

## SUPPLEMENTAL MATERIAL

Online Supplement for manuscript entitled:

**Derivation and validation of a novel prognostic scale (modified-SOAR) to predict early mortality in acute stroke**

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## SUPPLEMENTAL TABLES

**Supplementary Table I:** Integer value assignment for the variable 'baseline NIHSS' to form the modified-SOAR prognostic score.

Baseline NIHSS	N	Early death, n (%)	Log-OR	p-value	<i>Additional integer value to the original SOAR score</i>
1-4	363	8 (2.2)	0	-	0
5-10	326	22 (6.8)	0.86	0.046	1
11-20	248	49 (19.8)	1.52	<0.001	2
≥21	65	26 (40.0)	2.05	<0.001	2

Univariable analysis for outcome of early mortality. NIHSS indicates National Institutes of Health Stroke Scale; OR: odds ratio.

**Supplementary Table II:** Characteristics of patients with NIHSS observed and those within missing NIHSS data within the ASHCN registry (2008-2011).

	<b>NIHSS observed (n=1539)</b>	<b>NIHSS missing (n=6218)</b>	<b>p-value</b>
Age (years); mean $\pm$ sd	74.8 $\pm$ 12.9	76.7 $\pm$ 13.0	<0.001
Female; n(%)	728 (47.3)	3217 (51.7)	0.007
Pre-stroke mRS; n(%)			<0.001
0	736 (60.6)	1791 (48.3)	
1	181 (14.9)	635 (17.1)	
2	129 (10.6)	452 (12.2)	
3	107 (8.8)	450 (12.1)	
4	47 (3.9)	293 (7.9)	
5	13 (1.1)	88 (2.4)	
6	1 (0.1)	1 (0.0)	
Mortality within hospital admission of stroke	159 (10.3)	1306 (21.0)	<0.001

Sd indicates standard deviation; mRS: modified Rankin scale.

**Supplementary Table III:** Proportions of early mortality (death within 90 days) according to the original SOAR score.

Original SOAR score level	Derivation cohort	
	Patient, n	Patient with early mortality, n (%)
0 or 1	346	7 (2.0)
2	267	15 (5.6)
3	179	22 (12.3)
4	129	25 (19.4)
5	61	24 (39.3)
6	17	11 (64.7)
7	3	1 (33.3)

**Supplementary Table IV: Event and non-event reclassification in derivation cohort.**

		mSOAR score	1	2	3	4	5	6	7	Total
		Predicted event rate	1.0%	1.5%	6.5%	9.2%	19.5%	26.2%	49.2%	
SOAR score			Events, n							
1	2.0%	2	2	3	0	0	0	0	7	
2	5.6%	0	1	7	7	0	0	0	15	
3	12.3%	0	0	3	3	16	0	0	22	
4	19.4%	0	0	0	2	6	17	0	25	
5	39.3%	0	0	0	0	0	5	19	24	
6	64.7%	0	0	0	0	0	0	11	11	
7	33.3%	0	0	0	0	0	0	1	1	
Total		2	3	13	12	22	22	31	105	
		Non-events, n								
1	2.0%	203	95	41	0	0	0	0	339	
2	5.6%	0	109	95	48	0	0	0	252	
3	12.3%	0	0	51	52	54	0	0	157	
4	19.4%	0	0	0	18	31	55	0	104	
5	39.3%	0	0	0	0	6	7	24	37	
6	64.7%	0	0	0	0	0	0	6	6	
7	33.3%	0	0	0	0	0	0	2	2	
Total		203	204	187	118	91	62	31	897	

