Predictors of neurologic deficit after thoracoabdominal aortic aneurysm repair: a retrospective study

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Background & Goal of study

Neurologic deficit is a devastating complication of thoracoabdominal aortic aneurysm repair (TAAAR) and is associated with a significant increase in both, morbidity and mortality.

► **The goal of this study was to identify predictors of neurologic deficit after TAAAR.**

Methods

Consecutive 449 patients who underwent TAAAR between June 2003 and November 2015 were enrolled in this study.

Data were collected retrospectively through electronic medical records, then analyzed using univariate analysis and the logistic regression with Akaike information criterion stepwise selection.

Candidate predictors

1. Age

2. Sex

3. DM

4. Cerebral infarction

5. Renal insufficiency

6. Acute dissection

7. Emergency

8. CSFD

9. Crawford classification

10. Intercostal arteries reattachment

11. Clamp time

12. Open distal anastomosis

Results

Crawford classification	Number (%)
I	69 (15)
II	222 (49)
III	158 (35)
total	449

The incidence of neurologic deficit

12.5% (56/449)
{ paraplegia 6.6% (30/449)
{ paraparesis 5.8% (26/449)

Conclusion

The predictors of neurologic deficit in our hospital were preoperative renal insufficiency, presence of open distal anastomosis, and absence of intercostal artery reattachment.

Results

Univariate analysis

	Paralysis		p.value
	negative n = 393	positive n = 56	
age	63±13	65±11	0.40
sex (M/F, %)	288/105 (73)	46/10 (82)	0.19
DM (%)	33 (8)	6 (11)	0.61
cerebral.inf (%)	34 (9)	4 (7)	>0.99
Cr (mg/dl)	1.4 (1.4)	2.0 (2.8)	0.01
acute.dis (%)	9 (2)	1 (2)	>0.99
emergency (%)	42 (11)	13 (23)	0.01
CSFD (%)	336 (86)	45 (82)	0.42
Crawford (I + II)	249 (63)	42 (75)	0.10
ICAr (%)	213 (55)	29 (52)	0.77
Clamp.time (min)	106 (42)	116 (65)	0.13
open.distal (%)	122 (3)	31 (55)	<0.001

Multivariate analysis

	odds ratio (95% CI)	p.value
Sex (F vs. M)	1.76 (0.81-3.83)	0.15
Cerebral.inf	0.35 (0.09-1.3)	0.12
Cr	1.24 (1.06-1.44)	0.006
Crawford (I + II vs. other)	2.25 (1-5.11)	0.05
ICAr	0.47 (0.23-0.96)	0.04
Clamp.time (/30 min)	1.2 (1.44)	0.05
Open.distal	2.79 (1.52-5.12)	0.001