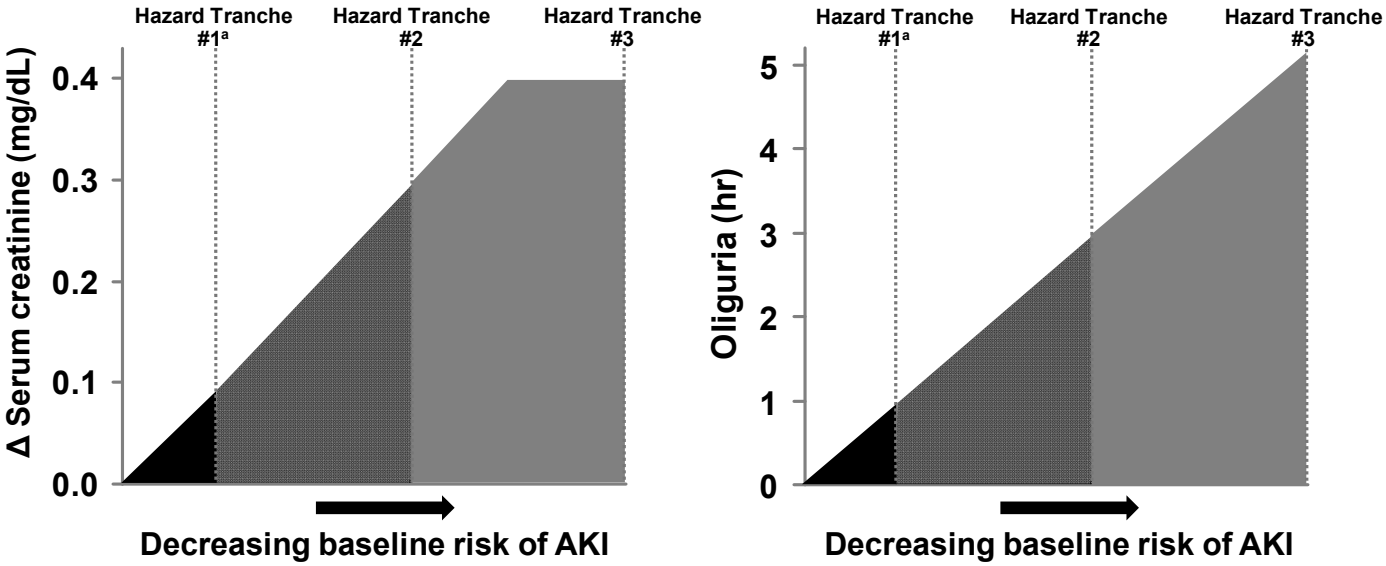
Online Supplemental Material
Figure 1. Originally proposed renal angina thresholds to predict the development of AKI in adults.



[a]**Hazard Tranche 1** - Very high risk patient (eg. septic shock): 0.1mg/dl increase over baseline or 1 hour of oliguria in an appropriately resuscitated patient

AKI, acute kidney injury

Adapted from: Goldstein, SL, Chawla, LS: Renal angina. *Clin J Am Soc Nephrol,* 5**:** 943-949, 2010.

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Figure 2. Multivariable receiver operator characteristic curve of the ability of consecutive oliguria, baseline to peak SCr level, and APACHE III score to predict achievement of stage II+ AKI criteria (AUC 0.81, 95% CI 0.76-0.87).