**Supplementary Table V: Event and non-event reclassification in validation cohort.**

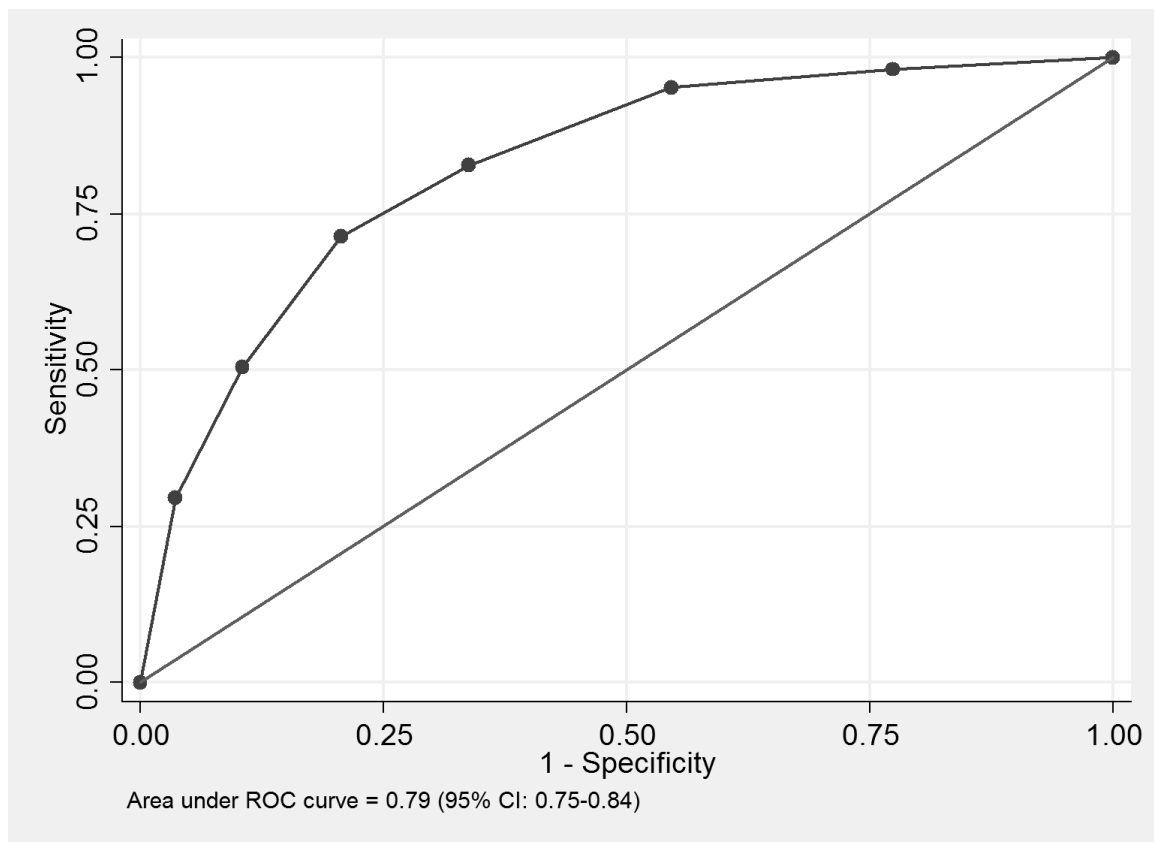
		mSOAR score	1	2	3	4	5	6	7	Total
SOAR score	Predicted event rate		1.9%	2.8%	10.5%	17.5%	31.1%	55.2%	41.7%	
	Events, n									
1	2.0%	7	4	9	0	0	0	0	0	20
2	5.6%	0	1	4	13	0	0	0	0	18
3	12.3%	0	0	2	3	23	0	0	0	28
4	19.4%	0	0	0	0	0	26	0	0	26
5	39.3%	0	0	0	0	1	2	3	3	6
Total			7	5	15	16	24	28	3	98
Non Events, n										
1	2.0%	356	147	47	0	0	0	0	0	550
2	5.6%	0	59	70	64	0	0	0	0	193
3	12.3%	0	0	21	22	68	0	0	0	111
4	19.4%	0	0	0	1	11	37	0	0	49
5	39.3%	0	0	0	0	0	2	8	8	10
6	64.7%	0	0	0	0	0	0	1	1	1
Total			356	206	138	87	79	39	9	917

