RAISE Trial

ORIGINAL ARTICLE

Reteplase versus Alteplase for Acute Ischemic Stroke

Design: Phase 3 multicenter prospective open-label randomized controlled trial with blinded endpoint

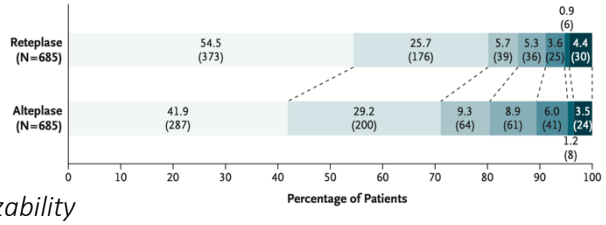
Reteplase: a recombinant plasminogen activator, characterized by fixed dose and double bolus approach. Reteplase has been approved for acute MI. GUSTO III and RAPID II trials have shown Reteplase is similar to tPA in acute MI.

Inclusion Criteria:	Contraindications:
- Ischemic Stroke - **Time**: < 4.5h from LKW - **mRS**: 0-1 - **NIHSS**: 4-25	- Planned thrombectomy - Contraindications to thrombolysis

Treatment Arms		
	Reteplase	Alteplase
Patients	707	705
Dose	**18mg bolus followed by another 18mg after 30 minutes**	0.9mg/kg, maximum 90mg
Weight IQR	60-75 KG	60-75 KG
NIHSS	6 (5-8)	6 (5-8)
LKW	180 (131-221)	183 (139-222)
DTN median	59	60

Outcomes		
	Reteplase	Alteplase
90d mRS 0-1	**79.5%**	70.4%
90d mRS 0-2	**85.3%**	79.8%
Dramatic recovery at 24h	**58.1%**	48.2%
sICH within 36h	2.4%	2%
PH2 within 36h	1.7%	1.4%
Major hemorrhage within 90d	3.3%	3%

Clinically significant values are bolded



Limitations:

- ***Desing**: Open label*
- ***Data**: missing outcome data for 3% of patients*
- ***Geographical**: limited to Chinese population limits generalizability*
- ***Patient characteristics**: most patients had mild stroke (66% had NIHSS 4-7)*
- *With the availability of TNK (single bolus), reteplase has to show superiority rather than non-inferiority to be clinically useful.*

***Bottom Line:** according to this study, Reteplase is non-inferior to alteplase in patients with acute ischemic stroke presented within 4.5h and not candidates for thrombectomy.*