

**How to predict procedural stroke risk with CEA
for asymptomatic carotid stenosis?**

Asymptomatic Carotid Endarterectomy Risk Score

Pooled Analysis of VA, ACAS, ACST-1 & GALA Trials

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Treatment Options for Asymptomatic Carotid Stenosis



Do Something!

>75% of US interventions

asymptomatic

Treatment Options for Asymptomatic Carotid Stenosis



Do Something!

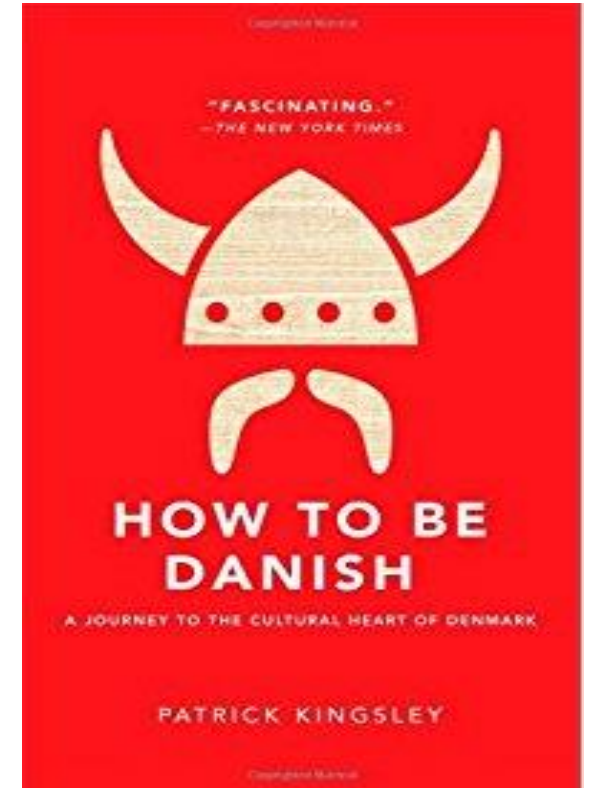
>75% of US interventions

asymptomatic

Do Nothing!

Zero asymptomatic

interventions in Denmark



Purpose of this Study

AIM: to identify important procedural risk factors for asymptomatic patients undergoing CEA


Methods

- IPD of 'surgically treated' asymptomatic patients from 4 large CEA trials


VA; ACAS; ACST-1 and GALA

- Restricted to surgical patients
- Major procedural complications (ie, within 30 days): MI, stroke, death
- Odds ratios (RR) from logistic regression

Trial Characteristics

	VA	ACAS	ACST-1	GALA
Recruitment	1983 - 1987	1987 - 1993	1993 - 2003	1999-2007
Participants	444	1 662	3 120	1 362 (asymptomatic)
Region	USA	USA	Europe	Europe, Australasia
Follow-up, Median [IQR]	5.7 [4.5-7.0]	4.8 [3.7-5.0]	9.0 [6.1-11.1]	Up to 1y
				Procedure: LA vs GA
	CEA + MT vs MT Alone			

Trial Characteristics (Cont'd)

	VA	ACAS	ACST-1	GALA
Age \pm SD	64.5 \pm 6.8	67.2 \pm 6.9	68.6 \pm 7.5	70 \pm 8.8
Sex (% Male)	100%	66%	66%	70%
IHD (%)	41%	42%	34%	36%
Diabetes (%)	28%	23%	20%	25%
	 CEA + MT vs MT Alone			Procedure: LA vs GA

MI, Stroke and Death with 30 Days of CEA

	VA	ACAS	ACST-1	GALA*
Procedures	229	1036	1841	1335
Events [†]	14	31	69	40
Event Risk	6.1%	3.0%	3.7%	3.2%

