

SUPPLEMENTARY DATA

eTable 1. Baseline characteristics and outcomes of unmatched groups

Variable	No Diabetes Mellitus history (n=43,307)			Diabetes Mellitus history (n=10,899)		
	HG+ (n=9,210)	HG- (n=34,097)	p-value	HG+ (n=5,876)	HG- (n=5,023)	p-value
Baseline Characteristics						
Age (mean±SD), years	71.3±12.8	69.1±14.0	<0.001	72.02±10.4	72.8±10.3	<0.001
Males (%)	51.8	54.7	<0.001	57.0	56.2	0.398
Admission NIHSS (median, IQR)	11 (6-17)	10 (6-16)	<0.001	10 (6-17)	10 (6-17)	0.374
Hypertension (%)	68.0	62.2	<0.001	86.0	85.7	0.728
Hyperlipidemia (%)	27.0	25.7	0.012	47.7	51.2	<0.001
Current smoking (%)	15.6	18.6	<0.001	13.6	13.9	0.622
Atrial fibrillation (%)	22.3	19.8	<0.001	23.2	22.8	0.581
Congestive heart failure (%)	8.2	7.7	<0.001	13.3	13.5	0.771
History of previous stroke* (%)	10.5	11.7	<0.001	15.5	16.5	0.170
Pre-stroke disability (mRS>1, %)	12.2	11.2	0.006	17.3	18.3	0.169
Statin pretreatment (%)	24.8	24.7	0.867	46.0	46.3	0.742
Antiplatelet pretreatment (%)	35.2	35.3	0.834	51.4	53.2	0.062
Anticoagulant pretreatment (%)	3.9	3.6	0.216	5.6	4.9	0.106
Admission SBP baseline (mean±SD), mmHg	153.2±24.0	152.0±23.7	<0.001	158.3±25.1	156.3±24.3	<0.001
Admission DBP (mean±SD), mmHg	83.2±14.7	83.0±14.3	0.344	83.6±15.1	82.4±14.5	<0.001
Admission plasma glucose (mean±SD), mg/dL	180.1±41.1	107.7±17.3	<0.001	213.0±63.7	111.8±19.6	<0.001
Onset-to-treatment time (mean±SD), min	162.7±64.9	158.5±63.2	<0.001	164.8±66.1	163.6±64.8	0.348
Outcomes						
SICH-SITS MOST (%)	1.9	1.6	0.083	2.8	2.3	0.130
SICH-ECASS II (%)	5.5	3.8	<0.001	7.5	6.1	0.008

SUPPLEMENTARY DATA

Any PH	5.6	4.5	<0.001	7.3	6.2	0.039
FFO (%)	39.3	46.9	<0.001	32.7	37.7	<0.001
FI (%)	51.9	61.3	<0.001	46.3	50.6	<0.001
Mortality at 3-months (%)	21.2	14.2	<0.001	26.0	21.5	<0.001
3-month mRS (median, IQR)	2 (1-5)	2 (0-4)	<0.001	3 (1-6)	2 (1-5)	<0.001

HG: hyperglycaemia, SD: standard deviation, NIHSS: National Institutes of Health Stroke Scale, IQR: interquartile range, mRS: modified Rankin Scale, SBP: systolic blood pressure, DBP: diastolic blood pressure, SICH: symptomatic intracranial haemorrhage, FFO: favorable functional outcome, FI: functional independence, PH: parenchymal hemorrhage

SUPPLEMENTARY DATA

eTable 2. Univariable and multivariable logistic regression analyses on the probability of symptomatic intracranial haemorrhage according to the SITS MOST definition.

