WELCOME *To the*

2026 SYMPOSIUM

My Experience as a Dedicated Access Surgeon

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VASCULAR ACCESS SOCIETY OF THE AMERICAS VASA Access Excellence.

Disclosures

- PI for Laminate Medical
- PI for Xeltis

Consecutive cases from January 1, 2011 to April 23, 2026

5,518	New Access Procedures
4,419	Patients
4,754	Surgical AVF
742	Grafts
27,750	Follow ups

Demographics

Gender

2153	49%	Female
2226	51%	Male

Race

3327	76%	Black
991	23%	White
67	1%	Other

Comorbidity

Hypertension	95%	4213
Diabetes	62%	2718
On Dialysis	55%	2415
BMI >30	46%	2032
Smoking	32%	1425
CHF	28%	1254
PVD	11%	487

New Access Procedures per Patient

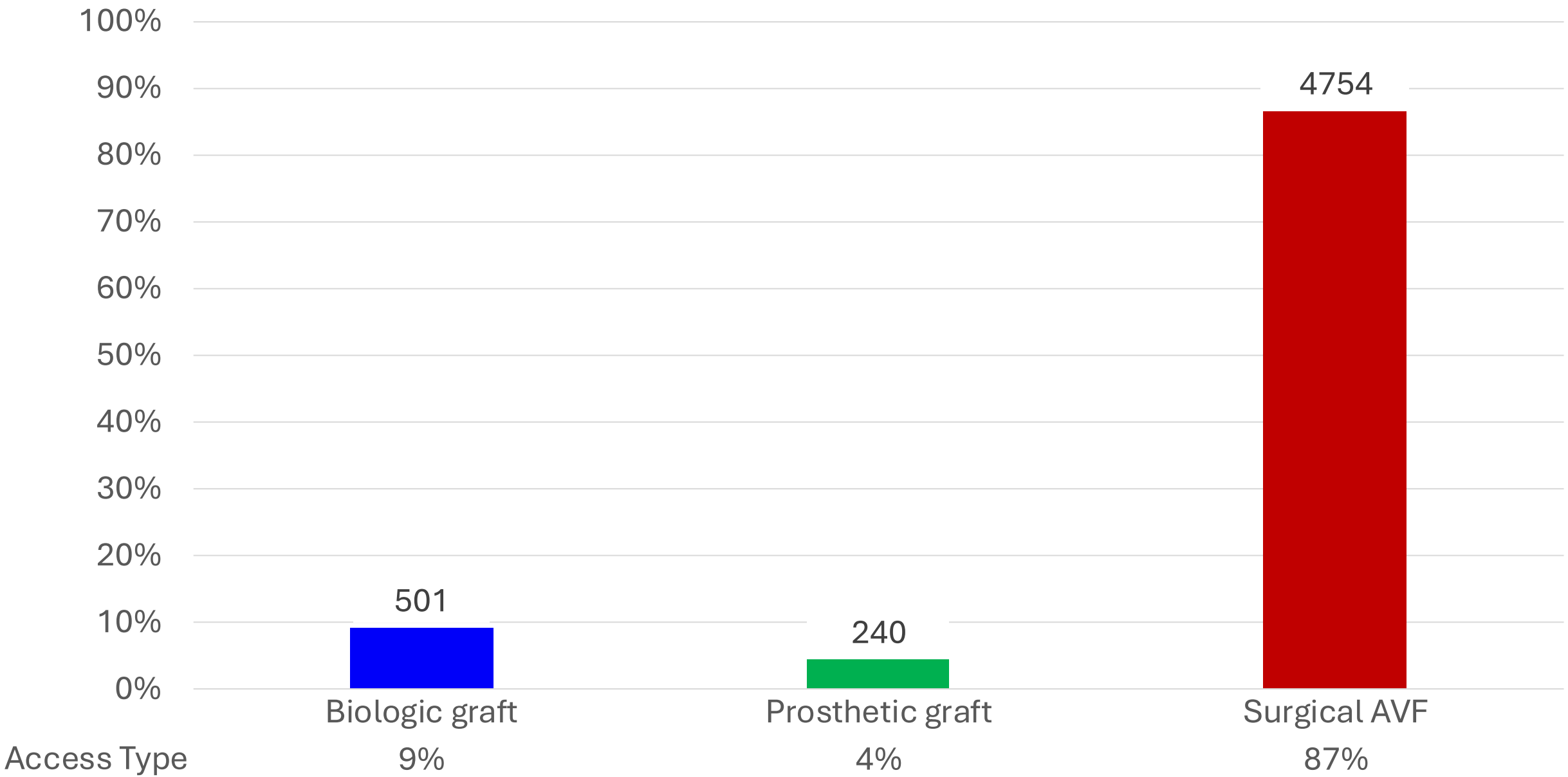
1 Procedure	3480
2 Procedures	656
3 Procedures	157
4 Procedures	39
5 Procedures	11
6 Procedures	2
7 Procedures	2

New Access Procedures per Patient

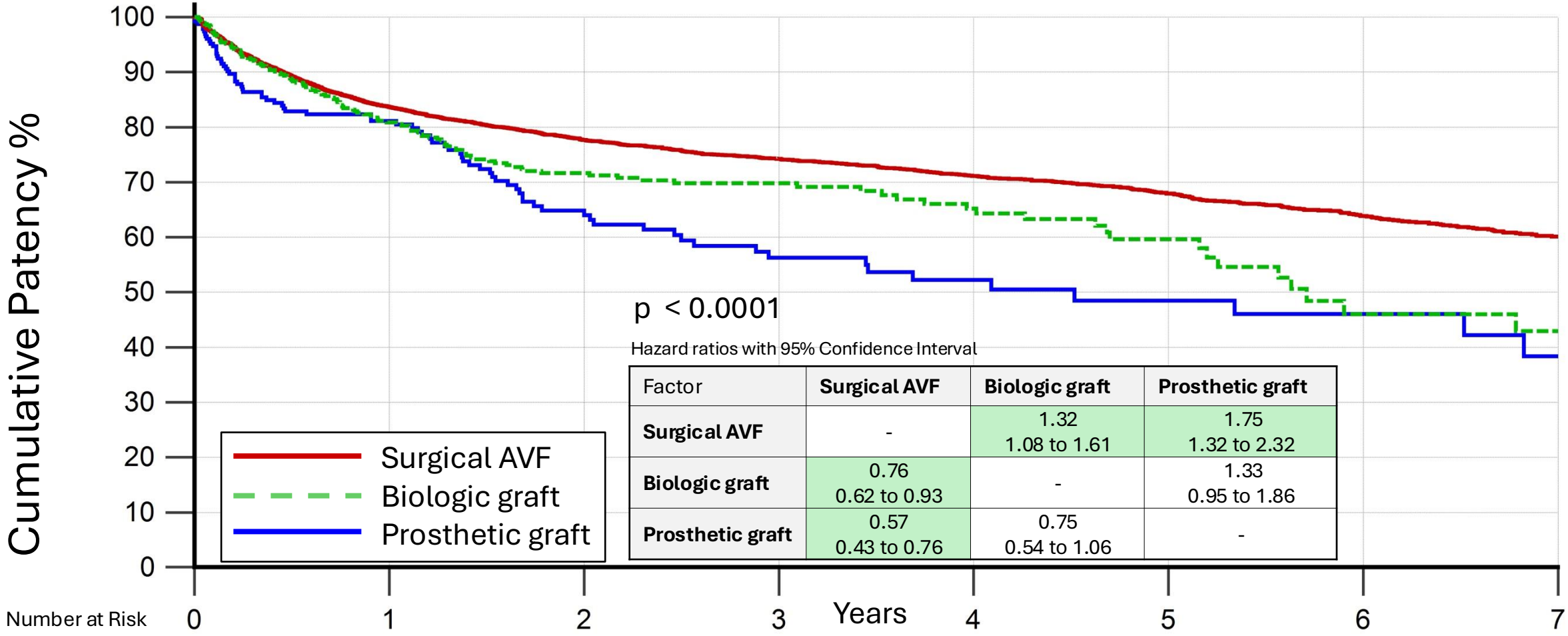
1 Procedure	3480		
2 Procedures	656		
3 Procedures	157		
4 Procedures	39	867	20%
5 Procedures	11		
6 Procedures	2		
7 Procedures	2		

AVFs vs AVGs

Access Type


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
501
240
4754
Biologic graft
Prosthetic graft
Surgical AVF
Access Type
9%
4%
87%

