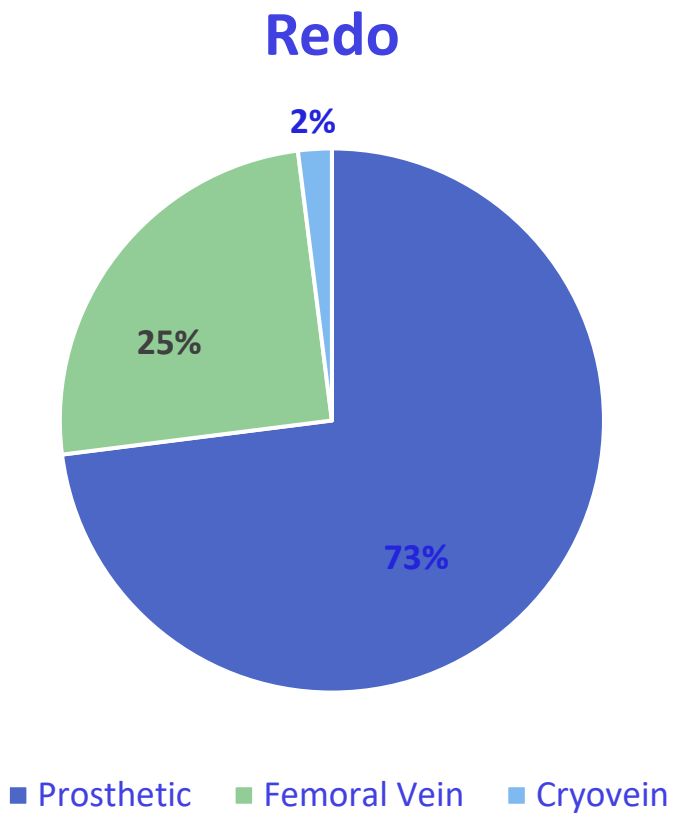
- Secondary End-points:
  - In-hospital complications, patency, and survival

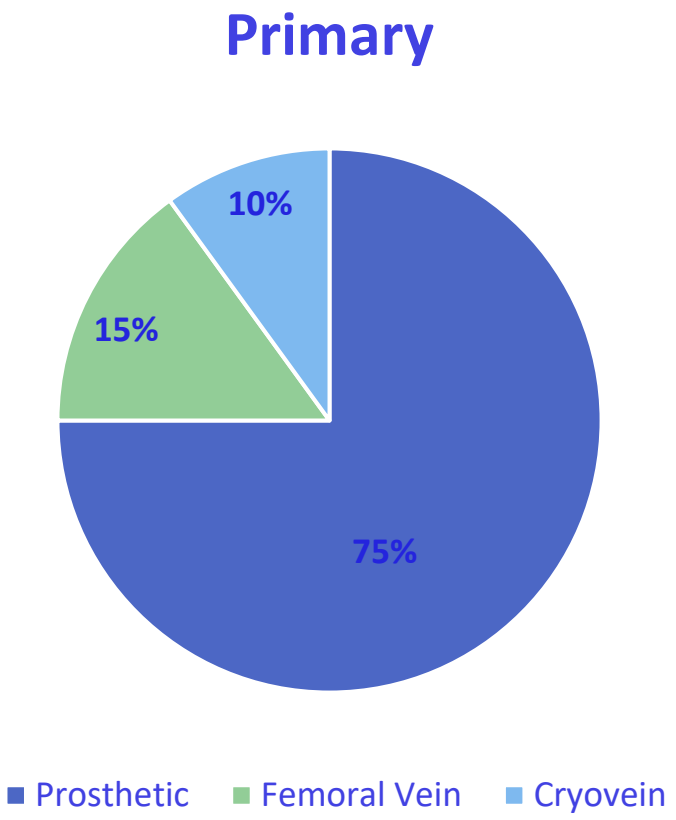
Demographics and Comorbidities

Feature, % (No.)	Redo N = 64	Primary N = 121	P-value
Age	64 ± 12	66 ± 10	**.03**
Female sex	69% (44)	55% (66)	.06
Preop BMI	24±5	23±5	.3
Smoking (current/former)	38% (24)	64% (77)	<.01
Dyslipidemia	50% (32)	49% (59)	.87
Preoperative Statin	45% (29)	38% (46)	.34
Preoperative Clopidogrel	28% (18)	21% (25)	.25

