대한 결핵 및 호흡기 학회
제 46 차 Workshop

Respiratory Review of 2018

Critical Care Medicine

허진원
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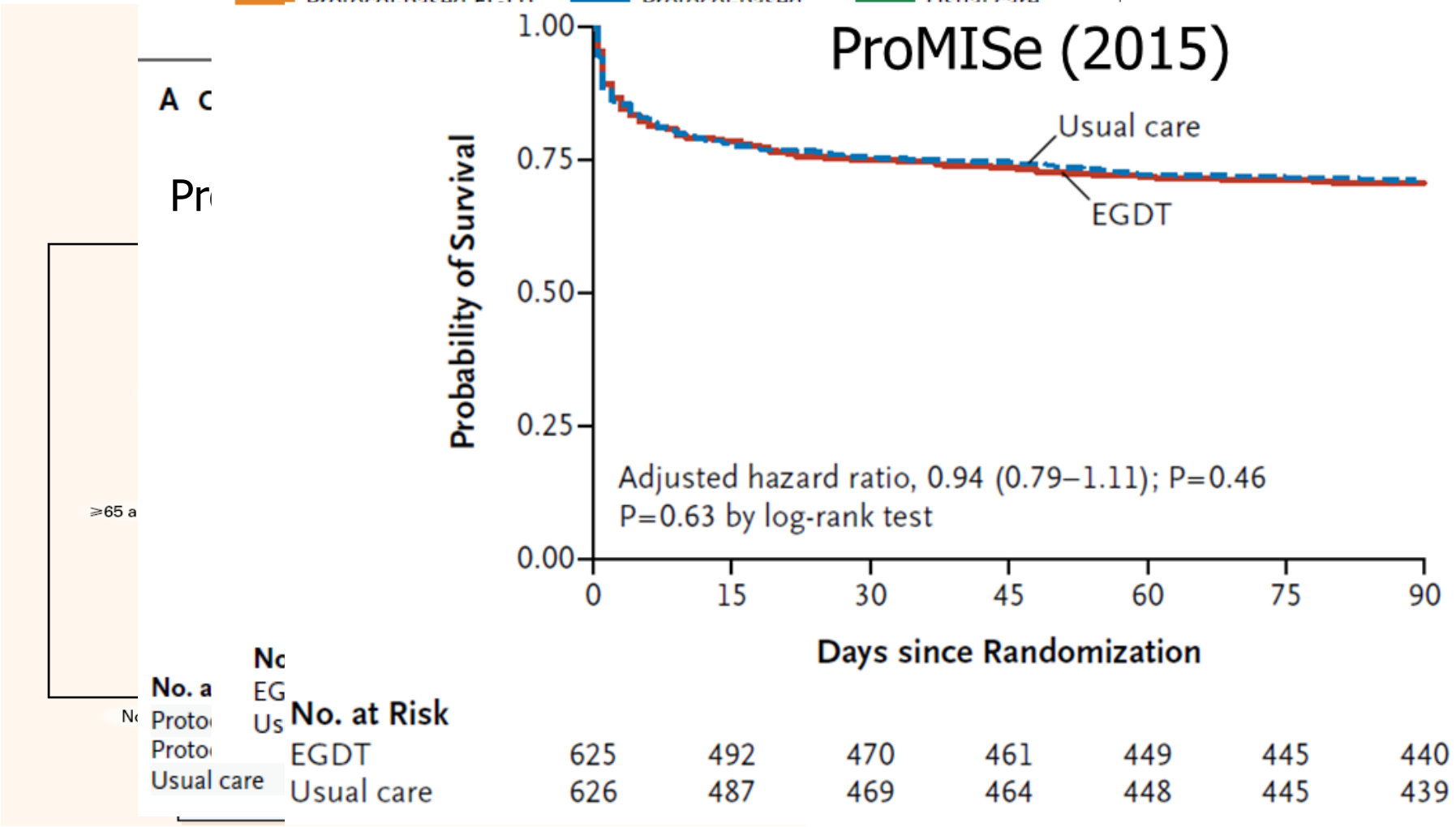

Rivers et al. N Engl J Med 2001;345:1368-77

Early, Goal-Directed Therapy for Septic Shock — A Patient-Level Meta-Analysis

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Outcome	EGDT (N=1857)	Usual Care (N=1880)	Incremental Effect (95% CI)	P Value	
				Overall Comparison	Comparison among Trials
Primary outcome: death at 90 days — no./total no. (%)	462/1852 (24.9)	475/1871 (25.4)	0.97 (0.82 to 1.14)†‡	0.68	0.73
Secondary outcomes: mortality					
Death at hospital discharge — no./total no. (%)§	370/1857 (19.9)	365/1878 (19.4)	1.02 (0.85 to 1.21)†	0.86	0.42
Death at 28 days — no./total no. (%)	375/1854 (20.2)	385/1873 (20.6)	0.96 (0.81 to 1.15)†	0.68	0.57
In ICU					
Admitted to ICU — no. (%)	1684 (90.7)	1532 (81.5)			
First stay — days					
Median among patients admitted	3	4			
IQR	2 to 6	2 to 6			
Mean overall	4.9±6.6	4.5±6.4	0.5 (0.1 to 0.9)¶	0.02	0.76
Total stay, including readmissions — days					
Median among patients admitted	4	4			
IQR	2 to 7	2 to 7			
Mean overall	5.3±7.1	4.9±7.0	0.5 (0.0 to 0.9)¶	0.04	0.78
Cardiovascular support: vasopressors or inotropes in ICU					
Receipt — no./total no. (%)	1040/1854 (56.1)	923/1873 (49.3)	1.42 (1.23 to 1.64)†	<0.001	0.40
Duration — days					
Median among patients receiving support	2	2			
IQR	1 to 4	1 to 4			
Mean overall	1.9±3.7	1.6±2.9	0.3 (0.1 to 0.5)¶	0.01	0.52

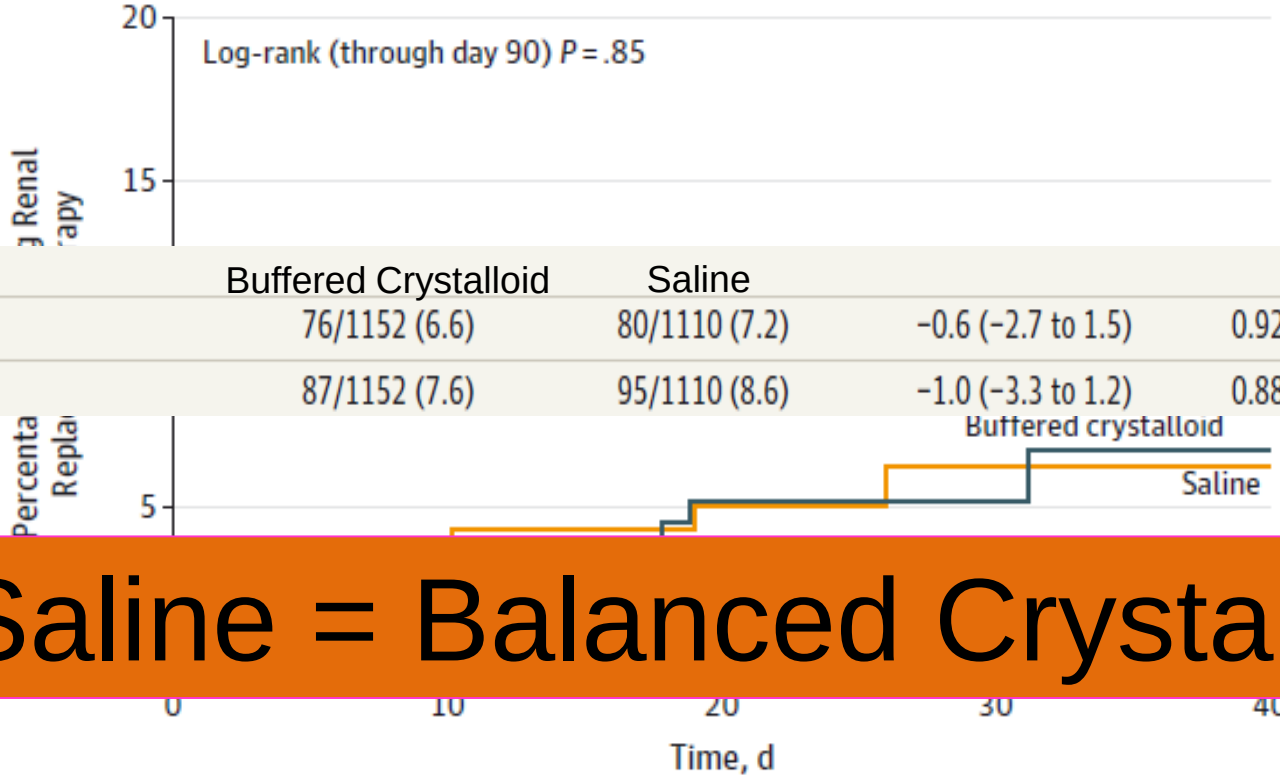
N Engl J Med. 2017; 376(23):2223-2234

Initial resuscitation

- sepsis-induced hypoperfusion : at least 30 mL/kg of IV crystalloid fluid within the first 3 hours
- We recommend crystalloids as the fluid of choice for initial resuscitation and subsequent intravascular volume replacement
- We suggest using either balanced crystalloids or saline for fluid resuscitation
- We suggest using albumin in addition to crystalloids for initial resuscitation and subsequent intravascular volume replacement
- We recommend against using hydroxyethyl starches (HESs)

Type of fluid

Effect of a Buffered Crystalloid Solution vs Saline on Acute Kidney Injury Among Patients in the Intensive Care Unit (SPLIT trial)



Mortality	Buffered Crystalloid	Saline			
Death in ICU	76/1152 (6.6)	80/1110 (7.2)	−0.6 (−2.7 to 1.5)	0.92 (0.68 to 1.24)	.62
Death in hospital	87/1152 (7.6)	95/1110 (8.6)	−1.0 (−3.3 to 1.2)	0.88 (0.67 to 1.17)	.40

No. at risk					
Buffered crystalloid	1152	341	134	62	36
Saline	1110	310	124	64	28

Saline = Balanced Crystalloid

Balanced Crystalloids versus Saline in Noncritically Ill Adults (SALT-ED trial)

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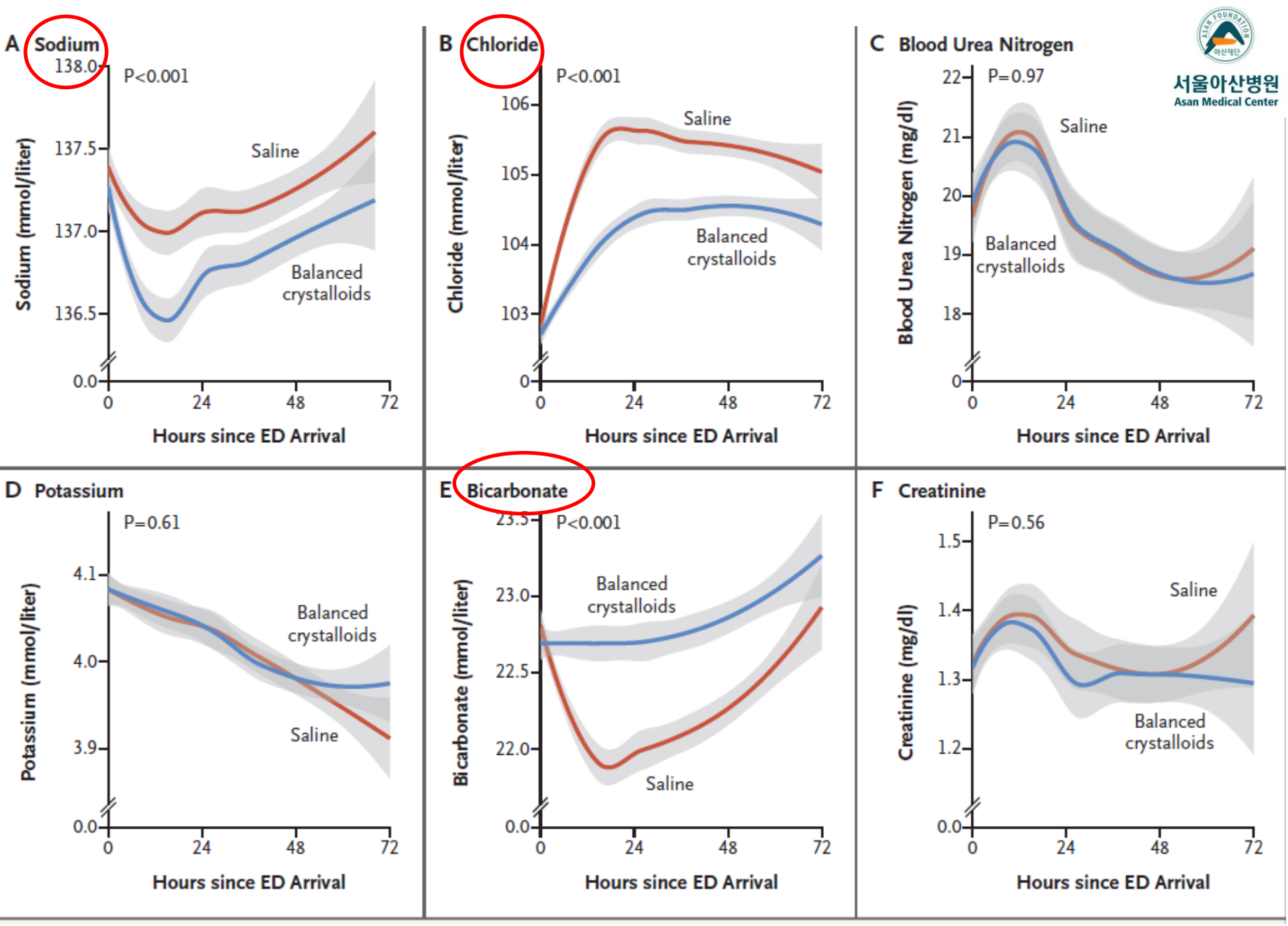
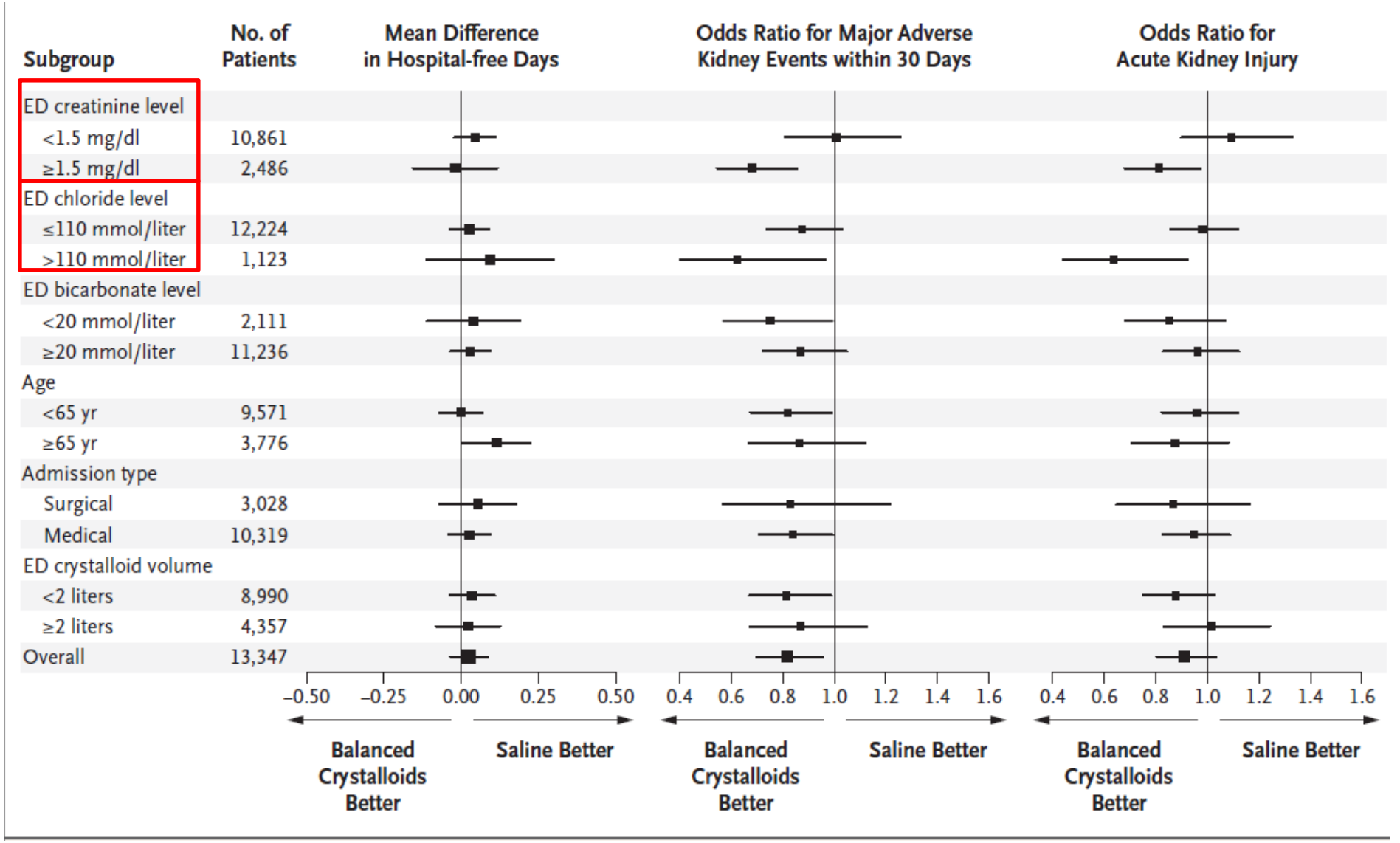
Table 3. Clinical Outcomes According to Assigned Treatment Group in the Intention-to-Treat Analysis.