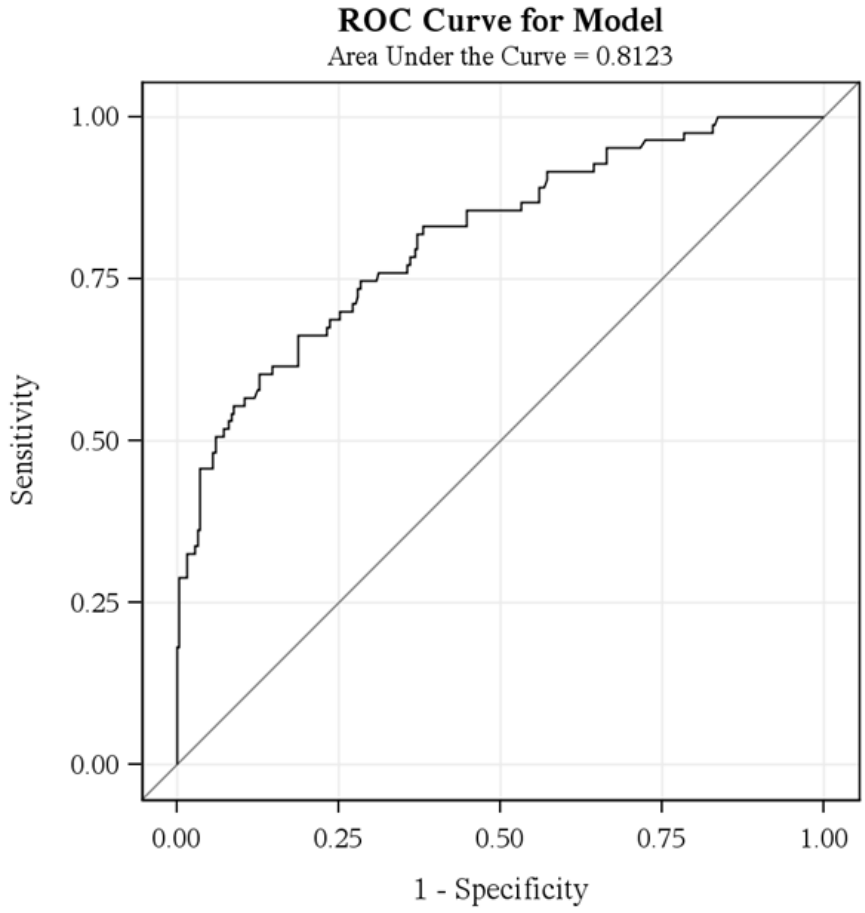

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Figure 3. Multivariable receiver operator characteristic curve of the ability of consecutive oliguria, baseline to peak SCr level, and APACHE III score to predict achievement of stage II+ AKI criteria when patients without documented baseline serum creatinine were excluded (N=338; AUC 0.80, 95% CI 0.74-0.86)

