

Aktuelle Studienlage zur simultanen Bypass- und Carotis-Operation

*Stato dell'arte: intervento simultaneo bypass
coronarico e ricostruzione carotidea*

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Unter 1184 KHK-Patienten = 65 Jahre fand sich eine Prävalenz für eine = 50% ACl-Stenose von 17% und für eine = 80% ACl-Stenose ein Prävalenz von 5,9%.

Berens ES et al.. Preoperative carotid screening in elderly patients undergoing cardiac surgery. J Vasc surg 1992;15(2).313-21

Schlaganfälle komplizieren in etwa 1,9% (Off pump) bis 3,8% (On pump) der Fälle CABG-Operationen.

Bucerius J. et al.. Stroke after cardiac surgery: a risk factor analysis of 16.184 consecutive adult patients. Ann Thorac Surg 2003;75(2):472-8

Makroembolisation von atherosklerotischem Material aus Aorta ascendens und Aortenbogen und Hypotension unter HLM sind häufigste Ursachen.

Karimi A et al.. Factors effecting postoperative morbidity an mortality in isolated coornary artery graft surgery. Surg Today 2008;38:890-8

Bislang ist ungeklärt, ob ein **prophylaktischer** Carotiseingriff bei Patienten mit signifikanter *ACI-Stenose* und *koronarer Herzkrankheit* das Risiko für einen postoperativen Schlaganfall reduziert?

Kawarada O et al.. Carotid stenosis and peripheral artery disease in Japanese patients with coronary artera disease undergoing coronary artery bapass grafting. Circ J 2003;67:1003-6

[J Am Coll Cardiol.](#) 2004 Aug 4;44(3):E1-E211.

ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction; A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of patients with acute myocardial infarction).

[Antman EM](#), [Anbe DT](#), [Armstrong PW](#), [Bates ER](#), [Green LA](#), [Hand M](#), [Hochman JS](#), [Krumholz HM](#),
[Kushner FG](#), [Lamas GA](#), [Mullany CJ](#), [Ornato JP](#), [Pearle DL](#), [Sloan MA](#), [Smith SC Jr](#), [Alpert JS](#),
[Anderson JL](#), [Faxon DP](#), [Fuster V](#), [Gibbons RJ](#), [Gregoratos G](#), [Halperin JL](#), [Hiratzka LF](#), [Hunt SA](#),
[Jacobs AK](#), [Ornato JP](#)

Aktuelle Studienlage zur simultanen Bypass- und Carotis-Operation



Table 3. Preoperative Estimation of Risk of Mortality, Cerebrovascular Accident and Mediastinitis

For use **only** in isolated CABG surgery

Directions: Locate outcome of interest, e.g., mortality. Use the score in that column for each relevant preop variable; then sum these scores to get the total score. Take the total score and look up the approximate preoperative risk in the table below.

Patient or Disease Characteristic	Mortality score	CVA score	Mediastinitis score
Age 60-69	1.5	1.5	1
Age 70-79	2.5	2.5	1.5
Age ≥80	6.5	3	2
Female sex	2	1.5	
Obesity (BMI 31-36)			2
Severe obesity (BMI ≥ 37)			4.5
Diabetes	1	1.5	1.5
COPD	2		2
PVD	1.5	1.5	
Dialysis	4	2	3
Creatinine ≥ 2	2	2	
MI ≤7 days	1.5		
Prior CABG	2.5		
EF < 40%	2	1.5	1.5
3-Vessel disease	1.5		
LM 50-89%	1.5		
LM ≥ 90%	2		
WBC >12K	2.5		
Urgent surg.	2	1.5	2
Emergency surg.	5	3.5	2
Total Score			