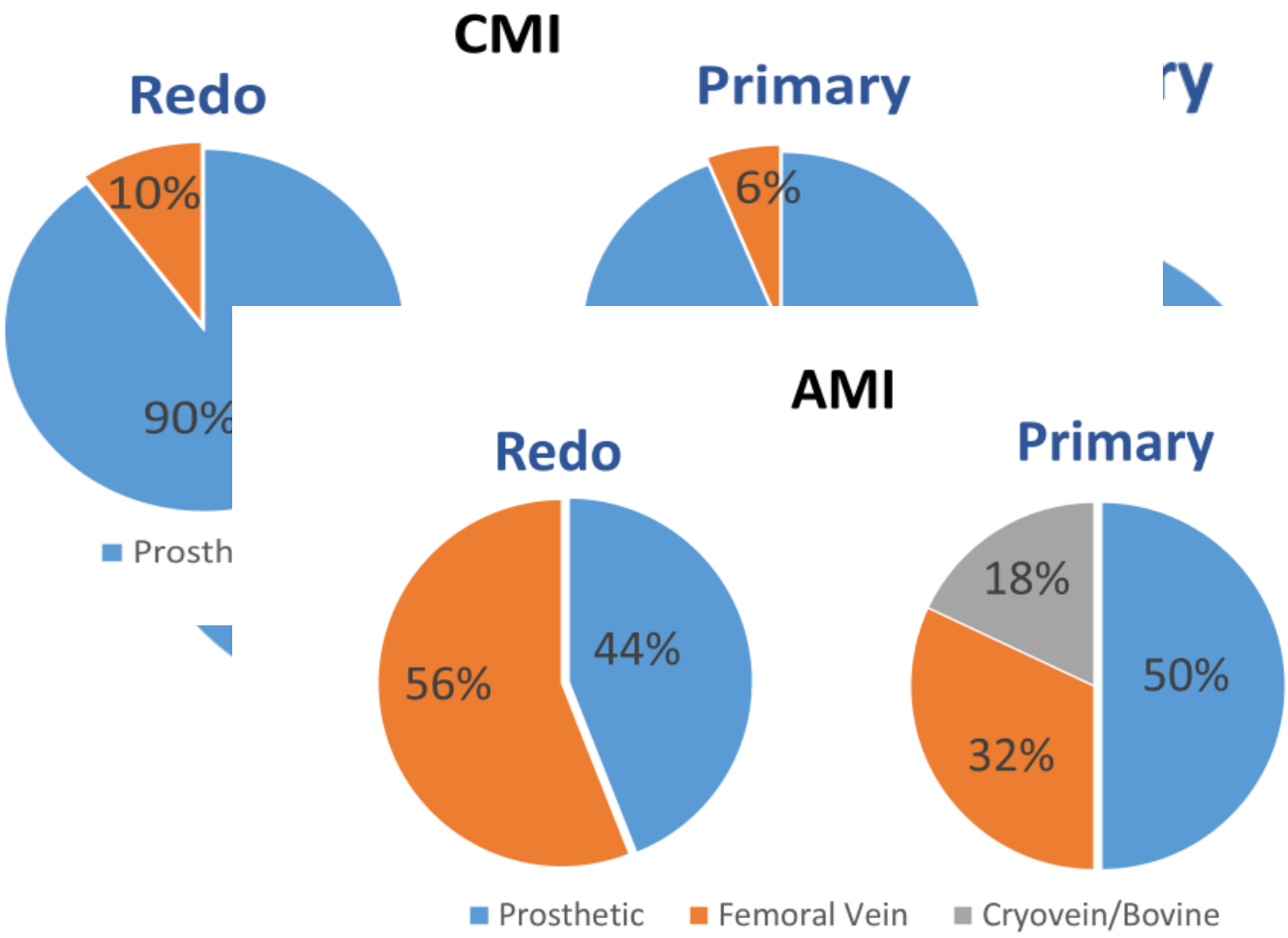
No difference in frequency of CAD, PAD, COPD, HTN, DM, CKD Stage ≥ 3, CVOD,, CHF between groups