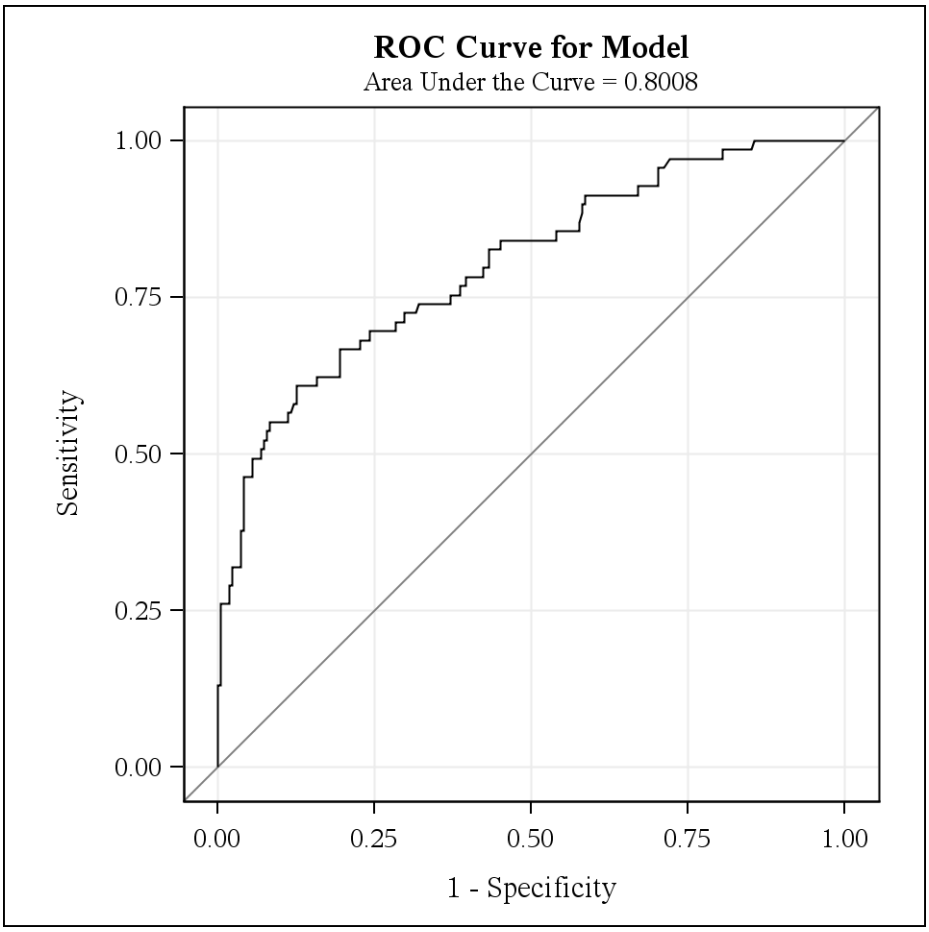

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Figure 4. Multivariable receiver operator characteristic curve of the ability of oliguria to predict achievement of stage II+ AKI criteria when patients without documented baseline serum creatinine were excluded (N=338; AUC 0.81, 95% CI 0.75-0.87).