Preoperative Risk			
Total Score	Mortality %	CVA %	Mediastinitis %
0	0.2	0.4	0.3
1	0.2		0.3
2	0.3	0.6	0.4
3	0.3	0.9	0.5
4	0.5	1.3	0.7
5	0.7	1.4	0.9
6	1.0	2.0	1.3
7	1.3	2.7	1.7
8	1.8	3.4	2.5
9	2.3	4.2	3.2
10	3.0	5.9	4.2
11	4.0	7.6	5.6
12	5.3	≥10.0	≥7.3
13	6.9		
14	8.8		
15	11.5		
16	14.1		
17	18.7		
18	≥23.0		

ACC/AHA 2004 Guideline Update for Coronary Artery Bypass Graft Surgery: Summary Article. A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1999 Guidelines for Coronary Artery Bypass Graft Surgery).

Circulation. 2004;110:1168-1176

4.1.1.1.6. Carotid Disease and Neurological Risk Reduction *Class IIa*

- 1. Carotid endarterectomy is probably recommended before CABG or concomitant to CABG in patients with a symptomatic carotid stenosis or in asymptomatic patients with a unilateral or bilateral internal carotid stenosis of 80% or more. (*Level of Evidence: C*)**
- 2. Carotid screening is probably indicated in the following subsets: age greater than 65 years, left main coronary stenosis, peripheral vascular disease, history of smoking, history of transient ischemic attack or stroke, or carotid bruit on examination. (*Level of Evidence: C*)**

Classification of Recommendations

Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.

Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.

Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.

Class IIb: Usefulness/efficacy is less well established by evidence/opinion.

Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.

Level of Evidence

Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.

Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies.

Level of Evidence C: Only consensus opinion of experts, case studies, or standard-of-care.

Angiology. 2011 Aug;62(6):457-60. Asymptomatic carotid disease and cardiac surgery consensus. Stansby G, Macdonald S, Allison R, de Belder M, Brown MM, Dark J, Featherstone R, Flather M, Ford GA, Halliday A, Malik I, Naylor R, Pepper J, Rothwell PM.

The Carotid Disease and Cardiac Surgery Consensus Meeting was convened as a multidisciplinary gathering to consider the management of patients undergoing cardiac surgery who are found to have asymptomatic carotid artery disease.

There are no randomized trials concerning whether carotid interventions are of value in this situation and the natural history is unclear.

A natural history study is urgently needed to determine the incidence, predictive factors, and natural history of asymptomatic carotid disease in patients undergoing contemporary cardiac surgical interventions to inform the design of any future randomized trial.

Bilateral carotid artery disease (=70% stenosis) should be regarded clinically relevant when considering hemodynamic and short-term surgical stroke risk. However, this may be because the presence of significant carotid disease is also a marker for aortic arch and intracerebral disease.

Angiology. 2011 Aug;62(6):457-60.

Asymptomatic carotid disease and cardiac surgery consensus. [Stansby G](#), [Macdonald S](#), [Allison R](#), [de Belder M](#), [Brown MM](#), [Dark J](#), [Featherstone R](#), [Flather M](#), [Ford GA](#), [Halliday A](#), [Malik I](#), [Naylor R](#), [Pepper J](#), [Rothwell PM](#).

Recommendations for the screening of asymptomatic patients for carotid disease prior to CABG to prevent short-term risk of stroke based on the ACC/AHA 2004 Guideline Update for Coronary Artery Bypass Graft Surgery are not supported by recent evidence and are not appropriate for current use in the UK NHS.

[J Vasc Surg.](#) 2006 Jul;44(1):67-72.

Combined carotid endarterectomy and coronary artery bypass grafting in patients with asymptomatic high-grade stenoses: an analysis of 758 procedures.

[Byrne J](#), [Darling RC 3rd](#), [Roddy SP](#), [Mehta M](#), [Paty PS](#), [Kreienberg PB](#), [Chang BB](#), [Ozsvath KJ](#), [Shah DM](#)

Von April 1980 bis Januar 2005; simultane Ops für CEA/CABG, wenn asymptomatische ACI-Stenose >70%.

