Table S1. Baseline characteristics of the patients according to sex.

	Total (n = 276)	Male (n = 153)			Female (n = 123)		
		END group (n = 20)	Non- END group (n = 133)	P-value	END group (n = 22)	Non- END group (n = 101)	P-value
Age (mean±SD), years	69.2±11.1	67.2±11.1	68.2±10.8	0.693	71.3±8.9	70.6±11.8	0.788
BMI (kg/m^2), n (%)				0.242			0.529
BMI < 25	194 (70.3)	12 (60.0)	103 (77.4)		14 (63.6)	65 (64.4)	
25≤ BMI <30	72 (26.1)	7 (35.0)	26 (19.5)		8 (36.4)	31 (30.7)	
BMI ≥ 30	10 (3.6)	1 (5.0)	4 (3.0)		0 (0.0)	5 (5.0)	
Hypertension, n (%)	199 (72.1)	16 (80.0)	92 (69.2)	0.322	16 (72.7)	75 (74.3)	0.882
Diabetes mellitus, n (%)	74 (26.8)	7 (35.0)	36 (27.1)	0.462	6 (27.3)	25 (24.8)	0.805
Hyperlipidemia, n (%)	96 (34.8)	6 (30.0)	46 (34.6)	0.686	11 (50.0)	33 (32.7)	0.124
Smoking, n (%)	87 (31.5)	10 (50.0)	61 (45.9)	0.730	4 (18.2)	12 (11.9)	0.484
Previous stroke/TIA, n (%)	81 (29.3)	3 (15.0)	39 (29.3)	0.181	6 (27.3)	33 (32.7)	0.622
Atrial fibrillation, n (%)	71 (25.7)	5 (25.0)	29 (21.8)	0.775	3 (13.6)	34 (33.7)	0.063
Pulmonary diseases, n (%)				0.813			0.113
COPD, n (%)	3 (1.1)	0 (0.0)	2 (1.5)		1 (4.5)	0 (0.0)	
Chronic asthma, n (%)	4 (1.4)	0 (0.0)	1 (0.8)		1 (4.5)	2 (2.0)	
Lung cancer, n (%)	8 (2.9)	1 (5.0)	3 (2.3)		0 (0.0)	4 (4.0)	
Initial NIHSS [median, (IQR)]	3 (1-8)	3 (3–7.75)	2 (1-6.0)	0.079	4 (2.75-7.25)	5 (2-14)	0.487
Discharge NIHSS [median, (IQR)]	2 (0-5)	5.5(3.25–8.0)	1 (0–4)	<0.001	4 (1-9)	2 (0-5.5)	0.183
Stroke mechanism, n (%)				0.609			0.127
LAA	82 (29.7)	6 (30.0)	40 (30.1)		7 (31.8)	29 (28.7)	
SVO	47 (17.0)	6 (30.0)	23 (17.3)		6 (27.3)	12 (11.9)	
CE	90 (32.6)	4 (20.0)	43 (32.3)		3 (13.6)	40 (39.6)	
Other determined	27 (9.8)	1 (5.0)	11 (8.3)		3 (13.6)	12 (11.9)	
Undetermined	30 (10.9)	3 (15.0)	16 (12.0)		3 (13.6)	8 (7.9)	
Lesion location, n (%)				0.549			0.546
Anterior circulation	165 (59.8)	13 (65.0)	74 (55.6)		14 (63.6)	64 (63.4)	
Posterior circulation	68 (24.6)	3 (15.0)	35 (26.3)		4 (18.2)	26 (25.7)	
Multiple territory	43 (15.6)	4 (20.0)	24 (18.0)		4 (18.2)	11 (10.9)	
Significant stenosis on relevant artery, n (%)	125 (45.3)	9 (45.0)	58 (43.6)	0.907	8 (36.4)	50 (49.5)	0.263
SU stay (days, mean±SD)	2.2±1.3	2.5±1.3	2.1±1.3	0.207	2.6±1.5	2.2±1.3	0.181

END: early neurological deterioration, SD: standard deviation, BMI: body mass index, TIA: transient ischemic attack, CHF: congestive heart failure, COPD: chronic obstructive pulmonary disease, TB: Tuberculosis, NOD: nocturnal oxygen desaturation, LAA: large artery atherosclerosis, SVO: small-vessel occlusion, CE: cardioembolism, SU: Stroke Unit

Table S2. Monitoring data in the Stroke Unit in patients with and without early neurologic deterioration according to sex.