Outcome	Balanced Crystalloids (N = 6708)	Saline (N = 6639)	Adjusted Odds Ratio (95% CI)*	Adjusted P Value
Median hospital-free days to day 28 (IQR)	25 (22–26)	25 (22–26)	0.98 (0.92–1.04)	0.41
Major adverse kidney event within 30 days — no. (%)	315 (4.7)	370 (5.6)	0.82 (0.70–0.95)	0.01
√ Death — no. (%)	94 (1.4)	102 (1.5)	0.89	
√ New renal-replacement therapy — no./total no. (%)†	18/6582 (0.3)	31/6530 (0.5)	0.56	
√ Final serum creatinine ≥200% of baseline — no./total no. (%)†	253/6582 (3.8)	293/6530 (4.5)	0.84	
Stage 2 or higher acute kidney injury — no./total no. (%)†	528/6582 (8.0)	560/6530 (8.6)	0.91 (0.80–1.03)	0.14
In-hospital death — no. (%)	95 (1.4)	105 (1.6)	0.88 (0.66–1.16)	0.36

N Engl J Med. 2018; 378(9):819-828


A Sodium
P<0.001
Saline
Balanced crystalloids
Sodium (mmol/liter)
138.0
137.5
137.0
136.5
0.0
0
24
48
72
Hours since ED Arrival
B Chloride
P<0.001
Saline
Balanced crystalloids
Chloride (mmol/liter)
106
105
104
103
0
Hours since ED Arrival
C Blood Urea Nitrogen
P=0.97
Saline
Balanced crystalloids
Blood Urea Nitrogen (mg/dl)
22
21
20
19
18
0
Hours since ED Arrival
D Potassium
P=0.61
Balanced crystalloids
Saline
Potassium (mmol/liter)
4.1
4.0
3.9
0.0
Hours since ED Arrival
E Bicarbonate
P<0.001
Balanced crystalloids
Saline
Bicarbonate (mmol/liter)
23.5
23.0
22.5
22.0
0.0
Hours since ED Arrival
F Creatinine
P=0.56
Saline
Balanced crystalloids
Creatinine (mg/dl)
1.5
1.4
1.3
1.2
0.0
Hours since ED Arrival



Balanced Crystalloids versus Saline in critically Ill Adults (SMART)

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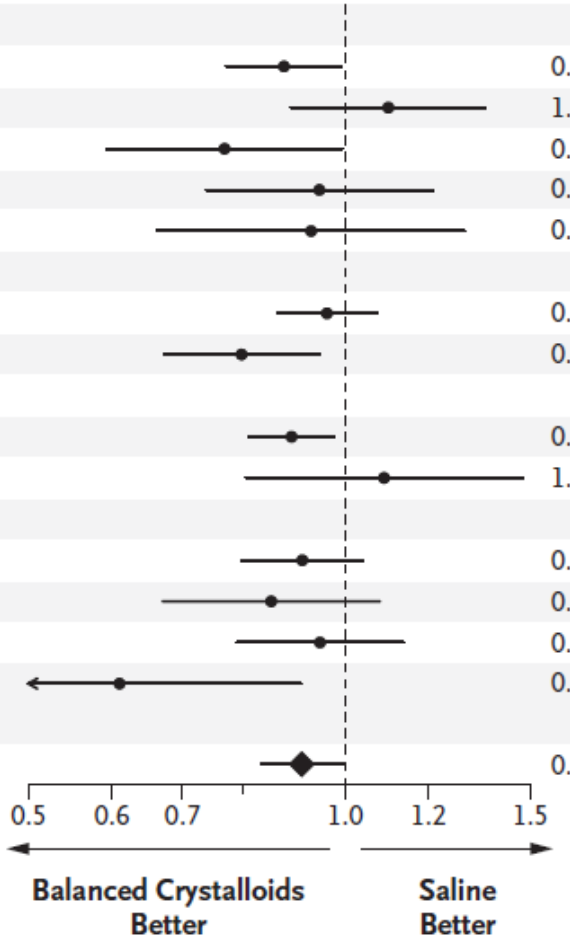
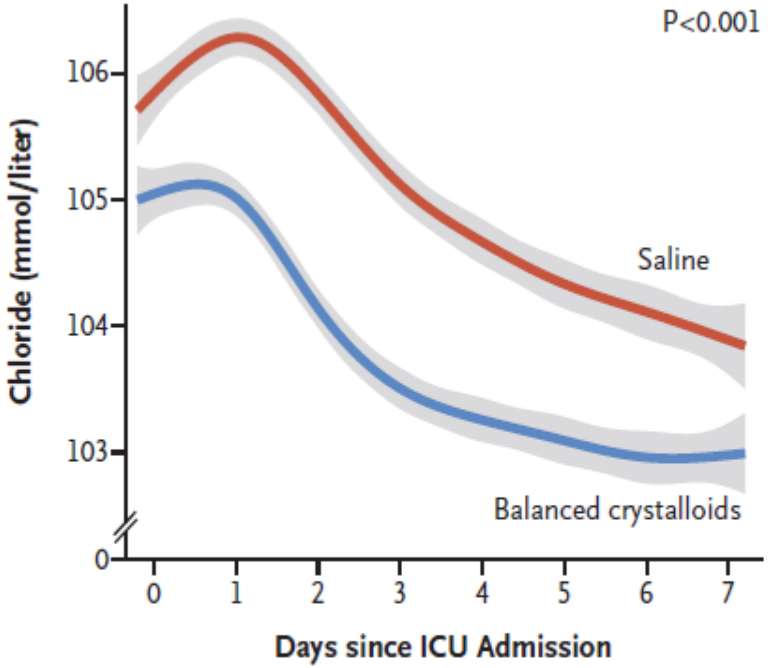
Outcome	Balanced Crystalloids (N=7942)	Saline (N=7860)	Adjusted Odds Ratio (95% CI)†	P Value†
Primary outcome				
Major adverse kidney event within 30 days — no. (%)‡	1139 (14.3)	1211 (15.4)	0.90 (0.82 to 0.99)	0.04
Components of primary outcome				
In-hospital death before 30 days — no. (%)	818 (10.3)	875 (11.1)	0.90 (0.80 to 1.01)	0.06
Receipt of new renal-replacement therapy — no./total no. (%)§	189/7558 (2.5)	220/7458 (2.9)	0.84 (0.68 to 1.02)	0.08
Among survivors	106/6787 (1.6)	117/6657 (1.8)		
Final creatinine level ≥200% of baseline — no./total no. (%)§	487/7558 (6.4)	494/7458 (6.6)	0.96 (0.84 to 1.11)	0.60
Among survivors	259/6787 (3.8)	273/6657 (4.1)		
Among survivors without new renal-replacement therapy	215/6681 (3.2)	219/6540 (3.3)		
Secondary outcomes				
In-hospital death — no. (%)				
Before ICU discharge	528 (6.6)	572 (7.3)	0.89 (0.78 to 1.02)	0.08
Before 60 days	928 (11.7)	975 (12.4)	0.92 (0.83 to 1.02)	0.13
Renal-replacement therapy–free days¶			1.11 (1.02 to 1.20)	0.01
Median	28.0	28.0		
Interquartile range	28.0 to 28.0	28.0 to 28.0		
Mean	25.0±8.6	24.8±8.9		

N Engl J Med 2018; 378(9):829-839

Subgroup	Balanced Crystalloids	Saline	Odds Ratio (95% CI)	P Value	P Value for Interaction
	no. of events/total no. (%)				
Unit					0.27
Medical	615/2735 (22.5)	659/2646 (24.9)	0.87 (0.77–0.99)	0.04	
Cardiac	202/1470 (13.7)	190/1501 (12.7)	1.10 (0.89–1.36)	0.38	
Neurologic	116/1440 (8.1)	141/1377 (10.2)	0.77 (0.59–0.99)	0.04	
Trauma	131/1640 (8.0)	142/1688 (8.4)	0.95 (0.74–1.21)	0.66	
Surgical	75/657 (11.4)	79/648 (12.2)	0.93 (0.66–1.30)	0.66	
Sepsis					0.06
No	744/6775 (11.0)	756/6691 (11.3)	0.96 (0.86–1.07)	0.47	
Yes	395/1167 (33.8)	455/1169 (38.9)	0.80 (0.67–0.94)	0.01	
Traumatic brain injury					0.24
No	1034/7244 (14.3)	1118/7195 (15.5)	0.89 (0.81–0.98)	0.01	
Yes	105/698 (15.0)	93/665 (14.0)	1.09 (0.81–1.47)	0.58	
Categories of kidney function					0.19
Normal	476/5596 (8.5)	514/5561 (9.2)	0.91 (0.80–1.04)	0.16	
Acute kidney injury	315/574 (54.9)	316/537 (58.8)	0.85 (0.67–1.08)	0.18	
Chronic kidney disease	301/1388 (21.7)	307/1360 (22.6)	0.95 (0.79–1.13)	0.55	
Previous renal-replacement therapy	47/384 (12.2)	74/402 (18.4)	0.61 (0.41–0.91)	0.01	
Overall	1139/7942 (14.3)	1211/7860 (15.4)	0.91 (0.83–0.99)	0.04	

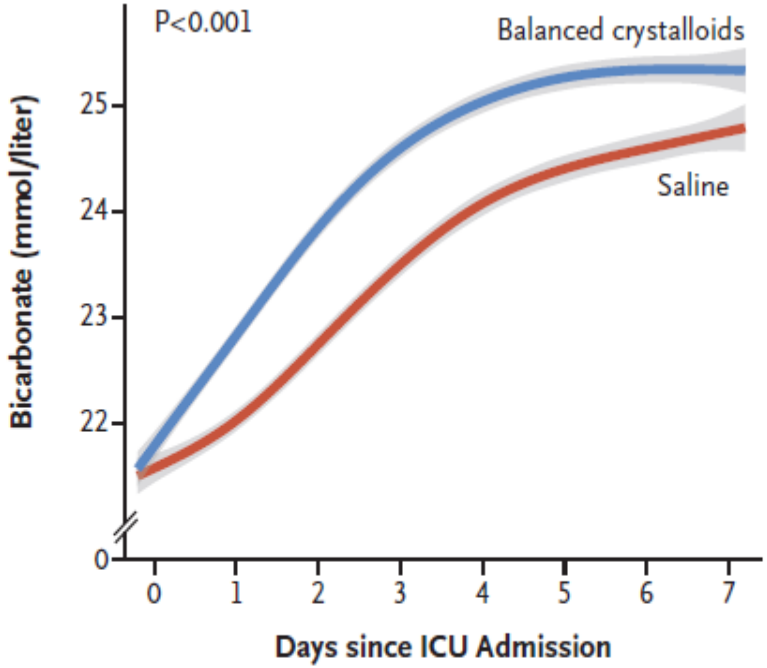


A Chloride Concentration



No. of Patients with Measurement				
Balanced crystalloids	6904	4715	3263	2195
Saline	6747	4669	3283	2172