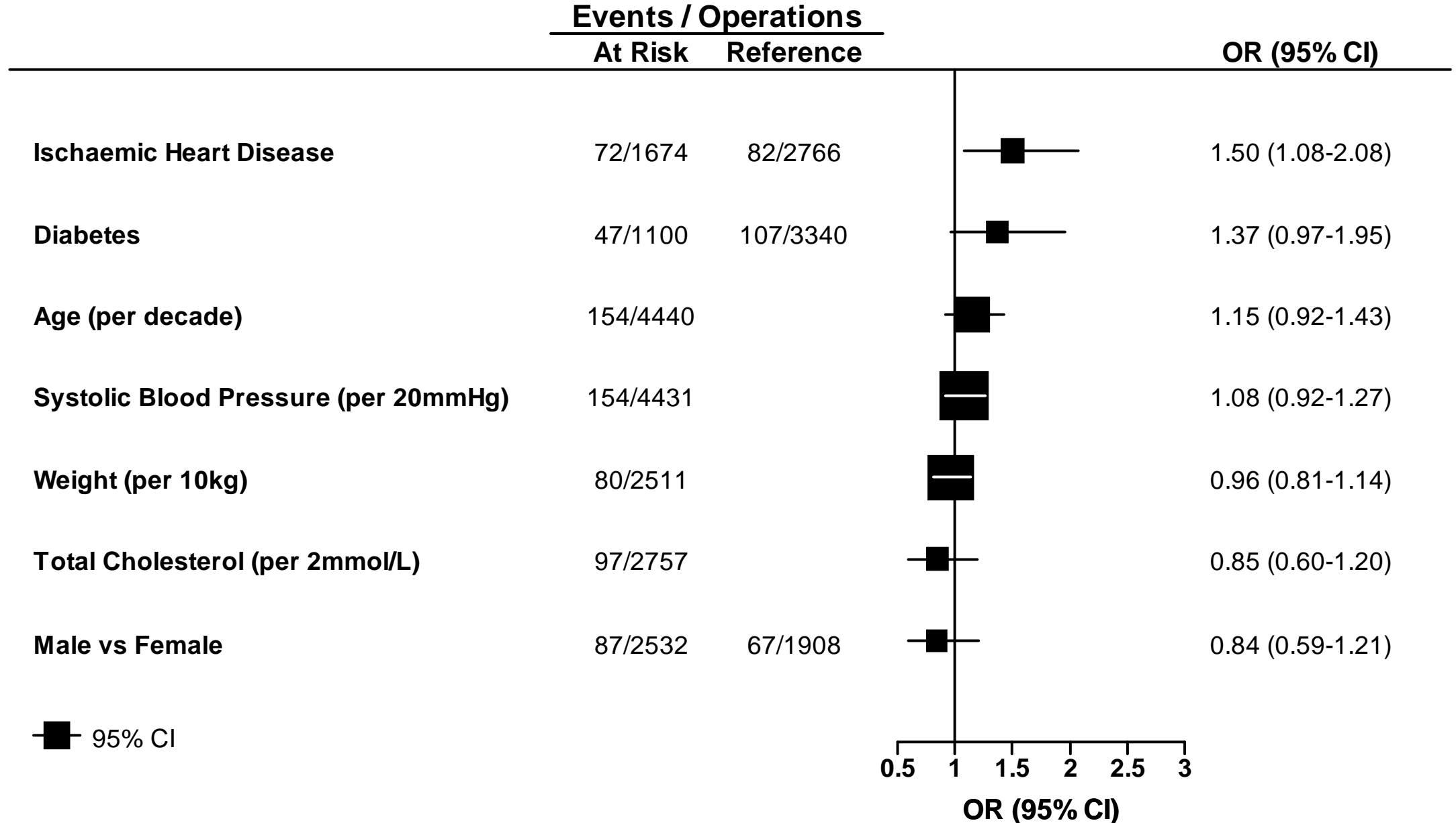
*Only asymptomatic patients included

Types of Events