Baseline characteristic	Univariable analysis		Multivariable analysis	
	OR (95%CI)	p-value	OR (95%CI)	p-value
Age	1.04 (1.03, 1.04)	<0.001	1.03 (1.02, 1.04)	<0.001
Males	1.12 (0.98, 1.29)	0.103	-	-
Admission NIHSS	1.04 (1.03, 1.05)	<0.001	1.04 (1.03, 1.05)	<0.001
Hypertension	1.63 (1.39, 1.91)	<0.001	0.98 (0.80, 1.21)	0.881
Diabetes mellitus	1.56 (1.34, 1.82)	<0.001	1.41 (1.16, 1.72)	0.001
Hyperlipidemia	1.20 (1.04, 1.38)	0.014	0.84 (0.68, 1.05)	0.123
Current smoking	0.52 (0.41, 0.65)	<0.001	0.78 (0.58, 1.05)	0.105
Atrial fibrillation	2.25 (2.14, 2.37)	<0.001	1.20 (0.98, 1.46)	0.073
Congestive heart failure	1.33 (1.07, 1.67)	<0.001	0.86 (0.65, 1.14)	0.292
History of previous stroke	1.54 (1.29, 1.85)	<0.001	1.20 (0.95, 1.51)	0.132
Pre-stroke disability	1.23 (1.01, 1.49)	0.035	0.80 (0.62, 1.00)	0.053
Statin pretreatment	1.42 (1.23, 1.66)	<0.001	1.27 (1.02, 1.58)	0.032
Antiplatelet pretreatment	1.89 (1.65, 2.17)	<0.001	1.38 (1.15, 1.67)	0.001
Anticoagulant pretreatment	1.33 (0.95, 1.85)	0.098	1.18 (0.79, 1.76)	0.418
Admission SBP baseline	1.11 (1.08, 1.14)	<0.001	1.07 (1.02, 1.11)	0.002
Admission DBP	1.08 (1.03, 1.13)	0.002	1.04 (0.97, 1.11)	0.248
Hypeglycaemia on admission*	1.33 (1.15, 1.53)	<0.001	1.10 (0.92, 1.32)	0.292
Onset-to-treatment time	1.02 (1.01, 1.03)	<0.001	1.02 (1.00, 1.03)	0.008

OR: odds ratio, 95%CI: 95% confidence intervals, NIHSS: National Institutes of Health Stroke Scale, SBP: systolic blood pressure, DBP: diastolic blood pressure
 * ≥ 144 mg/dl vs. < 144 mg/dl

SUPPLEMENTARY DATA

eTable 3. Univariable and multivariable logistic regression analyses on the probability of 3-month favorable functional outcome (mRS-scores of 0-1)

Baseline characteristic	Univariable analysis		Multivariable analysis	
	OR (95%CI)	p-value	OR (95%CI)	p-value
Age	0.96 (0.96, 0.96)	<0.001	0.97 (0.97, 0.97)	<0.001
Males	1.32 (1.28, 1.37)	<0.001	1.01 (0.96, 1.07)	0.601
Admission NIHSS	0.85 (0.84, 0.85)	<0.001	0.85 (0.84, 0.85)	<0.001
Hypertension	0.63 (0.61, 0.66)	<0.001	0.91 (0.86, 0.96)	0.001
Diabetes mellitus	0.65 (0.62, 0.68)	<0.001	0.73 (0.68, 0.78)	<0.001
Hyperlipidemia	0.96 (0.93, 1.00)	0.059	1.19 (1.11, 1.27)	<0.001
Current smoking	1.47 (1.41, 1.54)	<0.001	0.88 (0.82, 0.94)	<0.001
Atrial fibrillation	0.49 (0.47, 0.52)	<0.001	0.86 (0.80, 0.92)	<0.001
Congestive heart failure	0.49 (0.46, 0.53)	<0.001	0.85 (0.77, 0.94)	0.001
History of previous stroke	0.66 (0.62, 0.69)	<0.001	0.80 (0.73, 0.86)	<0.001
Pre-stroke disability	0.15 (0.14, 0.16)	<0.001	0.19 (0.18, 0.22)	<0.001
Statin pretreatment	0.87 (0.83, 0.90)	<0.001	1.01 (0.94, 1.09)	0.735
Antiplatelet pretreatment	0.70 (0.68, 0.73)	<0.001	1.08 (1.02, 1.14)	0.015
Anticoagulant pretreatment	0.58 (0.52, 0.64)	<0.001	0.98 (0.85, 1.13)	0.799
Admission SBP baseline	0.96 (0.96, 0.97)	<0.001	0.96 (0.95, 0.97)	<0.001
Admission DBP	1.01 (1.00, 1.03)	<0.001	0.97 (0.96, 0.99)	0.022
Hypeglycaemia on admission*	0.69 (0.66, 0.71)	<0.001	0.82 (0.77, 0.86)	<0.001
Onset-to-treatment time	0.99 (0.99, 0.99)	<0.001	0.98 (0.98, 0.99)	<0.001

