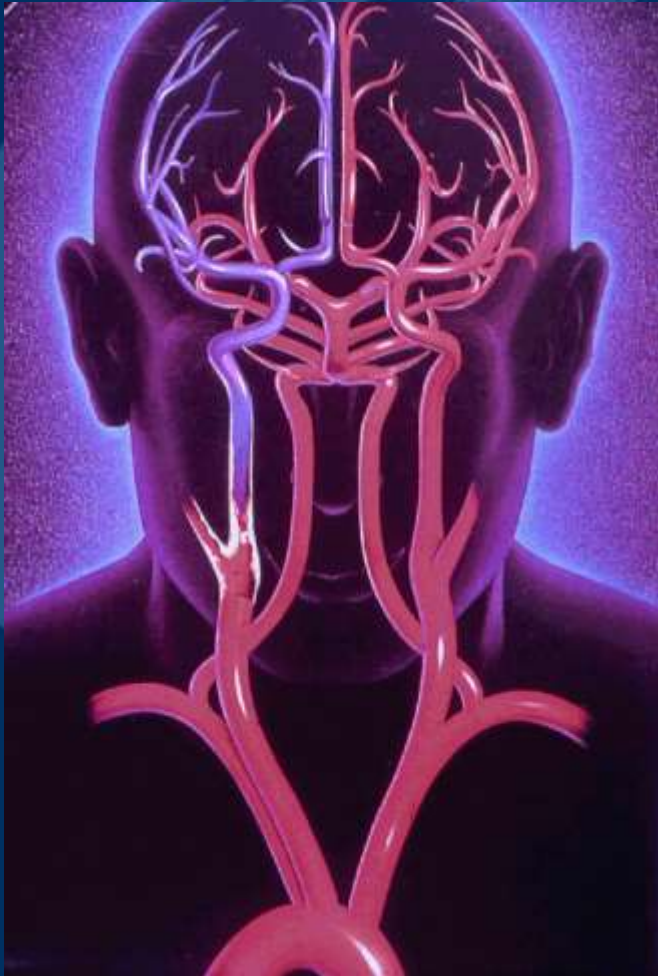


Carotid Interventions: is there a gender difference in outcome?



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Gender Specific outcome in Vascular Medicine – clinical issues

- The incidence of vascular disease is generally lower in women than in men
- Female patients are older at time of diagnosis/treatment
- Female patients have more risk factors and require careful periinterventional management