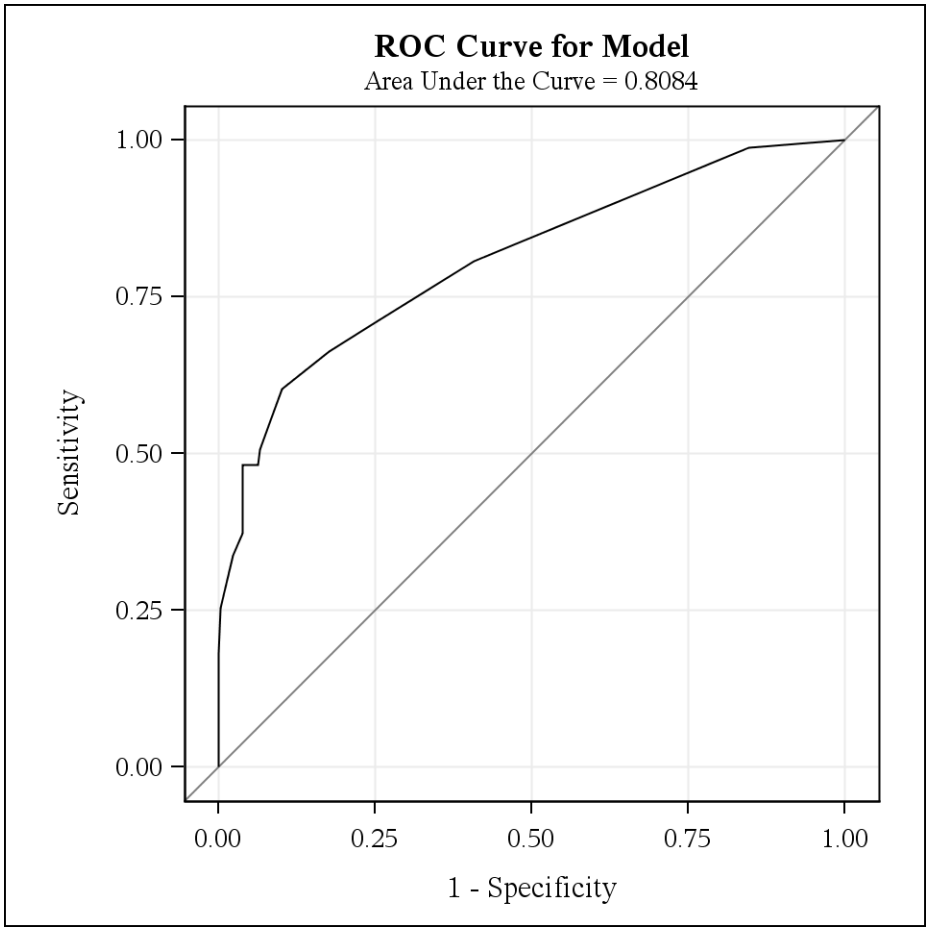

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Figure 5: Scatterplot of fluid balance versus oliguria duration. For every consecutive hour of oliguria duration in the first 12 hours, the average fluid balance at the end of ICU day 2 increased by 289.3 mL (95% CI 168.4 – 410.2, p<0.01)