Redo vs Primary OMB Conduit Choice





Redo vs Primary OMB Conduit Choice



Presentation, Operative Details, & Outcomes

Feature, % (No.)	Redo N = 64	Primary N = 121	P-value
CMI (vs AMI)	61% (39)	52% (63)	.25
Hospital transfer (data for CMI)	28% (11)	16% (10)	.13
Estimated blood loss (mL)	508±412	870±923	**.05**
Crystalloid (mL)	3051±1128	3520±1939	.07
Intraoperative packed red cells	0.8±1.2	1.7±2.2	**<.01**
Cell scavenger auto-transfusion	74±217	143±478	.17

Presentation, Operative Details, & Outcomes

Overall outcomes, % (No.)			
LOS, days (±SD)	21±20	22±18	.41
Any complication	59% (38)	64% (77)	.57
Total # of complications	1.7± 2.1	2± 2.2	.19
Cardiac complications	9% (6)	26% (31)	**<.01**
Bleeding complications	3% (2)	17% (20)	**<.01**
Renal failure req. dialysis	9% (6)	16% (19)	.23
In-hospital mortality	16% (10)	29% (35)	**.04**
30-day death	13% (8)	20% (24)	.21
Follow-up time, months	28±49	42±49	.48

Acute and Chronic Mesenteric Ischemia

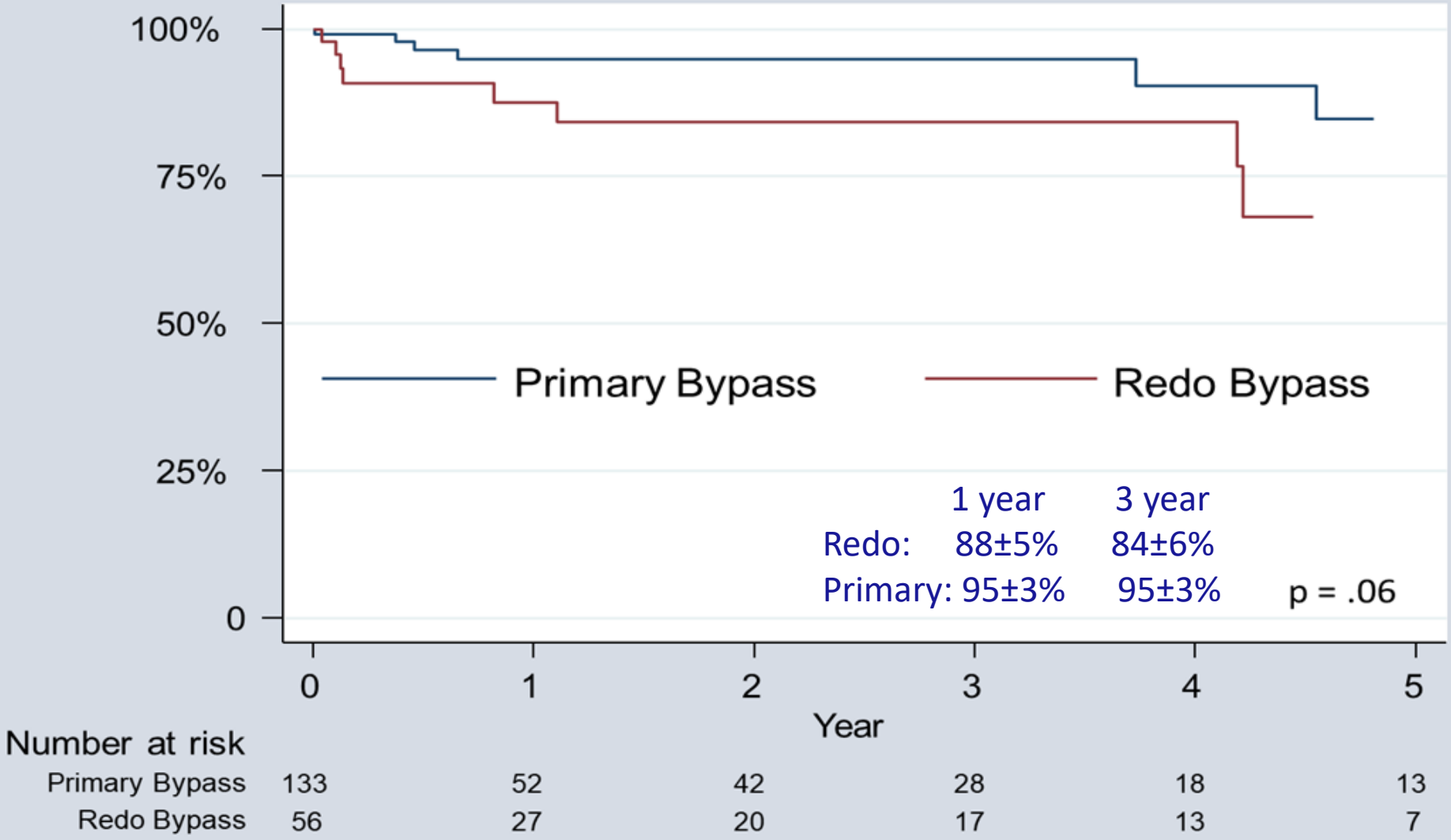
- Acute Mesenteric Ischemia

Outcomes, % (no.)	Redo N = 25	Primary N = 58	P-value
LOS, days (±SD)	25±22	26±30	.39
Any complication	72% (18)	76% (44)	.14
In-hospital death	24% (6)	48% (28)	**.04**
30-day death	24% (6)	31% (18)	.52

- Chronic Mesenteric Ischemia

Outcomes, % (no.)	Redo N = 39	Primary N = 63	P-value
LOS, days (±SD)	19±20	18±17	.38
Any complication	51% (20)	52% (33)	.91
In-hospital death	10% (4)	11% (7)	.89
30-day death	5% (2)	10% (6)	.42