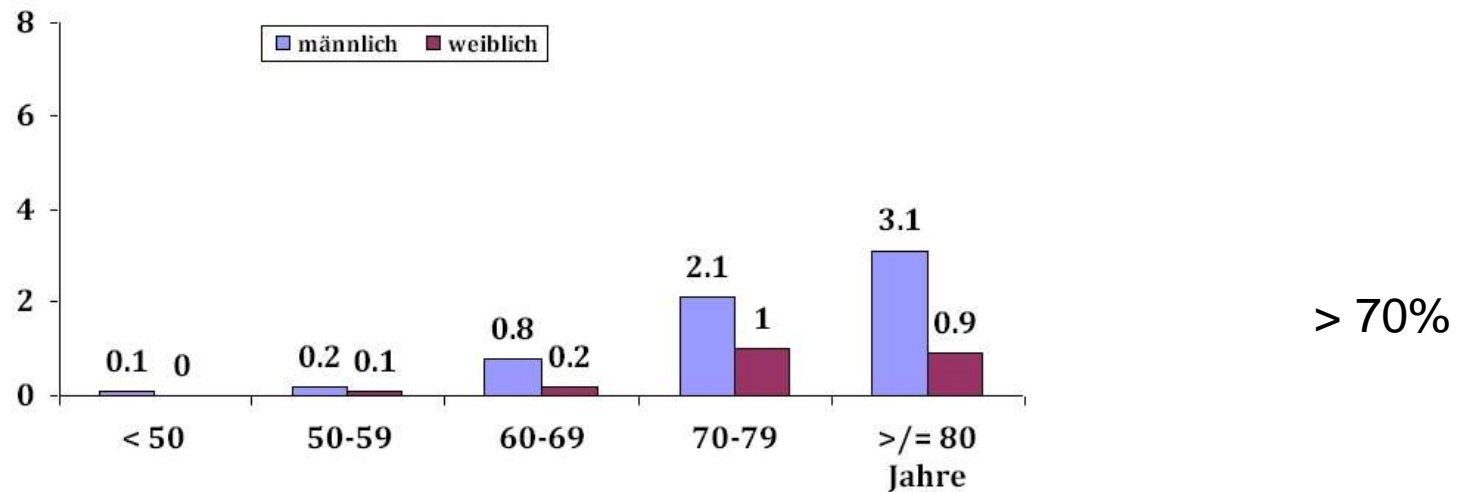
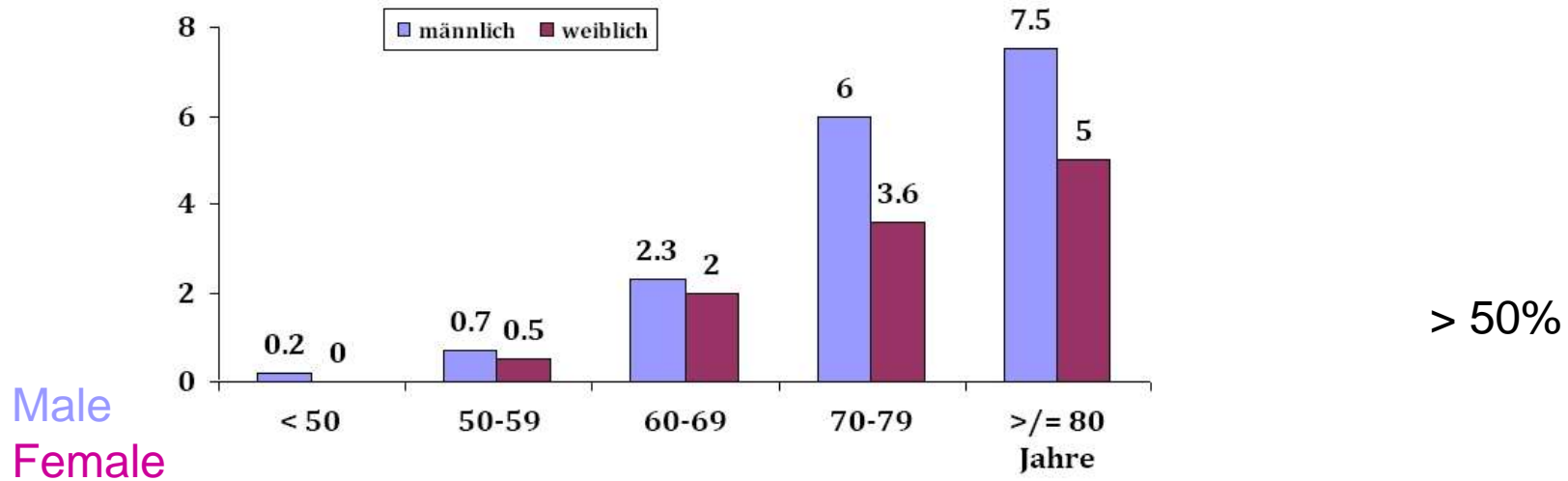
Is gender a factor in asymptomatic carotid intervention?



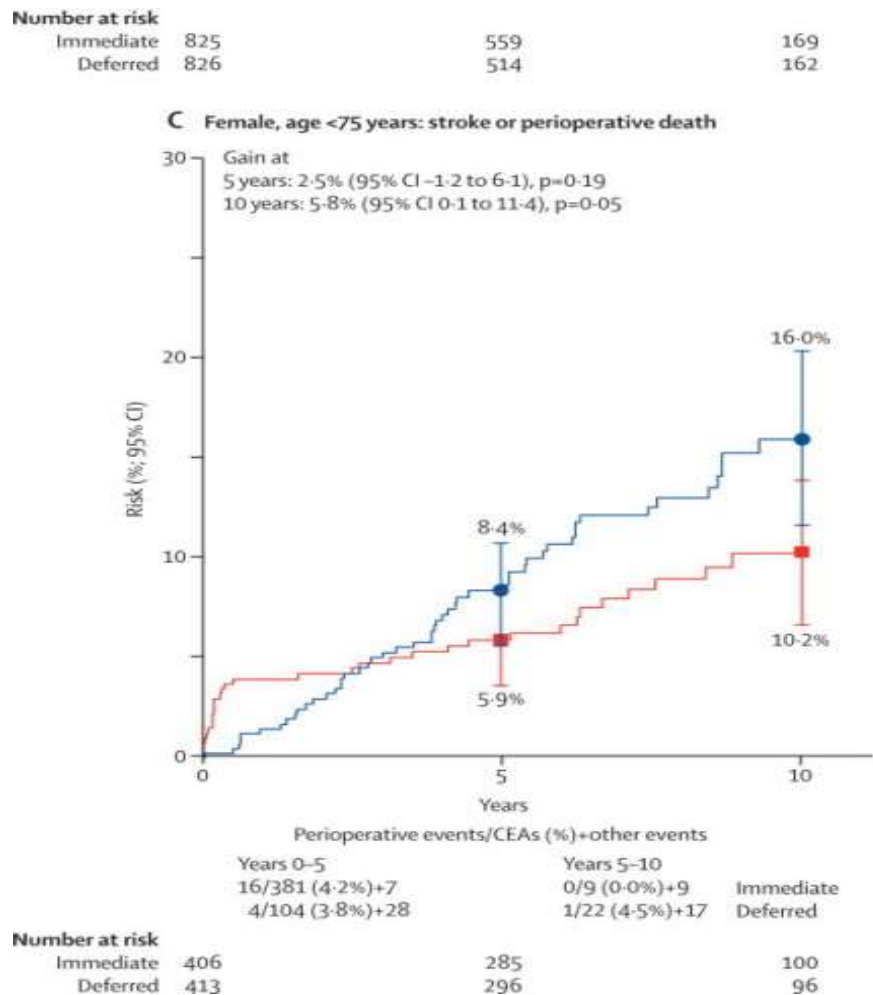
female patient!



