**Supplementary Figure 1**. Study flow chart.



EVT, endovascular treatment; GA, glycated albumin; ASPECTS, Alberta Stroke Program Early CT score; mRS, modified Rankin Scale score.

**Supplementary Figure 2.** Distribution of outcomes according to glycated hemoglobin level.



HbA1c, glycated hemoglobin; END, early neurological deterioration; SHT, symptomatic hemorrhagic transformation; mRS, modified Rankin Scale.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 |
|  | OR | 95% CI | OR | 95% CI | OR | 95% CI |
| Age, years | 1.05 | 1.01–1.09 | 1.05 | 1.01–1.09 | 1.06 | 1.01–1.10 |
| Male | 0.79 | 0.37–1.68 | 0.88 | 0.42–1.82 | 0.94 | 0.45–1.99 |
| Stroke subtype |  |  |  |  |  |  |
| Others | 1.00 | reference | 1.00 | reference | 1.00 | reference |
| CE | 0.60 | 0.23–1.62 | 0.62 | 0.24–1.65 | 0.66 | 0.24–1.76 |
| LAA | 0.38 | 0.13–1.15 | 0.46 | 0.16–1.35 | 0.53 | 0.18–1.60 |
| NIHSS | 0.96 | 0.91–1.02 | 0.96 | 0.91–1.02 | 0.96 | 0.91–1.02 |
| Hypertension | 1.58 | 0.70–3.60 | 1.50 | 0.66–3.37 | 1.51 | 0.67–3.44 |
| Diabetes | 0.47 | 0.20–1.13 | 0.56 | 0.24–1.33 | 0.42 | 0.17–1.08 |
| Current Smoking | 0.8 | 0.26–2.44 | 0.78 | 0.25–2.39 | 0.81 | 0.26–2.50 |
| Atrial fibrillation | 0.64 | 0.22–1.86 | 0.63 | 0.23–1.76 | 0.59 | 0.21–1.68 |
| Prior antithrombotics | 0.51 | 0.24–1.09 | 0.49 | 0.23–1.03 | 0.5 | 0.24–1.06 |
| Combined IVT and EVT | 0.65 | 0.32–1.30 | 0.66 | 0.33–1.32 | 0.64 | 0.32–1.28 |
| Creatinine, mg/dL | 0.82 | 0.36–1.84 | 0.78 | 0.35–1.77 | 0.71 | 0.28–1.76 |
| Platelet, uL/103 | 1.00 | 1.00–1.01 | 1.00 | 1.00–1.01 | 1.00 | 1.00–1.01 |
| INR | 1.60 | 0.50–5.20 | 1.76 | 0.53–5.85 | 1.86 | 0.56–6.17 |
| HbA1c, % | 0.98 | 0.72–1.33 | – | – | 0.93 | 0.98–1.01 |
| CRP, mg/dL | 0.99 | 0.98–1.01 | 1.00 | 0.98–1.01 | 1.00 | 0.98–1.01 |
| Initial glucose, mg/dL | 1.00 | 1.00–1.01 | 1.01 | 1.00–1.01 | 1.00 | 1.00–1.01 |
| GA ≥16% | 4.13 | 1.93–8.85 | – | – | – | – |
| GA/HbA1c | – | – | 2.25 | 1.18–4.30 | – | – |
| raw GA, % | – | – | – | – | 1.17 | 1.06–1.29 |

 **Supplementary Table 1**. Result of multivariate logistic regression analysis showing association other glycemic parameters and modified Thrombolysis in Cerebral Infarction 0 to 2a