OR: odds ratio, 95%CI: 95% confidence intervals, NIHSS: National Institutes of Health Stroke Scale, SBP: systolic blood pressure, DBP: diastolic blood pressure

* ≥ 144 mg/dl vs. < 144 mg/dl

SUPPLEMENTARY DATA

eTable 4. Univariable and multivariable logistic regression analyses on the probability of 3-month functional independence (mRS-scores of 0-2)

Baseline characteristic	Univariable analysis		Multivariable analysis	
	OR (95%CI)	p-value	OR (95%CI)	p-value
Age	0.95 (0.95, 0.95)	<0.001	0.96 (0.96, 0.97)	<0.001
Males	1.39 (1.34, 1.44)	<0.001	1.03 (0.98, 1.09)	0.229
Admission NIHSS	0.84 (0.84, 0.84)	<0.001	0.84 (0.84, 0.85)	<0.001
Hypertension	0.62 (0.60, 0.64)	<0.001	0.95 (0.90, 1.01)	0.091
Diabetes mellitus	0.64 (0.61, 0.67)	<0.001	0.71 (0.66, 0.75)	<0.001
Hyperlipidemia	0.98 (0.95, 1.02)	0.406	-	-
Current smoking	1.67 (1.59, 1.75)	<0.001	0.95 (0.88, 1.02)	0.155
Atrial fibrillation	0.48 (0.46, 0.50)	<0.001	0.90 (0.84, 0.96)	0.001
Congestive heart failure	0.47 (0.45, 0.51)	<0.001	0.82 (0.75, 0.90)	<0.001
History of previous stroke	0.73 (0.69, 0.77)	<0.001	0.90 (0.83, 0.97)	0.010
Pre-stroke disability	0.22 (0.21, 0.23)	<0.001	0.31 (0.28, 0.33)	<0.001
Statin pretreatment	0.89 (0.86, 0.93)	<0.001	1.16 (1.10, 1.24)	<0.001
Antiplatelet pretreatment	0.69 (0.67, 0.71)	<0.001	1.05 (0.99, 1.11)	0.121
Anticoagulant pretreatment	0.59 (0.54, 0.65)	<0.001	0.98 (0.85, 1.12)	0.750
Admission SBP baseline	0.97 (0.96, 0.97)	<0.001	0.97 (0.96, 0.97)	<0.001
Admission DBP	1.01 (1.01, 1.01)	<0.001	0.99 (0.99, 0.99)	0.027
Hypeglycaemia on admission*	0.66 (0.64, 0.69)	<0.001	0.79 (0.74, 0.83)	<0.001
Onset-to-treatment time	1.00 (0.99, 1.01)	0.202	-	-

OR: odds ratio, 95%CI: 95% confidence intervals, NIHSS: National Institutes of Health Stroke Scale, SBP: systolic blood pressure, DBP: diastolic blood pressure

* ≥ 144 mg/dl vs. < 144 mg/dl

SUPPLEMENTARY DATA

eTable 5. Univariable and multivariable logistic regression analyses on the probability of 3-month mortality.