Prevalence of asymptomatic stenosis: Lower incidence in female patients



No long-term benefit for female patients with asymptomatic stenosis (?)



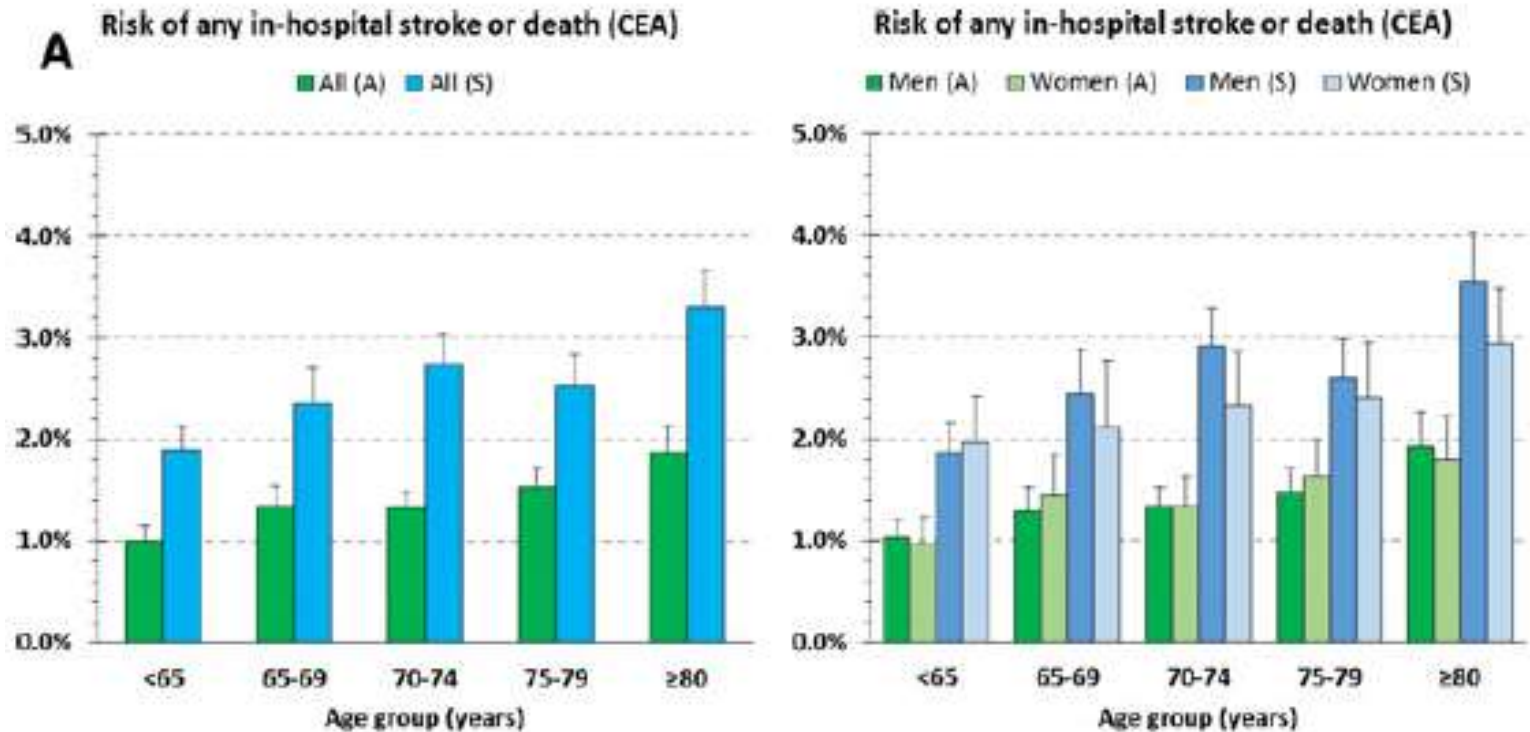
The German Carotid Registry



Database:	Statutory quality assurance registry
Coverage:	2009 – 2014 (163.088 CEAs) 2012 - 2014 (18.065 CAS)
Type of study:	Observational (secondary data analysis)
Statistics:	Descriptive statistics, multivariable regression model
<u>Primary endpoint:</u>	Any stroke or death until discharge