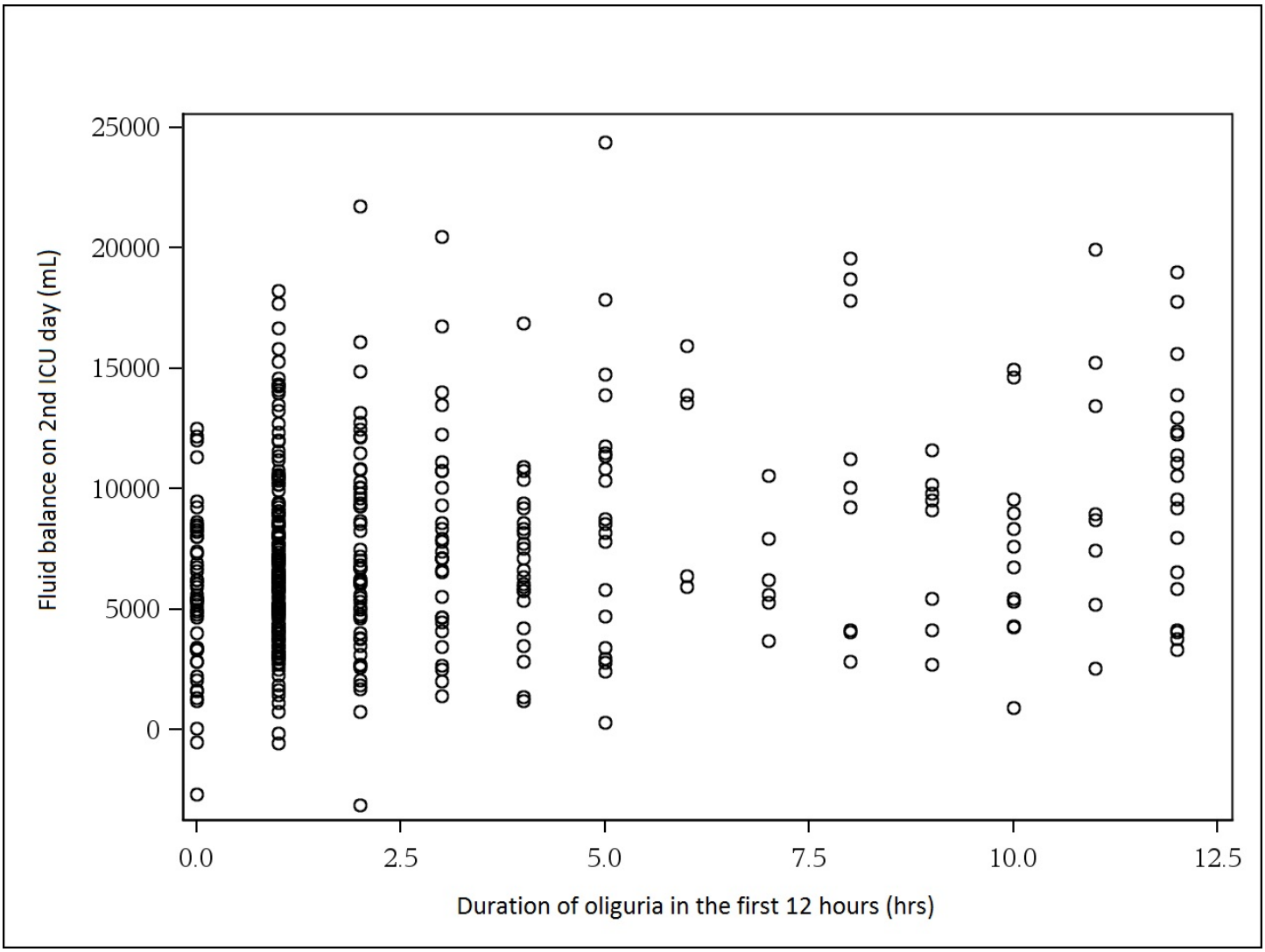

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Figure 6: Multivariable receiver operator characteristic curve of the ability of the 3 hour cutoff for oliguria to predict all AKI by KDIGO criteria (AUC 0.67, 95% CI 0.63-0.72).

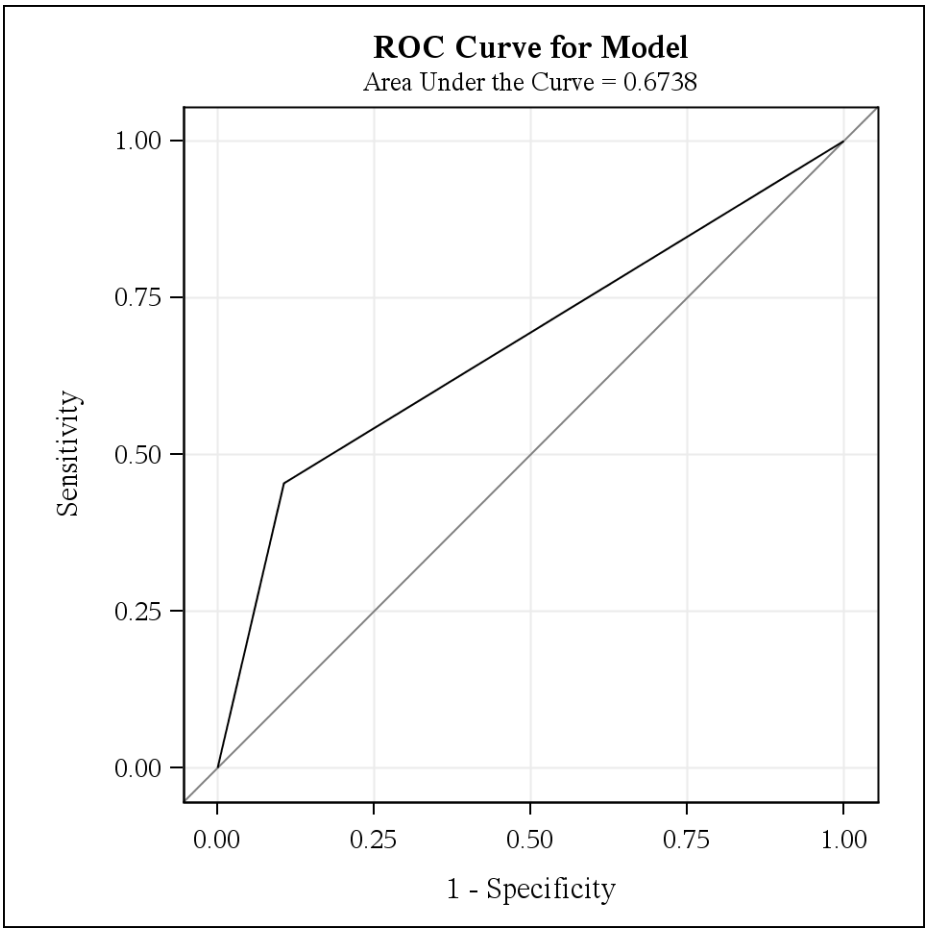

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Figure 7: Multivariable receiver operator characteristic curve of the ability of the 5 hour cutoff for oliguria to predict all AKI by KDIGO criteria (AUC 0.62, 95% CI 0.58-0.65).