B Bicarbonate Concentration



No. of Patients with Measurement				
Balanced crystalloids	6929	4718	3266	2198
Saline	6763	4678	3293	2175

Steroid

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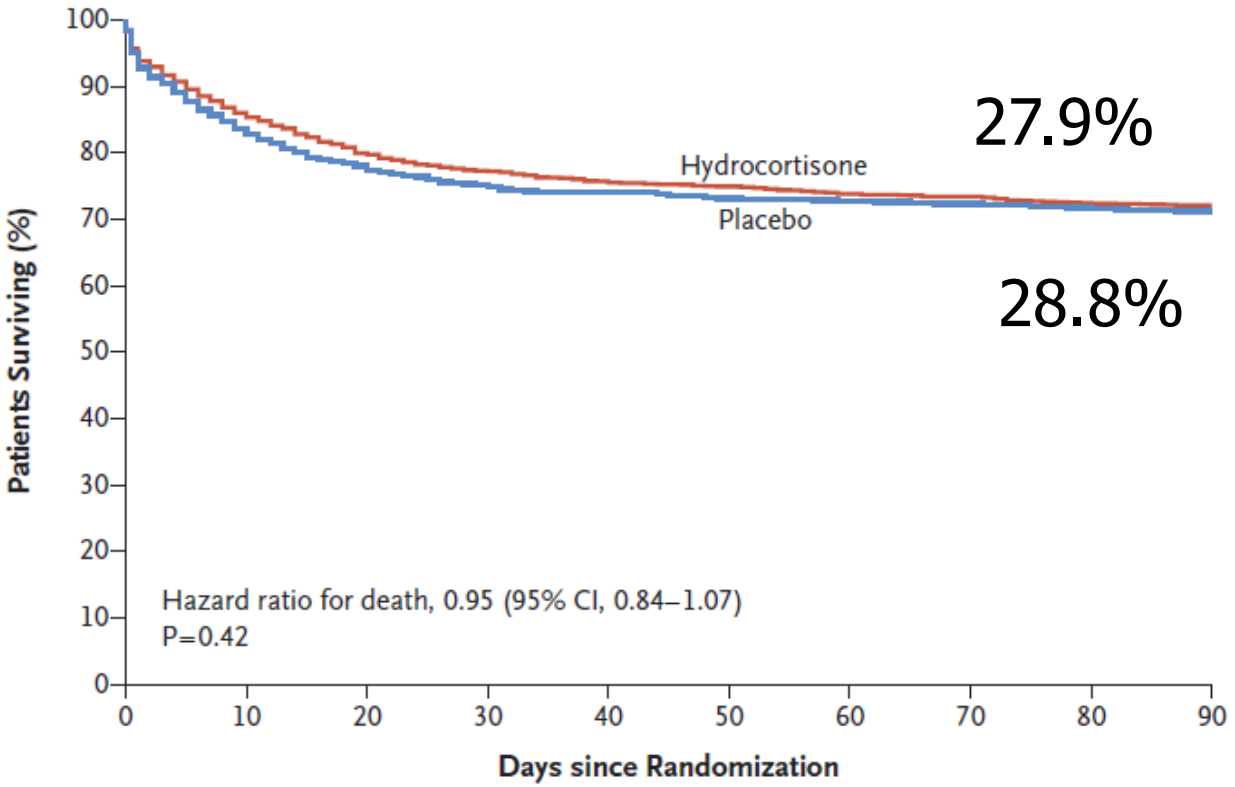
We suggest against using IV hydrocortisone to treat septic shock patients if adequate fluid resuscitation and vasopressor therapy are able to restore hemodynamic stability. If this is not achievable, we suggest IV hydrocortisone at a dose of 200 mg per day

Hydrocortisone plus Fludrocortisone for Adults with Septic Shock (APROCCHSS trial)

Outcome	Placebo (N=627)	Hydrocortisone plus Fludrocortisone (N=614)	All Patients (N=1241)	Relative Risk (95% CI)†	P Value
Primary outcome: death from any cause at day 90 — no. (%)	308 (49.1)	264 (43.0)	572 (46.1)	0.88 (0.78–0.99)	0.03
Secondary outcomes					
Death from any cause					
At day 28 — no. (%)	244 (38.9)	207 (33.7)	451 (36.3)	0.87 (0.75–1.01)	0.06
At ICU discharge — no./total no. (%)	257/627 (41.0)	217/613 (35.4)	474/1240 (38.2)	0.86 (0.75–0.99)	0.04
At hospital discharge — no./total no. (%)	284/627 (45.3)	239/613 (39.0)	523/1240 (42.2)	0.86 (0.76–0.98)	0.02
At day 180 — no./total no. (%)	328/625 (52.5)	285/611 (46.6)	613/1236 (49.6)	0.89 (0.79–0.99)	0.04
Decision to withhold or withdraw active treatment by day 90 — no./total no. (%)	61/626 (9.7)	64/614 (10.4)	125/1240 (10.1)	1.07 (0.77–1.49)	0.69
Vasopressor-free days to day 28‡					
Mean	15±11	17±11	16±11	—	<0.001
Median (IQR)	19 (1–26)	23 (5–26)	21 (2–26)		
Ventilator-free days to day 28‡					
Mean	10±11	11±11	11±11	—	0.07
Median (IQR)	4 (0–21)	10 (0–22)	8 (0–21)		
Organ-failure–free days to day 28‡					
Mean	12±11	14±11	13±11	—	0.003
Median (IQR)	12 (0–24)	19 (0–25)	15 (0–24)		

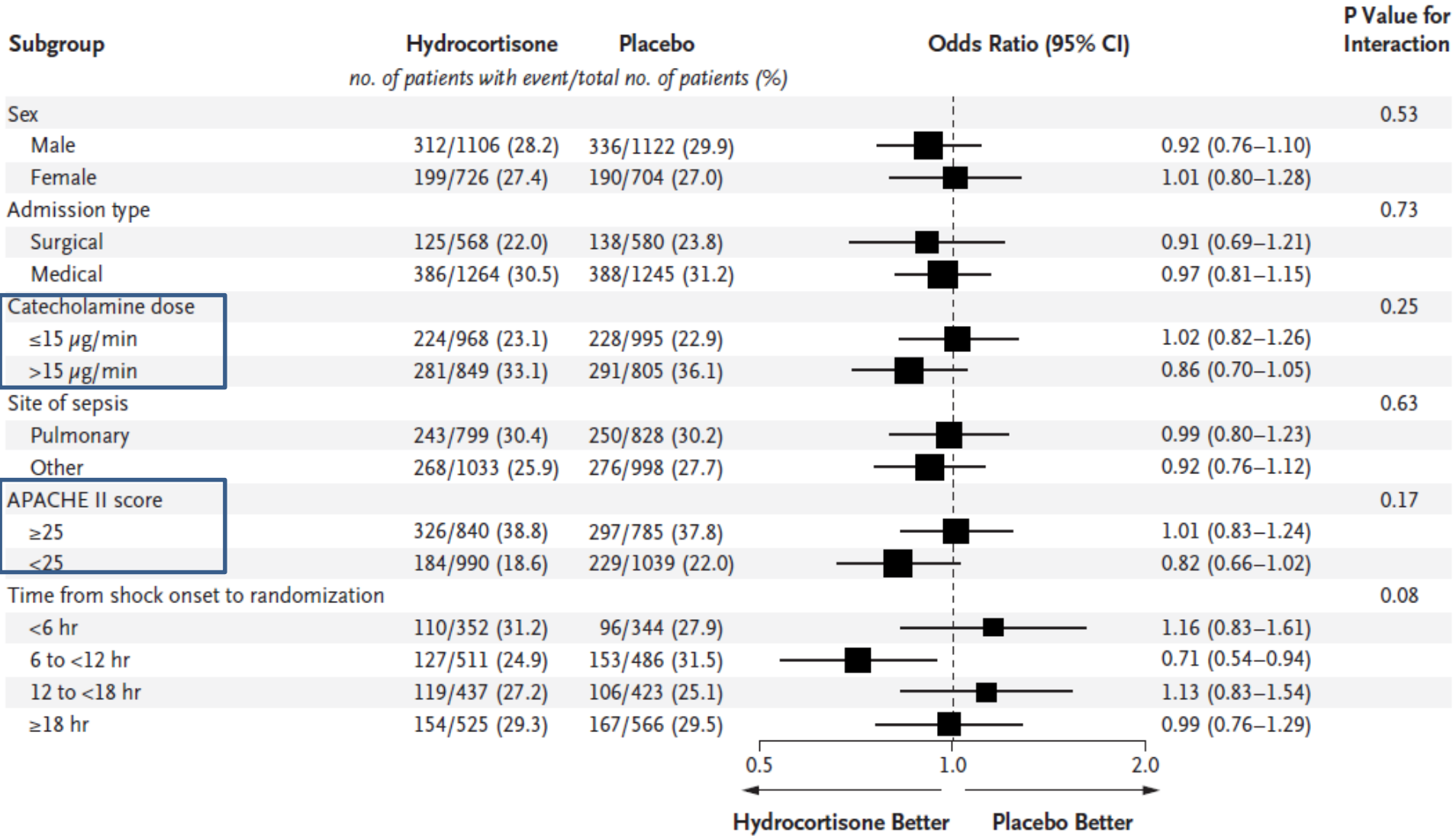
N Engl J Med. 2017; 378:809-818

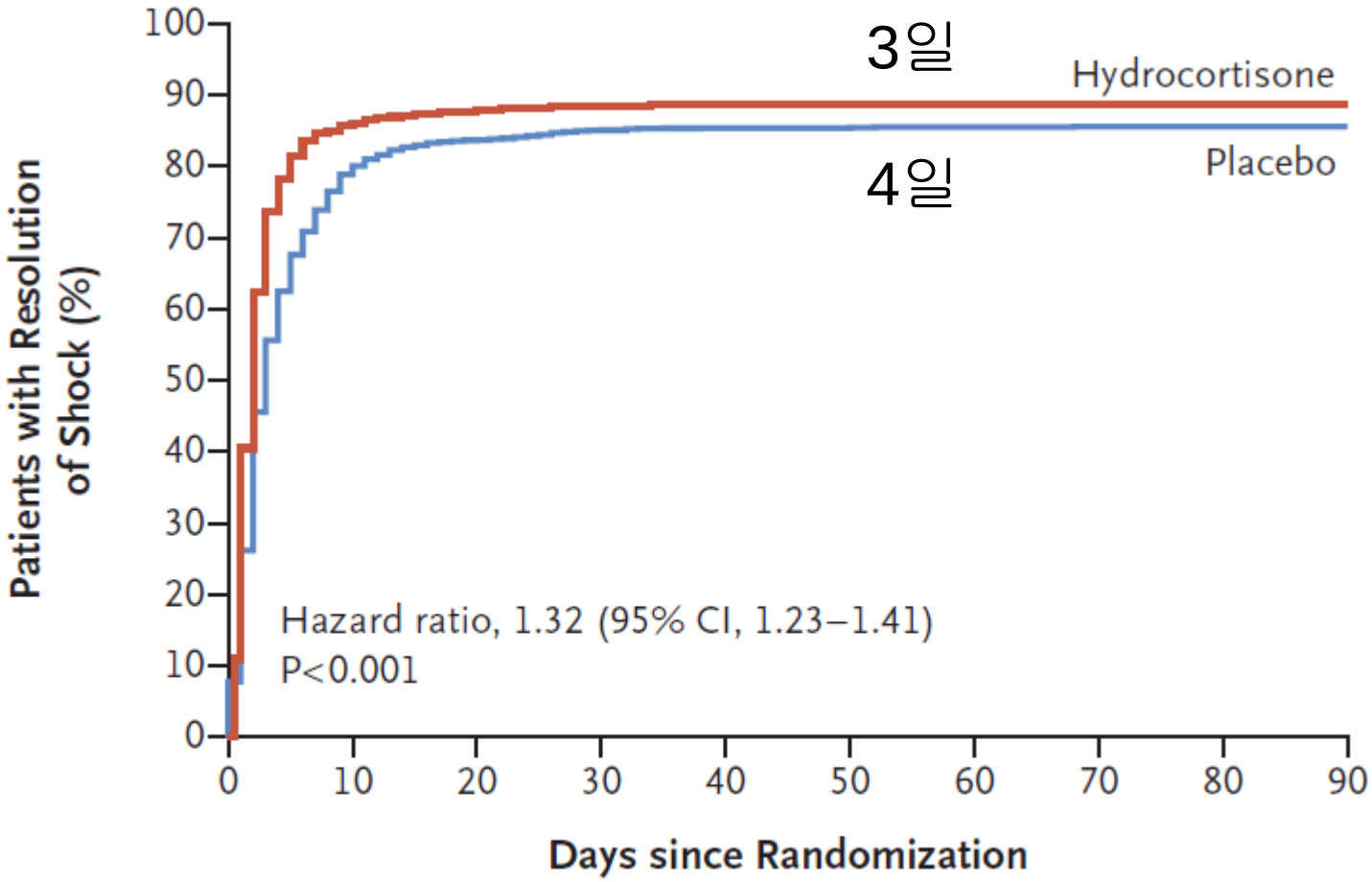
Adjunctive Glucocorticoid Therapy in Patients with Septic Shock (ADRENAL trial)



No. at Risk										
Hydrocortisone	1832	1591	1481	1418	1388	1374	1356	1348	1328	1321
Placebo	1826	1546	1433	1376	1354	1337	1330	1322	1312	1300