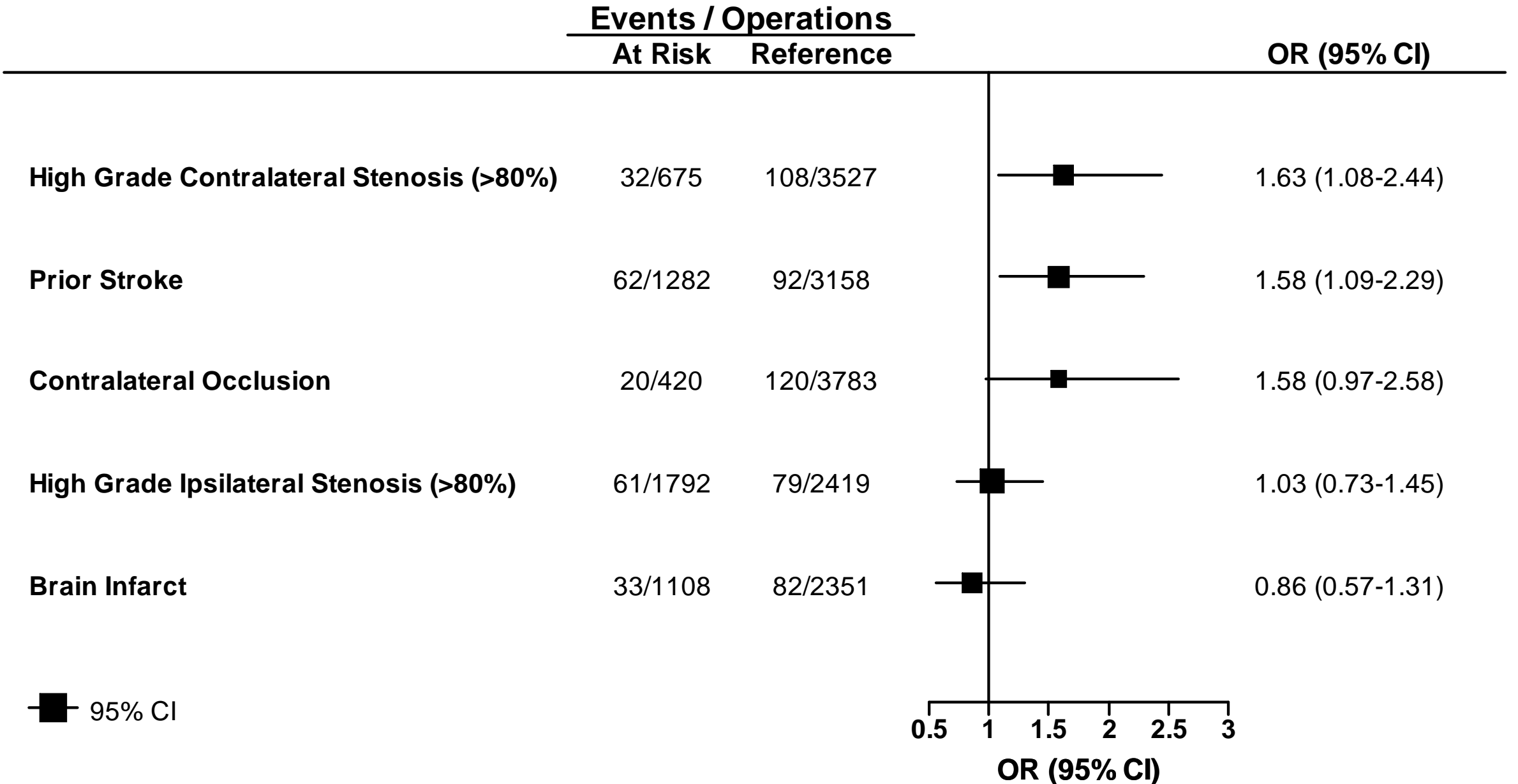
Event Type*	Number	Percent
Stroke	111	72.1%
MI	34	22.1%
Death	9	5.8%
Any Event	154	100%

