Supplemental Digital Content 3

Four models describing the association of AKI severity with post-operative outcome in cardio surgical patients of the study cohort: On the left, a binary logistic regression model estimating the odds ratio (OR) and a corresponding Cox proportional hazard regression model estimating the hazard ratio (HR) for all-cause in-hospital death; on the right, a robust regression model estimating the coefficients for hospital length of stay and a corresponding Cox proportional hazard model calculating the HR for hospital discharge.

	Mortality				Morbidity			
	In-Hospital Death		Survival[g]		Hospital Length of Stay[k]		Discharge[m]	
	p	OR (95%CI)	p	HR[h] (95%CI)	p	β (95%CI)	p	HR[n] (95%CI)
Constant[a]	<.001	–	–	–	<.001	11.31 (7.36–15.26)	–	–
Age, years	.35	1.01 (0.99–1.04)	.05	1.02 (1.00–1.04)	.02	-0.05 (-0.09– -0.01)	.21	1.00 (0.99–1.01)
Gender, female vs. male	.05	1.61 (1.00–2.60)	.08	1.42 (0.96–2.10)	.35	0.36 (-0.43–1.22)	.03	0.88 0.78–0.99)
Charlson Comorbidity Index	.04	1.13 (1.01–1.28)	.97	1.00 (0.88–1.08)	<.001	0.77 (0.56–0.98)	<.001	0.90 (0.87–0.93)
Congestive heart failure	.92	1.03 (0.62–1.70)	.66	1.11 (0.70–1.74)	.66	-0.17 (-0.92–0.58)	.26	0.94 (0.84–1.05)
Preoperative hemoglobin, mg/dL	.80	0.99 (0.88–1.11)	.53	0.97 (0.88–1.08)	.91	-0.01 (-0.21–0.19)	.43	1.01 (0.98–1.04)
Preoperative creatinine, mg/dl[b]	.94	1.02 (0.70–1.48)	.54	1.10 (0.81–1.50)	.34	0.51 (-1.54–0.53)	.87	1.01 (0.87–1.18)
Radio contrast agent[c]	.66	1.15 (0.63–2.11)	.12	0.60 (0.32–1.14)	<.001	2.30 (1.09–3.51)	.06	0.85 (0.71–1.01)
Cardiac surgery procedure[d]								
Valve sugery	.70	1.11 (0.65–1.91)	.82	1.05 (0.66–1.67)	<.001	-1.73 (-2.53– -0.94)	.01	1.16 (1.04–1.31)
CABG and valve surgery	.004	2.25 (1.29–3.94)	<.001	2.34 (1.48–3.68)	.01	-1.46 (-2.75– -0.35)	.94	1.01 (0.85–1.19)
Risk factors surgical AKI[e]								
Emergency surgery	<.001	2.61 (1.46–4.67)	<.001	2.12 (1.34–3.35)	.04	1.43 (0.11–2.70)	.01	0.78 (0.65–0.95)
Intra-operative transfusion	.28	1.30 (0.80–2.10)	.44	1.18 (0.78–1.79)	.45	0.29 (-0.46–1.03)	.06	0.90 (0.81–1.00)
Severity of AKI[f]								
ΔCr 1–24%	.24	0.52 (0.17–1.56)	.26	0.54 (0.18–1.60)	.24	0.56 (-0.38–1.49)	.81	0.98 (0.86–1.13)
ΔCr 25-49%	.28	0.42 (0.08–2.05)	.17	0.33 (0.07–1.59)	.002	2.06 (0.79–3.33)	<.001	0.71 (0.59–0.85)
KDIGO stage 1	.41	1.49 (0.58–3.80)	.63	1.26 (0.50–3.16)	.002	1.75 (0.66–2.83)	.001	0.76 (0.65–0.89)
KDIGO stage 2	.02	3.48 (1.21–10.03)	.04	2.86 (1.04–7.86)	<.001	3.55 (1.77–5.33)	<.001	0.62 (0.48–0.80)
KDIGO stage 3	<.001	16.93 (7.39–38.77)	<.001	5.69 (2.52–12.86)	<.001	11.53 (10.12–12.94)	<.001	0.31 (0.25–0.38)

[a]n/a for Cox proportional hazard regression model; [b]SI conversion factor: To convert creatinine to μmol/L, multiply values by 76.3; [c]administered within one week before surgery; [d]compard to isolated CABG; [e]as described by Ketherpal et al.[1]: intrathoracic surgery, intraperitoneal surgery, emergency surgery, intraoperative transfusion; [f]mutually exclusive categories of AKI severity by definition of the Kidney Disease Improving Global Outcome (KDIGO) group;[2] [g]1,629 cases were censored due to hospital discharge; [h]hazard ratio for in-hospital death; [k]R^2 = 0.20; [m]112 cases were censored due to in hospital death; [n]hazard ratio for discharge from hospital; AKI: Acute kidney injury, ICU: Intensive care unit, no F/U: no follow-up, SE: Standard error, OR: Odds ratio, HR: Hazard ratio.

References:

1. Kheterpal S, Tremper KK, Englesbe MJ, O'Reilly M, Shanks AM, Fetterman DM, Rosenberg AL, Swartz RD: Predictors of postoperative acute renal failure after noncardiac surgery in patients with previously normal renal function. Anesthesiology 2007; 107: 892-902
2. Kidney Disease: Improving Global Outcomes (KDIGO) Acute Kidney Injury Work Group. KDIGO Clinical Practice Guideline for Acute Kidney Injury. Kidney International 2012; Supplement: 1-138