Table I. Demographic details for 702 asymptomatic patients undergoing synchronous eversion carotid endarterectomy and coronary artery bypass grafting procedures from 1980 to 2005 in Albany*

	<i>Men n (%)</i>	<i>Women n (%)</i>	<i>Total</i>
Procedures	453 (59.7)	305 (40.3)	758
Patients	426 (60.7)	276 (39.3)	702
Mean age	69 ± 8.25	70 ± 8.59	69 ± 8.39
Diabetes mellitus	66 (15.5)	63 (22.8)	
Smokers	168 (39.4)	91 (33)	
Shunt insertion	18 (3.97)	8 (2.62)	26 (3.43)

*Data are values (%) or mean ± SD.

Table II. Clinical outcomes for 53 patients undergoing bilateral synchronous bilateral synchronous eversion carotid endarterectomy and coronary artery bypass grafting operations*

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Bilateral eCEA/CABG (same operation)	23	30	53
Deaths	1	1	2
Cardiac	1	1	2
Stroke related	0	0	0
Complications	1	1	2
Stroke	0	0	0
Nonfatal cardiac	2	0	2
Hematoma	0	1	1
Bleeding	0	1	1
Restenosis	2	0	2

3,8% →

eCEA, Eversion carotid endarterectomy; CABG, coronary artery bypass grafting.

*A further 3 patients underwent initial eCEA under regional block followed by synchronous eCEA/CABG

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Table III. Clinical outcomes for asymptomatic and symptomatic patients undergoing synchronous procedures

	<i>Men n (%)</i>	<i>Women n (%)</i>	<i>Total</i>
Operative mortality	13 (3.05)	9 (3.26)	22 (3.1)
Cardiac causes	12 (2.8)	9 (3.26)	21 (2.99)
Hemorrhagic stroke	1 (0.23)	0 (0)	1 (1.4) 0,13%
Nonfatal complications			
TIA	4 (0.88)	5 (1.64)	9 (1.19) 2,1%
Stroke	6 (1.32)	1 (0.33)	7 (0.92)
Hematoma	3 (0.66)	3 (0.98)	6 (0.79)
Arterial bleed	0	1 (0.33)	1 (0.13)
Immediate thrombosis	1 (0.22)	0	1 (0.13)
Nerve injury	0	1 (0.33)	1 (0.13)
Respiratory	1 (0.22)	2 (0.66)	3 (0.40)
Cardiac	6 (1.32)	3 (0.98)	9 (1.19)
Restenosis	5 (1.10)	4 (1.31)	9 (1.19)
Being followed-up	1 (0.22)	1 (0.33)	2 (0.26)
Redo CEA	4 (0.88)	2 (0.66)	6 (0.79)
Carotid bypass	0	1 (0.33)	1 (0.13)
Median follow-up			
Range (months)	1-213	1-176	1-213

TIA, transient ischemic attack; CEA, carotid endarterectomy.
All data are the value (%) or range.

Tod/Schlaganfall 29/702 4,1%

Table IV. Clinical outcomes for patients aged >75 vs those for patients ≤75 years

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Age >75			
CEAs	105	82	187
Patients	101	79	180
Stroke/mortality	7	2	9 4,8%
Age ≤75			
CEAs	348	223	571
Patients	325	197	522
Stroke/mortality	12*	8	20* 3,5%

CEA, Carotid endarterectomy.

*In keeping with suggested reporting standards, there was a fatal stroke in a 57-year-old man. This is double-counted in the text when calculating stroke-mortality.

Kein signifikanter Unterschied zwischen Männern und Frauen und zwischen Jüngeren und Älteren

[J Vasc Surg.](#) 2006 Jul;44(1):67-72.

Combined carotid endarterectomy and coronary artery bypass grafting in patients with asymptomatic high-grade stenoses: an analysis of 758 procedures.