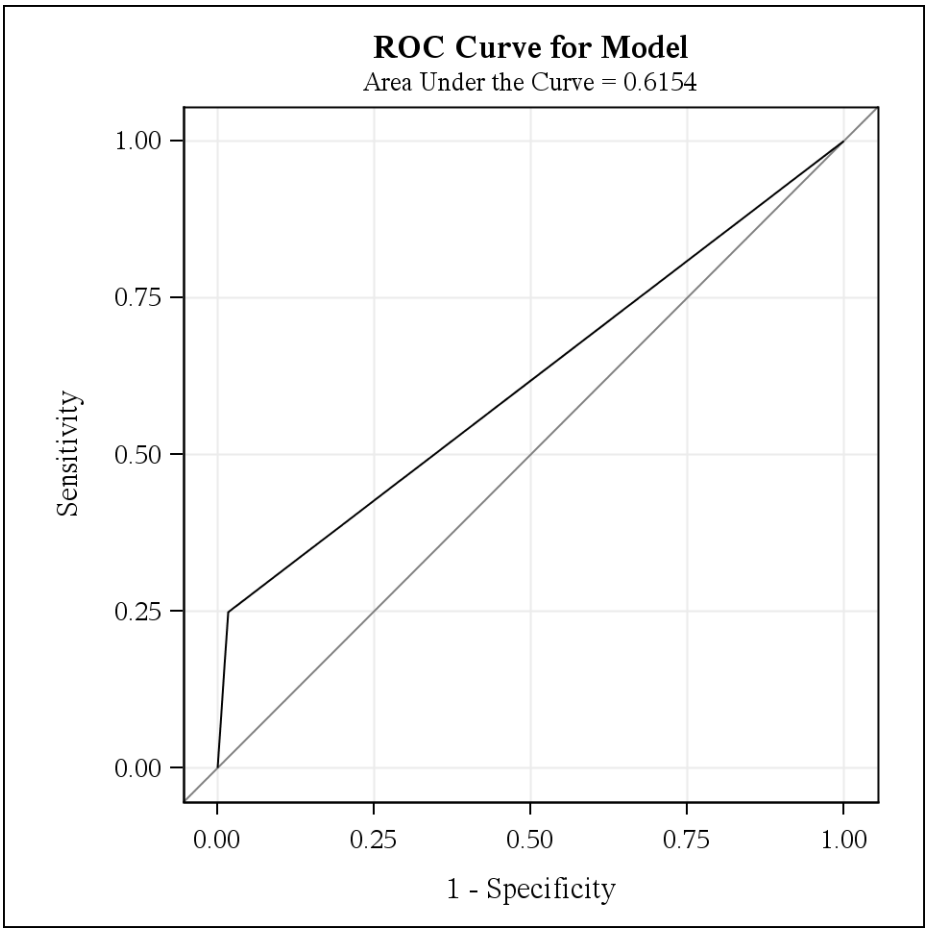

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Figure 8: ROC Contrast Test. The difference between the AUC of the multivariable model from online table 3 (green) = 0.87, 95% CI 0.82-0.91, and consecutive oliguria model (blue) = AUC 0.81, 95% CI 0.75-0.87, was statistically significant (p=0.02). For reference, the red ROC curve denotes the 3-variable multivariable adult renal angina model from online figure 3 = AUC 0.80, 95% CI 0.74-0.86.