Access Type



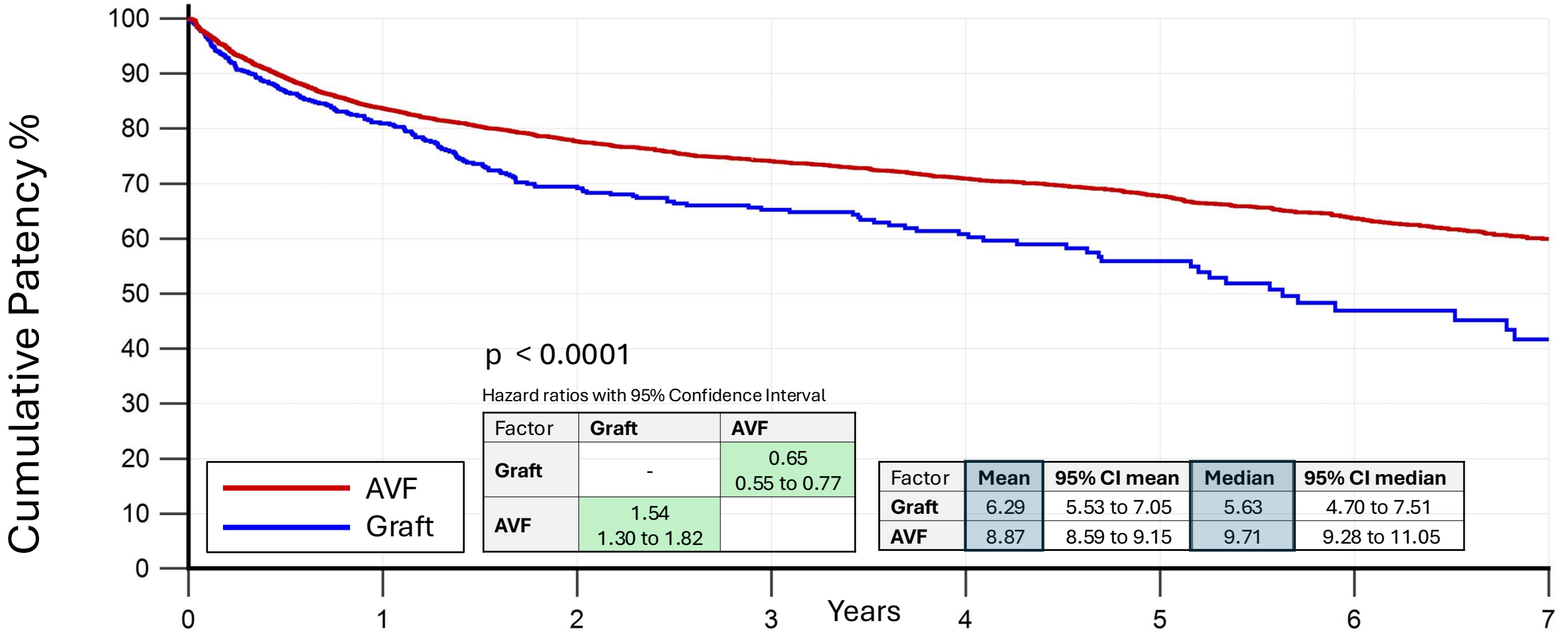
Hazard ratios with 95% Confidence Interval

Factor	Surgical AVF	Biologic graft	Prosthetic graft
Surgical AVF	-	1.32 1.08 to 1.61	1.75 1.32 to 2.32
Biologic graft	0.76 0.62 to 0.93	-	1.33 0.95 to 1.86
Prosthetic graft	0.57 0.43 to 0.76	0.75 0.54 to 1.06	-

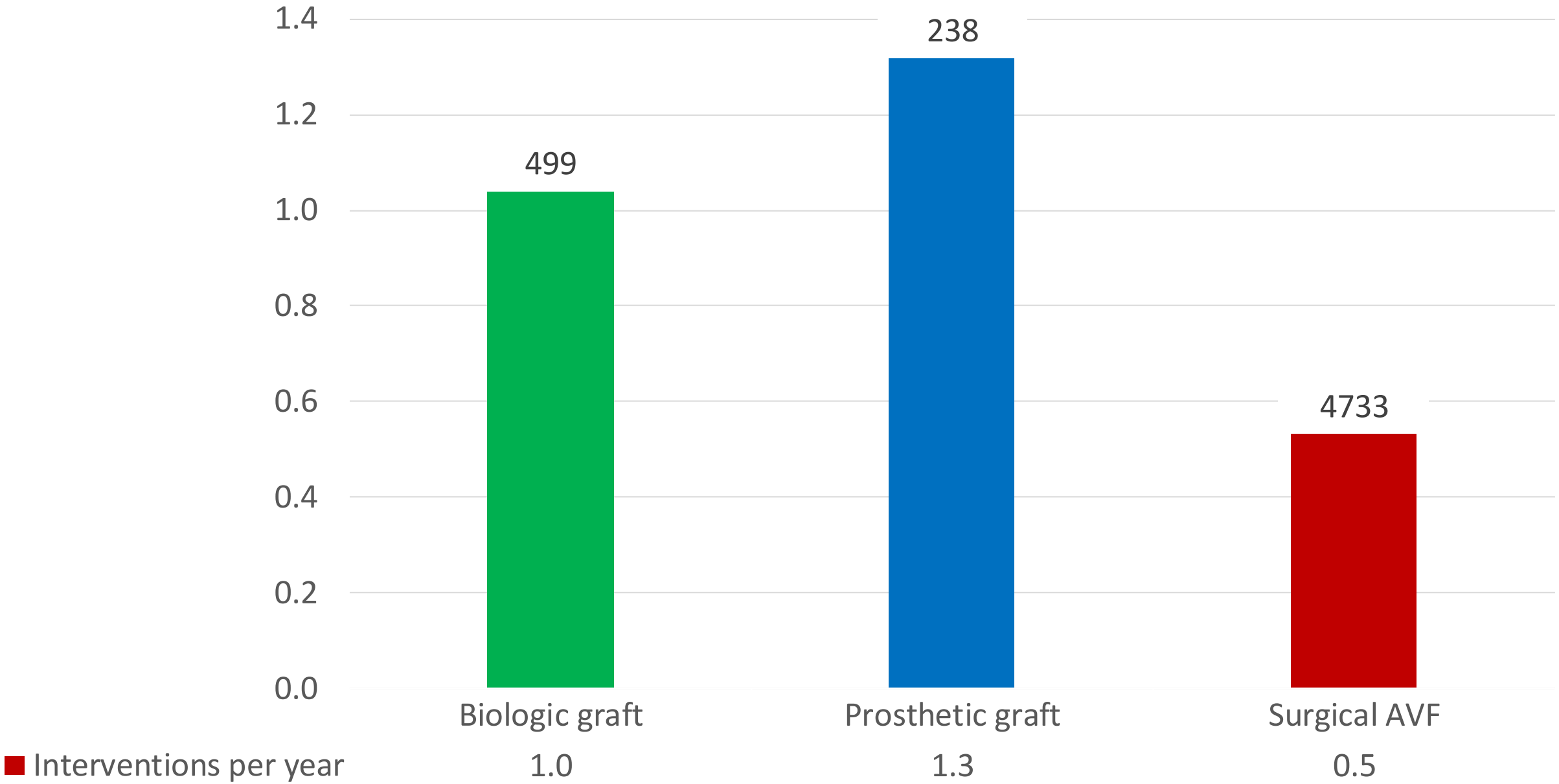
Number at Risk

Surgical AVF	4733	2861	2168	1654	1228	917	680	486
Biologic graft	498	271	171	109	74	40	18	14
Prosthetic graft	238	130	77	52	32	23	13	8

AVFs vs AVGs


Cumulative Patency %
100
90
80
70
60
50
40
30
20
10
0
AVF
Graft
p < 0.0001
Hazard ratios with 95% Confidence Interval
Factor | Graft | AVF
Graft | - | 0.65 0.55 to 0.77
AVF | 1.54 1.30 to 1.82 |
Factor | Mean | 95% CI mean | Median | 95% CI median
Graft | 6.29 | 5.53 to 7.05 | 5.63 | 4.70 to 7.51
AVF | 8.87 | 8.59 to 9.15 | 9.71 | 9.28 to 11.05
0
1
2
3
Years
4
5
6
7
AVF 4756 2875 2180 1660 1232 919 682 487
Graft 736 401 248 161 106 63 31 22