[Byrne J](#), [Darling RC 3rd](#), [Roddy SP](#), [Mehta M](#), [Paty PS](#), [Kreienberg PB](#), [Chang BB](#),
[Ozsvath KJ](#), [Shah DM](#)

Ergebnisse ***symptomatische*** ACI-Stenose und KHK (04/85 – 01/2001)

N= 132, Symptome TIA 74(56%), Amaurosis fugax 31(24%), präop
zeitnahe Schlaganfall 27(20%).

30-Tage-Letalität / Schlaganfall betrug 6,1% der Fälle. Kein
signifikanter Unterschied zu den asymptomatischen Patienten
(.05<p< 0.10)

Current Outcomes of Simultaneous Carotid Endarterectomy and Coronary Artery Bypass Graft Surgery in North America

Sunil M. Prasad · Shuang Li · J. Scott Rankin · Sean M. O'Brien ·
James S. Gammie · John D. Puskas · David M. Shahian ·
Edgar G. Chedrawy · Malek G. Massad

Retrospektive Analyse aus der STS-Datenbank, veröffentlicht 2010.

745769 CABG-Patienten im Zeitraum von 2003 bis 2007 wurden untersucht. Elektive und dringliche Patienten wurden eingeschlossen.

108212 wiesen eine cerebrovaskuläre Erkrankung auf (14,5%)!

Alle Patienten mit >75% Carotisstenose wurden weiter untersucht.

Eine logistische Regressionsanalyse, mit Anpassung für Unterschiede in den Gruppenzusammensetzungen und der operativer Mortalität und der Zusammensetzung neurologischer Komplikationen wurden vorgenommen.


Table 1 Outcomes of isolated CABG with and without CVD

	All patients	CABG w/o CVD	CABG w/ CVD
Patients (number)	745,769	637,557	108,212
Age (yr)	65.16 ± 10.77	64.48 ± 10.82	69.14 ± 9.57
Male	72.72	73.76	66.62
BMI (mean)	29.4 ± 5.87	29.51 ± 5.89	28.71 ± 5.71
DM	37.53	36.3	44.78
HTN	80.36	78.9	88.97
Dyslipidemia	76.93	76.27	80.82
Smoker	62.01	61.07	67.54
Severe lung	3.03	2.74	4.73
PVD	15.64	12.14	36.25
Renal failure	5.61	4.92	9.72
Dialysis	30.54	31.34	28.16
Redo-CABG	4.47	4.17	6.20
MI	43.48	43.03	46.11
CHF	13.32	12.38	18.85
NYHA IV	19.47	19.23	20.94
LM	28.76	27.85	34.12
EF	50.98 ± 13.04	51.09 ± 12.98	50.32 ± 13.36
Off-pump	20.58	20.41	21.58
In-house complications	36.24	34.7	45.3
Reoperation	4.91	4.58	6.83
Reoperation noncardiac	1.87	1.65	3.13
Stroke	1.25	1.00	2.72
TIA	0.67	0.55	1.35
Coma	0.3	0.26	0.56
Readmission TIA	0.07	0.06	0.12
Readmission CVA	0.07	0.06	0.12
Composite	2.26	1.85	4.64
Mortality 30-day	1.85	1.60	3.31
Mortality all	2.11	1.82	3.78
PPLOS (days)	6.86 ± 6.25	6.64 ± 5.93	7.77 ± 8.16

