

Comparison of recanalized patients with and without DWI reversal areas

Characteristics	Total (n = 118)	With DWI reversal areas (n = 42)	Without DWI reversal areas (n = 76)	P-value
Age, years	76 ± 11	77 ± 11	75 ± 11	.29
Male sex	62 (53)	25 (60)	37 (49)	.26
Pre-stroke mRS score				
0	87 (74)	32 (76)	55 (72)	.64
1	24 (20)	8 (20)	16 (21)	
2	4 (3)	1 (2)	3 (4)	
3	3 (3)	1 (2)	2 (3)	
Initial NIHSS score	18 (14–23)	19 (14–24)	18 (14–22)	.69
Risk factors				
Hypertension	71 (60)	27 (64)	44 (58)	.50
Diabetes mellitus	28 (24)	8 (19)	20 (26)	.37
Hyperlipidemia	35 (30)	15 (36)	20 (26)	.28
Current smoker	43 (36)	12 (29)	31 (41)	.19
Prior stroke	24 (20)	11 (26)	13 (17)	.24
Stroke subtypes				
Cardioembolic stroke	89 (75)	34 (81)	55 (72)	.56
Large artery atherosclerosis	15 (13)	3 (7)	12 (16)	
Embolic stroke of undetermined source	12 (10)	4 (10)	8 (11)	

Others	2 (2)	1 (2)	1 (1)	
Occluded artery				
Internal carotid artery	27 (23)	10 (24)	17 (22)	
M1	62 (53)	21 (50)	41 (54)	.59
M2	28 (24)	10 (24)	18 (24)	
M3	1 (1)	1 (2)	0 (0)	
Emergency treatment				
Intravenous tPA + MT	58 (49)	23 (55)	35 (46)	.36
MT	60 (51)	19 (45)	41 (54)	
ASPECTS-DWI	8 (7–9)	8 (7–9)	7.5 (6–8)	.10
Onset to imaging time, min	119 (60–178)	80 (50–150)	122 (60–193)	.049*
Imaging to recanalization time, min	59 (40–82)	50 (40–70)	60 (40–93)	.07
Onset to recanalization time, min	190 (112–270)	136 (110–225)	215 (129–325)	.01*
ADC value, $\times 10^{-6}$ mm ² /s				
Mean	515 (459–578)	575 (539–621)	478 (434–534)	<.0001*
Maximum	693 (581–759)	747 (695–798)	641 (562–726)	<.0001*
Minimum	387 (313–440)	441 (392–517)	346 (294–411)	<.0001*
11 minus ASPECTS-DWI score				
Baseline	3 (2–5)	3 (2–4)	3.5 (3–5)	.097
Follow-up	3 (1–5)	1 (0–3)	4 (3–5)	<.0001*

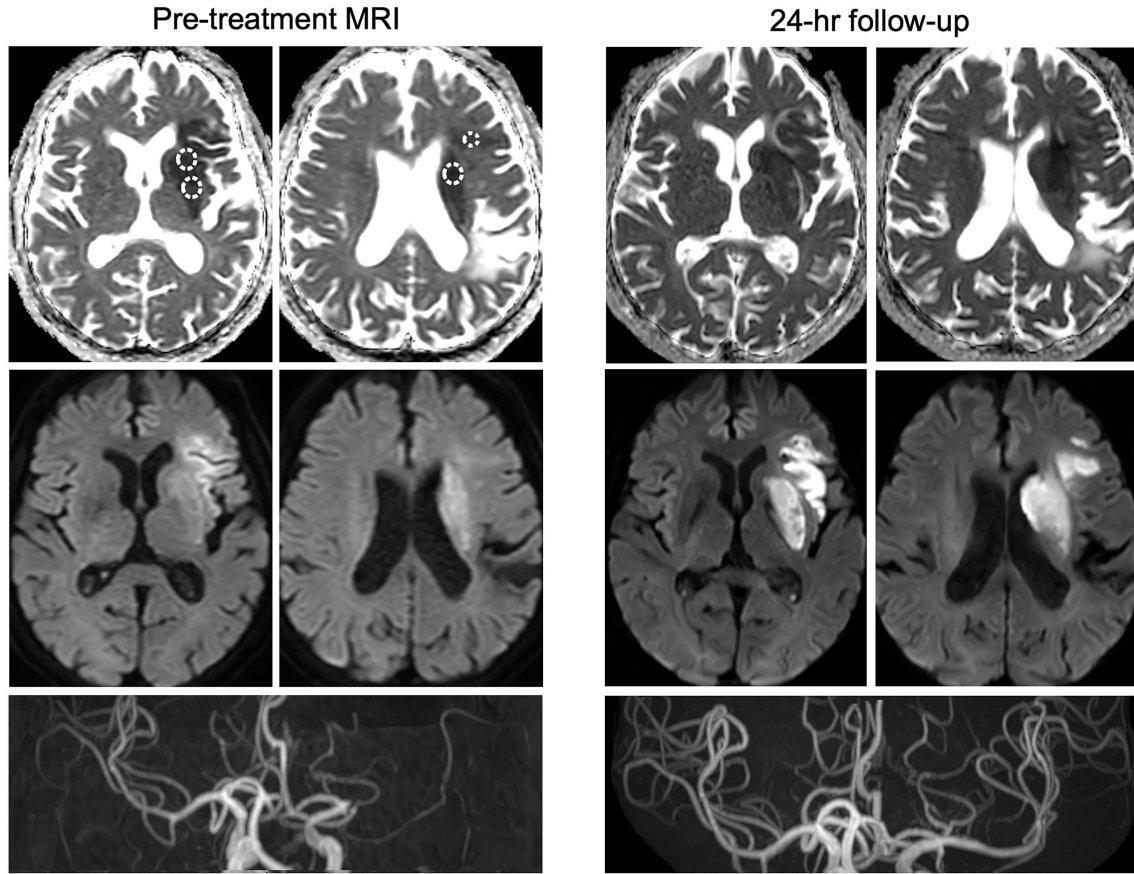
DWI reversal	0 (0–1)	2 (1–3)	0 (-1–0)	<.0001*
Recanalization state				
TICI 2b	59 (50)	16 (38)	43 (57)	.054
TICI 3	59 (50)	26 (62)	33 (43)	
Outcomes				
Parenchymal hemorrhage	15 (13)	0	15 (20)	.002
NIHSS score at 7 d	4 (2–12)	2 (1–4)	6 (4–14)	<.0001*
mRS at 3 months	2 (1–4)	2 (1–3)	3 (2–4)	.0009*
Good functional outcome (mRS,0-2)	63 (53)	29 (69)	34 (45)	.011*