*Note. If multiple events, stroke taken as main event

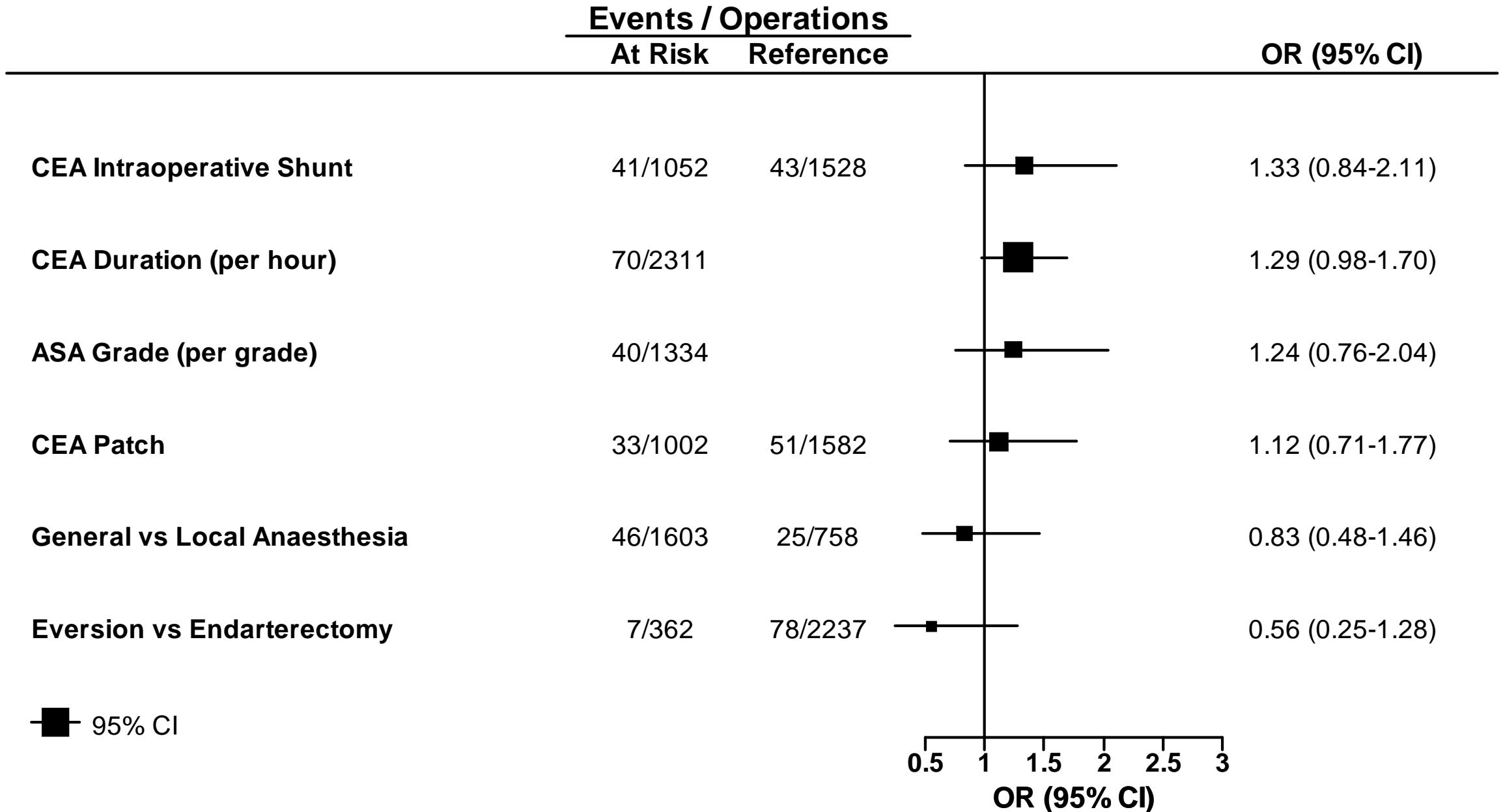
Association of Traditional CV Risk Factors with Procedural MI, Stroke & Death (day 0-30)