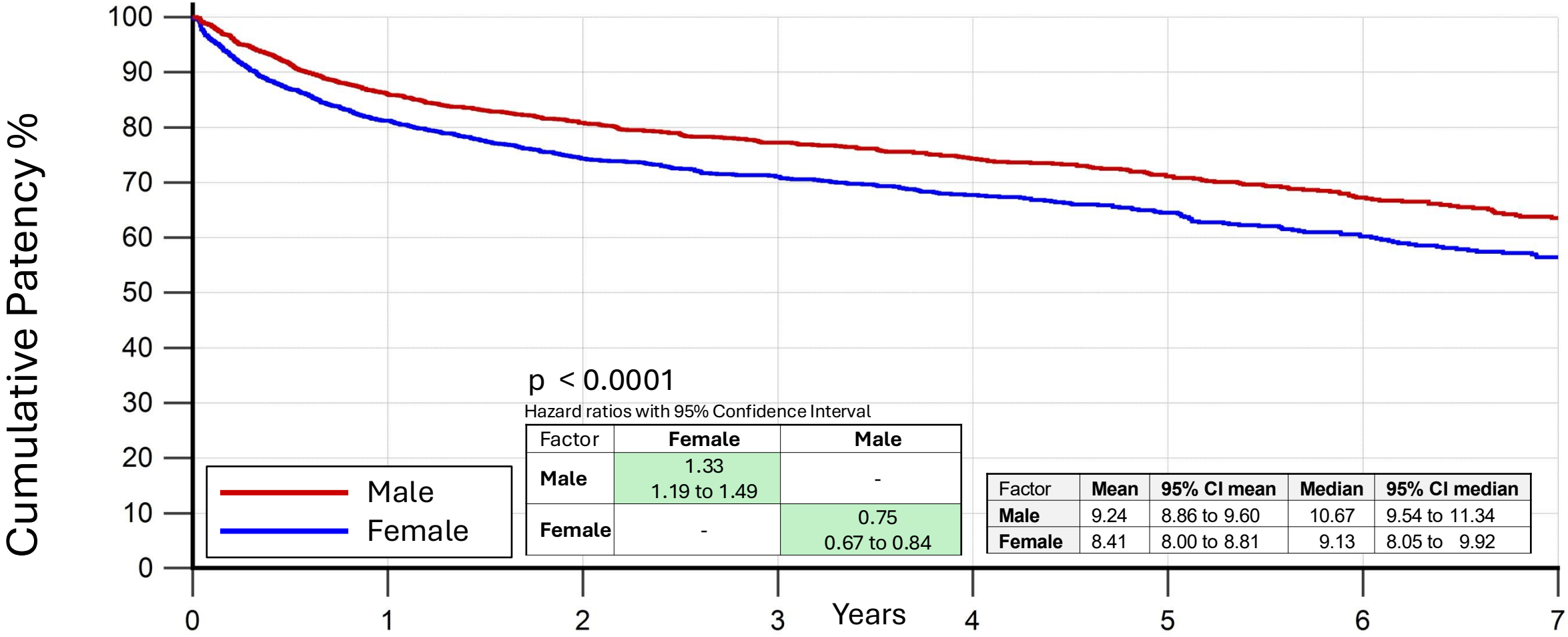
Interventions per Year



Primary AVFs

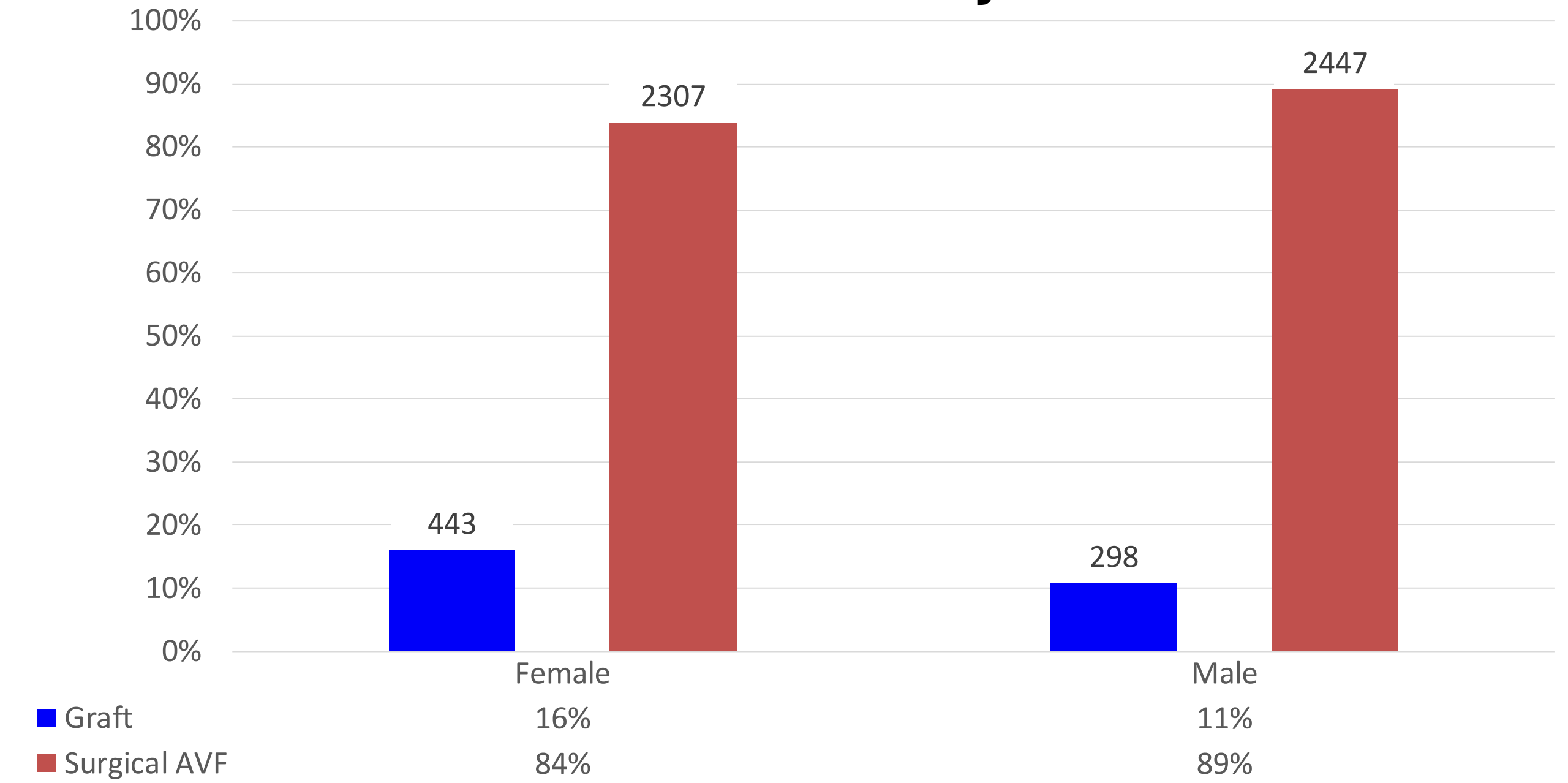
Analysis of
4,754 Surgical Arteriovenous Fistulas