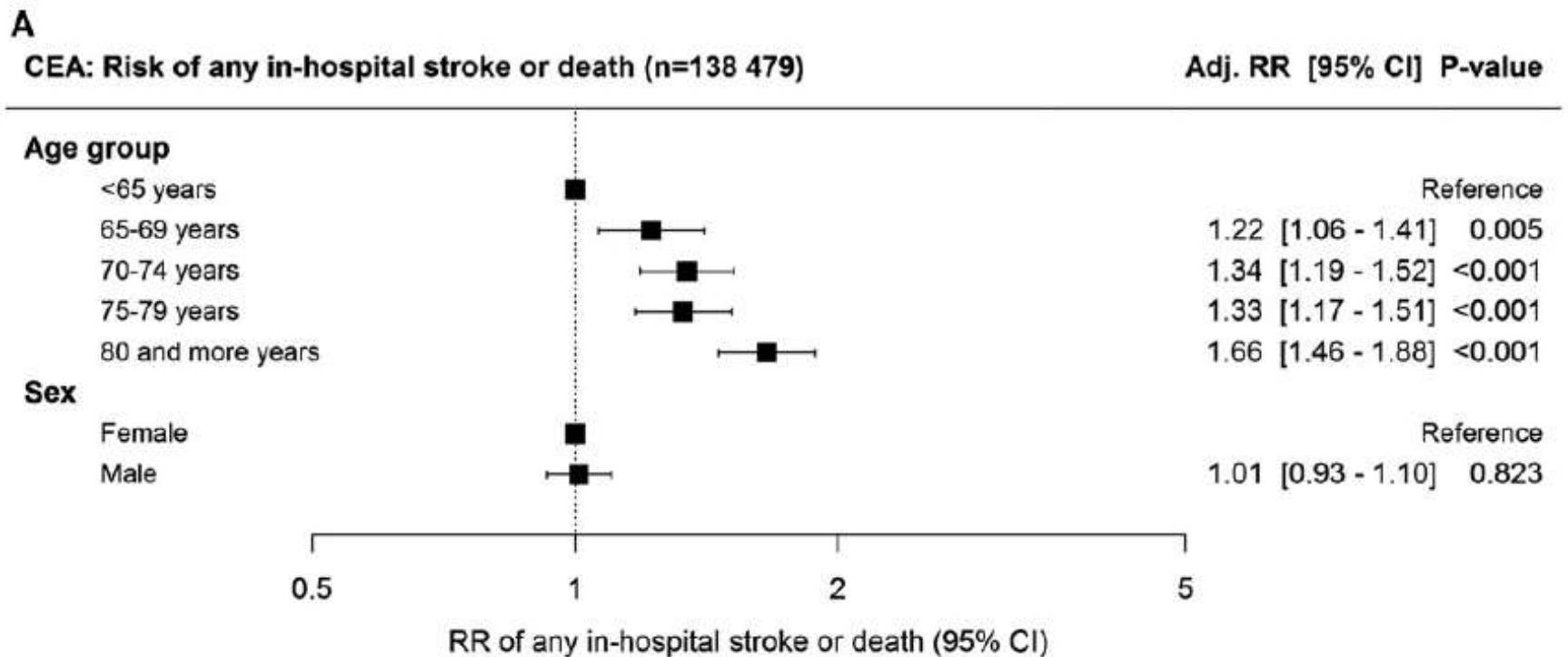
Carotid Surgery : Gender is not a factor but age