N Engl J Med. 2018; 378(9):797-808


Subgroup
Hydrocortisone
Placebo
Odds Ratio (95% CI)
P Value for Interaction
no. of patients with event/total no. of patients (%)
Sex 0.53
Male 312/1106 (28.2) 336/1122 (29.9) 0.92 (0.76–1.10)
Female 199/726 (27.4) 190/704 (27.0) 1.01 (0.80–1.28)
Admission type 0.73
Surgical 125/568 (22.0) 138/580 (23.8) 0.91 (0.69–1.21)
Medical 386/1264 (30.5) 388/1245 (31.2) 0.97 (0.81–1.15)
Catecholamine dose 0.25
≤15 μg/min 224/968 (23.1) 228/995 (22.9) 1.02 (0.82–1.26)
>15 μg/min 281/849 (33.1) 291/805 (36.1) 0.86 (0.70–1.05)
Site of sepsis 0.63
Pulmonary 243/799 (30.4) 250/828 (30.2) 0.99 (0.80–1.23)
Other 268/1033 (25.9) 276/998 (27.7) 0.92 (0.76–1.12)
APACHE II score 0.17
≥25 326/840 (38.8) 297/785 (37.8) 1.01 (0.83–1.24)
<25 184/990 (18.6) 229/1039 (22.0) 0.82 (0.66–1.02)
Time from shock onset to randomization 0.08
<6 hr 110/352 (31.2) 96/344 (27.9) 1.16 (0.83–1.61)
6 to <12 hr 127/511 (24.9) 153/486 (31.5) 0.71 (0.54–0.94)
12 to <18 hr 119/437 (27.2) 106/423 (25.1) 1.13 (0.83–1.54)
≥18 hr 154/525 (29.3) 167/566 (29.5) 0.99 (0.76–1.29)
0.5
1.0
2.0
Hydrocortisone Better
Placebo Better



No. at Risk

Hydrocortisone	1843	104	34	9	6	3	3	2	1	0
Placebo	1854	213	53	19	8	6	4	0	0	0

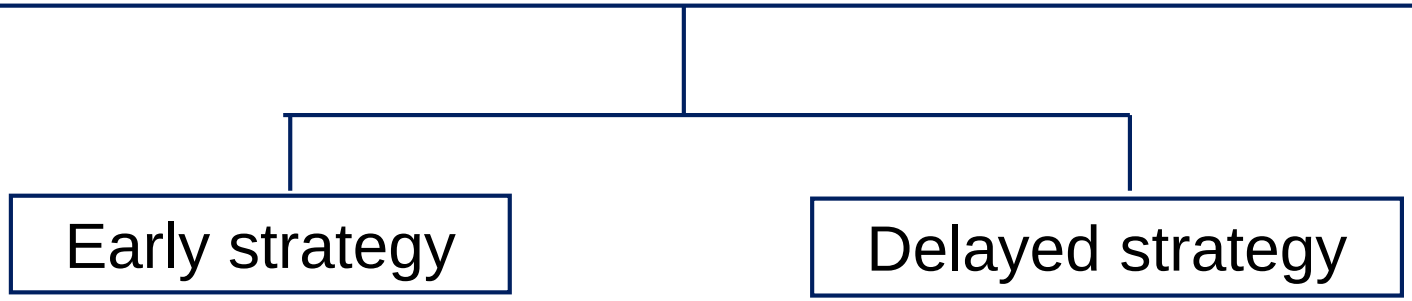
Renal Replacement Therapy

1. We suggest that either continuous RRT (CRRT) or intermittent RRT be used in patients with sepsis and acute kidney injury
2. We suggest using CRRT to facilitate management of fluid balance in hemodynamically unstable septic patients
3. We suggest *against* the use of RRT in patients with sepsis and acute kidney injury for increase in creatinine or oliguria without other definitive indications for dialysis

Timing of Renal Support and Outcome of Septic Shock and Acute Respiratory Distress Syndrome

Artificial Kidney Initiation in Kidney Injury (AKIKI) trial

adults (18 years of age or older) admitted to the ICU with AKI
invasive mechanical ventilation and/or catecholamine infusion
have AKI stage 3 of KDIGO classification (at least one of the following criteria)
: serum creatinine concentration of more than 4 mg/dl or
greater than 3 times the baseline creatinine level,
anuria (urine output of 100 ml/day or less) for more than 12 hours,
oliguria (urine output < 0.3 ml/kg/h or < 500 ml/day) for more than 24 hours.

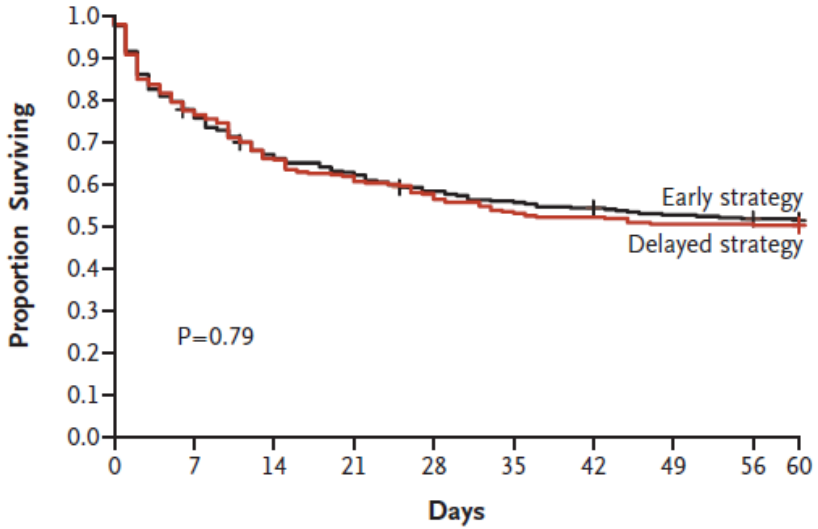


Am J Respir Crit Care Med. 2018 Jan 19

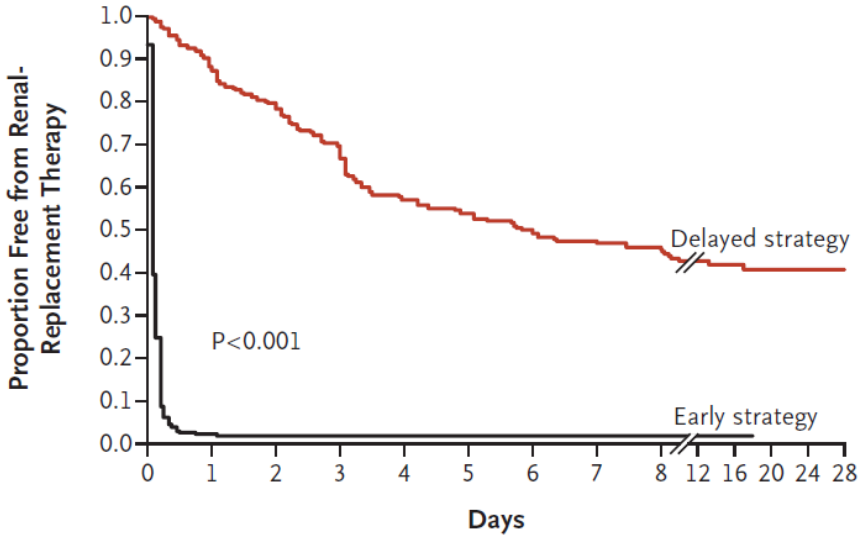
Criteria mandating RRT initiation in the delayed RRT strategy

1. Oliguria or anuria for more than 72 hours after randomization
2. Blood urea nitrogen of more than 112 md/dl (40 mmol/liter)
3. Serum potassium concentration of more than 6 mmol/liter
4. Serum potassium concentration of more than 5.5 mmol/liter despite medical treatment
5. pH below 7.15 in a context of pure metabolic acidosis (PaCO2 below 35 mmHg) or in a context of mixed acidosis with PaCO2 of 50 mmHg or more
6. Acute pulmonary edema due to fluid overload responsible for severe hypoxemia

A



No. at Risk									
Early strategy	311	241	207	194	179	172	167	161	158 157
Delayed strategy	308	239	204	191	178	165	161	156	156 155



No. at Risk														
Early strategy	311	7	4	4	4	4	3	3	3	1	1	0	0	0
Delayed strategy	308	268	229	192	153	135	118	105	92	61	39	28	21	13

Subgroup analysis

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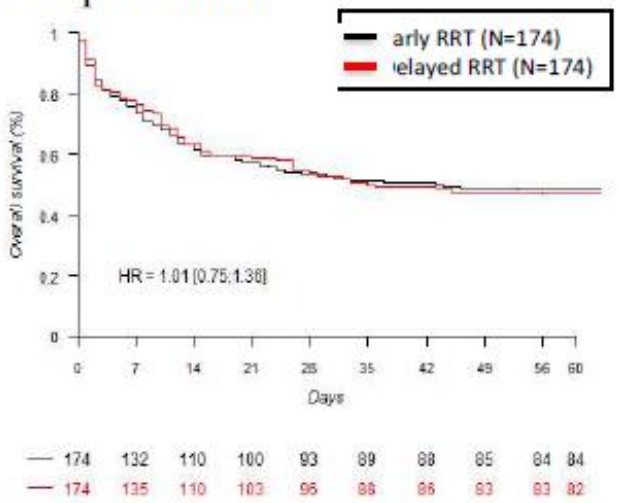
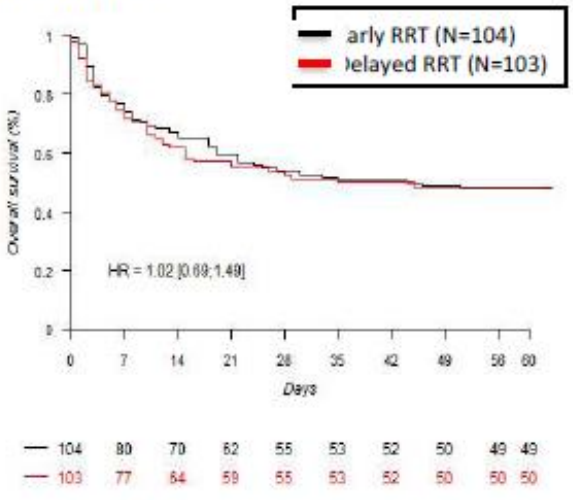
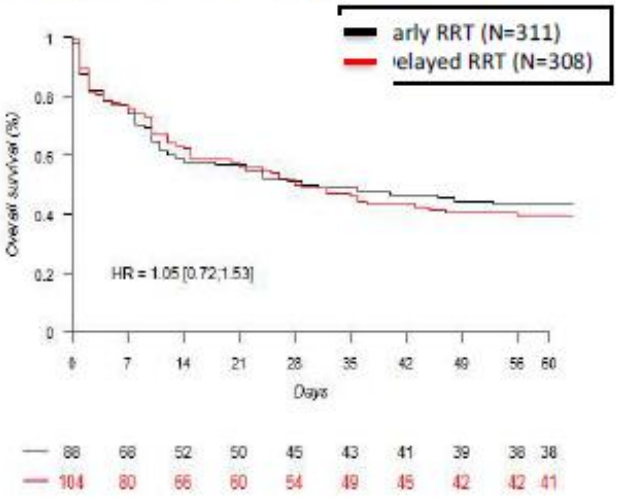
a-Septic Shock



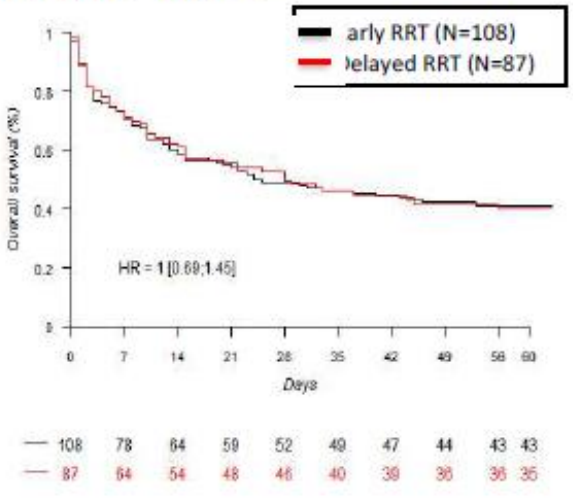
b-ARDS

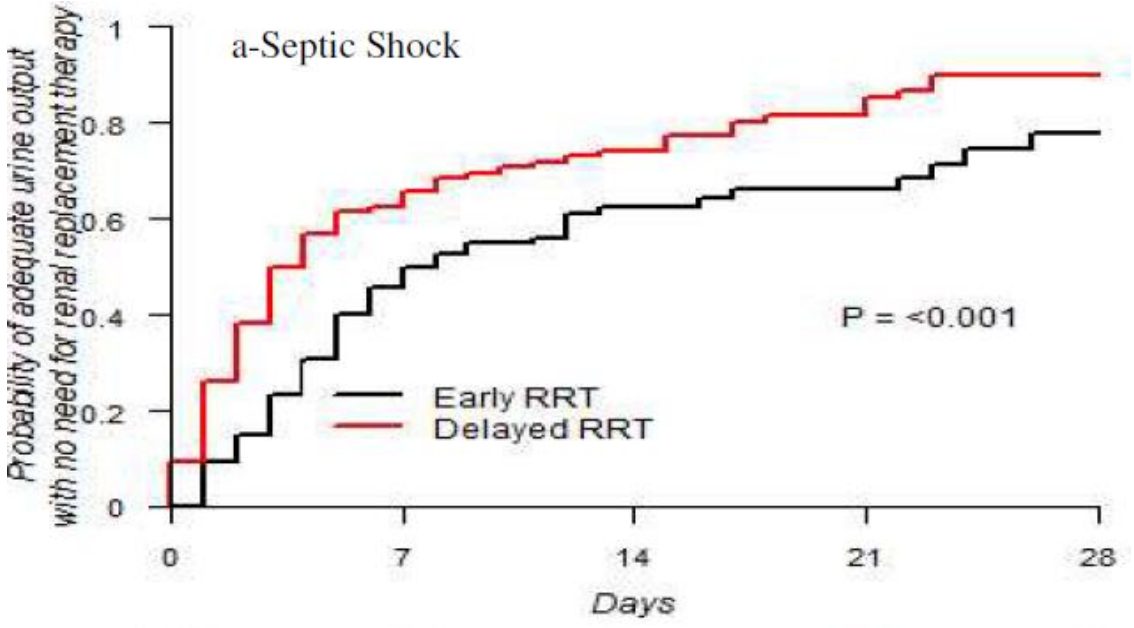


c-Higher SAPS III (vs. [78~138])