Gender

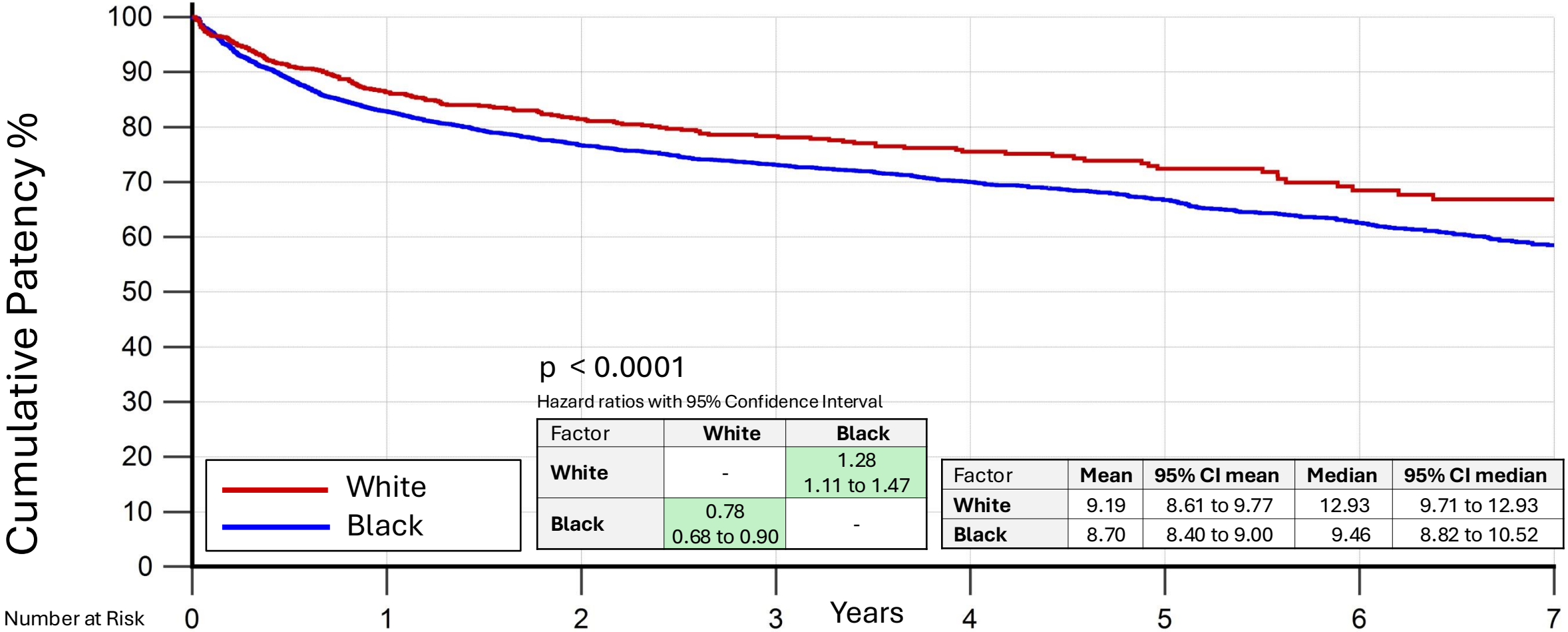


Female	2300	1343	985	748	554	418	304	222
Male	2433	1518	1183	906	674	499	376	264

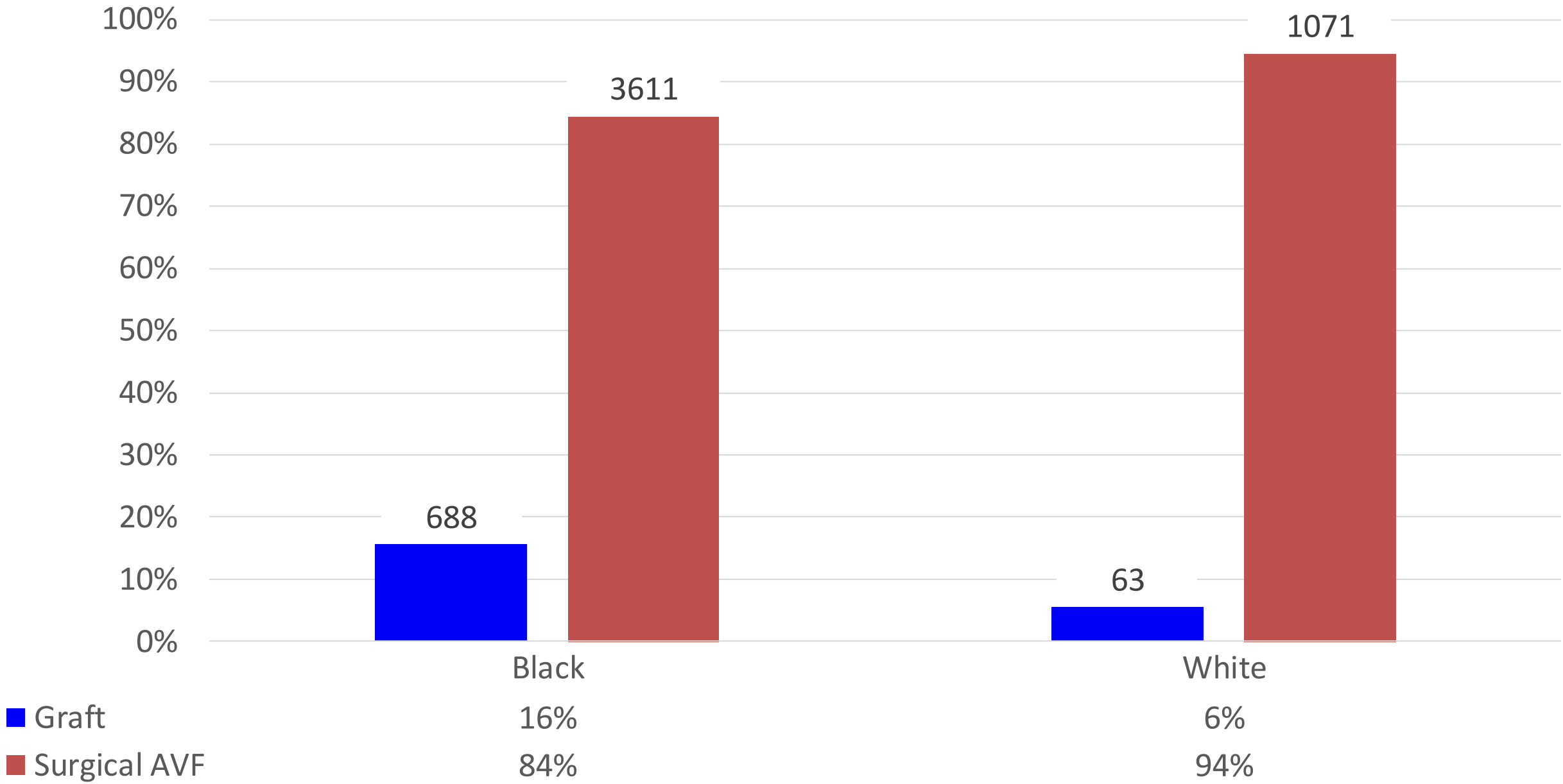
Percent of AVFs by Gender



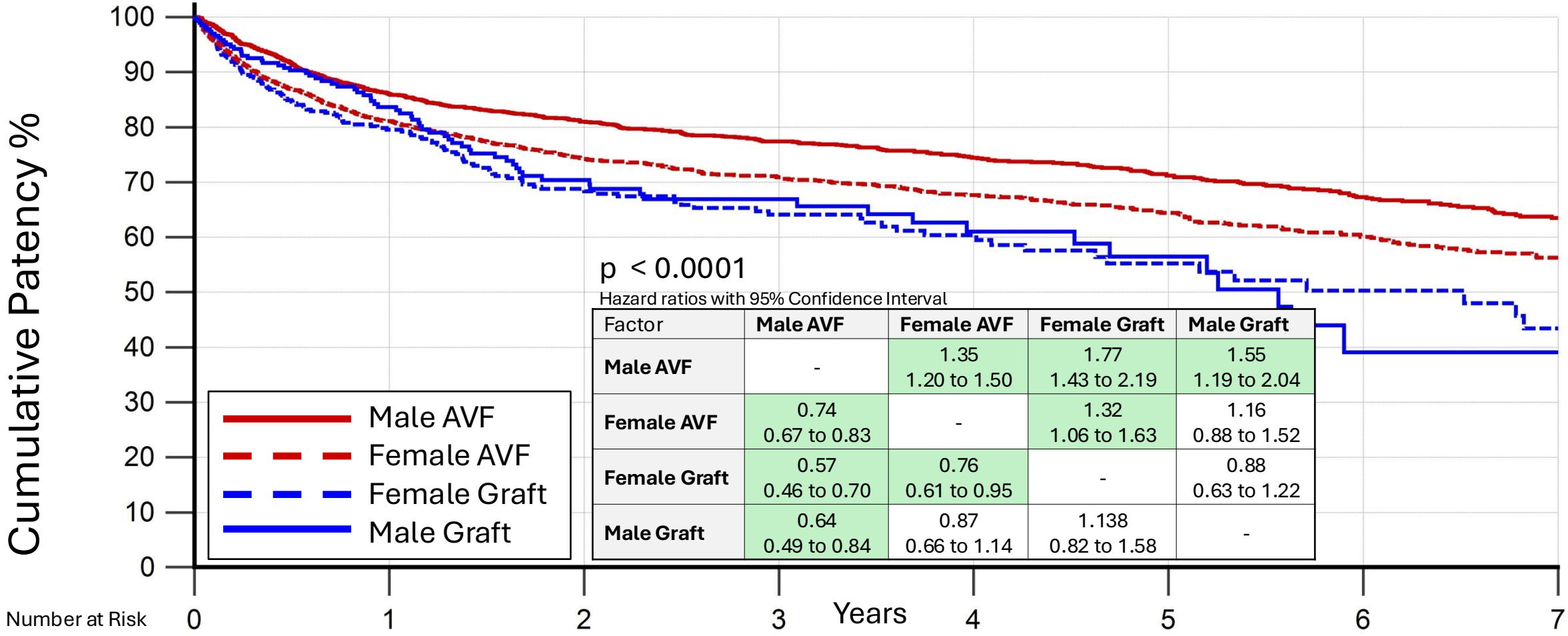
Race


Cumulative Patency %
100
90
80
70
60
50
40
30
20
10
0
White
Black
p < 0.0001
Hazard ratios with 95% Confidence Interval
Factor | White | Black
White | - | 1.28 1.11 to 1.47
Black | 0.78 0.68 to 0.90 | -
Factor | Mean | 95% CI mean | Median | 95% CI median
White | 9.19 | 8.61 to 9.77 | 12.93 | 9.71 to 12.93
Black | 8.70 | 8.40 to 9.00 | 9.46 | 8.82 to 10.52
Number at Risk
0 1 2 3 Years 4 5 6 7
Black 3593 2188 1686 1309 994 758 578 414
White 1068 628 447 322 220 148 93 65

Percentage of AVF by Race



Access Type and Gender

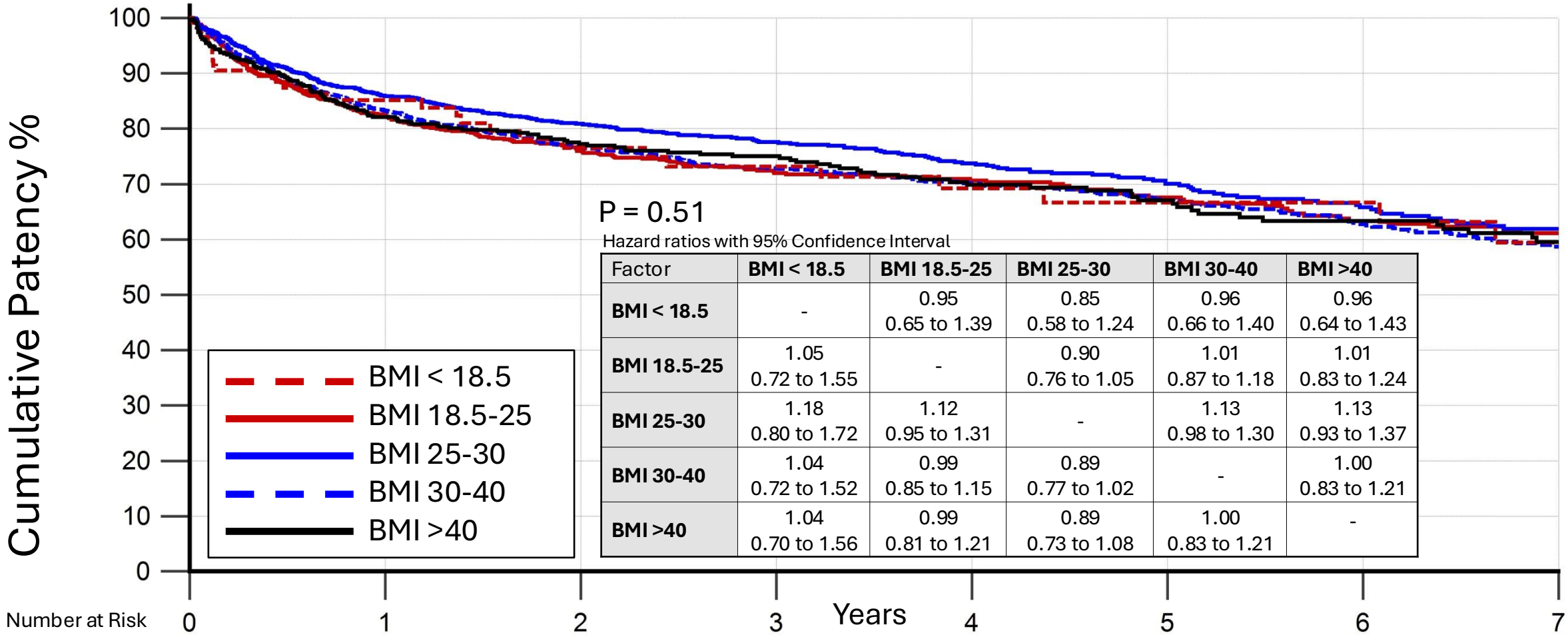


Factor	Male AVF	Female AVF	Female Graft	Male Graft
Male AVF	-	1.35 1.20 to 1.50	1.77 1.43 to 2.19	1.55 1.19 to 2.04
Female AVF	0.74 0.67 to 0.83	-	1.32 1.06 to 1.63	1.16 0.88 to 1.52
Female Graft	0.57 0.46 to 0.70	0.76 0.61 to 0.95	-	0.88 0.63 to 1.22
Male Graft	0.64 0.49 to 0.84	0.87 0.66 to 1.14	1.138 0.82 to 1.58	-