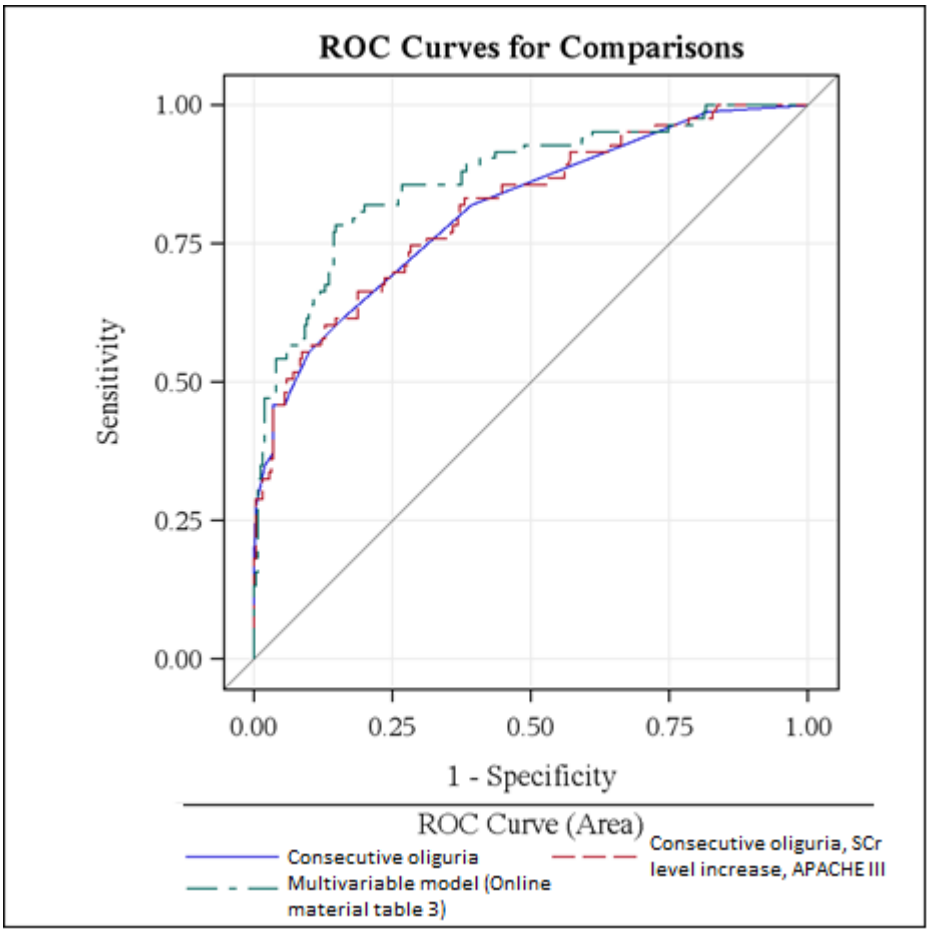

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Table 1. Comparison of fluid balance at the end of ICU day 2.

	3-hour oliguria		**5-hour oliguria**	
	Yes	No	Yes	No
Average fluid balance at the end of ICU day 2	8584 mL	6823 mL	9211 mL	6957 mL
Difference in fluid balance at the end of ICU day 2	1761 mL (95% CI 903 – 2618)		2256 mL (95% CI 1270 – 3240)	
P	<0.01		<0.01	

ICU, intensive care unit

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Table 2. Univariable analyses comparing patients with and without the 5-hour consecutive oliguria cutoff for adult renal angina in the first 12 hours after septic shock recognition.