OR, odds ratio; CI, confidence interval; CE, cardioembolism; LAA, large artery atherosclerosis; NIHSS, National Institute of Health Stroke Scale; IVT, intravenous thrombolysis; IAT, intraarticular thrombolysis; INR, international normalized ratio; CRP, C-reactive protein; GA, glycated albumin; HbA1c, glycated hemoglobin.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 |
|  | OR | 95% CI | OR | 95% CI | OR | 95% CI |
| Age, years | 1.01 | 0.98–1.05 | 1.01 | 0.98–1.05 | 1.01 | 0.98–1.05 |
| Male | 0.79 | 0.41–1.54 | 0.87 | 0.44–1.70 | 0.88 | 0.45–1.75 |
| Stroke subtype |  |  |  |  |  |  |
| Others | 1.00 | reference | 1.00 | reference | 1.00 | reference |
| CE | 1.01 | 0.41–2.51 | 1.08 | 0.42–2.74 | 1.09 | 0.42–2.83 |
| LAA | 0.23 | 0.08–0.65 | 0.27 | 0.09–0.81 | 0.29 | 0.09–0.89 |
| NIHSS | 0.98 | 0.93–1.04 | 0.98 | 0.93–1.03 | 0.98 | 0.93–1.03 |
| Hypertension | 1.37 | 0.65–2.87 | 1.47 | 0.68–3.16 | 1.47 | 0.68–3.20 |
| Diabetes | 1.72 | 0.84–3.50 | 1.28 | 0.60–2.74 | 1.13 | 0.51–2.50 |
| Current Smoking | 0.58 | 0.20–1.70 | 0.51 | 0.17–1.55 | 0.51 | 0.17–1.56 |
| Atrial fibrillation | 2.37 | 0.88–6.39 | 2.07 | 0.74–5.77 | 2.05 | 0.72–5.82 |
| Prior antithrombotics | 0.77 | 0.40–1.47 | 0.74 | 0.37–1.45 | 0.73 | 0.37–1.45 |
| Combined IVT and EVT | 1.00 | 0.54–1.85 | 1.07 | 0.57–2.02 | 1.05 | 0.55–1.98 |
| Creatinine, mg/dL | 1.41 | 0.75–2.63 | 1.24 | 0.65–2.35 | 1.24 | 0.64–2.39 |
| Platelet, uL/103 | 1.00 | 1.00–1.00 | 1.00 | 0.99–1.00 | 1.00 | 0.99–1.00 |
| INR | 0.35 | 0.05–2.47 | 0.26 | 0.03–2.42 | 0.27 | 0.03–2.69 |
| HbA1c, % | 1.09 | 0.84–1.41 | – | – | 1.02 | 0.75–1.38 |
| CRP, mg/dL | 1.00 | 0.98–1.01 | 0.998 | 0.98–1.01 | 1.00 | 0.98–1.01 |
| Initial glucose, mg/dL | 1.00 | 1.00–1.01 | 0.999 | 0.99–1.01 | 1.00 | 0.99–1.00 |
| GA ≥16% | 1.99 | 1.04–3.81 | – | – | – | – |
| GA/HbA1c | – | – | 3.46 | 1.47–6.72 | – | – |
| raw GA, % | – | – | – | – | 1.23 | 1.11–1.36 |

**Supplementary Table 2.** Result of multivariate logistic regression analysis showing association other glycemic parameters and early neurological deterioration

