

Supplemental Table 1. Univariable and multivariable predictors of acute kidney injury

Predictors	Univariable		Multivariable	
	Odds ratio (95% CI)	<i>P</i> -value	Odds ratio (95% CI)	<i>P</i> -value
Age at surgery, per year increase	1.01 (1.009-1.016)	< 0.0001		
Male sex	1.21 (1.09-1.34)	0.0004	1.44 (1.29-1.62)	< 0.0001
Race				
Black	1.0		1.0	
White	0.62 (0.55-0.70)	< 0.0001	0.68 (0.60-0.77)	< 0.0001
All Other	0.50 (0.38-0.66)	< 0.0001	0.59 (0.46-0.78)	0.0003
ASA category, per category increase	2.12 (1.95-2.31)	< 0.0001	1.37 (1.24-1.51)	< 0.0001
Emergency surgery	1.46 (1.23-1.74)	< 0.0001		
Cleveland Clinic Risk Index, per 1-point increase	1.27 (1.23-1.31)	< 0.0001	1.13 (1.09-1.16)	< 0.0001
Preoperative hemoglobin, per 1-g/dL increase	0.82 (0.80-0.84)	< 0.0001	0.88 (0.86-0.92)	< 0.0001
Baseline pulse pressure, per 20-mmHg increase	1.35 (1.28-1.44)	< 0.0001	1.17 (1.10-1.25)	< 0.0001
Preoperative medications				
Alpha-receptor blockers	1.67 (1.35-2.06)	< 0.0001		
Angiotensin converting enzyme inhibitors	1.49 (1.30-1.70)	< 0.0001	1.19 (1.03-1.38)	0.02
Angiotensin receptor blockers	1.31 (1.11-1.56)	0.002	1.35 (1.12-1.62)	0.001
Antiplatelet medications	1.38 (1.23-1.55)	< 0.0001		
Beta-blockers	1.94 (1.73-2.17)	< 0.0001	1.22 (1.07-1.39)	0.004
Calcium-channel blockers	1.69 (1.47-1.96)	< 0.0001		

Cholesterol lowering medications	1.25 (0.82-1.92)	0.30		
Diuretics	1.47 (1.31-1.66)	< 0.0001		
Nitroglycerine	2.56 (2.04-3.21)	< 0.0001		
Intraoperative variables				
Cumulative duration of time with MAP < 55 mmHg, per 10-min increase	1.13 (1.08-1.18)	< 0.0001	1.05 (1.004-1.10)	0.03
Cumulative duration of time with MAP > 100 mmHg, per 10 min increase	1.03 (1.02-1.05)	< 0.0001		
Epinephrine	4.08 (2.81-5.92)	< 0.0001	1.81 (1.20-2.74)	0.005
Nitroglycerine	2.81 (2.24-3.54)	< 0.0001	1.82 (1.42-2.33)	< 0.0001
Nitroprusside	3.02 (1.61-5.65)	0.0006		
Norepinephrine	4.18 (3.12-5.59)	< 0.0001	1.43 (1.03-1.99)	0.03
Phenylephrine	1.33 (1.20-1.47)	< 0.0001		
Crystalloid, per 500-mL increase	1.04 (1.02-1.06)	< 0.0001		
Colloid, per 500-mL increase	1.25 (1.19-1.32)	< 0.0001	1.19 (1.11-1.27)	< 0.0001
Red blood cell transfusion	2.36 (2.01-2.80)	< 0.0001		
Fresh frozen plasma transfusion	2.87 (2.10-3.92)	< 0.0001		
Platelet transfusion	2.88 (1.84-4.51)	< 0.0001		
Cryoprecipitate	4.06 (1.18-14.05)	0.03		
Bispectral Index, per unit increase	0.99 (0.98-1.0)	0.0008	0.99 (0.98-1.0)	0.04
MAC, per percentage increase	0.53 (0.40-0.72)	< 0.0001		
Duration of surgery, per 30-min increase	1.05 (1.04-1.07)	< 0.0001	1.05 (1.03-1.06)	< 0.0001