Baseline characteristic	Univariable analysis		Multivariable analysis	
	OR (95%CI)	p-value	OR (95%CI)	p-value
Age	1.07 (1.06, 1.07)	<0.001	1.05 (1.05, 1.06)	<0.001
Males	0.79 (0.76, 0.82)	<0.001	1.25 (1.17, 1.34)	<0.001
Admission NIHSS	1.16 (1.15, 1.16)	<0.001	1.14 (1.14, 1.15)	<0.001
Hypertension	1.72 (1.63, 1.81)	<0.001	1.06 (0.98, 1.14)	0.145
Diabetes mellitus	1.68 (1.60, 1.77)	<0.001	1.52 (1.41, 1.64)	<0.001
Hyperlipidemia	0.99 (0.94, 1.04)	0.717	-	-
Current smoking	0.47 (0.44, 0.51)	<0.001	0.95 (0.85, 1.06)	0.365
Atrial fibrillation	2.25 (2.14, 2.37)	<0.001	1.18 (1.09, 1.27)	<0.001
Congestive heart failure	2.54 (2.38, 2.72)	<0.001	1.54 (1.39, 1.69)	<0.001
History of previous stroke	1.31 (1.23, 1.40)	<0.001	1.03 (0.94, 1.14)	0.520
Pre-stroke disability	3.09 (2.92, 3.26)	<0.001	1.62 (1.49, 1.76)	<0.001
Statin pretreatment	1.11 (1.05, 1.16)	<0.001	0.86 (0.80, 0.93)	<0.001
Antiplatelet pretreatment	1.54 (1.47, 1.61)	<0.001	1.01 (0.94, 1.09)	0.758
Anticoagulant pretreatment	1.96 (1.77, 2.18)	<0.001	1.25 (1.08, 1.45)	0.003
Admission SBP	1.02 (1.02, 1.04)	<0.001	1.01 (1.00, 1.03)	0.049
Admission DBP	1.00 (0.98, 1.01)	0.421	-	-
Hypeglycaemia on admission*	1.68 (1.60, 1.76)	<0.001	1.36 (1.27, 1.46)	<0.001
Onset-to-treatment time	1.00 (0.99, 1.01)	0.386	-	-

OR: odds ratio, 95%CI: 95% confidence intervals, NIHSS: National Institutes of Health Stroke Scale, SBP: systolic blood pressure, DBP: diastolic blood pressure

* ≥ 144 mg/dl vs. < 144 mg/dl

SUPPLEMENTARY DATA

eTable 6. Univariable and multivariable ordinal regression analyses on the probability of 3-month functional improvement defined as 1-point decrease in 3-month mRS-scores over the entire range of score groupings (shift analysis).

Baseline characteristic	Univariable analysis		Multivariable analysis	
	cOR (95%CI)	p-value	cOR (95%CI)	p-value
Age	0.95 (0.95, 0.96)	<0.001	0.97 (0.97, 0.97)	<0.001
Males	1.32 (1.28, 1.35)	<0.001	0.96 (0.92, 0.99)	0.038
Admission NIHSS	0.85 (0.85, 0.85)	<0.001	0.85 (0.85, 0.86)	<0.001
Hypertension	0.62 (0.60, 0.64)	<0.001	0.93 (0.90, 0.98)	0.003
Diabetes mellitus	0.63 (0.61, 0.66)	<0.001	0.71 (0.68, 0.75)	<0.001
Hyperlipidemia	0.96 (0.93, 0.99)	0.014	1.13 (1.07, 1.19)	<0.001
Current smoking	1.56 (1.49, 1.61)	<0.001	0.91 (0.86, 0.96)	<0.001
Atrial fibrillation	0.47 (0.45, 0.49)	<0.001	0.86 (0.82, 0.91)	<0.001
Congestive heart failure	0.44 (0.42, 0.47)	<0.001	0.76 (0.70, 0.81)	<0.001
History of previous stroke	0.69 (0.66, 0.72)	<0.001	0.83 (0.78, 0.88)	<0.001
Pre-stroke disability	0.26 (0.25, 0.27)	<0.001	0.39 (0.37, 0.41)	<0.001
Statin pretreatment	0.87 (0.84, 0.90)	<0.001	1.04 (0.99, 1.10)	0.117
Antiplatelet pretreatment	0.68 (0.66, 0.70)	<0.001	1.04 (1.00, 1.10)	0.066
Anticoagulant pretreatment	0.55 (0.51, 0.60)	<0.001	0.93 (0.84, 1.03)	0.184
Admission SBP	0.97 (0.96, 0.97)	<0.001	0.98 (0.97, 0.99)	<0.001
Admission DBP	1.02 (1.01, 1.03)	<0.001	0.97 (0.95, 0.98)	<0.001
Hypoglycaemia on admission*	0.66 (0.64, 0.68)	<0.001	0.82 (0.79, 0.85)	<0.001
Onset-to-treatment time	1.00 (1.00, 1.01)	0.052	0.99 (0.98, 0.99)	<0.001

cOR: common odds ratio, 95%CI: 95% confidence intervals, NIHSS: National Institutes of Health Stroke Scale, SBP: systolic blood pressure, DBP: diastolic blood pressure

* ≥ 144 mg/dl vs. < 144 mg/dl

SUPPLEMENTARY DATA

eTable 7. Overview of the adjusted analyses on the association of admission plasma glucose levels and diabetes mellitus history with outcomes of interest in the unmatched cohort.