Freedom from Re-intervention



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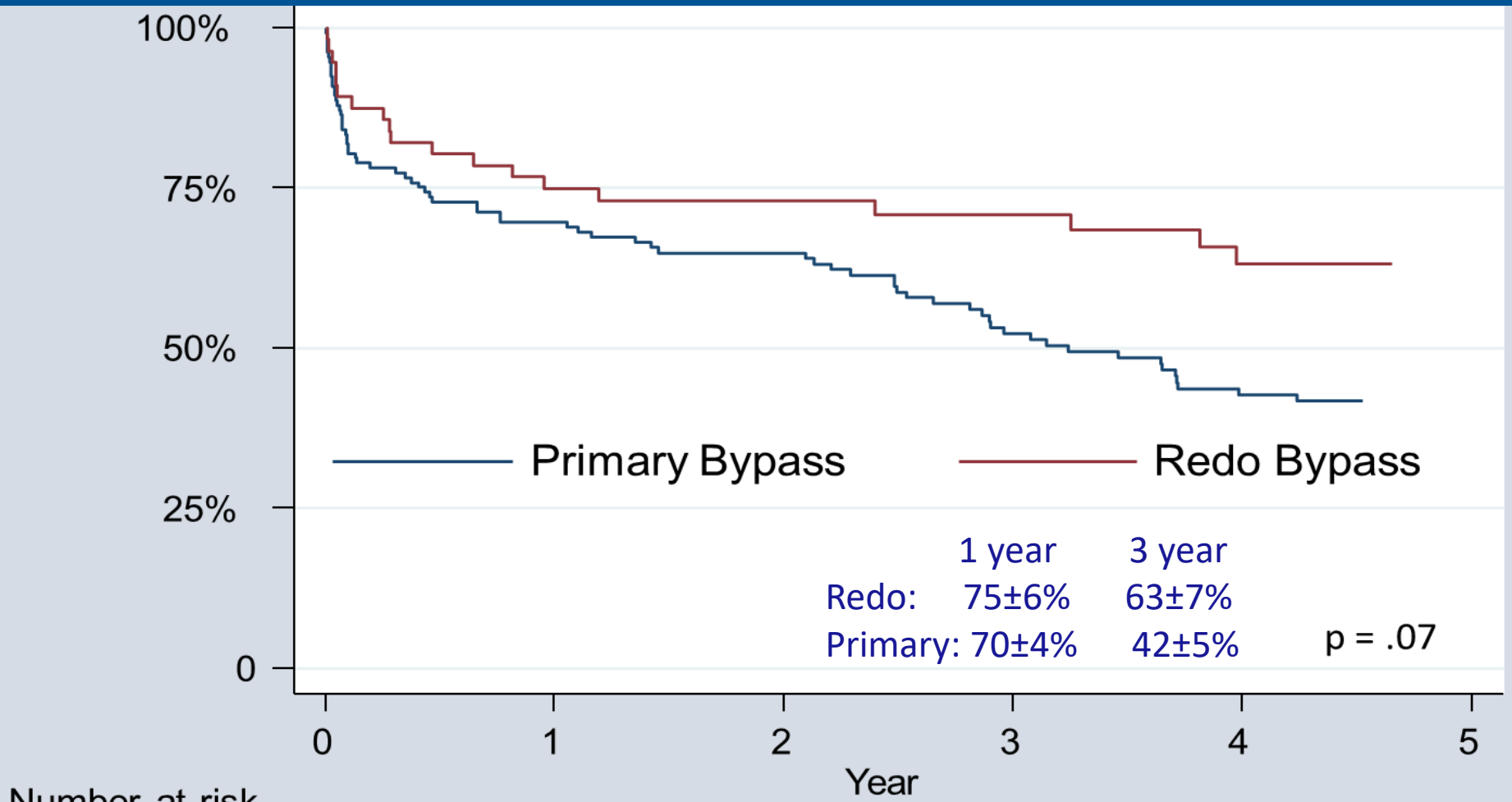
Overall Survival



Number at risk

Primary Bypass	133	88	77	56	44	40