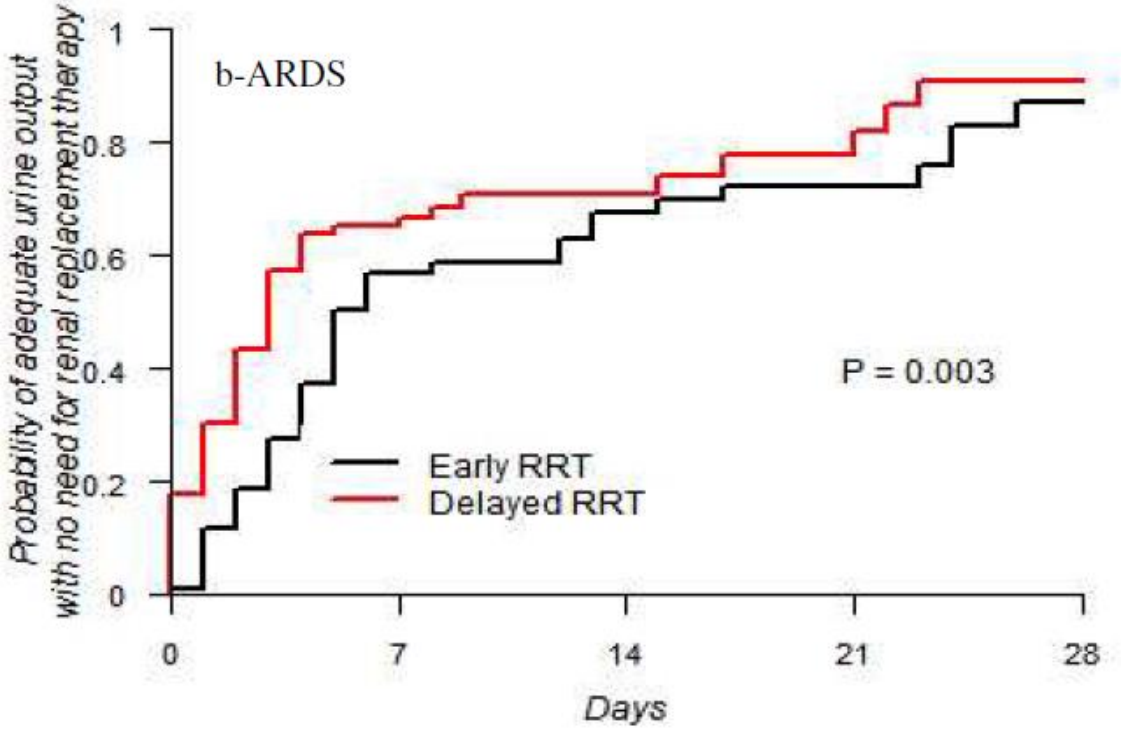


d-Higher SOFA (vs. [13~20])





Delayed strategy group: 45%의 환자가 RRT 를 피함



Delayed strategy group: 46%의 환자가 RRT 를 피함

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2. RESPIRATORY CARE

Acute hypoxemic respiratory failure in immunocompromised patients: the Efraim multinational prospective cohort study

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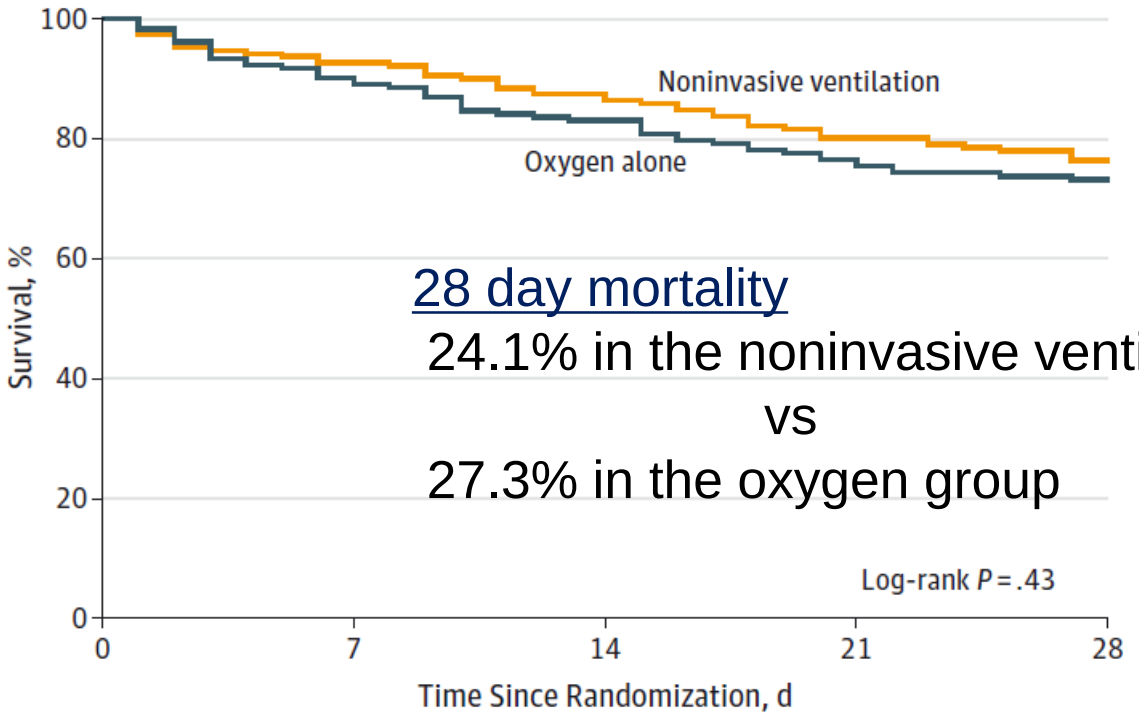
Effect of Noninvasive Ventilation vs Oxygen Therapy on Mortality Among Immunocompromised Patients With Acute Respiratory Failure (JAMA. 2015:314:1711-9)



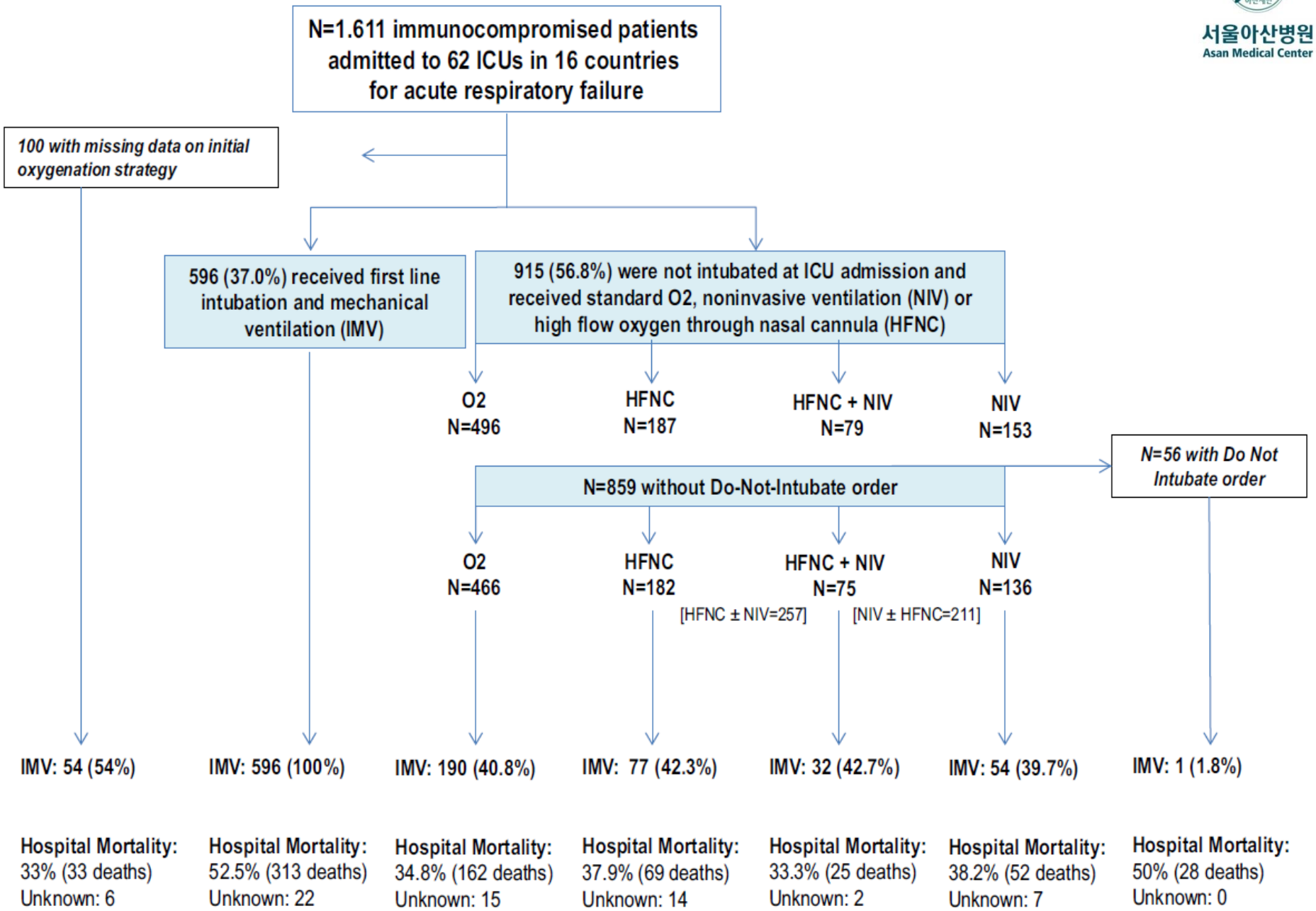
28 day mortality

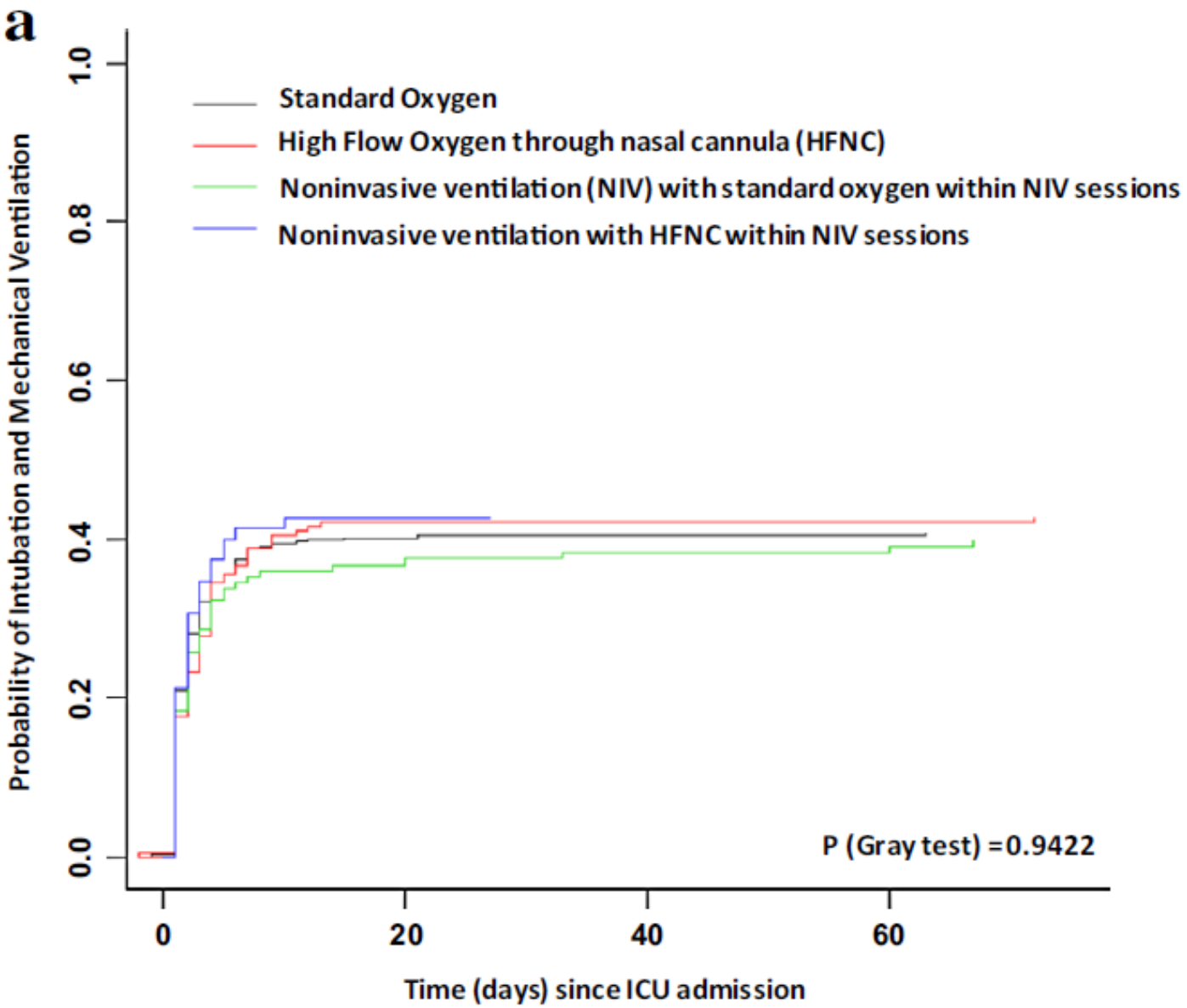
24.1% in the noninvasive ventilation group