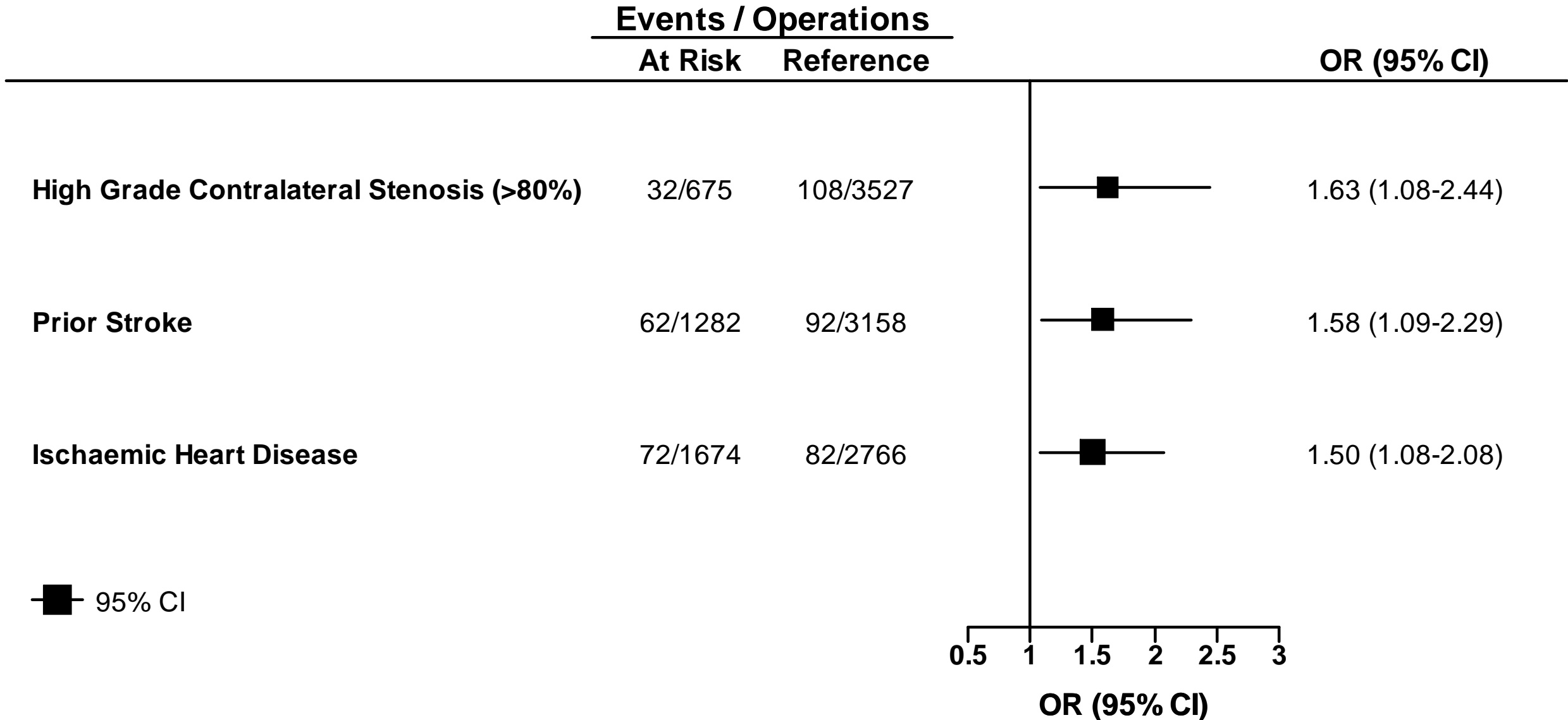
Association of Cerebrovascular Factors with Procedural MI, Stroke and Death (day 0-30)