Data are parentheses unless otherwise noted

1,81% 4,63% p< 0.01

Table 2 Outcomes of patients with CVD

	All CVD patients	SCC	pCEA	+Doppler
Patients (number)	45,656	5,732	15,757	24,167
Age (yr)	70.15 ± 8.93	69.37 ± 8.85	69.58 ± 9.2	70.71 ± 8.73
Male	67.19	69.42	66.08	67.39
BMI (mean)	28.29 ± 5.47	28.34 ± 5.53	28.28 ± 5.52	28.23 ± 5.42
DM	41.28	42.2	42.19	40.47
HTN	88.65	88.01	87.29	89.68
Dyslipidemia	82.66	78.66	81.06	84.66
Smoker	73.23	74.62	72.75	73.22
Severe lung	5.46	4.8	6.11	5.19
PVD	46.67	41.5	43.43	50.01
Renal failure	8.98	7.94	8.94	9.25
Dialysis	20.84	20.22	22.73	19.78
Redo-CABG	7.42	3.52	5.62	9.52
MI	42.74	38.33	43.66	43.2
CHF	17.98	16.31	18.72	17.9
NYHA IV	19.89	17.78	21.55	19.31
LM	39.01	37.16	39.59	39.07
EF	50.99 ± 13.15	50.7 ± 13.05	50.38 ± 13.34	51.46 ± 13.03
Off-pump	21.15	18.98	21.33	21.55
In-house complications	46	47.66	45.17	46.15
Reoperation	6.96	8.04	6.86	6.77
Reoperation noncardiac	3.19	4.19	3.38	2.83
Stroke	2.65	4.48	2.95	2.02
TIA	1.24	1.66	1.33	1.08
Coma	0.51	0.7	0.48	0.498
Readmission TIA	0.11	0.12	0.13	0.1
Readmission CVA	0.14	0.21	0.17	0.12
Composite	4.41	6.82	4.79	3.59
Mortality 30-day	3.57	4.1	3.22	3.68
Mortality all	3.99	4.75	3.58	4.08
PPLOS (days)	10.54 ± 8.01	11.31 ± 8.15	10.48 ± 8.11	10.39 ± 8.15

Data are parentheses unless otherwise noted

Pat.>75% Carotisstenose
in DoppleruntersuchungAktuelle Studienlage
zur simultanen
Bypass- und Carotis-
Operation

Schlaganfall/Tod

Prasad S M et al..Current outcome of simultaneous carotid endarterectomy and coronary artery bypass graft surgery in North America. World J Surg 2010;34:2292-2298

Table 3 Risk-adjusted outcomes

Outcomes	SCC with preop CVD (Total <i>N</i> = 5,732)	Isolated CABG with preop non invasive >75%, without concomitant CEA (Total <i>N</i> = 15,757)			Isolated CABG with preop prior carotid surgery, without concomitant CEA (Total <i>N</i> = 24,167)		
	No. of events (%)	No. of events (%)	Adjusted odds ratio*	Adjusted <i>P</i> value*	No. of event (%)	Adjusted odds ratio*	Adjusted <i>P</i> value*
Operative mortality	242 (4.22%)	514 (3.26%)	0.65	<0.001	910 (3.77%)	0.72	<0.001
In-hospital mortality	204 (3.56%)	460 (2.92%)	0.69	<0.001	820 (3.39%)	0.77	0.002
30-day mortality	235 (4.10%)	508 (3.22%)	0.67	<0.001	889 (3.68%)	0.73	<0.001
Permanent stroke	257 (4.48%)	465 (2.95%)	0.68	<0.001	489 (2.02%)	0.43	<0.001
Transient stroke	95 (1.66%)	210 (1.33%)	0.83	0.132	260 (1.08%)	0.62	<0.001
Coma	40 (0.7%)	75 (0.48%)	0.66	0.04	119 (0.49%)	0.64	0.017
Readmission for TIA	7 (0.12%)	20 (0.13%)	1.15	0.762	25 (0.10%)	0.89	0.797
Readmission for permanent CVA	12 (0.21%)	26 (0.17%)	0.80	0.523	28 (0.12%)	0.56	0.106
Composite of permanent stroke, transient stroke, coma, readmission for TIA, or for permanent CVA	391 (6.82%)	754 (4.79%)	0.71	<0.001	867 (3.59%)	0.49	<0.001

SCC is the control group

Short-term results of a randomized trial examining timing of carotid endarterectomy in patients with severe asymptomatic unilateral carotid stenosis undergoing coronary artery bypass grafting.