Data from German national registry 2009 – 2014 n= 142 074

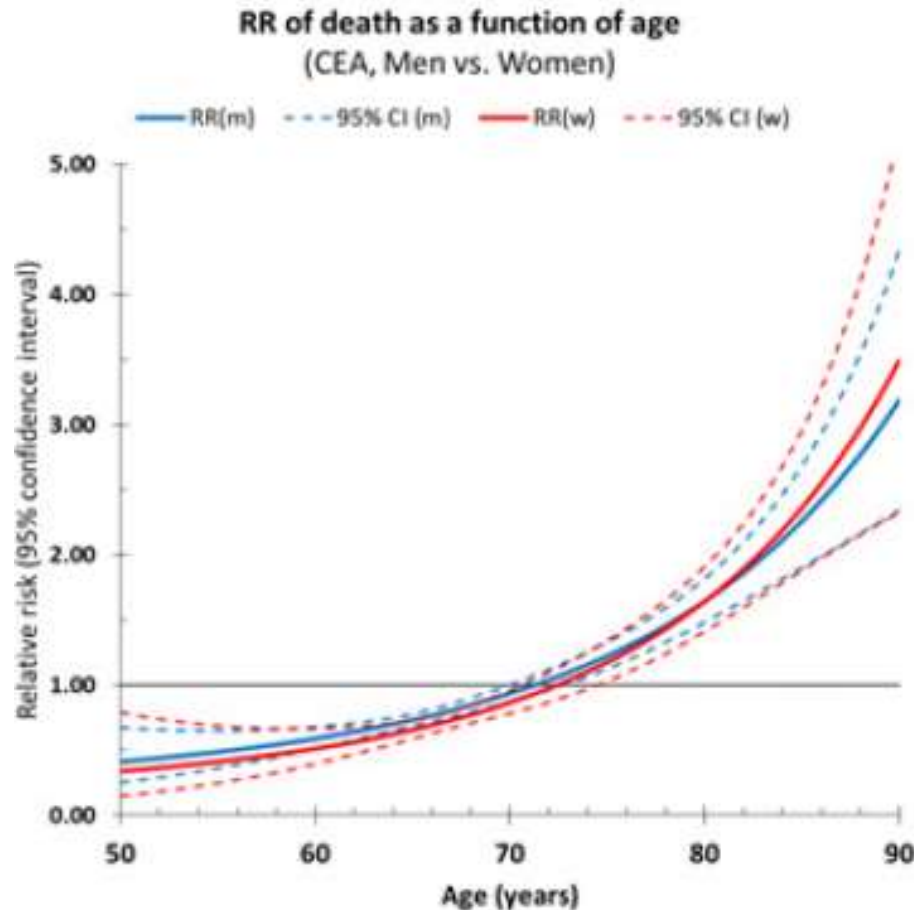


Carotid Surgery : Gender is not a factor but age

Data from German national registry 2009 – 2014 n= 142 074

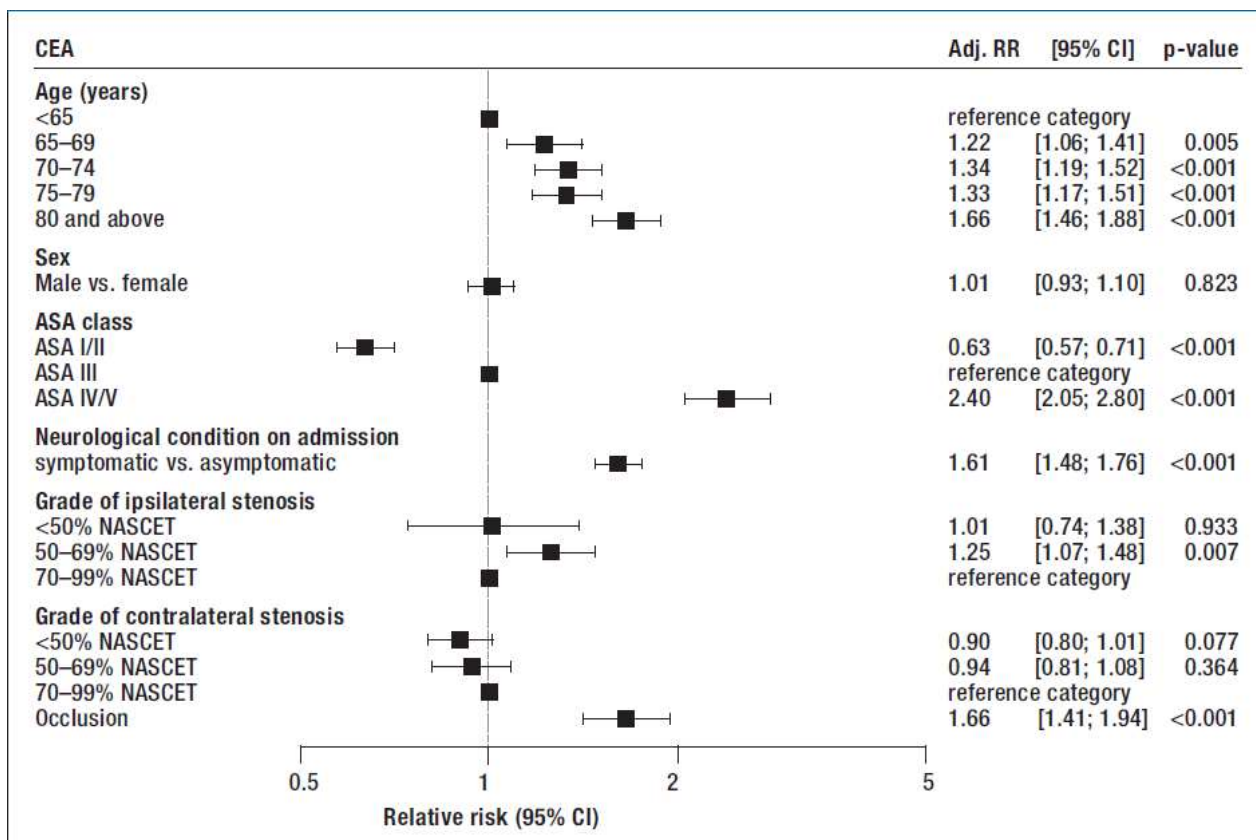


Carotid Surgery : Gender is not a factor but age



Clinically unalterable variables: CEA

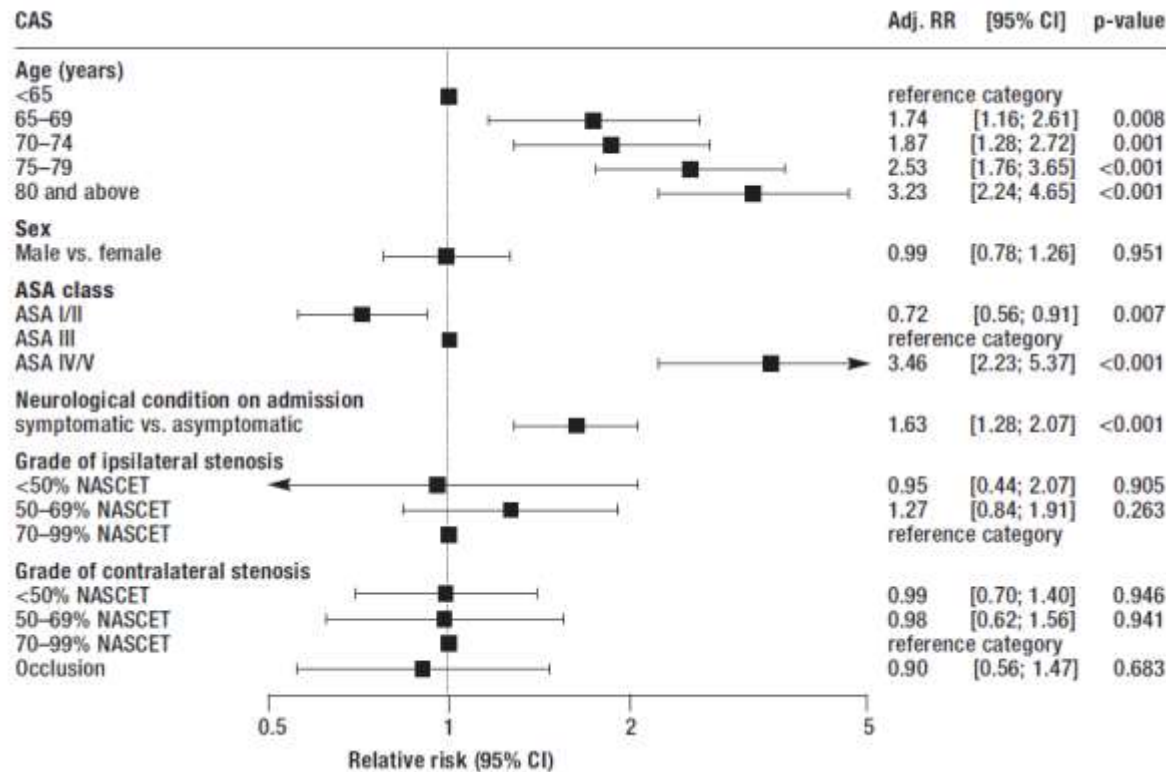
in-hospital stroke/death rates: CEA 1.4%-2.5% / CAS 1.7%-3.7%



The effect of clinically unalterable variables on the risk of periprocedural stroke or death after CEA, adjusted for platelet inhibition, pre- and postprocedural neurological examination, neuromonitoring, hospital caseload, operative technique, anesthesia technique, shunt placement, clamping time, and intraoperative completion studies. Patient clustering in hospitals was taken into account.

Clinically unalterable variables: CAS

in-hospital stroke/death rates: CEA 1.4%-2.5% / CAS 1.7%-3.7%



The effect of clinically unalterable variables on the risk of periprocedural stroke or death after CAS, adjusted for platelet inhibition, pre- and postprocedural neurological examination, neuromonitoring, hospital caseload, and use of a protection device.