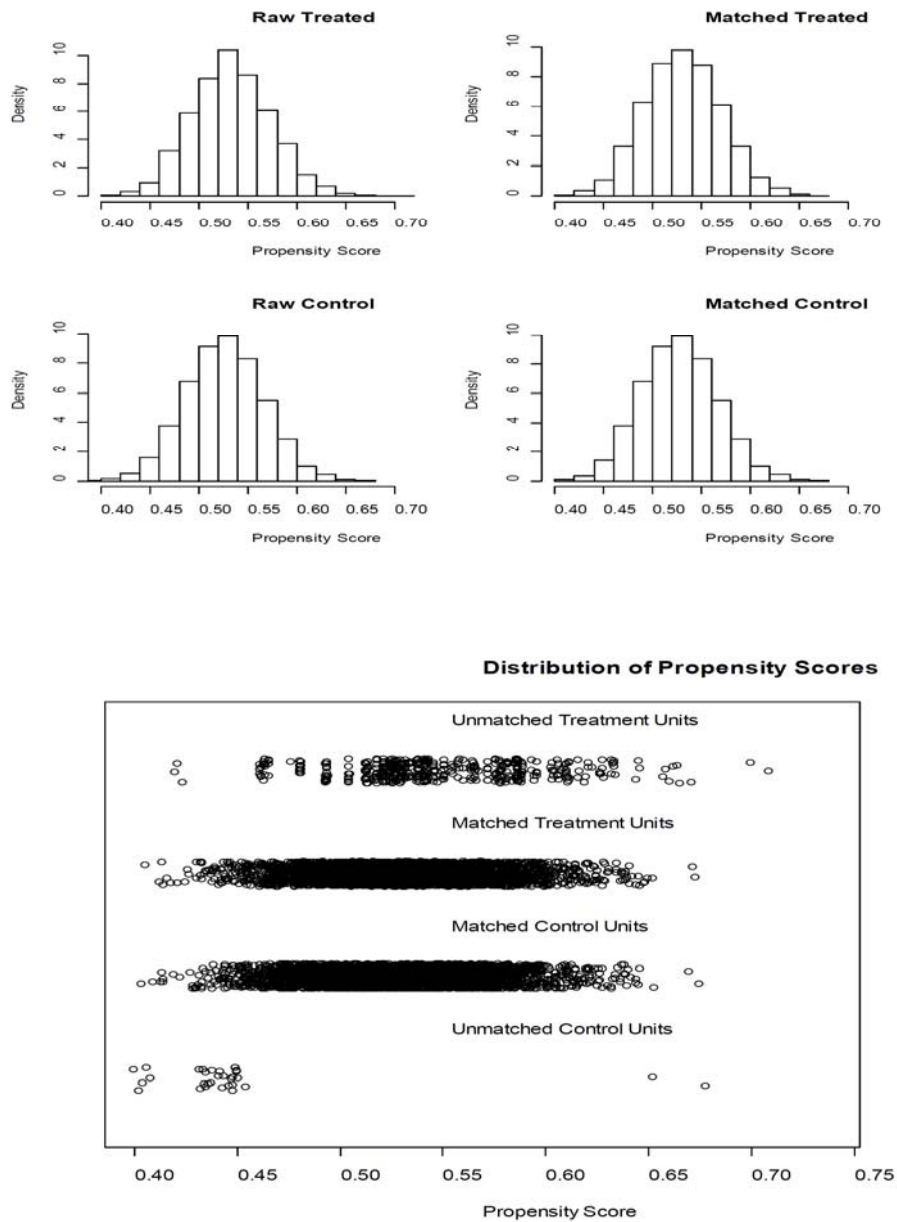
Outcome	Admission plasma glucose*		Diabetes Mellitus	
	OR/cOR (95%CI)	p-value	OR/cOR (95%CI)	p-value
SICH (SITS-MOST)	1.01 (0.99, 1.03)	0.065	1.37 (1.12, 1.67)	0.002
3-month FFO	0.97 (0.96, 0.98)	<0.001	0.77 (0.72, 0.82)	<0.001
3-month FI	0.97 (0.96, 0.98)	<0.001	0.75 (0.70, 0.80)	<0.001
3-month mortality	1.03 (1.02, 1.04)	<0.001	1.46 (1.35, 1.58)	<0.001
3-month functional improvement	0.97 (0.96, 0.98)	<0.001	0.81 (0.75, 0.88)	<0.001