Giulio Illuminati, MD,^a Jean-Baptiste Ricco, MD,^b Francesco Calì, MD,^a Maria Antonietta Pacilè, MD,^a Fabio Miraldi, MD,^c Giacomo Frati, MD,^c Francesco Macrina, MD,^c and Michele Toscano, MD,^c Rome, Italy; and Poitiers, France

(J Vasc Surg 2011;54:993-9.)

Zweite randomisierte Studie. Patienteneinschluss von Januar 2004 bis Dezember 2009

Alle Patienten wurden auf arteriosklerotische Veränderungen von Aortenbogen und supraaortale Äste mittels CT-Untersuchung gescreened

Notfallpatienten und Off-Pump-Patienten wurden ausgeschlossen

N= 185 Patienten mit einseitiger Carotisstenose > 70% und operationswürdiger KHK

Alle Carotis-Eingriffe wurden mit Shunteinlage vorgenommen

Gruppe A: Carotis-Eingriff simultan zum CABG oder vorher,
Gruppe B erst CABG, dann Carotis-Eingriff im Abstand von 1-3 Monaten

Studienendpunkte: Tod oder Schlaganfall bis zum 90. postop. Tag

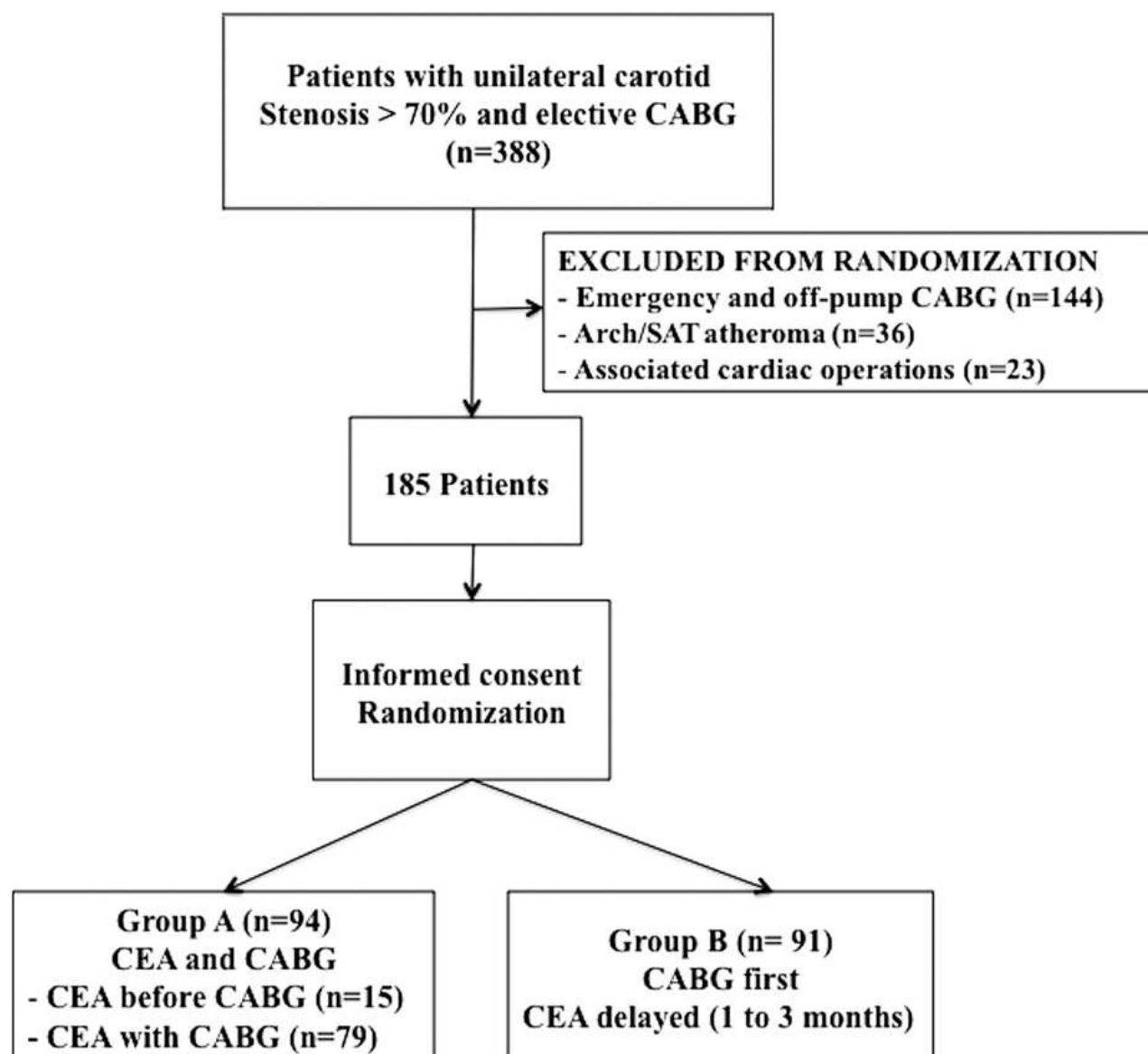


Fig. Flow chart of the study also shows the inclusion and exclusion criteria. CABG, Coronary artery bypass graft; CEA, carotid endarterectomy; SAT, supra-aortic trunks.

Short-term results of a randomized trial examining timing of carotid endarterectomy in patients with severe asymptomatic unilateral carotid stenosis undergoing coronary artery bypass grafting. Giulio Illuminati, MD,^a Jean-Baptiste Ricco, MD,^b Francesco Calì, MD,^a Maria Antonietta Pacilè, MD,^c Mai Fabio Miraldi, MD,^c Giacomo Frati, MD,^c Francesco Macrina, MD,^c and Michele Toscano, MD,^c Rome, Italy; and Poitiers, France