Carotid Stenting : Gender specific advantage for CAS?

Subgroup analysis: n=212 vs. 278, study underpowered

ACT 1 subgroup analysis shows benefit of carotid artery stenting for women and highly atherosclerotic patients

New ACT 1 subgroup analysis demonstrates that in female patients the rate of ipsilateral stroke is lower with carotid artery stenting (CAS) compared with endarterectomy (CEA), while in highly atherosclerotic patients stenting seems to deliver better overall long-term results than endarterectomy.

The data were presented by Gary Ansel (Columbus, USA) at the Vascular Interventional Advances 2017 conference (VIVA; 11–14 September, Las Vegas, USA), with Ansel noting that the results for female patients are significant as they are discordant with those reported in the CREST trial, while the findings for highly atherosclerotic patients are concordant with data from the CAPTURE 2 trial. Furthermore.



Source: Vascular News, Issue 76; Nov 17 2018

Predictors of poor outcome after carotid intervention

Anahita Dua, MD, MS, MBA,^a Michael Romanelli, BS,^b Gilbert R. Upchurch Jr, MD,^c James Pan, MD,^d Douglas Hood, MD,^d Kim J. Hodgson, MD,^d and Sapan S. Desai, MD, PhD, MBA,^d *Milwaukee, Wisc; Springfield, Ill; and Charlottesville, Va*

Propensity matched analysis

Variable	CEA (n = 2249)			CAS (n = 2249)		
	OR	CI	P	OR	CI	P
Postoperative CVA						
Female gender	1.21	1.11-1.43	<.05	6.63	4.11-12.12	<.001
1-2 cases per year	1.14	0.91-1.56	NS	2.87	1.03-11.51	<.05
≥3 cases per year	0.86	0.66-1.01	NS	0.89	0.37-3.14	NS
Postoperative MI						
CHF	2.68	1.88-4.84	<.01	4.34	2.63-8.71	<.001
PAD	0.97	0.64-2.78	NS	2.07	1.41-5.36	<.05
1-2 cases per year	1.03	0.78-4.34	NS	1.48	0.97-4.31	NS
≥3 cases per year	0.99	0.62-1.91	NS	0.86	0.51-3.97	NS

Female Gender was a strong predictor of CVA especially in CAS (p<0.01)

Carotid artery stenting is associated with a higher incidence of major adverse clinical events than carotid endarterectomy in female patients

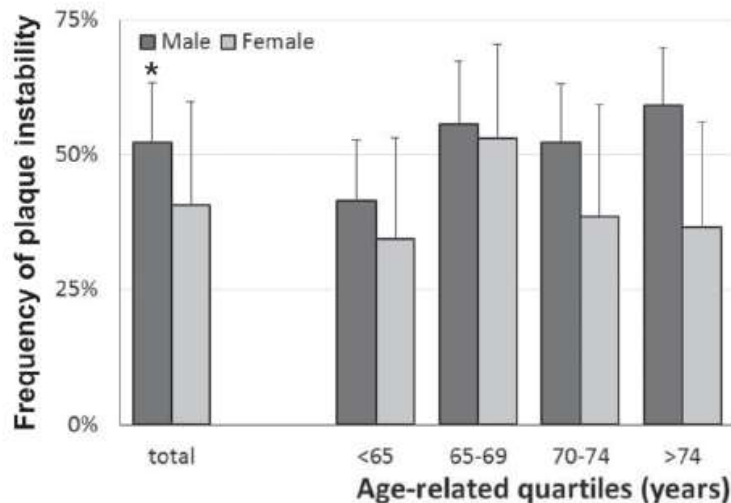
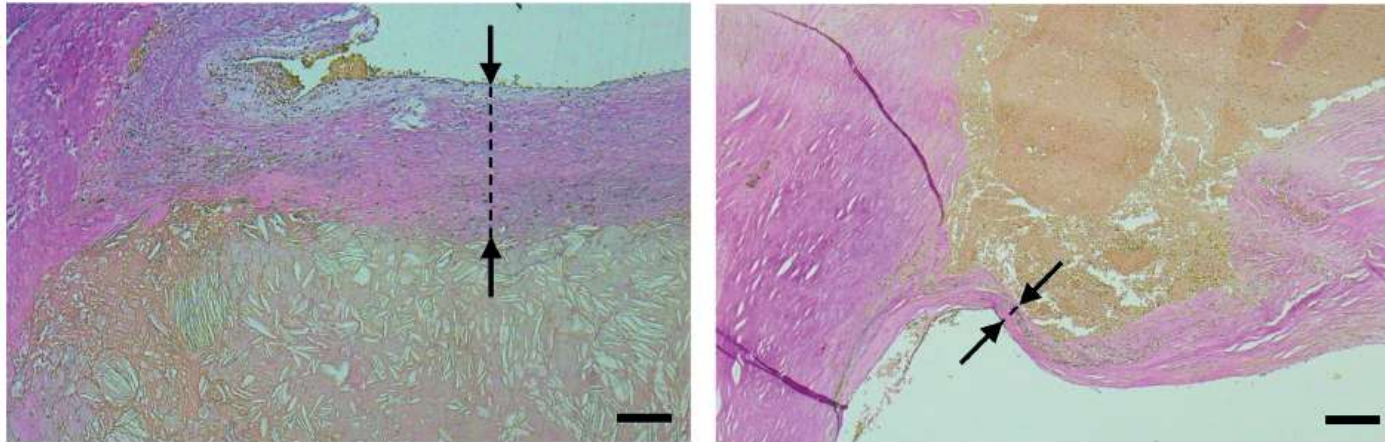
Kyla M. Bennett, MD, and John E. Scarborough, MD, Madison, Wisc