	Total (n = 276)	Male (n = 153)			Female (n = 123)		
		END group (n = 20)	Non- END group (n = 133)	*P*-value	END group (n = 22)	Non- END group (n = 101)	*P*-value
NOD, n (%)	49 (17.8)	9 (45.0)	15 (11.3)	0.001	10 (45.5)	15 (14.9)	0.003
O2 therapy after SU stay, n (%)	21 (7.6)	1 (5.0)	8 (6.0)	0.857	2 (9.1)	10 (9.9)	0.908
SBP, mmHg , (mean±SD)	158.8±30.6	163.6±29.1	155.7±31.5	0.298	167.3±29.5	160.0±19.8	0.300
DBP, mmHg (mean±SD)	85.7±15.5	89.4±12.8	85.7±16.6	0.339	86.3±14.6	84.8±14.6	0.656
Nocturnal MBP, mmHg (mean±SD),	93.3±13.6	97.4±16.2	92.6±13.6	0.151	97.5±14.4	92.5±12.9	0.110
Severe Desaturation time (SpO2 <90%), min	2.3±6.2	2.5±4.9	1.8±3.9	0.445	5.8±15.1	2.1±5.4	0.271
Mean nocturnal saturation, (mean±SD) %	97.1±1.4	97.0±1.3	97.3±1.3	0.431	96.5±1.3	97.1±1.5	0.092
ODI, (mean±SD)	2.8±2.6	4.3±3.1	2.4±2.3	0.020	4.4±3.1	2.8±2.6	0.028

END: early neurologic deterioration; NOD: nocturnal oxygen desaturation; SBP: systolic blood pressure, SD: standard deviation; DBP: diastolic blood pressure, MBP: mean blood pressure; ODI: oxygen desaturation index

Table S3. Laboratory data in patients with and without early neurological deterioration according to sex.

	Male (n = 153)			Female (n = 123)		
	END group (n = 20)	Non- END group (n = 133)	*P*-value	END group (n = 22)	Non- END group (n = 101)	*P*-value
WBC, x10^3/μl (mean±SD)	8.32±3.17	8.12±2.64	0.765	8.11±2.76	8.46±3.60	0.670
Hb, g/dL (mean±SD)	13.43±2.34	13.55±1.92	0.817	13.25±1.80	12.76±1.86	0.269
HDL, mg/dL (mean±SD)	48.40±13.61	45.85±13.89	0.444	48.86±14.46	47.39±12.63	0.632
TG, mg/dL (mean±SD)	118.30±74.53	103.08±45.32	0.207	101.18±27.26	105.28±50.90	0.715
Total cholesterol, mg/dL (mean±SD)	187.00±41.36	161.82±35.32	0.004	195.50±46.27	175.63±43.44	0.105
FBS, mg/dL (mean±SD)	113.40±33.91	101.21±26.59	0.068	115.64±54.40	103.51±26.31	0.318
Fibrinogen, mg/dL (mean±SD)	357.70±78.10	325.84±71.78	0.069	332.09±66.07	326.90±79.90	0.777

END: early neurological deterioration, WBC: white blood cell, SD: standard deviation, Hb: hemoglobin, HDL: high density lipoprotein, TG: triglyceride, FBS: fasting blood sugar

Table S4. Factors associated with early neurological deterioration according to sex.

	Unadjusted OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Male				
NOD	6.44 (2.29-18.06)	<0.001	6.86 (2.10-22.41)	0.001
Total cholesterol	1.02 (1.01-1.03)	0.006	1.02 (1.01-1.03)	0.005
Female				
NOD	4.78 (1.75-13.02)	0.002	5.57 (1.82-17.10)	0.003