Redo Bypass	56	41	36	30	23	20

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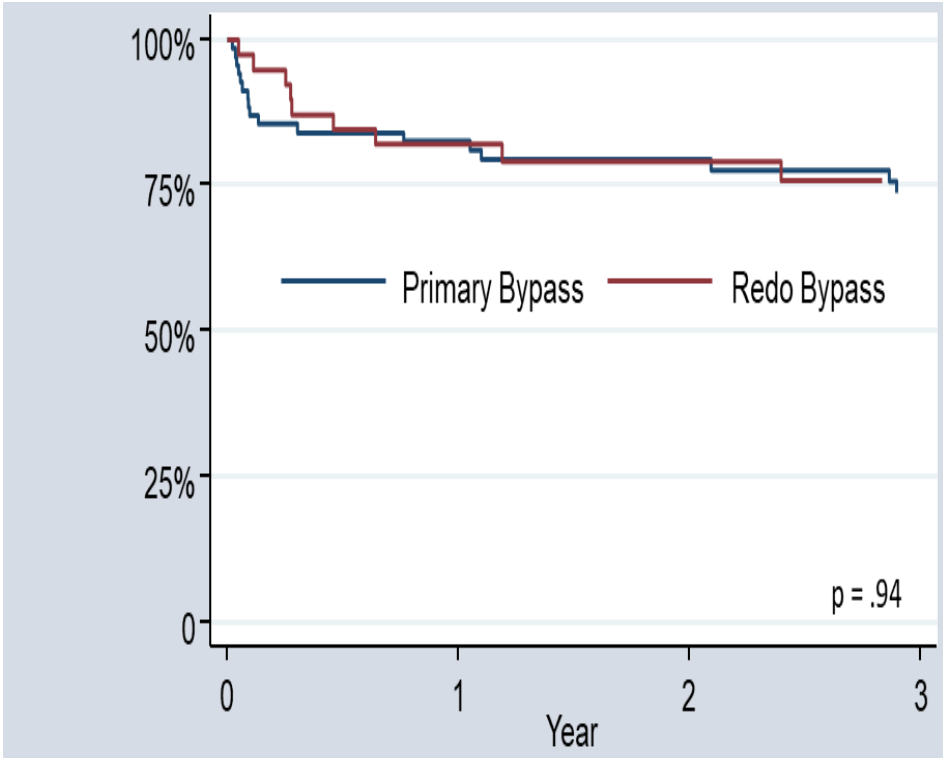
Survival: Acute & Chronic Mesenteric Ischemia