Number at Risk

Male AVF	2386	1489	1161	892	664	492	370	260
Female AVF	2275	1327	972	739	550	414	301	219
Female Graft	437	247	156	104	69	42	24	17
Male Graft	289	148	87	54	36	20	7	5

BMI

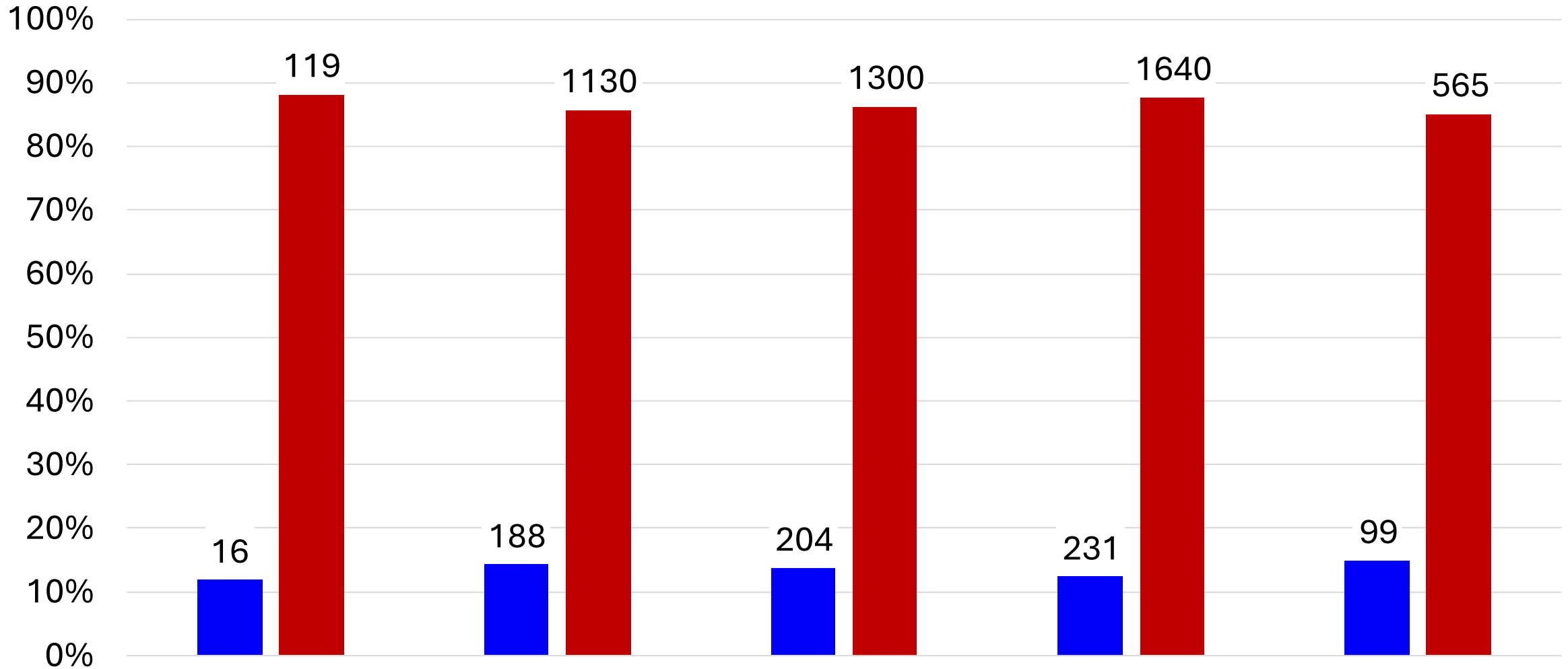


Hazard ratios with 95% Confidence Interval

Factor	BMI < 18.5	BMI 18.5-25	BMI 25-30	BMI 30-40	BMI >40
BMI < 18.5	-	0.95 0.65 to 1.39	0.85 0.58 to 1.24	0.96 0.66 to 1.40	0.96 0.64 to 1.43
BMI 18.5-25	1.05 0.72 to 1.55	-	0.90 0.76 to 1.05	1.01 0.87 to 1.18	1.01 0.83 to 1.24
BMI 25-30	1.18 0.80 to 1.72	1.12 0.95 to 1.31	-	1.13 0.98 to 1.30	1.13 0.93 to 1.37
BMI 30-40	1.04 0.72 to 1.52	0.99 0.85 to 1.15	0.89 0.77 to 1.02	-	1.00 0.83 to 1.21
BMI >40	1.04 0.70 to 1.56	0.99 0.81 to 1.21	0.89 0.73 to 1.08	1.00 0.83 to 1.21	-

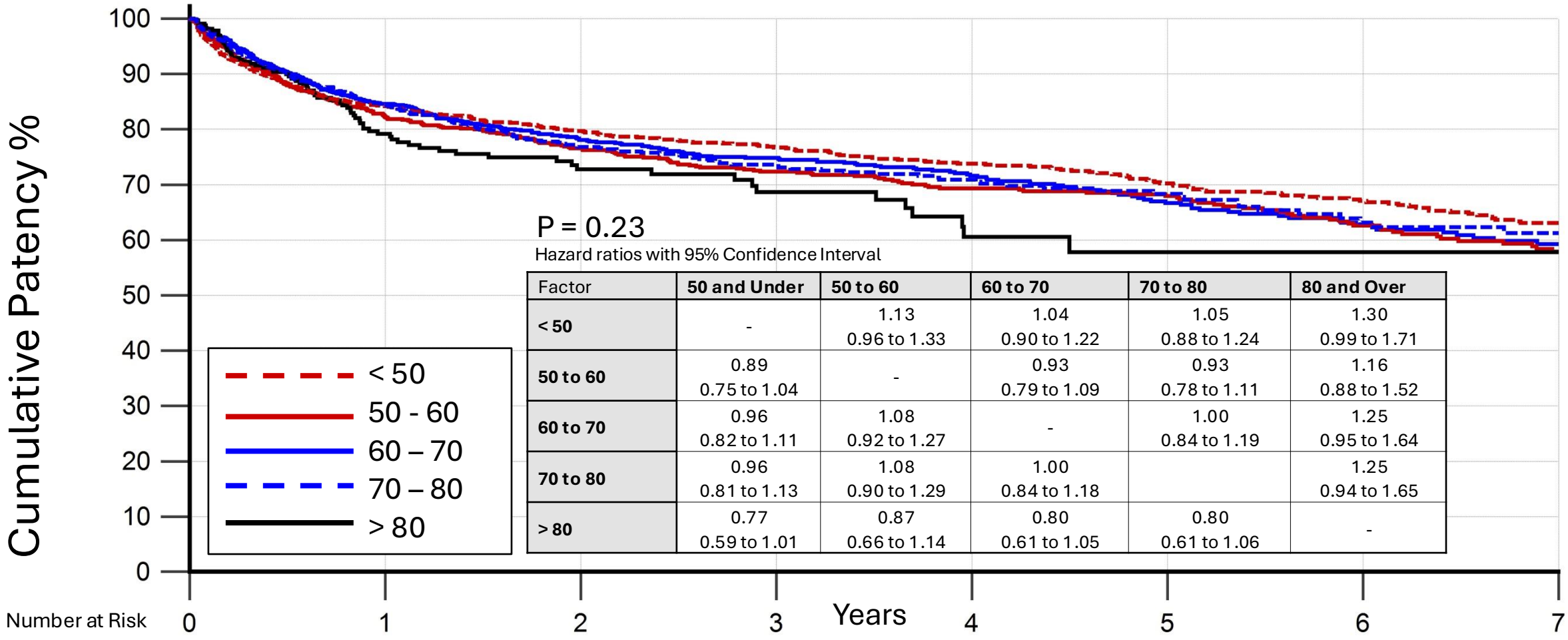
Number at Risk	0	1	2	3	4	5	6	7
BMI < 18.5 Underweight	118	66	49	41	31	24	19	13
BMI 18.5-25 Normal	1125	621	451	323	238	181	133	98
BMI 25-30 Overweight	1295	812	623	479	351	245	171	116
BMI 30-40 Obesity	1633	1032	782	599	463	355	263	187
BMI >40 Severe	562	330	263	212	145	112	94	72

Percent of AVFs by BMI



	BMI < 18.5 Underweight	BMI 18.5-25 Normal	BMI 25-30 Overweight	BMI 30-40 Obesity	BMI >40 Severe Obesity
Graft	12%	14%	14%	12%	15%
Surgical AVF	88%	86%	86%	88%	85%