OR, odds ratio; CI, confidence interval; CE, cardioembolism; LAA, large artery atherosclerosis; NIHSS, National Institute of Health Stroke Scale; IVT, intravenous thrombolysis; IAT, intraarticular thrombolysis; INR, international normalized ratio; CRP, C-reactive protein; GA, glycated albumin; HbA1c, glycated hemoglobin.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 |
|  | OR | 95% CI | OR | 95% CI | OR | 95% CI |
| Age, years | 1.00 | 0.94–1.06 | 1.10 | 0.96–1.07 | 1.01 | 0.96–1.07 |
| Male | 1.13 | 0.38–3.36 | 1.37 | 0.47–4.01 | 1.39 | 0.47–4.10 |
| Stroke subtype |  |  |  |  |  |  |
| Others | 1.00 | reference | 1.00 | reference | 1.00 | reference |
| CE | 0.74 | 0.14–3.78 | 0.65 | 0.14–3.09 | 0.69 | 0.14–3.37 |
| LAA | 0.85 | 0.15–4.95 | 0.90 | 0.1–4.81 | 1.05 | 0.19–5.82 |
| NIHSS | 0.98 | 0.89–1.08 | 0.97 | 0.88–1.08 | 0.97 | 0.88–1.08 |
| Hypertension | 0.59 | 0.18–1.99 | 0.58 | 0.17–1.94 | 0.57 | 0.17–1.95 |
| Diabetes | 2.69 | 0.75–9.65 | 3.21 | 0.94–10.95 | 2.77 | 0.74–10.30 |
| Current Smoking |  |  |  |  |  |  |
| Atrial fibrillation | 0.81 | 0.19–3.56 | 0.73 | 0.17–3.05 | 0.72 | 0.17–3.03 |
| Prior antithrombotics | 0.82 | 0.27–2.54 | 0.91 | 0.30–2.73 | 0.89 | 0.29–2.68 |
| Combined IVT and EVT | 10.31 | 2.50–42.51 | 10.16 | 2.43–42.48 | 10.18 | 2.43–42.61 |
| Creatinine, mg/dL | 2.06 | 0.89–4.80 | 1.93 | 0.81–4.62 | 1.94 | 0.80–4.73 |
| Platelet, uL/103 | 1.00 | 0.99–1.01 | 1.00 | 0.99–1.01 | 1.00 | 0.99–1.01 |
| INR | 0.76 | 0.02–33.19 | 1.05 | 0.04–31.35 | 1.19 | 0.04–35.15 |
| HbA1c, % | 0.85 | 0.49–1.49 |  |  | 0.84 | 0.45–1.57 |
| CRP, mg/dL | 1.01 | 0.99–1.03 | 1.01 | 0.99–1.03 | 1.01 | 0.99–1.03 |
| Initial glucose, mg/dL | 0.99 | 0.98–1.01 | 0.99 | 0.98–1.01 | 0.99 | 0.98–1.00 |
| GA ≥16% | 4.82 | 1.35–17.29 | – | – | – | – |
| GA/HbA1c | – | – | 2.47 | 0.84–7.25 | – | – |
| raw GA, % | – | – | – | – | 1.16 | 0.99–1.35 |

**Supplementary Table 3.** Result of multivariate logistic regression analysis showing association other glycemic parameters and symptomatic hemorrhagic transformation

OR, odds ratio; CI, confidence interval; CE, cardioembolism; LAA, large artery atherosclerosis; NIHSS, National Institute of Health Stroke Scale; IVT, intravenous thrombolysis; IAT, intraarticular thrombolysis; INR, international normalized ratio; CRP, C-reactive protein; GA, glycated albumin; HbA1c, glycated hemoglobin.