Values are expressed as mean $\pm$ standard deviation, n (%), or median (interquartile range).

* $P < .05$.

MT, mechanical thrombectomy.

ASPECTS, alberta stroke program early CT score



Lesions without DWI reversal assessed by MRI DWI/ADC. DW, ADC, and MRA images show lesions without reversal of the left frontal ischemic lesion 24 h after mechanical thrombectomy for M1 occlusion. The ADC values (mean, maximum, minimum) without reversal are measured in the ROIs (white circle area with dotted line) at the pre-treatment MRI and each parameter is averaged. The ADC values of lesions without DWI reversal (mean, maximum, minimum) are $303 \times 10^{-6} \text{ mm}^2/\text{s}$, $489 \times 10^{-6} \text{ mm}^2/\text{s}$, and $155 \times 10^{-6} \text{ mm}^2/\text{s}$, respectively.

ADC values between DWI lesions with and without DWI reversal in the same patients

	With DWI	Without DWI	
	reversal areas	reversal areas	<i>P</i>-value
	(n=22)	(n=22)	
ADC level, $\times 10^{-6}$ mm ² /s			
Mean	556	493	.079
	(526-588)	(443-581)	
Maximum	740	705	.265
	(686-801)	(610-813)	
Minimum	406	330	.022*
	(369-458)	(248-422)	

Multivariate analysis of factors associated with DWI reversal

	Odds Ratio (95% CI)	P-Value
Age	.971 (0.921-1.023)	.262
Sex, men	2.154 (0.735-6.313)	.162
Initial NIHSS	1.002 (0.938-1.071)	.952
ASPECTS DWI	.797 (0.578-1.098)	.165
Onset to image, min	1.001 (0.998-1.004)	.454
Imaging to recanalization time, min	.987 (0.974-1.000)	.051
Mean ADC level, $\times 10^{-6}$ mm ² /s	1.023 (1.013-1.033)	<.0001*
Complete recanalization (TICI 3)	1.788 (0.674-4.742)	.243

Multivariate analysis of factors associated with good functional outcomes

	Odds Ratio (95% CI)	P-Value
Age	.963 (0.917-1.011)	.126
Sex, men	3.065 (1.081-8.690)	.035*
Initial NIHSS	.972 (0.904-1.046)	.452
ASPECTS DWI	2.527 (1.666-3.832)	<.0001*
Onset to image	1.003 (0.999-1.006)	.066
Imaging to recanalization time, min	1.002 (0.993-1.011)	.684
ADC mean	.996 (0.988-1.003)	.246
Complete recanalization (TICI 3)	2.952 (1.074-8.113)	.036*
DWI reversal	3.082 (0.877-10.839)	.079
Parenchymal hemorrhage	.389 (0.056-2.693)	.339