*per 10mg/dl increase

OR: odds ratio, cOR: common OR, SICH: symptomatic intracranial haemorrhage, FFO: favorable functional outcome, FI: functional independence

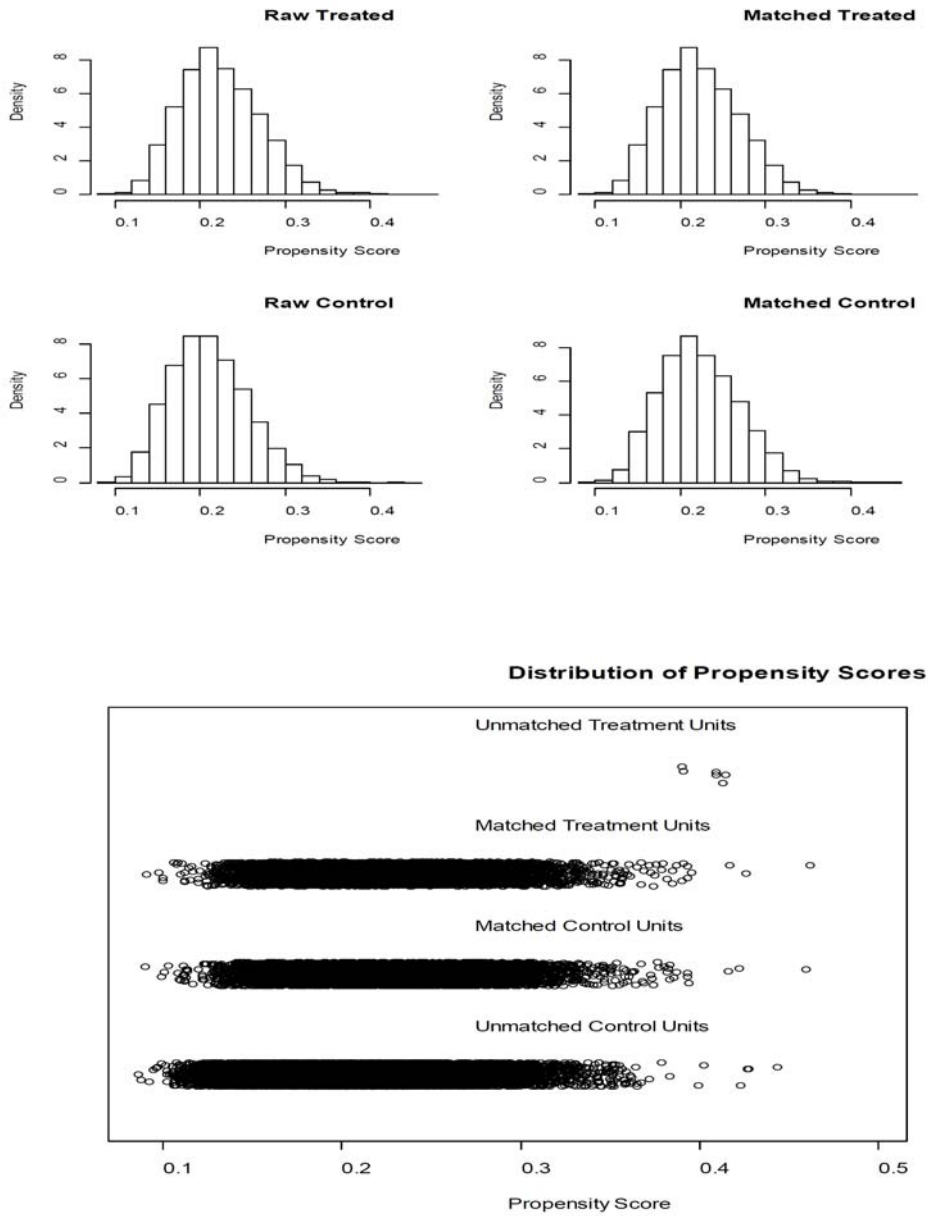
SUPPLEMENTARY DATA

eFigure 1. Distribution of propensity scores for diabetic patients before and after propensity score matching.