Variable	Did not meet 5-hour oliguria threshold (N=303)	Met 5-hour oliguria threshold (N=87)	Total (N=390)	*P*
AGE, yr				
Mean (SD)	67.4 (15.9)	71.7 (14.0)	68.3 (15.6)	0.033
Median	69.0	74.0	71.0	
Q1, Q3	54.0, 80.0	61.0, 82.0	56.0, 81.0	
Range	(26.0-97.0)	(32.0-96.0)	(26.0-97.0)	
Chronic kidney disease	23 (7.6%)	16 (18.4%)	39 (10.0%)	0.003
Mechanical ventilation	131 (43.2%)	49 (56.3%)	180 (46.2%)	0.031
Chronic liver disease	11 (3.6%)	5 (5.7%)	16 (4.1%)	0.380
Hypertension	145 (47.9%)	40 (46.0%)	185 (47.4%)	0.757
Diabetes	64 (21.1%)	18 (20.7.3%)	82 (21.0%)	0.931
Required vasopressor	149 (49.2%)	63 (72.4%)	212 (54.4%)	<0.001

SD, standard deviation

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Table 3. Multivariable logistic regression analysis to identify independent predictors of stage II+ AKI criteria achievement by hour 96.

Variable	OR (95% CI)	*P*
APACHE III score, per unit	0.99 (0.97-1.01)	0.285
SCr level increase, per 0.1 mg/dl	1.01 (0.91-1.13)	0.801
Consecutive oliguria, per hour	1.51 (1.36-1.68)	<0.001
Age, per yr	1.01 (0.98-1.04)	0.500
Chronic kidney disease	1.75 (0.63-4.89)	0.283
Mechanical ventilation	4.20 (2.00-8.82)	<0.001
Chronic liver disease	0.96 (0.15-6.15)	0.969
Hypertension	0.36 (0.17-0.76)	0.008
Diabetes	1.03 (0.44-2.44)	0.942
Required vasopressor	1.46 (0.71-3.00)	0.304

APACHE, Acute Physiology and Chronic Health Evaluation; OR, odds ratio; SCr, serum creatinine

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Table 4. Univariable analyses comparing evaluable non-included patients to included patients.

	Not included (N=570)	Included (N=390)	Total (N=960)	p value
Age				0.004
N	569	390	959	
Mean (SD)	65.0 (16.7)	68.3 (15.6)	66.3 (16.3)	
Median	68.0	71.0	69.0	
Q1, Q3	54.0, 78.0	56.0, 81.0	55.0, 79.0	
Range	(18.0-97.0)	(26.0-97.0)	(18.0-97.0)	
Caucasian	518 (91.0%)	361 (92.6%)	879 (91.7%)	0.401
Male	330 (58.0%)	191 (49.0%)	521 (54.3%)	0.006
Vasopressor	355 (62.3%)	212 (54.4%)	567 (59.1%)	0.014
APACHE III				0.286
N	570	390	960	
Mean (SD)	60.6 (22.8)	58.7 (20.6)	59.8 (21.9)	
Median	58.0	57.0	58.0	
Q1, Q3	46.0, 75.0	43.0, 73.0	45.0, 74.0	
Range	(0.0-136.0)	(14.0-127.0)	(0.0-136.0)	
ICU actual body weight				0.157
N	74	390	464	
Mean (SD)	90.0 (37.4)	80.6 (26.2)	82.1 (28.5)	
Median	82.6	75.4	75.9	
Q1, Q3	58.4, 109.8	62.2, 92.8	61.8, 96.2	
Range	(37.8-201.5)	(35.5-229.5)	(35.5-229.5)	
Baseline SCr				0.002
N	458	390	848	
Mean (SD)	1.6 (1.6)	1.3 (0.9)	1.5 (1.4)	
Median	1.1	1.0	1.1	
Q1, Q3	0.8, 1.8	0.7, 1.5	0.8, 1.6	
Range	(0.2-15.1)	(0.1-9.8)	(0.1-15.1)	
Hypertension	241 (42.4%)	185 (47.4%)	426 (44.4%)	0.120
Diabetes	129 (22.7%)	82 (21.0%)	211 (22.0%)	0.546
Congestive heart failure	98 (17.2%)	69 (17.7%)	167 (17.4%)	0.851
Liver Disease	21 (3.7%)	16 (4.1%)	37 (3.9%)	0.745

SD, standard deviation; APACHE, Acute Physiology and Chronic Health Evaluation;

SCr, serum creatinine