(J Vasc Surg 2011;54:993-9.)

Table I. Patient characteristics

Characteristics	Group A (n = 94)	Group B (n = 91)	P
Age, years	67 ± 7	66 ± 6	.37
Men	59 (62.8)	61 (67.0)	.54
Hypertension	76 (80.9)	71 (78.0)	.63
Smokers	45 (47.9)	47 (51.6)	.60
Hyperlipidemia	26 (27.7)	30 (33.0)	.43
Diabetes	25 (26.6)	21 (23.1)	.58
COPD	36 (38.3)	38 (41.8)	.63
Lower limb occlusive disease	13 (13.8)	11 (12.1)	.72
Chronic renal insufficiency ^b	3 (3.2)	4 (4.4)	.66
MI > 24 hours	24 (25.5)	19 (20.9)	.45
Stable angina	33 (35.1)	36 (39.6)	
Unstable angina	54 (57.4)	47 (52.6)	.72
Effort dyspnea (%)	7 (7.4)	8 (8.8)	
Mean preoperative LVEF	35.6 ± 5.7	39.2 ± 6.0	.21
Mean duration of CPB, minutes	85.0 ± 16.9	90.3 ± 15.8	.03
Grafts per patient	3.05 ± 0.37	3.02 ± 0.34	.42
Patients with redo CABG	5	4	.77

CABG, Coronary artery bypass grafting; COPD, chronic obstructive pulmonary disease; CPB, cardiopulmonary bypass; LVEF, left ventricular ejection fraction; MI, myocardial infarction.

^aContinuous data are presented as mean ± standard deviation; categorical data as number (%).

^bDefined as serum creatinine level >125 mmol/L.

Table II. Postoperative stroke, death, and cervical hematoma by univariate analysis

Variable	Group A n = 94 No. (%)	Group B n = 91 No. (%)	P
Operative mortality	1 (1.0)	1 (1.1)	.98
All strokes ^a	0 (0.0)	7 (7.7)	.008
90-day combined stroke/death ^b	1 (1.0)	8 (8.8)	.018
Post-op cervical hematoma	2 (2.1)	0 (0.0)	.16

^aRelative risk, 0.92 (95% confidence interval, 0.87-0.97); number needed to treat to avoid a stroke = 13.