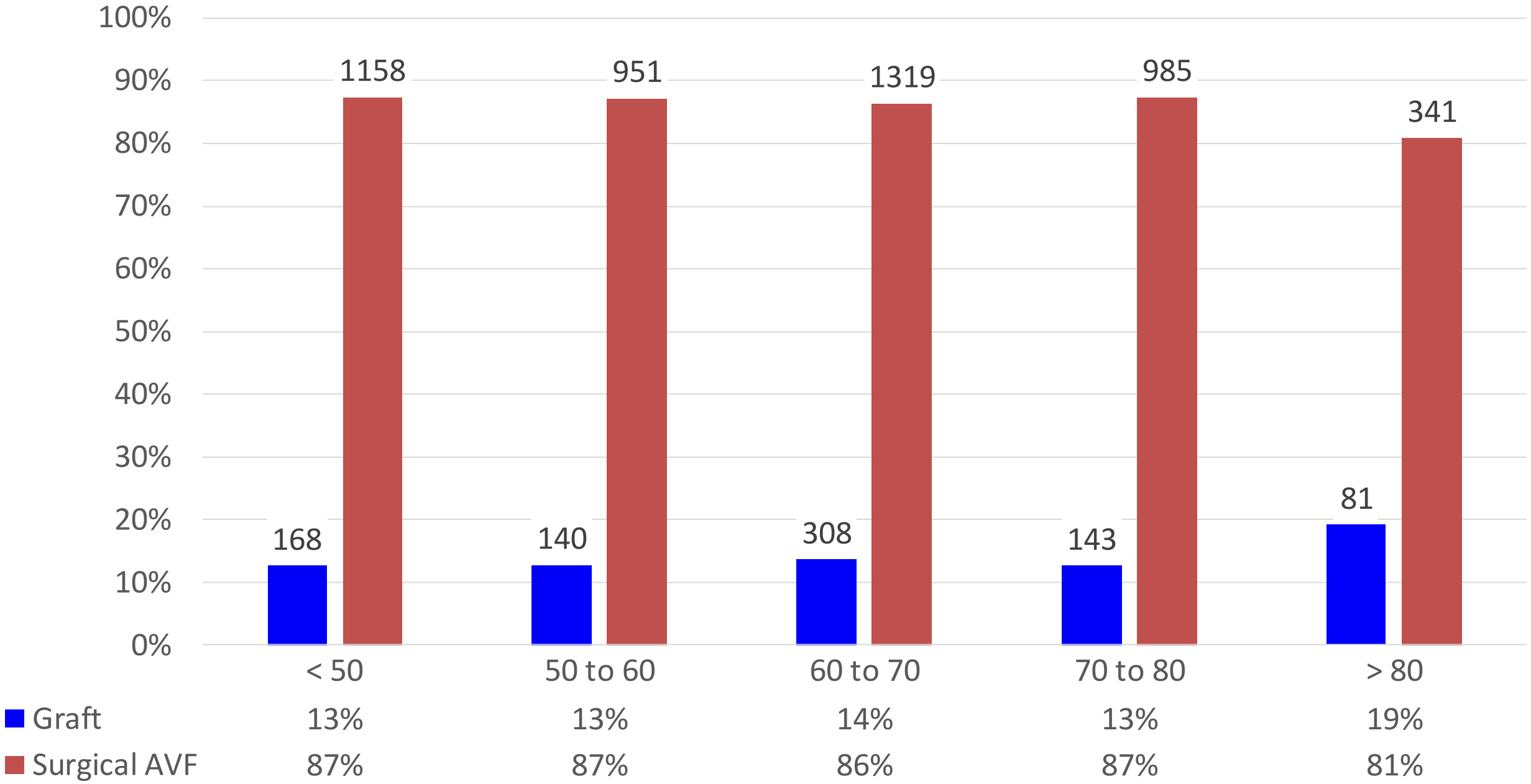
Age



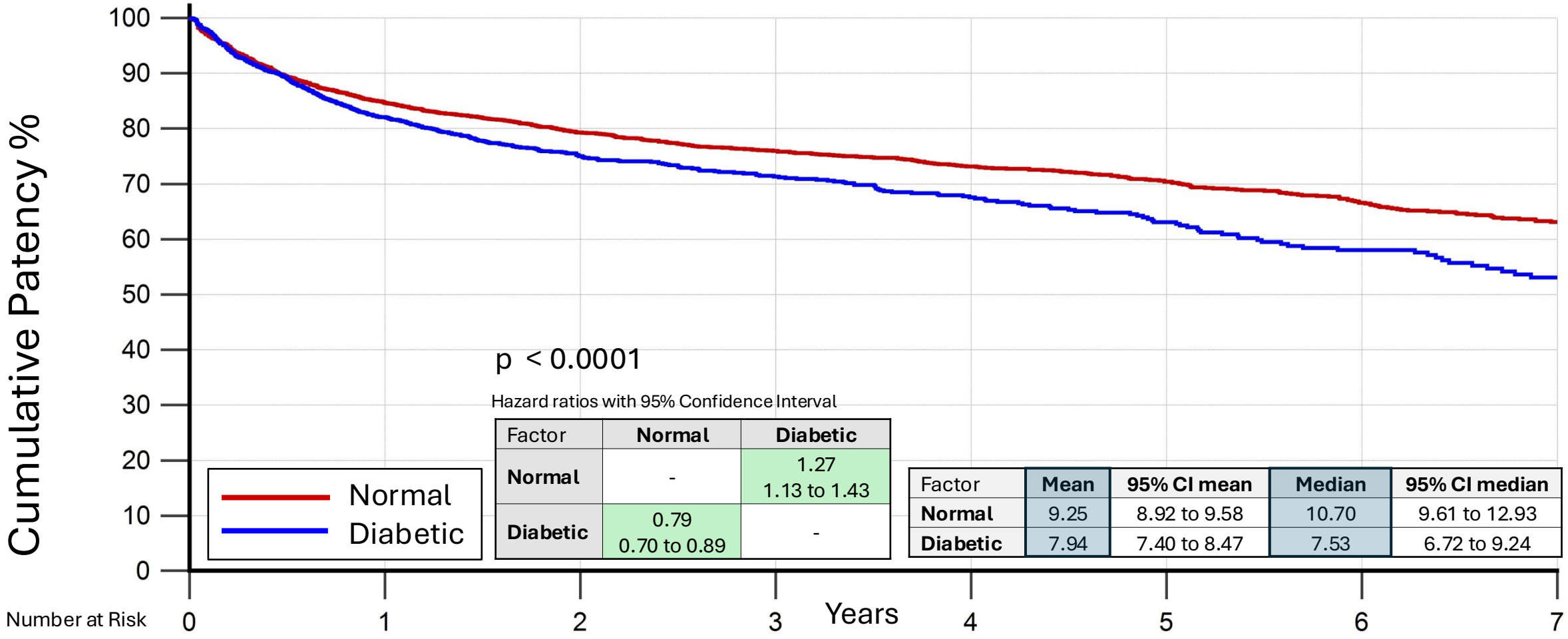
Factor	50 and Under	50 to 60	60 to 70	70 to 80	80 and Over
< 50	-	1.13 0.96 to 1.33	1.04 0.90 to 1.22	1.05 0.88 to 1.24	1.30 0.99 to 1.71
50 to 60	0.89 0.75 to 1.04	-	0.93 0.79 to 1.09	0.93 0.78 to 1.11	1.16 0.88 to 1.52
60 to 70	0.96 0.82 to 1.11	1.08 0.92 to 1.27	-	1.00 0.84 to 1.19	1.25 0.95 to 1.64
70 to 80	0.96 0.81 to 1.13	1.08 0.90 to 1.29	1.00 0.84 to 1.18		1.25 0.94 to 1.65
> 80	0.77 0.59 to 1.01	0.87 0.66 to 1.14	0.80 0.61 to 1.05	0.80 0.61 to 1.06	-

Number at Risk	0	1	2	3	4	5	6	7
< 50	1154	752	635	514	410	331	269	215
50 to 60	949	591	469	378	283	225	170	119
60 to 70	1308	796	575	427	309	217	149	97
70 to 80	981	561	389	275	195	130	82	52
> 80	341	161	100	60	31	14	10	3