|  |  |  |  |
| --- | --- | --- | --- |
|  | GA≥16% in the model | GA/HbA1c in the model | raw GA in the model |
|  | OR | 95% CI | OR | 95% CI | OR | 95% CI |
| Age, years | 1.02 | 0.99–1.05 | 1.02 | 0.99–1.05 | 1.02 | 0.99-1.04 |
| Male | 0.74 | 0.40–1.38 | 0.78 | 0.42–1.45 | 0.74 | 0.39-1.41 |
| Stroke subtype |  |  |  |  |  |  |
| Others | 1.00 | reference | 1.00 | reference | 1.00 | reference |
| CE | 0.81 | 0.34–1.90 | 0.78 | 0.34–1.79 | 0.90 | 0.37–2.17 |
| LAA | 0.36 | 0.14–0.97 | 0.36 | 0.14–0.94 | 0.45 | 0.16–1.23 |
| NIHSS | 1.13 | 1.07–1.19 | 1.12 | 1.07–1.18 | 1.14 | 1.08–1.20 |
| Hypertension | 1.61 | 0.86–3.01 | 1.59 | 0.86–2.94 | 1.59 | 0.84–3.00 |
| Diabetes | 1.07 | 0.53–2.15 | 1.35 | 0.97–2.66 | 0.72 | 0.34–1.52 |
| Current Smoking | 0.56 | 0.24–1.31 | 0.51 | 0.22–1.19 | 0.53 | 0.22–1.29 |
| Atrial fibrillation | 1.50 | 0.66–3.44 | 1.46 | 0.64–3.31 | 1.34 | 0.58–3.13 |
| Prior antithrombotics | 0.98 | 0.54–1.78 | 0.89 | 0.49–1.62 | 0.91 | 0.49–1.67 |
| Combined IVT and EVT | 0.61 | 0.35–1.06 | 0.62 | 0.36–1.07 | 0.61 | 0.35–1.06 |
| Creatinine, mg/dL | 1.85 | 0.74–4.63 | 1.79 | 0.70–4.59 | 1.62 | 0.66–3.96 |
| Platelet, uL/103 | 1.00 | 1.00–1.00 | 1.00 | 1.00–1.01 | 1.00 | 1.00–1.01 |
| INR | 2.24 | 0.33–15.42 | 3.27 | 0.54–19.72 | 2.16 | 0.30–15.70 |
| HbA1c, % | 1.15 | 0.90–1.48 |  |  | 1.18 | 0.91–1.52 |
| CRP, mg/dL | 1.00 | 0.99–1.02 | 1.01 | 0.99–1.02 | 1.00 | 0.99–1.02 |
| Initial glucose, mg/dL | 1.00 | 0.99–1.01 | 1.00 | 1.00–1.01 | 1.00 | 0.99–1.00 |
| GA ≥16% | 2.84 | 1.56–5.19 | – | – | – | – |
| GA/HbA1c | – | – | 2.54 | 1.40–4.61 | – | – |
| raw GA, % | – | – | – | – | 1.34 | 1.18–1.53 |

**Supplementary Table 4.** Result of multivariate logistic regression analysis showing association other glycemic parameters and 3-month mRS >2

OR, odds ratio; CI, confidence interval; CE, cardioembolism; LAA, large artery atherosclerosis; NIHSS, National Institute of Health Stroke Scale; IVT, intravenous thrombolysis; IAT, intraarticular thrombolysis; INR, international normalized ratio; CRP, C-reactive protein; GA, glycated albumin; HbA1c, glycated hemoglobin.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | mTICI 0-2a | END | SHT | 3-month mRS >2 |
|  | OR | 95% CI | OR | 95% CI | OR | 95% CI | OR | 95% CI |
| HbA1c ≥6.5% | 2.20 | 1.00–4.84 | 1.94 | 0.94–3.99 | 0.61 | 0.17–2.25 | 1.70 | 0.84–2.42 |
| Age, years | 1.06 | 1.03–1.10 | 1.04 | 1.01–1.07 | 1.01 | 0.96–1.06 | 1.04 | 1.1–1.06 |
| Male | 0.85 | 0.43–1.69 | 0.80 | 0.73–1.51 | 1.01 | 0.37–0.76 | 0.71 | 0.41–1.24 |
| Stroke subtype |  |  |  |  |  |  |  |  |
| Others | 1.00 | reference | 1.00 | reference | 1.00 | reference | 1.00 | reference |
| CE | 0.72 | 0.29–1.76 | 1.07 | 0.45–2.52 | 0.72 | 0.17–3.09 | 0.89 | 0.41–1.96 |
| LAA | 0.36 | 0.15–0.86 | 0.42 | 0.18–0.98 | 0.58 | 0.16–2.11 | 0.60 | 0.29–1.25 |
| NIHSS | 0.97 | 0.92–1.03 | 0.99 | 0.94–1.04 | 1.00 | 0.92–1.08 | 1.12 | 1.07–1.17 |
| Diabetes | 0.62 | 0.28–1.36 | 2.00 | 1.04–3.84 | 2.99 | 1.08–8.31 | 1.72 | 0.92–3.23 |
| Hyperlipidemia | 0.80 | 0.31–1.95 | 0.96 | 0.43–2.13 | 1.14 | 0.33–3.95 | 0.74 | 0.36–1.49 |
| LDL, mg/dL | 1.01 | 1.00–1.01 | 1.00 | 0.99–1.00 | 0.98 | 0.96–0.99 | 1.00 | 0.99–1.01 |
| CRP, mg/dL | 1.00 | 0.99–1.01 | 1.00 | 0.98–1.01 | 0.99 | 0.97–1.01 | 1.01 | 1.00–1.02 |
| Initial glucose, mg/dL | 1.00 | 1.00–1.01 | 1.00 | 1.00–1.01 | 1.00 | 0.99–1.01 | 1.00 | 1.00–1.01 |