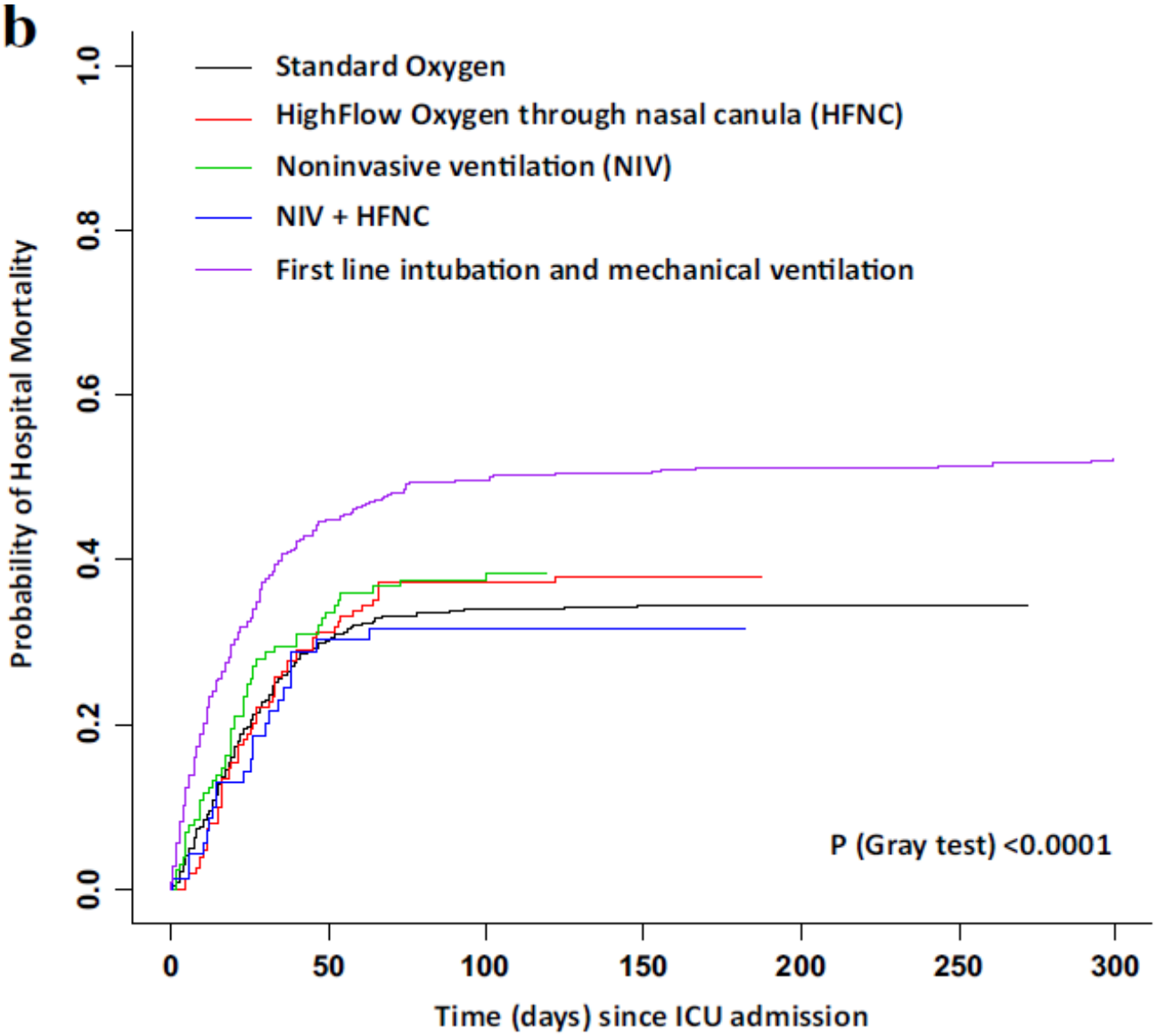
vs

27.3% in the oxygen group

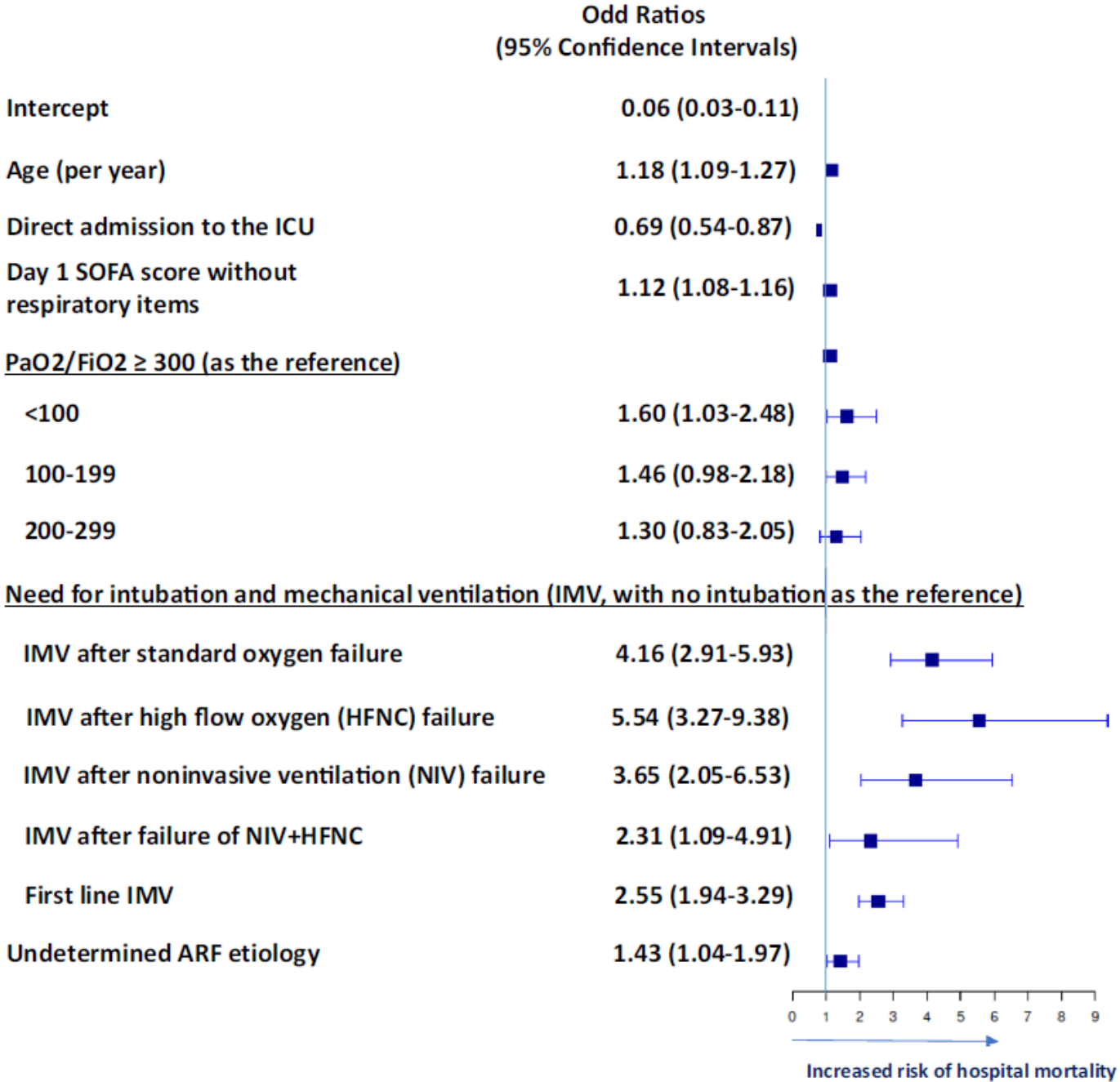
Intensive Care Med. 2017; 43(12):1808-1819





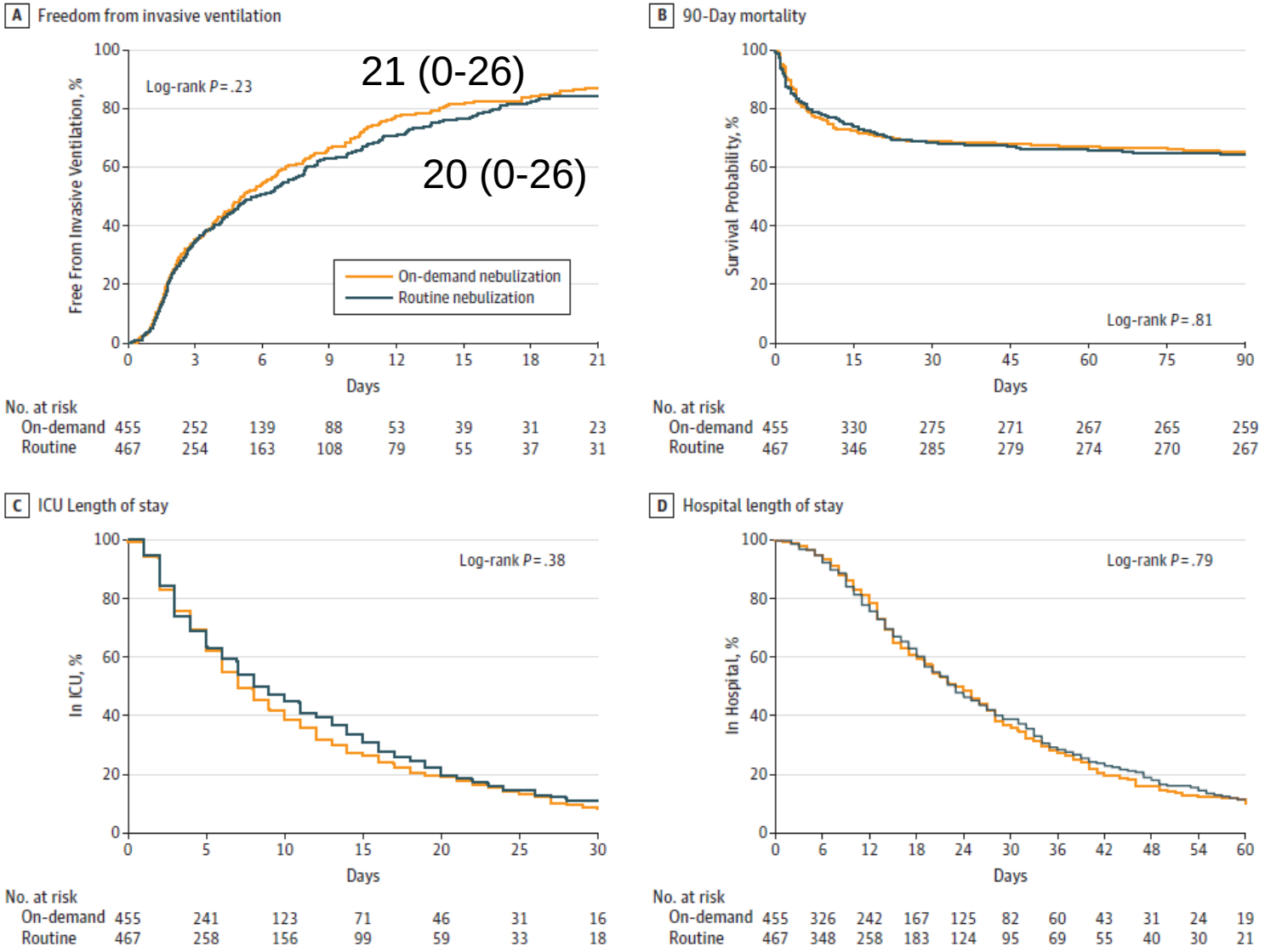


Multivariate model of the prevalence of hospital death (n=1545)



Effect of On-Demand vs Routine Nebulization of Acetylcysteine With Salbutamol on Ventilator-Free Days Intensive Care Unit Patients Receiving Invasive Ventilation

서울아산병원 Asan Medical Center



JAMA. 2018; 319:993-1001

서울아산병원
Asan Medical Center

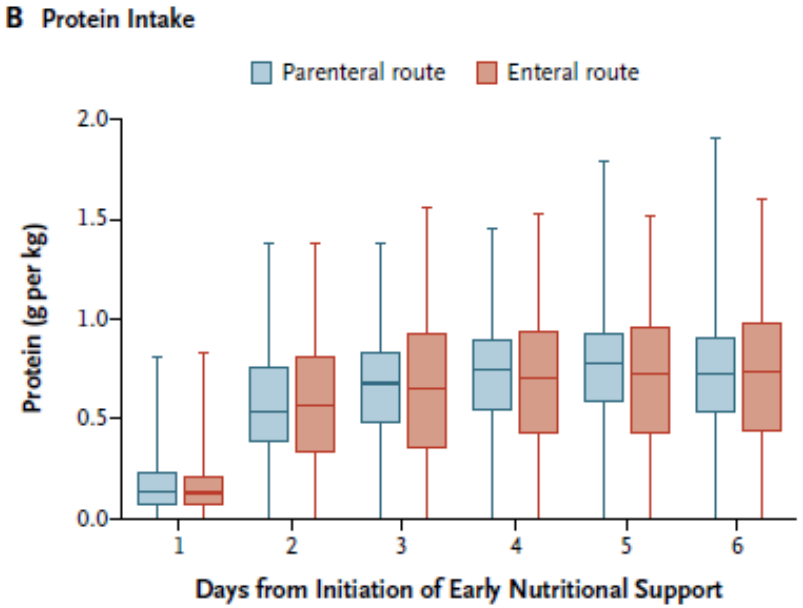
Outcome	On-Demand Nebulization (n = 455)	Routine Nebulization (n = 467)	Absolute Difference (95% CI)	*P* Value[a]
Duration of invasive ventilation, median (IQR)	4 (2-8)	4 (2-10)	-0.5 (-1.3 to 0.2)	.28
Length of stay, median (IQR), d				
ICU	5 (2-10)	5 (2-13)	-0.8 (-1.8 to 0.2)	.49
Hospital	15 (7-27)	14 (6-27)	-0.9 (-3.0 to 1.2)	.57
Pulmonary complications, No. (%)[c]	204 (44.8)	228 (48.8)	-4.0 (-10.4 to 2.4)	.24
Moderate or severe ARDS[d]	23 (5.1)	30 (6.4)	-1.4 (-4.4 to 1.6)	.40
VAP[e]	14 (3.1)	10 (2.1)	0.9 (-1.1 to 3.0)	.41
Severe atelectasis[f]	175 (38.5)	200 (42.8)	-4.4 (-10.7 to 2.0)	.18
Pneumothorax[g]	25 (5.5)	22 (4.7)	0.8 (-2.1 to 3.6)	.65
Tube occlusion[h]	1 (0.2)	2 (0.4)	-0.2 (-0.9 to 0.5)	.99
Adverse events, No. (%)[i]	63 (13.8)	137 (29.3)	-15.5 (-20.7 to -10.3)	<.001
√ Tachyarrhythmia	57 (12.5)	121 (25.9)	-13.4 (-18.4 to -8.4)	<.001
√ Agitation	1 (0.2)	20 (4.3)	-4.1 (-5.9 to -2.2)	<.001
√ Hypoxemia	9 (2.0)	20 (4.3)	-2.3 (-4.5 to -0.1)	.06
Dyspnea	1 (0.2)	5 (1.1)	-0.9 (-1.9 to 0.2)	.22
Bronchospasm	1 (0.2)	4 (0.9)	-0.6 (-1.6 to 0.3)	.37
Apnea	0	3 (0.6)	-0.6 (-1.4 to 0.1)	.25
√ Self-extubation	0	4 (0.9)	-0.9 (-1.7 to 0.0)	.06
Vomiting	1 (0.2)	6 (1.3)	-1.1 (-2.2 to 0.0)	.12