American College of Surgeons National Surgical Quality Improvement Program 30 day results

Outcome	Revascularization procedure, No. (%)		P value
	CEA (n = 5620)	CAS (n = 131)	
MACE	290 (5.2)	16 (12.2)	<.001
Death	41 (0.7)	2 (1.5)	.30
Stroke	123 (2.2)	5 (3.8)	.21
Transient ischemic attack	60 (1.1)	3 (2.3)	.18
MI/arrhythmia	106 (1.9)	6 (4.6)	.03
Bleeding	115 (2.1)	10 (7.6)	<.001
Reoperation	129 (2.3)	3 (2.3)	1.0
Postoperative LOS >2 days	1002 (17.8)	17 (13.0)	.15
Nonhome discharge	363 (6.5)	7 (5.3)	.60
Readmission	390 (6.9)	14 (10.7)	.10

CAS, Carotid artery stenting; CEA, carotid endarterectomy; LOS, length of stay; MACE, major adverse clinical event; MI, myocardial infarction.

Unstable plaques more often in male asymptomatic

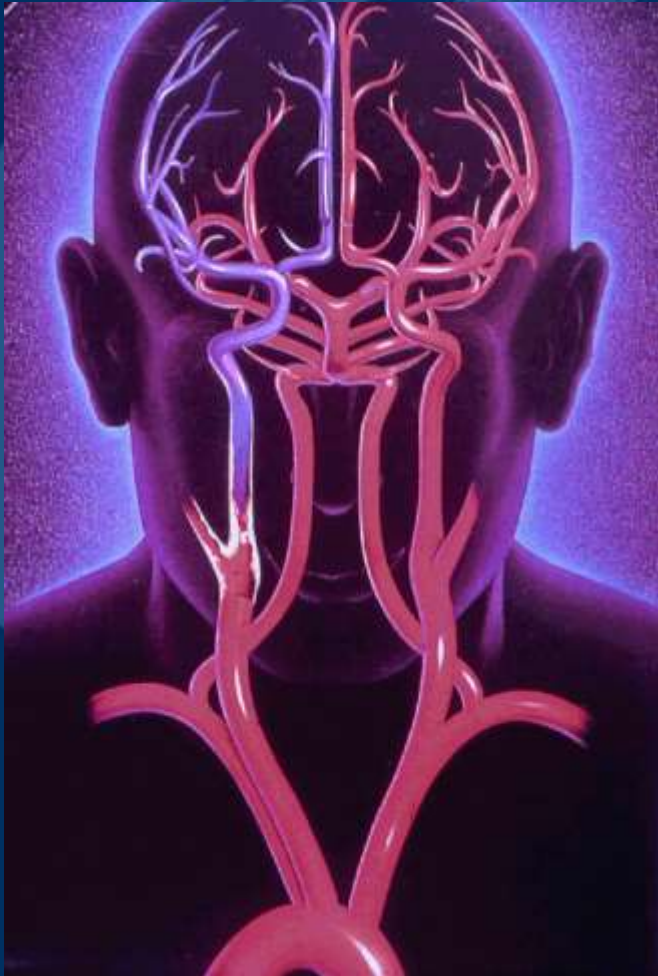


n=465
Munich Vascular Biobank
2004-2013

Conclusion

- Female patients have a similar periprocedural outcome in asymptomatic stenosis
- Age is a factor that outweighs gender
- In CAS there appear to be gender differences
- ACST II has the largest number of female patients included in a RCT (> 1000)

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