Year of surgery, per year increase	1.11 (1.05-1.17)	0.0002	1.12 (1.06-1.19)	< 0.0001
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ASA, American Society of Anesthesiologists; CI, confidence interval; MAC, minimum alveolar concentration; MAP, mean arterial pressure

Supplemental Table 2. Multivariable predictors of severity of postoperative acute kidney injury

PREDICTORS	STAGES OF ACUTE KIDNEY INJURY*					
	Stage I, n=1,578		Stage II, n=151		Stage III, n=76	
	Odds Ratio (95% CI)	P value	Odds Ratio (95% CI)	P value	Odds Ratio (95% CI)	P value
Male sex	1.46 (1.29-1.64)	< 0.0001	1.07 (0.76-1.49)	0.72	2.12 (1.30-3.47)	0.003
Race						
White vs Black	0.69 (0.61-0.79)	< 0.0001	0.96 (0.66-1.42)	0.85	0.26 (0.16-0.43)	< 0.0001
All Other vs Black	0.64 (0.48-0.85)	0.002	0.12 (0.02-0.88)	0.04	0.48 (0.17-1.37)	0.17
Year of surgery, per year increase	1.12 (1.06-1.19)	0.0002	1.14 (0.96-1.35)	0.13	1.09 (0.86-1.39)	0.46
ASA category, per category increase	1.32 (1.19-1.46)	< 0.0001	1.49 (1.10-2.02)	0.01	2.48 (1.61-3.80)	< 0.0001
Cleveland Clinic Risk Index, per 1-point increase	1.12 (1.08-1.16)	< 0.0001	1.11 (1.01-1.22)	0.02	1.26 (1.11-1.41)	0.0002
Preoperative hemoglobin, per 1-g/dL increase	0.89 (0.86-0.92)	< 0.0001	0.88 (0.81-0.97)	0.006	0.86 (0.76-0.96)	0.01
Baseline pulse pressure, per 20-mmHg increase	1.19 (1.11-1.27)	< 0.0001	1.11 (0.92-1.35)	0.28	0.96 (0.73-1.26)	0.78
Preoperative medications						
Angiotensin converting enzyme inhibitors	1.18 (1.01-1.37)	0.04	1.45 (0.95-2.20)	0.09	1.03 (0.55-1.94)	0.92
Angiotensin receptor blockers	1.30 (1.07-1.58)	0.008	1.74 (1.04-2.89)	0.03	1.91 (0.91-4.01)	0.09
Beta-blockers	1.24 (1.08-1.42)	0.002	1.02 (0.69-1.51)	0.92	1.17 (0.69-1.99)	0.56
Intraoperative variables						
Epinephrine	1.59 (1.02-2.48)	0.04	4.52 (2.15-9.54)	< 0.0001	1.50 (0.47-4.79)	0.50

Nitroglycerine	1.89 (1.47-2.44)	< 0.0001	1.88 (0.97-3.64)	0.06	0.49 (0.11-2.10)	0.33
Norepinephrine	1.36 (0.96-1.92)	0.09	1.44 (0.66-3.12)	0.36	2.15 (0.94-4.95)	0.07
Colloid, per 500-mL increase	1.18 (1.11-1.27)	< 0.0001	1.41 (1.19-1.68)	0.0001	0.80 (0.58-1.12)	0.17
Bispectral Index, per unit increase	0.99 (0.99-1.0)	0.13	0.98 (0.96-1.0)	0.047	0.99 (0.97-1.02)	0.60
Cumulative duration of time with MAP < 55 mmHg, per 10-min increase	1.05 (1.01-1.10)	0.03	1.06 (0.99-1.17)	0.25	0.98 (0.95-1.14)	0.28
Duration of surgery, per 30-min increase	1.05 (1.03-1.07)	< 0.0001	1.04 (0.99-1.09)	0.14	1.09 (1.02-1.16)	0.009

ASA, American Society of Anesthesiologists

*Multinomial multivariable logistic regression analysis. The reference group is the group of patients without postoperative acute kidney injury.