Percentage AVFs by Age



Diabetes

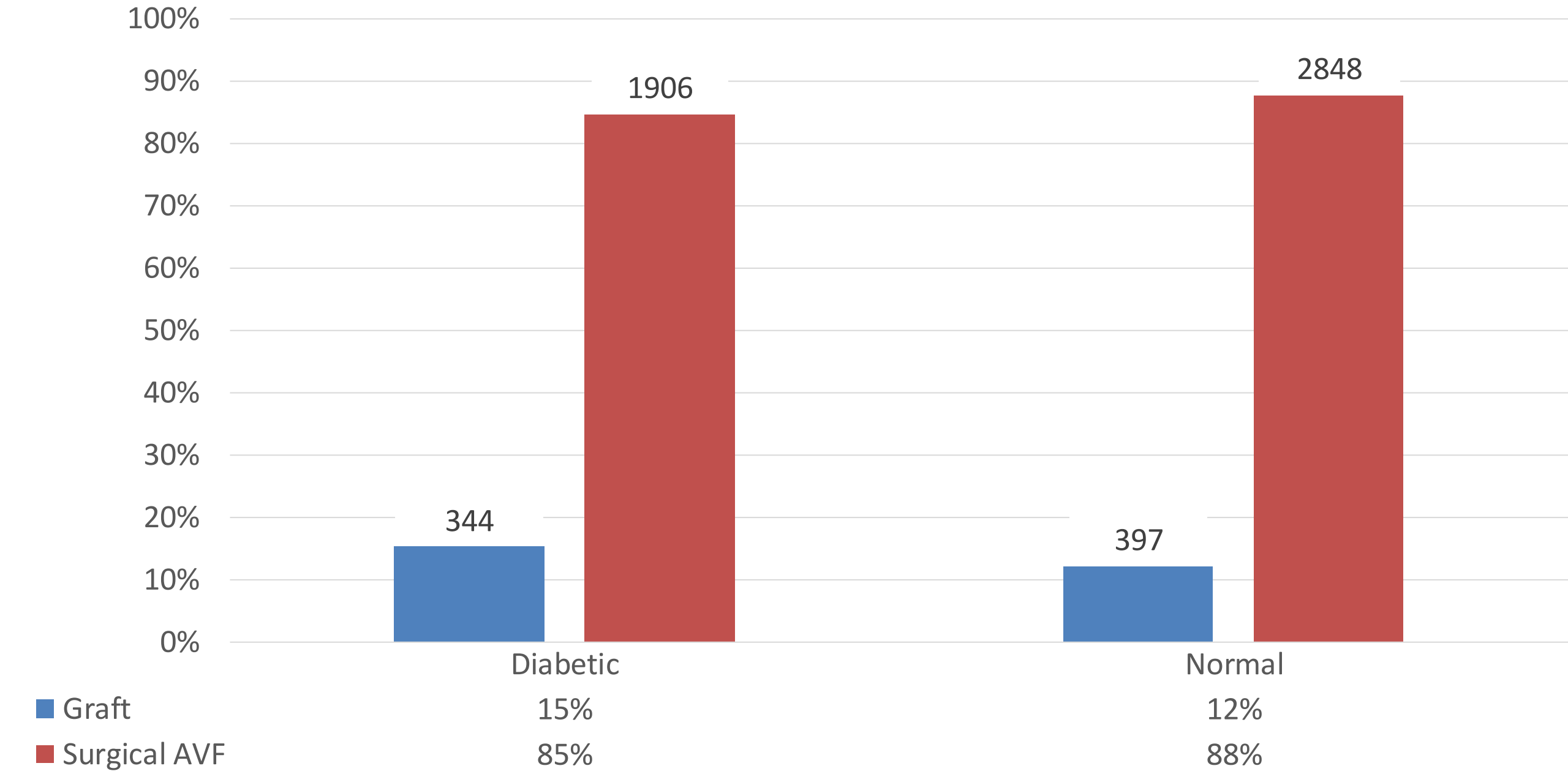


Factor	Normal	Diabetic
Normal	-	1.27 1.13 to 1.43
Diabetic	0.79 0.70 to 0.89	-

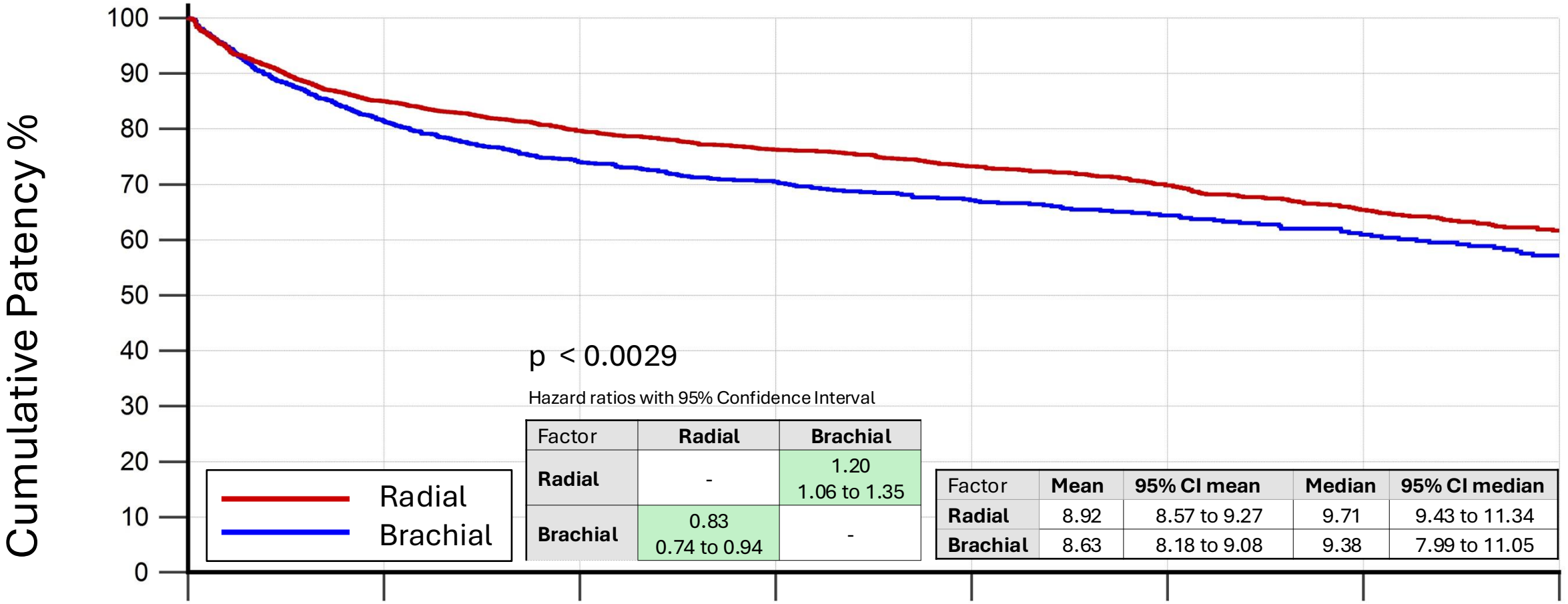
Factor	Mean	95% CI mean	Median	95% CI median
Normal	9.25	8.92 to 9.58	10.70	9.61 to 12.93
Diabetic	7.94	7.40 to 8.47	7.53	6.72 to 9.24

Number at Risk	0	1	2	3	4	5	6	7
Normal	2837	1801	1425	1152	886	704	534	394
Diabetic	1896	1060	743	502	342	213	146	92

Percent AVFs in Diabetics



Artery



$p < 0.0029$

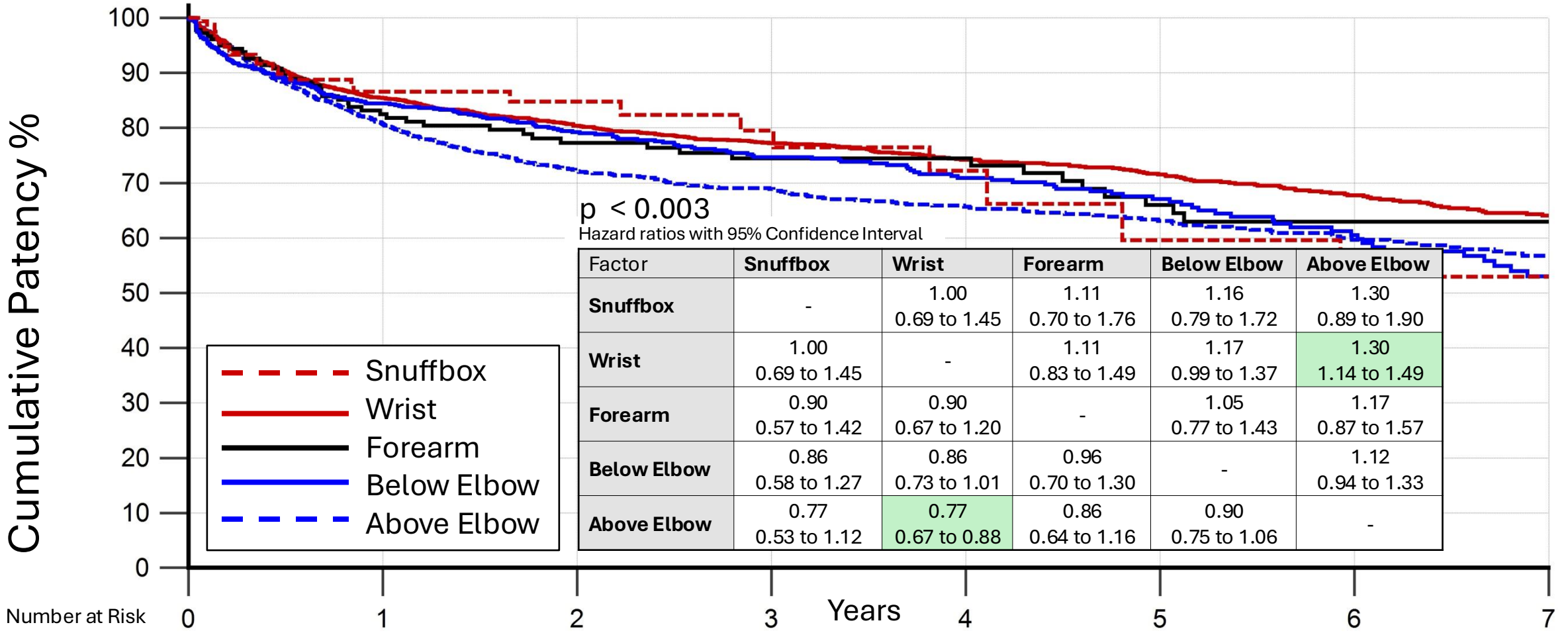
Hazard ratios with 95% Confidence Interval

Factor	Radial	Brachial
Radial	-	1.20 1.06 to 1.35
Brachial	0.83 0.74 to 0.94	-

Factor	Mean	95% CI mean	Median	95% CI median
Radial	8.92	8.57 to 9.27	9.71	9.43 to 11.34
Brachial	8.63	8.18 to 9.08	9.38	7.99 to 11.05

