Highest Chloride D1 & 2 Lowest SIDa D1 & 2	Outcome: 30-day mortality[1] (n=6,480)				Outcome: hospital mortality[2] (n=5,176)			
Chloride category	n	% outcome	Odds ratio (95% CI) vs. normochloremia	p-value	n	% outcome	Odds ratio (95% CI) vs. normochloremia	p-value
Normochloremia	3.087	9.9%			2.439	24.7%		
Hypochloremia	250	18.8%	1.52 (0.99-2.35)	0.06	190	50.5%	2.21 (1.51-3.24)	<0.001
Moderate hyperchloremia	1.570	8.7%	1.14 (0.87-1.48)	0.35	1.285	18.7%	0.91 (0.74-1.14)	0.42
Severe hyperchloremia	1.573	14.3%	1.67 (1.24-2.24)	0.001	1.262	28.1%	1.32 (1.03-1.68)	0.03
SIDa category	n	% outcome	Odds ratio (95% CI) vs. intermediate SIDa	p-value	n	% outcome	Odds ratio (95% CI) vs. intermediate SIDa	p-value
Intermediate SIDa	3.065	9.8%			2.459	21.2%		
Low SIDa	2.011	9.8%	0.97 (0.76-1.24)	0.81	1.587	21.7%	0.86 (0.80-1.20)	0.86
High SIDa	1.404	15.5%	1.07 (0.83-1.37)	0.60	1.130	38.0%	1.44 (1.17-1.76)	<0.001
Sodium category	n	% outcome	Odds ratio (95% CI) vs. normal sodium	p-value	n	% outcome	Odds ratio (95% CI) vs. normal sodium	p-value
Normal sodium	4.921	9.4%			3.963	22.5%		
Hyponatremia	1.009	13.0%	1.22 (0.92-1.61)	0.17	761	29.2%	0.89 (0.70-1.23)	0.32
Hypernatremia	550	21.8%	1.07 (0.75-1.48)	0.68	452	39.8%	1.07 (0.80-1.42)	0.67
			Area under ROC 86.7%				Area under ROC 83.6%	
			Maximal VIF 2.38				Maximal VIF 2.40	
			Tolerance 0.68				Tolerance 0.68	

Table S5: Logistic regression models in the **total ICU population** excluding patients admitted after elective cardiac surgery. The highest chloride and the lowest SIDa encountered during the **first two days of admission** were used for analysis.

[1] Confounders adjusted for in the model: SAPS-3, admission reason, RIFLEcrea*, RIFLEurine, lactate, heart failure*, COPD*, pCO2* (low, normal, high), albumin, SIG, potentiometry type* (* = p > 0.05).

[2] Confounders adjusted for in the model: SAPS-3, admission reason, RIFLEcrea, RIFLEurine, lactate, heart failure, COPD, pCO2* (low, normal, high), albumin, SIG*, potentiometry type (* = p > 0.05).

SIDa = apparent strong ion difference (excl. lactate); ROC = Receiver under Operating Characteristics Curve; VIF = variance inflation factor