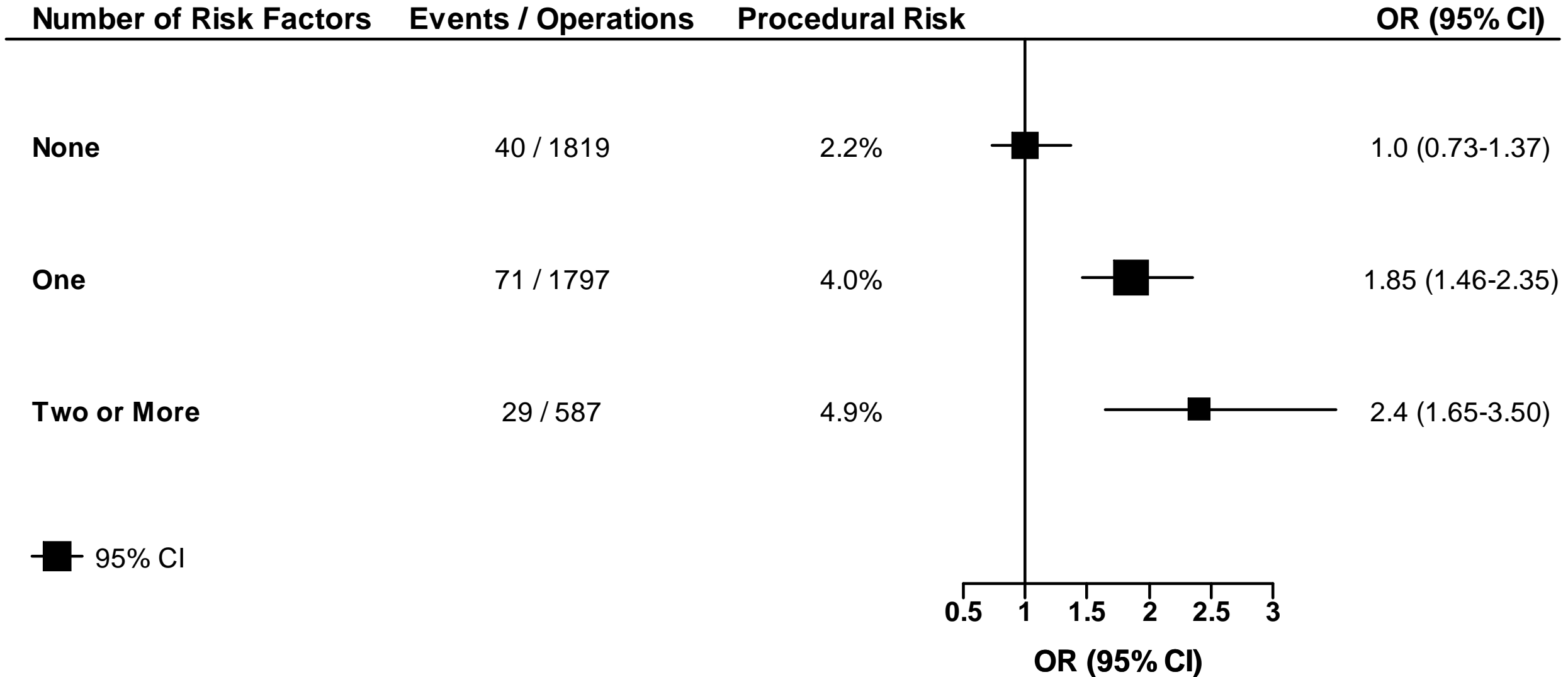
Association of Surgical Factors with Procedural MI, Stroke & Death (day 0-30)



Important Risk Factors for Procedural MI, Stroke & Death (day 0-30)



Number of Risk Factors and Procedural Risk



Risk Prediction

- Operative risks in 2010s are substantially lower than in these RCTs
- New benchmarks for CEA are a major stroke or death risk of 1-2%
 - No risk factors: ~1%
 - One risk factor: ~2%
 - Two+ risk factors: ~3%

Conclusion

**Simple characteristics (contralateral stenosis, prior stroke, IHD)
may identify asymptomatic patients
with higher risk of procedural complications,
thereby aiding selection**

Acknowledgements

ACST, ACAS, VA, GALA Trialists and to
the participants who took part