Number at Risk	0	1	2	3	4	5	6	7
Radial	3035	1915	1482	1140	833	623	454	326
Brachial	1684	941	682	510	392	293	225	159

Artery Location

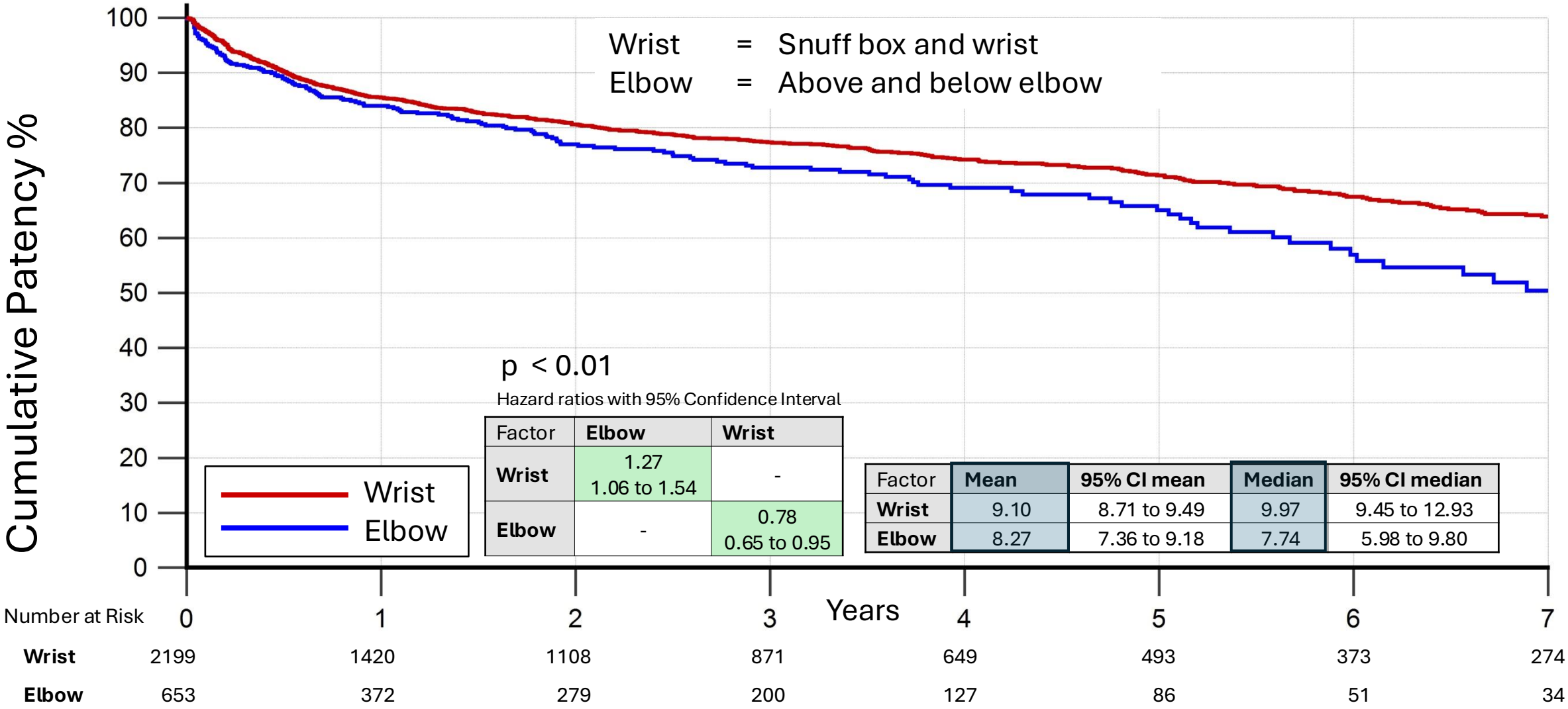


Factor	Snuffbox	Wrist	Forearm	Below Elbow	Above Elbow
Snuffbox	-	1.00 0.69 to 1.45	1.11 0.70 to 1.76	1.16 0.79 to 1.72	1.30 0.89 to 1.90
Wrist	1.00 0.69 to 1.45	-	1.11 0.83 to 1.49	1.17 0.99 to 1.37	1.30 1.14 to 1.49
Forearm	0.90 0.57 to 1.42	0.90 0.67 to 1.20	-	1.05 0.77 to 1.43	1.17 0.87 to 1.57
Below Elbow	0.86 0.58 to 1.27	0.86 0.73 to 1.01	0.96 0.70 to 1.30	-	1.12 0.94 to 1.33
Above Elbow	0.77 0.53 to 1.12	0.77 0.67 to 0.88	0.86 0.64 to 1.16	0.90 0.75 to 1.06	-

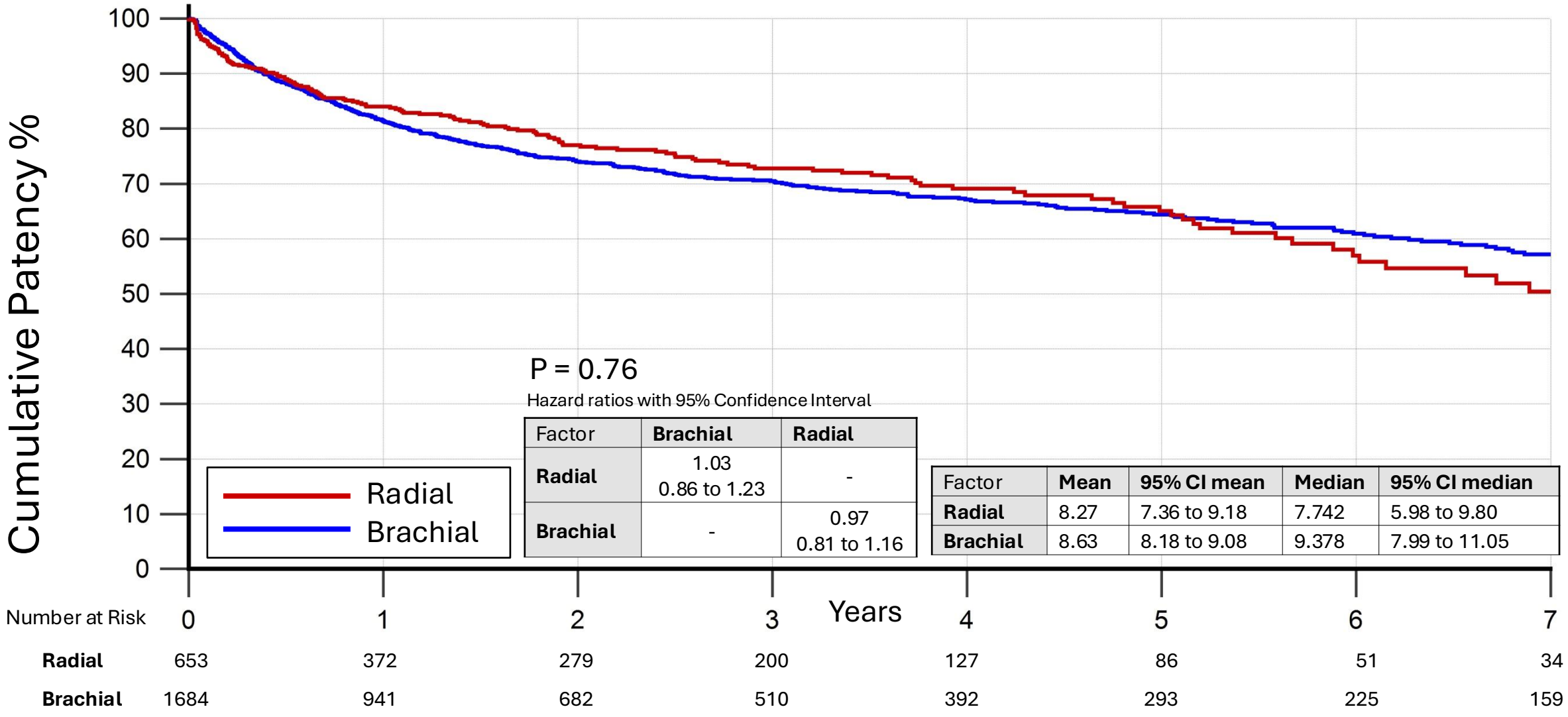
Years

Number at Risk	0	1	2	3	4	5	6	7
Snuffbox	178	77	38	26	13	9	8	6
Wrist	2021	1343	1070	845	636	484	365	268
Forearm	183	123	95	69	57	44	30	18
Below Elbow	894	518	400	292	198	136	85	55
Above Elbow	1443	795	561	418	321	243	191	138

Radial Artery AVFs by Location



AVFs at the Elbow



Factor	Brachial	Radial
Radial	1.03 0.86 to 1.23	-
Brachial	-	0.97 0.81 to 1.16

Factor	Mean	95% CI mean	Median	95% CI median
Radial	8.27	7.36 to 9.18	7.742	5.98 to 9.80
Brachial	8.63	8.18 to 9.08	9.378	7.99 to 11.05

Conclusions

- Factors that do not affect patency of AVFs
  - Age
  - BMI
- Factors that affect patency of AVFs
  - Race
  - Gender
  - Diabetes
  - Artery
  - Distal location

Conclusions

- Decision for AVF vs Graft
  - Life expectancy
  - Quality of vessels
- Choose radial artery over brachial artery
- Choose most distal site possible

Thank You

Questions