**Supplementary Table 5.** Result of multivariate logistic regression analysis showing association higher glycated hemoglobin parameters and outcomes

mTICI, modified Thrombolysis in Cerebral infarction; END, early neurological deterioration; SHT, symptomatic hemorrhagic transformation; mRS, modified Rankin Scale Score; HbA1c, glycated hemoglobin; OR, odds ratio; CI, confidence interval; CE, cardioembolism; LAA, large artery atherosclerosis; NIHSS, National Institute of Health Stroke Scale; LDL, low-density lipoprotein; CRP, C-reactive protein.

**Supplemental Table 6.** Result of multivariate logistic regression analyses showing effects of higher glycated albumin on outcomes according to type of recanalization therapy

|  |  |  |
| --- | --- | --- |
|  | IV+EVT group (n=151) | EVT only group (n=159) |
|  |  |  |
|  | OR | 95% CI | p-value | OR | 95% CI | p-value |
| mTICI 0-2a | 1.69 | 0.56-5.08 | 0.35 | 6.05 | 2.19-16.69 | <0.001 |
| END | 3.23 | 1.26-8.28 | 0.01 | 1.39 | 0.61-3.18 | 0.43 |
| SHT | 4.80 | 1.38-16.75 | 0.01 | 1.70 | 0.28-12.07 | 0.42 |
| 3-month mRS >2 | 3.17 | 1.37-7.30 | 0.007 | 2.71 | 1.23-5.99 | 0.01 |

IV, intravenous recombinant tissue type plasminogen activator ; EVT, endovascular therapy; OR, odds ratio; CI, confidence interval; mTICI, modified Thrombolysis in Cerebral Infarction; END, early neurologic deterioration; SHT, symptomatic hemorrhagic transformation; mRS, modified Rankin Scale. Multivariate logistic regression models were adjusted for age, gender, stroke subtype, initial National Institute of Health Score Scale, type of endovascular therapy, creatinine, platelet count, C-reactive protein and initial glucose.

**Supplemental Table 7.** Result of multivariate logistic regression analyses showing effects of different criteria of higher glycated hemoglobin (6.5% vs 7.0%) on outcomes.

|  |  |  |
| --- | --- | --- |
|  | HbA1c≥6.5% | HbA1c≥7.0% |
|  | OR | 95% CI | p-value | OR | 95% CI | p-value |
| mTICI 0-2a | 2.20 | 0.998-4.84 | 0.05 | 1.92 | 0.81-4.58 | 0.14 |
| END | 1.94 | 0.94-3.99 | 0.07 | 2.89 | 1.33-6.30 | 0.008 |
| SHT | 0.61 | 0.17-2.25 | 0.46 | 2.16 | 0.57-8.18 | 0.26 |
| 3-month mRS >2 | 1.70 | 0.84-3.42 | 0.14 | 2.99 | 1.28-7.01 | 0.01 |

HbA1c, glycated hemoglobin; OR, odds ratio; CI, confidence interval; mTICI, modified Thrombolysis in Cerebral Infarction; END, early neurologic deterioration; SHT, symptomatic hemorrhagic transformation; mRS, modified Rankin Scale. Multivariate logistic regression models were adjusted for age, gender, stroke subtype, initial National Institute of Health Score Scale, type of endovascular therapy, creatinine, platelet count, C-reactive protein and initial glucose.