NOD: nocturnal oxygen desaturation

Male group: Adjusting for NOD, initial NIHSS, mean nocturnal saturation, fasting blood sugar, fibrinogen and total cholesterol
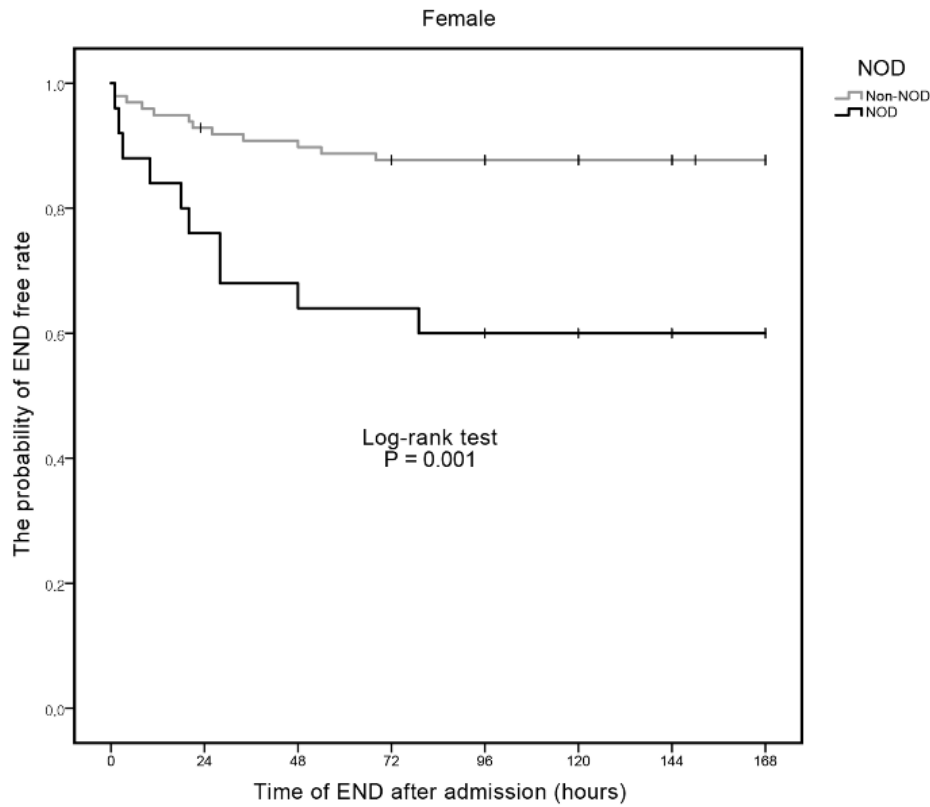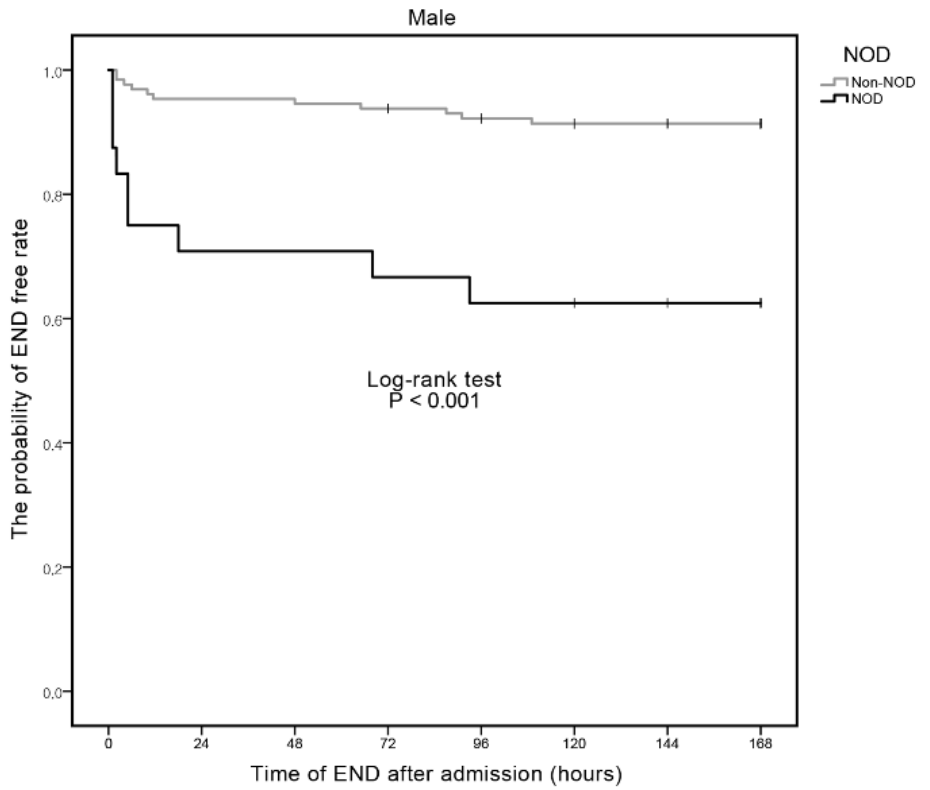
Female group: Adjusting for NOD, mean nocturnal saturation, and atrial fibrillation

Table S5. Baseline characteristics of included patients and excluded patients with O2 therapy during stroke unit care.

	Included patients (n=285)	Excluded patients with O2 therapy during SU care (n=15)	P-value
Age (mean±SD), years	68.2±12.3	71.3±15.6	0.354
Male, n (%)	158(55.4)	8(53.3)	0.873
BMI (mean±SD), kg/m2	23.3±3.3	21.9±3.3	0.112
Hypertension, n (%)	200(70.2)	13(86.7)	0.245
Diabetes mellitus, n (%)	75(26.3)	8(53.3)	0.035
Hyperlipidemia, n (%)	96(33.7)	5(33.3)	0.978
Smoking, n (%)	91(31.9)	4(26.7)	0.782
Previous stroke/TIA, n (%)	83(29.1)	4(26.7)	0.838
Atrial fibrillation, n (%)	72(25.3)	6(40.0)	0.229
Initial NIHSS [median,(IQR)]	3(1-8)	13(5-19)	0.002
Discharge NIHSS [median,(IQR)]	2(0-5)	13(11-18)	<0.001
Stroke mechanism, n (%)			0.491
LAA	85(29.8)	3(20.0)	
SVO	48(16.8)	1(6.7)	
CE	93(32.6)	8(53.3)	
Other determined	28(9.8)	1(6.7)	
Undetermined	31(10.9)	2(13.3)	
END, n (%)	42(14.7)	3(20.0)	0.478

END: early neurological deterioration, SD: standard deviation, BMI: body mass index, TIA: transient ischemic attack, LAA: large artery atherosclerosis, SVO: small-vessel occlusion, CE: cardioembolism, SU: Stroke Unit

Figure S1. Kaplan-Meier event curves for END from Admission time to 7 days after admission in both sexes.

The probability of END-free was different between patients with and without nocturnal desaturation. This trend was similar in both sexes.