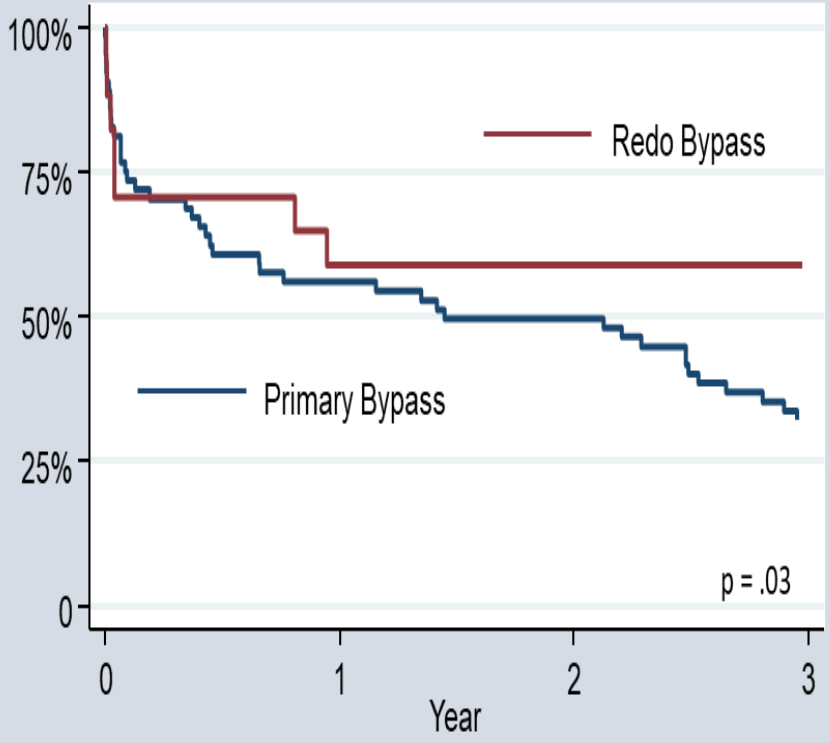
Acute Mesenteric Ischemia



Number at risk

Primary Bypass	69	53	46	36
Redo Bypass	39	31	26	21

Chronic Mesenteric Ischemia



Number at risk

Primary Bypass	64	35	31	20
Redo Bypass	17	10	10	9

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Independent Predictors of Mortality

Predictor	HR	95% CI	P-value
Congestive heart failure	1.8	1.8-3.1	.03
Chronic kidney disease	1.7	1.1-2.5	.02
Redo OMB	0.7	0.4-0.99	.05

Conclusions

- Patients presenting with recurrent AMI/CMI after prior failed endovascular or OMB can anticipate similar outcomes compared to primary OMB subjects.
- Conduit choice and configuration can be selectively applied depending on anatomic features and surgeon preference to achieve similar outcomes.
- Re-intervention rates are higher after redo OMB, thus the implementation of surveillance protocols may optimize long-term durability.

Thank you

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