SEVERE POSTOPERATIVE HYPOTENSION AFTER CAROTID ENDARTERECTOMY: RISK FACTORS AND PERIOPERATIVE OUTCOME.

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BACKGROUND AND GOAL OF STUDY

Carotid endarterectomy (CEA) for stroke prevention is associated with perioperative haemodynamic instability and this has been correlated to worst outcome. Our aim was to analyse the incidence of severe hypotension after CEA, to identify possible risk factors for such complication and evaluate a possible association of severe hypotension with perioperative morbidity.

MATERIAL AND METHODS

The review included data of 201 patients who underwent CEA for carotid stenosis under general anaesthesia in our institution from 2005 to 2011. Severe hypotension was defined as the need for the administration of a continuous infusion of intravenous noradrenaline in the postoperative period. All data was obtained from medical records. Mann-Whitney U and Chi square tests were used to compare means or percentages respectively.

Demographic and clinical characteristics	
Total No, n(%)	201 (100)
Male, n(%)	162 (80.6)
Age (y), median (IQR)	70 (64 - 75)
BMI (Kg/m2),	26.9 (24.8 - 29.8)
Physical Status (ASA), n(%)	
2	37 (18.5)
3	158 (79)
4	5 (2.5)
Surgical procedure, n(%)	
Right TEA	105 (52.2)
Left TEA	96 (47.8)
Stenosis grade,n (%)	
51-70%	28 (13.9)
>71%	173 (86.1)
Contralateral stenosis (%)	
< 30	91 (45.3)
31-50	39 (19.4)
>51-70	34 (16.9)
>71	37 (18.4)
Prior stroke/TIA	
No	99 (49.3)
Yes	102 (50.7)
Previous contralateral surgery, n(%)	
No	180 (89.6)
Yes	21 (10.4)
ICU stay (h), median (IQR)	22 (21 - 24)
Hospital stay (d), median (IQR)	5 (4 - 6)
ACV-surgery time (d)	120 (30-241)

IQR= percentile 25 - percentile 75; BMI= Body Mass Index;
ASA= American Society of Anesthesiologists physical status;
ICU= postoperative intensive care unit.

RESULTS

The incidence of severe hypotension after CEA was 13,4%. Severe postoperative hypotension was associated to a longer ICU stay [median (IQR): 22 (21-24) vs 24(23-45) hours; p<0.001)] but did not have any impact in length of hospital stay [5 (4-6) vs 5 (4-7) days; p=0.978].

We only found preoperative estimated glomerular filtration rate (eGFR)<45 mL/min/1,73m² to be associated with a major incidence of postoperative hypotension.

Preoperative variables			
	No Hypotension	**Hypotension**	**p**
Hypertension, n(%)	141 (81)	24 (88.9)	0,425
Preoperative Haemoglobin (g/dL),n(%)	13.8 (12.5 - 15)	13.3 (12.4 - 14.6)	0,392
Peripheral vascular disease, n(%)	78 (44.8)	8 (29.6)	0,409
Coronary artery disease, n(%)	48 (27.6)	9 (33.3)	0,923
Diabetes mellitus, n(%)	54 (31)	13 (48.1)	0,085
Dislipidemia, n(%)	131 (75.3)	22 (81.5)	0,63
Chronic heart failure, n(%)	6 (3.4)	2 (7.4)	0,293
Chronic Kidney disease, n(%)	20 (11.5)	6 (22.2)	0,129
eGFR (CKD-EPI) < 45	16 (9.2)	7 (25.9)	**0,015**
eGFR (CKD-EPI)	72.2(60.2- 90.5)	79.2(40.8 - 84.8)	0,812
Medical treatments, n(%)			
Diuretics	72 (43.1)	13 (49)	0,531
ß-Blockers	53 (31.9)	9 (34.6)	0,823
Statins	136 (78.2)	23 (85.2)	0,611
ACE inhibitors	64 (36.8)	13 (48.1)	0,291
ARBs	35 (21.1)	5 (19.2)	0,829
Nitrates	13 (7.8)	1 (3.8)	0,697
Calcium channel blockers	51 (30.7)	6 (23.1)	0,496
Number of antihypertensive Drugs, n(%)			0,928
0	40 (23)	4 (14.8)	
1	44 (25.3)	8 (29.6)	
2	48 (27.6)	7 (25.9)	
≥3+	42 (24.1)	8 (29.7)	

Perioperative complications at 30 days after surgery			
	No hypotension	Hypotension	P
Any complications	31 (18.9)	8 (29.6)	0,205
Exitus, n(%)	1 (0.6)	2 (7.4)	0,052
Transfusion, n(%)	17 (10.4)	4 (14.8)	0,507
SDRA, n(%)	0 (0)	2 (7.4)	0,019
Atelectasia, n(%)	1 (0.6)	2 (7.4)	0,052
Surgical wound infection, n(%)	2 (1.2)	0 (0)	0,565
Infeccio greu, n(%)	1 (0.6)	1 (3.7)	0,265
MACCE, n(%)	18 (10.3)	4 (14.8)	0,507

CONCLUSIONS

Severe postoperative hypotension after CEA is difficult to predict. Although not uncommon, hypotension does not increase the incidence of perioperative complications

REFERENCES

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