**Supplementary Table VI: Sensitivity analysis- Proportions death within 10 days according to the modified SOAR score.**

<b>Modified SOAR score level</b>	<b>Validation cohort</b>	
	<b>Patient, n</b>	<b>Mortality within 10 days of stroke, n (%)</b>
0 or 1	363	7 (1.9)
2	211	5 (3.0)
3	153	15 (9.8)
4	103	16 (15.5)
5	103	24 (23.3)
6	67	28 (41.8)
7	12	3 (25.0)

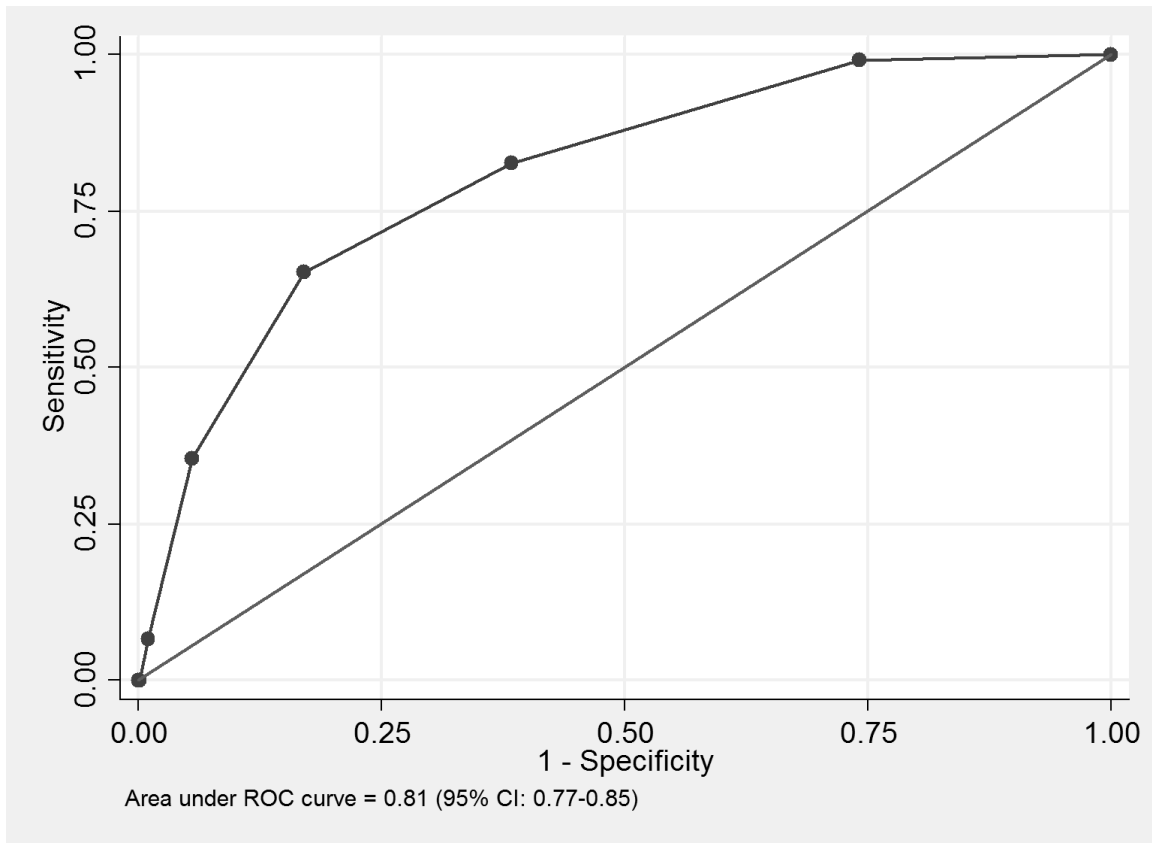
## SUPPLEMENTAL FIGURE AND FIGURE LEGEND

**Supplementary Figure I:** Area under the receiving operator curve (AUROC) of the original SOAR score for early mortality in the derivation cohort.





**Supplementary Figure II:** Area under the receiving operator curve (AUROC) of the original SOAR score for early mortality in the validation cohort.



**Supplementary Figure III:** Sensitivity analysis- Area under the receiving operator curve (AUROC) of the modified SOAR score for mortality within 10 days post-stroke in validation cohort.