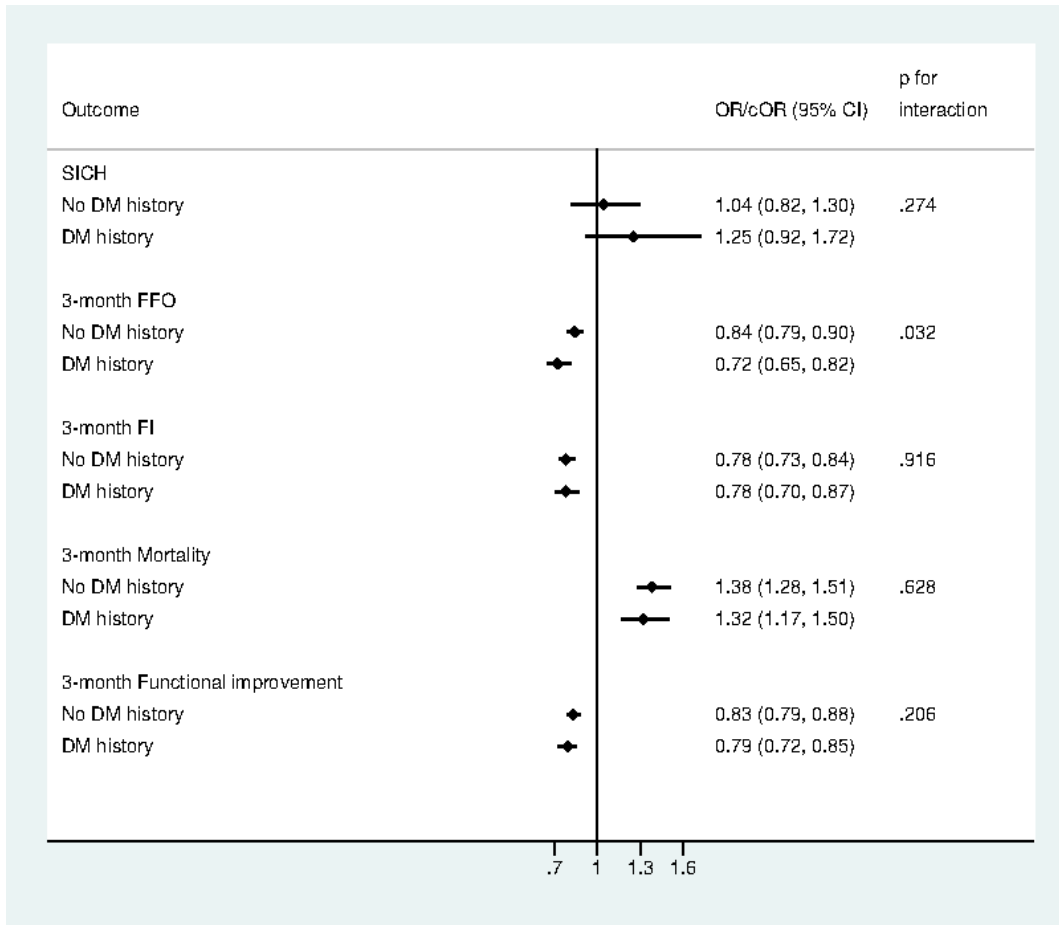
SUPPLEMENTARY DATA

eFigure 2. Distribution of propensity scores for non-diabetic patients before and after propensity score matching.



SUPPLEMENTARY DATA

eFigure 3. Interaction testing between admission hyperglycaemia and history of diabetes mellitus on the outcomes of interest.



SUPPLEMENTARY DATA

eFigure 4. Modeled probability of favorable functional outcome at 3-months following intravenous thrombolysis treatment by admission blood glucose (unadjusted analyses).