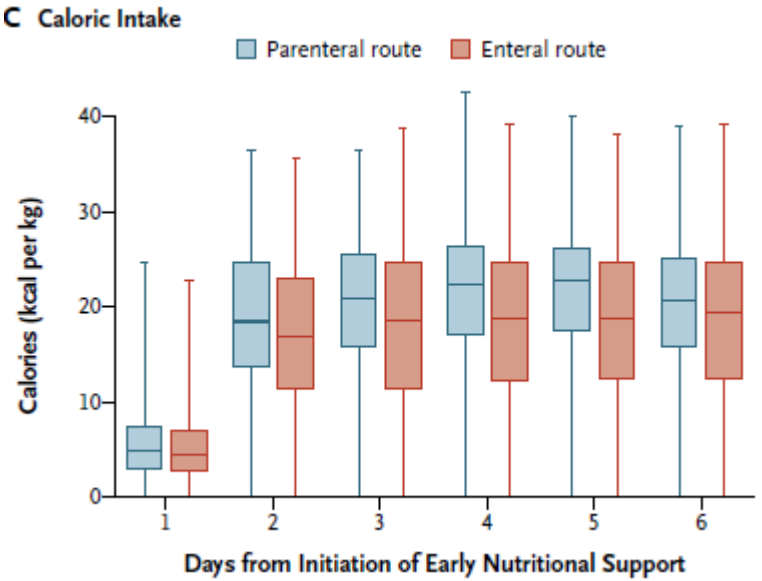
서울아산병원
Asan Medical Center

3. NUTRITION

CALORIES Trial

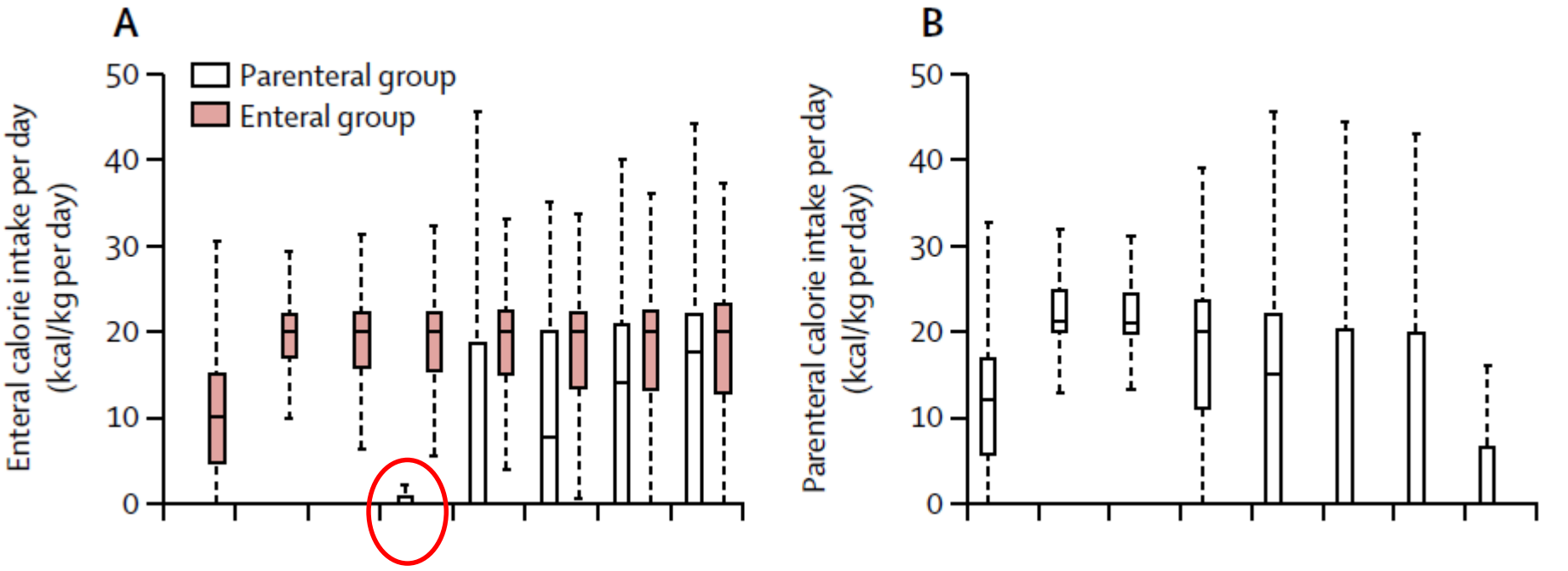
Outcome	Parenteral Group (N=1191)	Enteral Group (N=1197)	Absolute Difference between Groups (95% CI)	Relative Risk (95% CI)	P Value
Primary outcome: death within 30 days — no./total no. (%)	393/1188 (33.1)	409/1195 (34.2)	1.15 (−2.65 to 4.94)†	0.97 (0.86 to 1.08)‡	0.57§





N Engl J Med 2014;371:1673-84

Enteral versus parenteral early nutrition in ventilated adults with shock: a randomised,controlled,multicentre, open-label, parallel-group study (NUTRIREA-2)



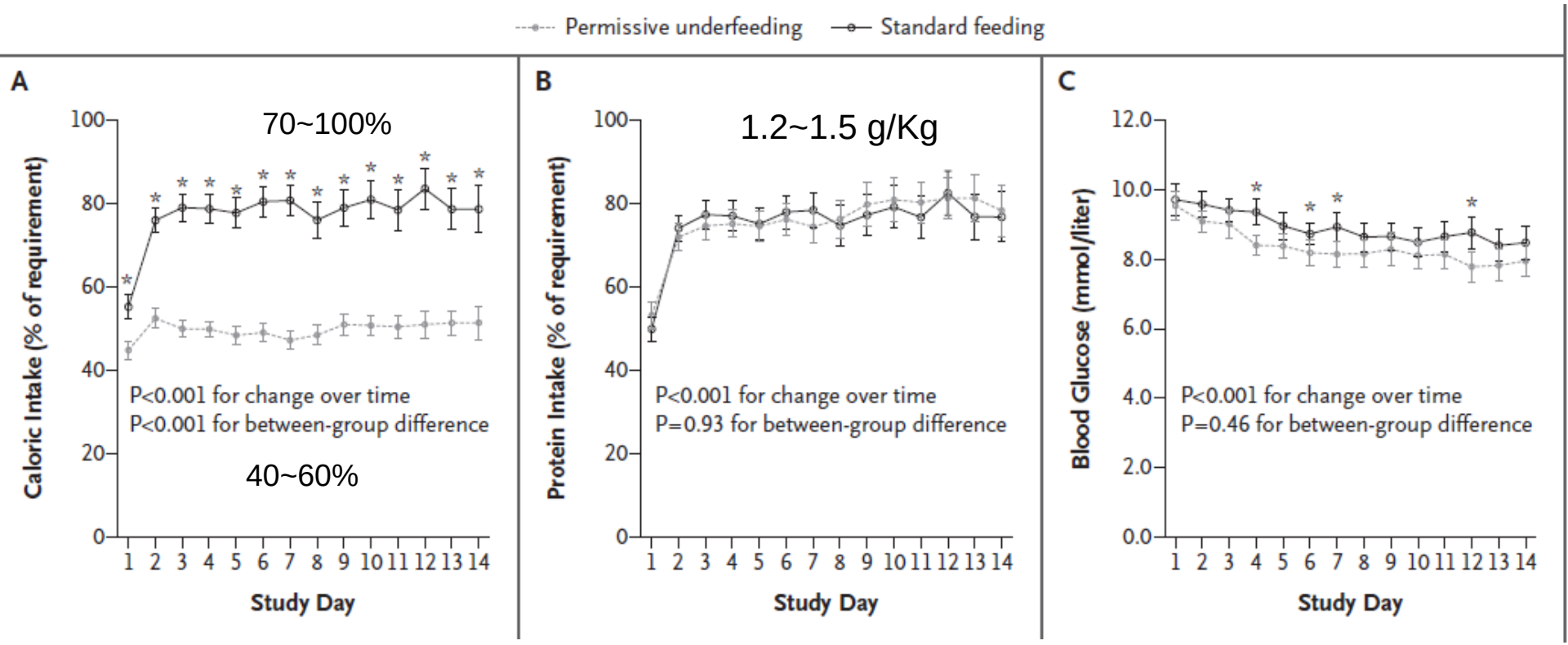
	Enteral group (n=1202)	Parenteral group (n=1208)	Hazard ratio (95% CI)	p value
Days with parenteral nutrition	0·0 (0·0–0·0)	4·0 (3·0–6·0)	..	<0·0001
Days with enteral nutrition	6·0 (3·0–8·0)	1·0 (0·0–3·0)	..	<0·0001
Total calories received (kcal/kg)*	113·5 (61·2)	125·7 (61·9)	..	<0·0001
Daily calorie intake (kcal/kg per 24 h)	17·8 (5·5)	19·6 (5·3)	..	<0·0001
Total protein intake (g/kg)	4·1 (2·3)	5·1 (2·5)	..	<0·0001
Daily protein intake (g/kg/d)	0·7 (0·2)	0·8 (0·2)	..	<0·0001

Lancet. 2018; 391(10116):133-143

	Enteral group (n=1202)	Parenteral group (n=1208)	Absolute difference estimate (95% CI)	Hazard ratio (95% CI)	p value
Primary outcome					
Day 28 mortality	443/1202 (37%)	422/1208 (35%)	2·0 (–1·9 to 5·8)	..	0·33
Secondary outcomes					
Day 90 mortality	530/1185 (45%)	507/1192 (43%)	2·2 (–1·8 to 6·2)	..	0·28
ICU mortality*	429 (33%)	405 (31%)	..	1·10 (0·96 to 1·26)	0·17
Hospital mortality*	498 (36%)	479 (34%)	..	1·08 (0·95 to 1·22)	0·25
ICU length of stay (days)	9·0 (5·0 to 16·0)	10·0 (5·0 to 17·0)	..	..	0·08
Acute-care hospital length of stay (days)	17·0 (8·0 to 32·0)	18·0 (9·0 to 33·0)	..	..	0·11
Days without vasopressor support*	20·0 (0·0 to 25·0)	21·0 (0·0 to 26·0)	..	..	0·10
Days without dialysis*	27·0 (0·0 to 28·0)	27·0 (0·0 to 28·0)	..	..	0·52
Days without mechanical ventilation*	11·0 (0·0 to 23·0)	12·0 (0·0 to 23·0)	..	..	0·54
Infections					
ICU-acquired infection*	173 (14%)	194 (16%)	..	0·89 (0·72 to 1·09)	0·25
Ventilator-associated pneumonia*	113 (9%)	118 (10%)	..	0·96 (0·74 to 1·24)	0·75
Bacteraemia*	38 (3%)	55 (5%)	..	0·69 (0·46 to 1·04)	0·08
CVC-related infection*	29 (2%)	27 (2%)	..	1·07 (0·64 to 1·81)	0·79
Urinary tract infection*	18 (2%)	16 (1%)	..	1·13 (0·58 to 2·21)	0·73
Soft-tissue infection					
Patients (n)	1/1202	6/1208	..	..	..
Other infection*	11 (1%)	21 (2%)	..	0·52 (0·25 to 1·09)	0·08
Gastrointestinal complications					
Vomiting*	406 (34%)	246 (24%)	..	1·89 (1·62 to 2·20)	<0·0001
Diarrhoea*	432 (36%)	393 (33%)	..	1·20 (1·05 to 1·37)	0·009
Bowel ischaemia*	19 (2%)	5 (<1%)	..	3·84 (1·43 to 10·3)	0·007
Acute colonic pseudo-obstruction*	11 (1%)	3 (<1%)	..	3·7 (1·03 to 13·2)	0·04

Permissive Underfeeding or Standard Enteral Feeding in Critically Ill Adults

N Engl J Med 2015;372:2398-408



Outcome	Permissive Underfeeding (N=448)	Standard Feeding (N=446)	Relative Risk (95% CI)	P Value
Death by 90 days — no./total no. (%)	121/445 (27.2)	127/440 (28.9)	0.94 (0.76–1.16)	0.58
Death in the ICU — no. (%)	72 (16.1)	85 (19.1)	0.84 (0.63–1.12)	0.24
Death by 28 days — no./total no. (%)	93/447 (20.8)	97/444 (21.8)	0.95 (0.74–1.23)	0.7
Death in the hospital — no./total no. (%)	108/447 (24.2)	123/445 (27.6)	0.87 (0.70–1.09)	0.24
Death by 180 days — no./total no. (%)	131/438 (29.9)	140/436 (32.1)	0.93 (0.76–1.14)	0.48

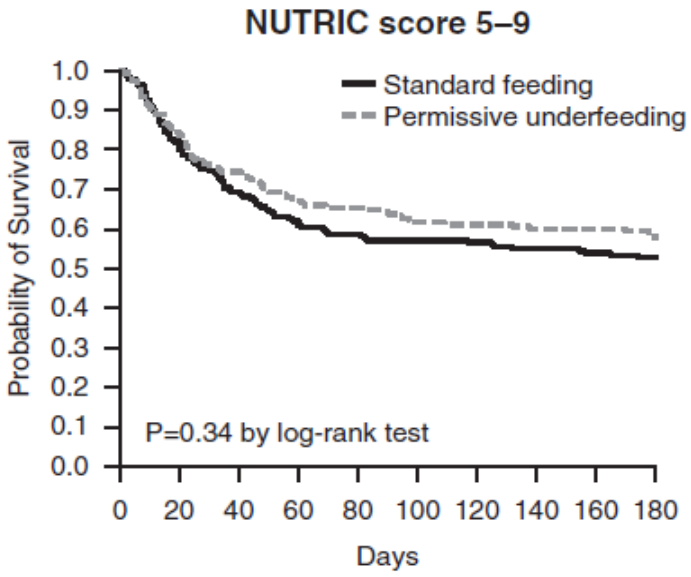
Permissive Underfeeding or Standard Enteral Feeding in High– and Low–Nutritional-Risk Critically Ill Adults. Post Hoc Analysis of the PermiT Trial