^bRelative risk, 0.92 (95% confidence interval, 0.86-0.98), number needed to treat = 12.9.

Gruppe A keine Schlaganfälle

Gruppe B drei direkt postoperative Schlaganfälle und jeweils einer am 39, 50, 58 und 66 postop. Tag.

Bei Pat. aus Gruppe B, die einen Schlaganfall erlitten hatten, wurde kein Carotis-Eingriff vorgenommen. Die Verzögerung war durch Komplikationen im postop. Verlauf bedingt (Wundheilungsstörung oder Verzögerungen im Rehabilitationsprogramm). Die Schlaganfälle waren alle ipsilateral.

Gruppe A: OP-Letalität 1,0%
Gruppe A: Schlaganfälle 0%

Gruppe B: 1,1%
Gruppe B: 7,7%

Kombiniert Tod/ Schlaganfall 90 Tage

Gruppe A : 1,0% Gruppe B: 8,8%
(OR 0.11;95% confidence interval CI 0,01-0.91; P=.02)

Die logistische Regressionsanalyse zeigte das nur zweizeitige CEA (OR,14,2;95% CI, 1,32-152.0; P=.03) und HLM-Zeit (OR,1,06;95% CI,1.02-1,11; P=.004) verlässliche Parameter für die Vorhersage von Tod und Schlaganfall waren.

Zusammenfassung:

Es gibt augenblicklich keine Langzeit-Daten aus randomisierten Studien zu diesem Thema.

Es gibt keine belastbaren Leitlinienempfehlungen zu diesem Thema aus den großen Fachgesellschaften.

Patienten mit KHK und hochgradiger extrakranieller ACI-Stenose weisen bei simultaner Operation in einigen veröffentlichten Studien ein höheres Op-Risiko auf als bei zweizeitigem Vorgehen oder gar als bei alleiniger CABG-Op.

Trotzdem zeigen Daten einzelner monozentrischer Studien sehr gute Ergebnisse für das simultane Vorgehen bei asymptomatischer Carotisstenose und KHK auf.

Zusammenfassung:

Ob das Arteria Carotis Stenting oder die chirurgische Carotis Endarterieektomie die bessere Ergebnisse erzielen bleibt zu untersuchen.

Besondere Befund-Konstellationen bei einzelnen Patienten könnten trotzdem ein simultanes Vorgehen rechtfertigen, z. B. bei Vorliegen einer bilateralen, hochgradigen ACI-Stenose oder bei einseitiger hochgradiger ACI-Stenose und kontralateralem ACI-Verschluss.

Patienten mit dieser Konstellation weisen unter CABG-OPs ohne Carotiseingriff ein bis zu vierfach höheres Schlaganfallrisiko auf.

Simultaneous Carotid Endarterectomy and Cardiac Surgery: Early Results of 386 Patients

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Table 1a Demographic Data of 386 Patients with Simultaneous CEA and CPB Operated between 7/1994 and 9/2010

Age: 47–87 Years; Mean 68.3 ± 7.9		
Sex: Male: 229 (59%), Female 157 (41%)		
Preoperative Status	No. of Patients	%
Symptomatic carotid artery disease	131 of 386	33.9
Stroke	38 of 131	29.0
PRIND	29 of 131	22.1
TIA	41 of 131	31.3
Amaurosis fugax	23 of 131	17.6
Previous myocardial infarction	148 of 386	38.3
Urgent/emergent operations	54 of 386	14.0
EF < 30%	33 of 386	8.5

CEA, carotid endarterectomy; CPB, cardiopulmonary bypass; PRIND, prolonged reversible ischemic neurological deficit; TIA, transient ischemic attack; EF, ejection fraction.