Table 1: NUTRIC Score variables

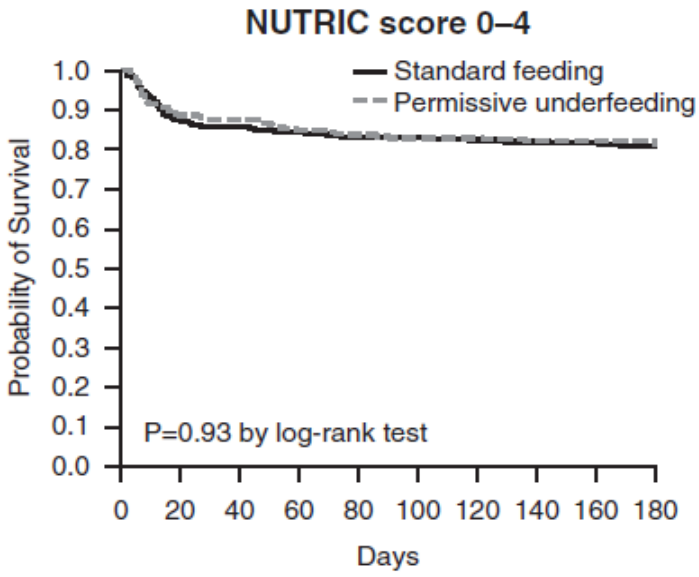
Variable	Range	Points
Age	<50	0
	50 - <75	1
	≥75	2
APACHE II	<15	0
	15 - <20	1
	20-28	2
	≥28	3
SOFA	<6	0
	6 - <10	1
	≥10	2
Number of Co-morbidities	0-1	0
	≥2	1
Days from hospital to ICU admission	0 - <1	0
	≥1	1

Modified NUTRIC Score
score ≥5 : high score

Am J Respir Crit Care Med. 2017; 195(5):652-662



No. at RIsk										
Standard feeding	189	155	131	117	111	108	107	104	102	100
Permissive underfeeding	188	159	140	125	122	115	114	112	112	110



No. at RIsk										
Standard feeding	257	225	221	217	214	214	212	211	210	208
Permissive underfeeding	259	230	227	220	217	215	215	213	213	213

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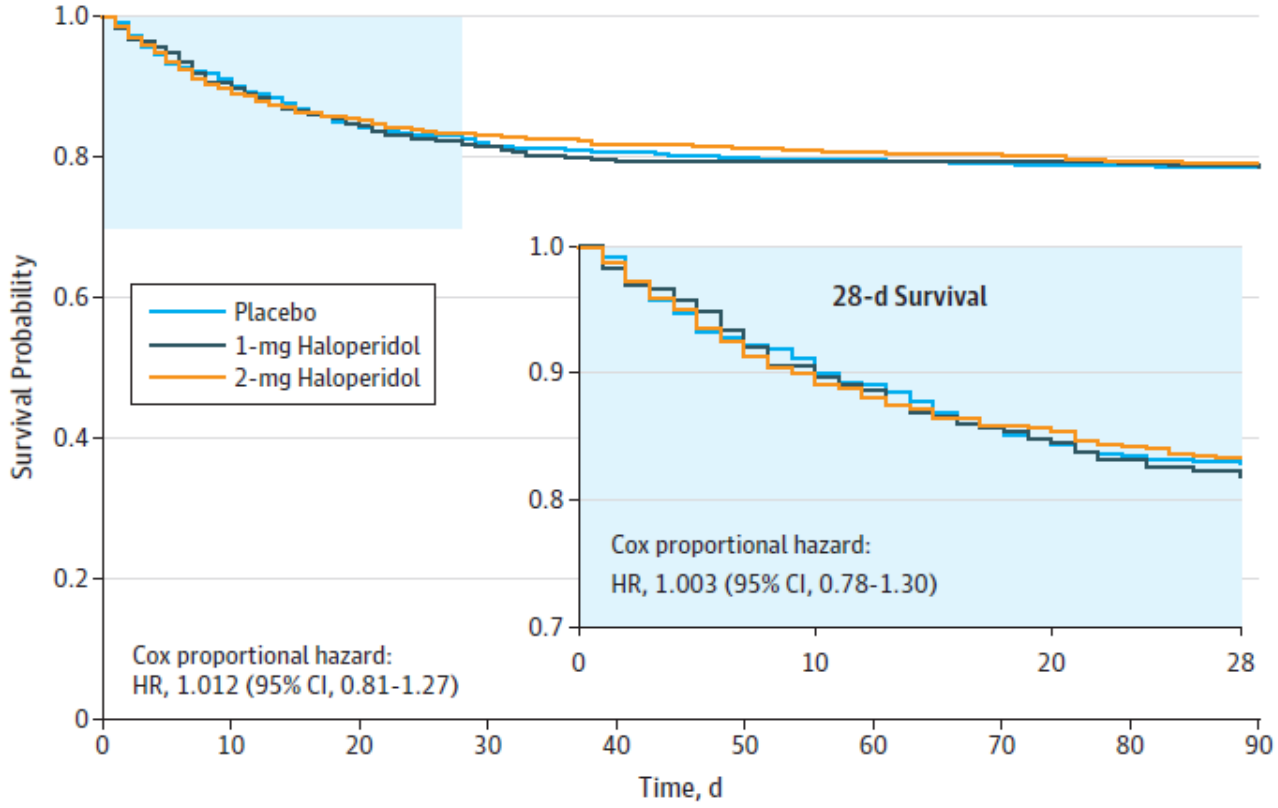
4. DELIRIUM

Effect of Haloperidol on Survival Among Critically Ill Adults With a High Risk of Delirium: The REDUCE Randomized Clinical Trial

Q : the effect of prophylactic haloperidol on survival among critically ill adults ??



82.7%

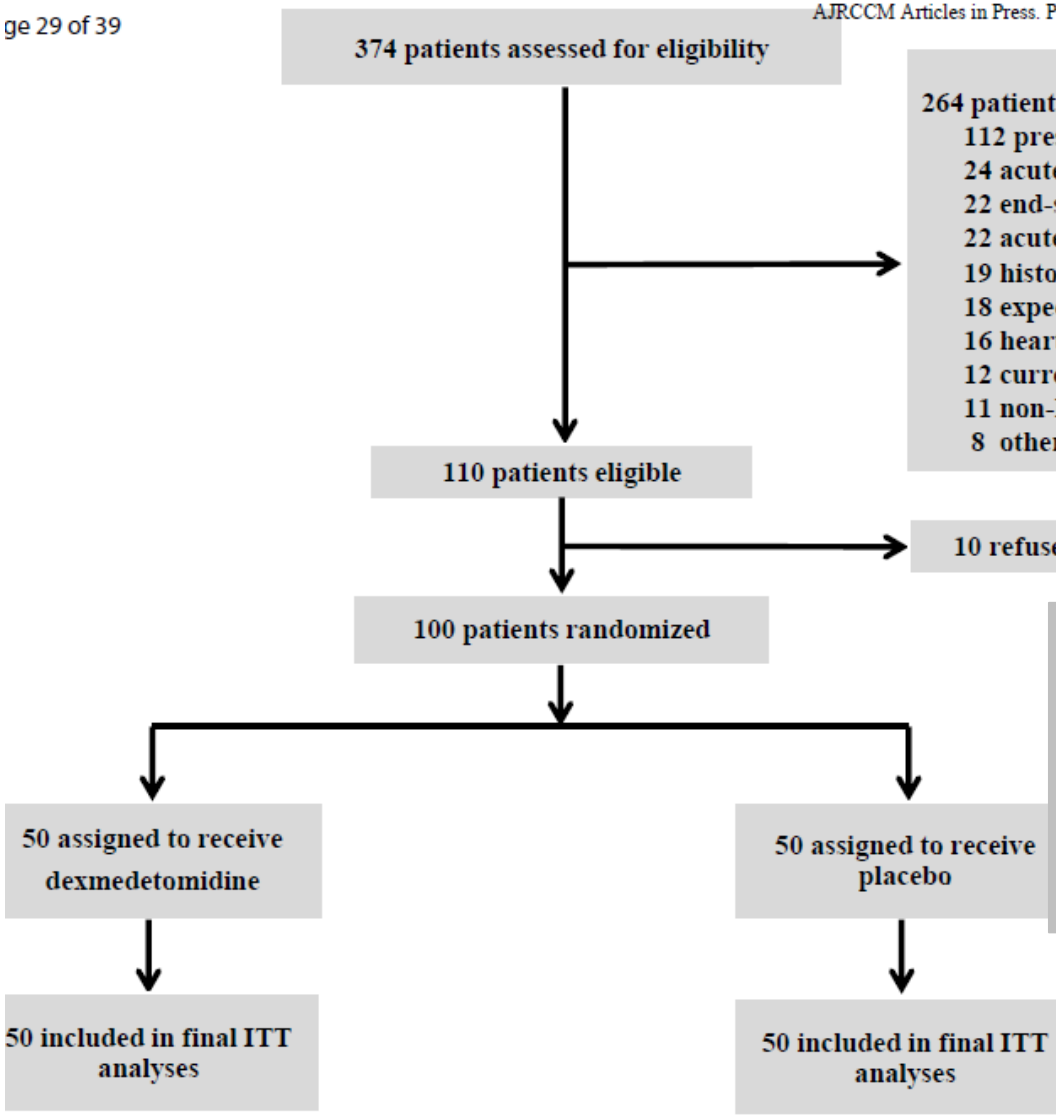
83.3%

No. at risk

Placebo	707	644	600	580	571	565	563	559	557	556
1-mg Haloperidol	350	317	297	285	279	278	278	278	277	276
2-mg Haloperidol	732	658	627	609	599	595	591	589	582	579

Low-dose nocturnal dexmedetomidine prevents ICU delirium: a randomized, placebo-controlled trial

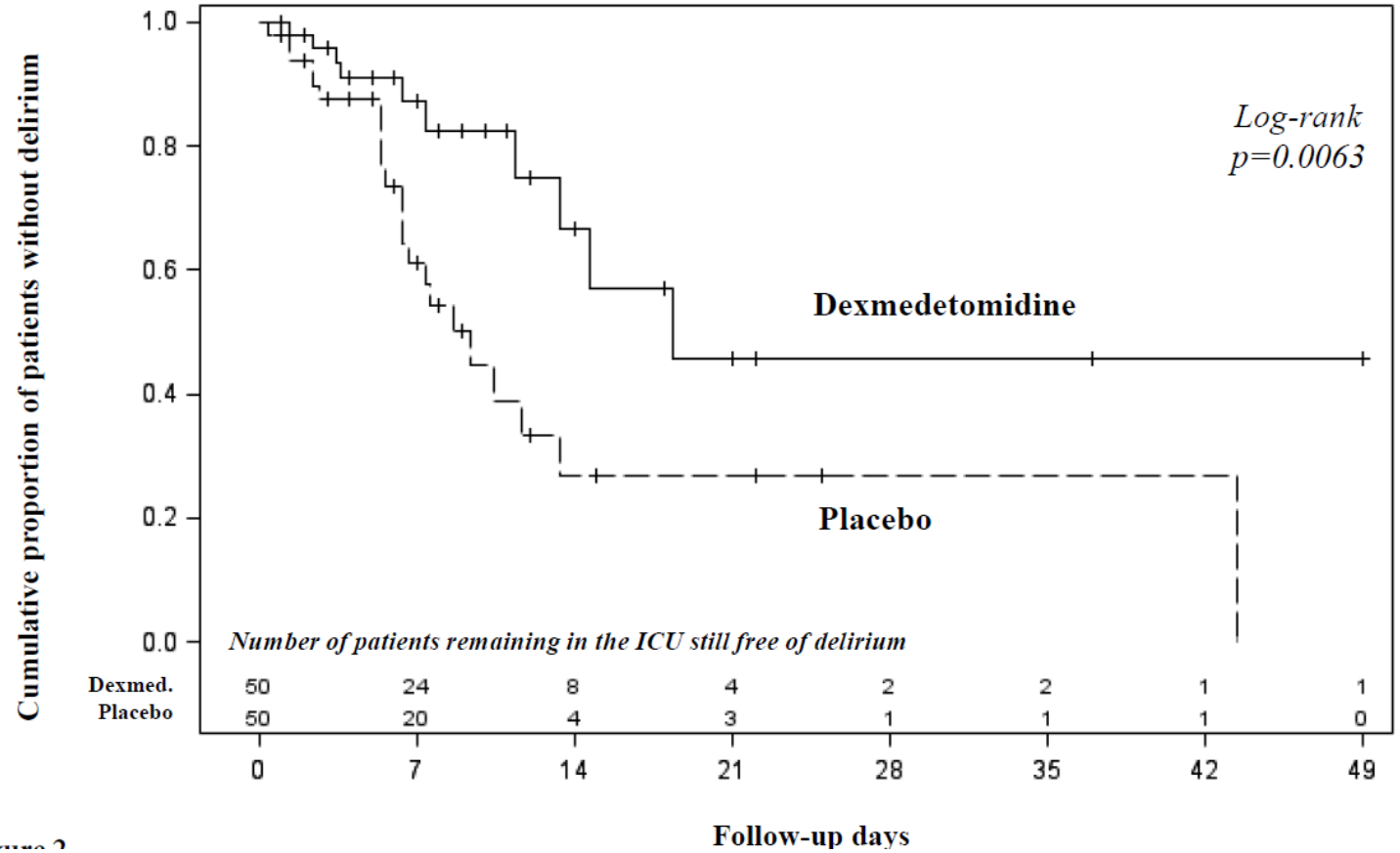
AJRCCM Articles in Press. Published on 02-March-2018 as 10.1164/rccm.201710-1995OC



9:30 pm-6:30 am

- all current sedatives:1/2,
- Dexmedetomidine at 0.2 mcg/kg/hour (or the equivalent mL/hr of the placebo)
- target RASS -1
- as needed IV midazolam

Am J Respir Crit Care Med. 2018 Mar 2.



Clinical outcomes

Variable	Dexmedetomidine N=50	Placebo N=50	P value
Duration of mechanical ventilation, days	3 [5]	4 [6]	0.94
Duration of ICU stay, days	10 [11]	9 [9]	0.56
ICU mortality, n (%)	9 (18)	6 (12)	0.22
Duration of hospital stay, days	27 [44]	29 [35]	0.48
Hospital mortality, n (%)	13 (26)	11 (22)	0.64