

ENRICH Trial

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RESEARCH SUMMARY

Trial of Early Minimally Invasive Removal of Intracerebral Hemorrhage

Pradilla G et al. DOI: 10.1056/NEJMoa2308440

Design: prospective, multicenter, blinded, randomized controlled trial.

Inclusion Criteria:

- Spontaneous ICH
- **Age:** 18-80 year-old
- **Location:** Lobar or anterior basal ganglia
- **Size:** 30-80 ml
- **Exam:** GCS 5-14, NIHSS > 5, mRS of 0-1
- **Surgery** can be done within **24h** from LKW

Exclusions:

- **IVH** > 50% of either lateral ventricle
- Primary **thalamic** hemorrhage
- **Infratentorial** hemorrhage
- **Secondary** ICH

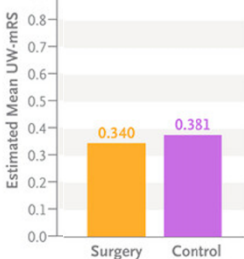
Baseline Characteristics (most patients)	
NIHSS	12-22
GCS	9-14 in about 80% of patients
ICH Location	Anterior BG 30% Lobar 70%
ICH Volume	40-72 ml
ICH Score	1-2
LKW-to-Surgery Time	10-21 hour

Treatment Arms: 150 patients in each arm, minimally invasive para fascicular surgery, done within 24h from last know well, within 2 hours from ED arrival, versus conservative treatment alone.

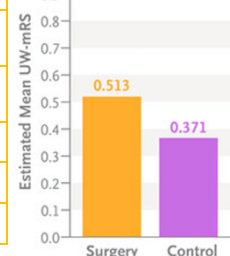
Surgery	
Door-to-Surgery Time	1-2 hours
Access Device	BrainPath
Hematoma size reduction %	73%
Hematoma size after surgery (mean)	15 ml

ENRICH Trial Outcomes				
	MIPS	Conservative	Difference	CI
Uw-mRS at 180 days (mean)	0.47	0.37	0.084	0.005 to 0.163
Anterior BG	0.34	0.38	-0.013	-0.147 to 0.116
Lobar	0.51	0.37	0.127	0.035 to 0.219
ICU Stay (days)	6.9	9.7	-2.832	-4.527 to -1.134
Hospital Stay (days)	14.9	18.1	-3.125	-5.903 to -0.393
Hematoma size reduction %, ml	73%, 15ml			
mRS 0-3 at 180 days	50%	41%	9.2%	-2.0 to 20.3
Decompressive Hemicrani	3.3%	20%	-16.6%	-23.9 to -9.9

Anterior Basal Ganglia ICH (N=87)
Estimated difference, -0.013 (95% credible interval, -0.147 to 0.116)



Lobar ICH (N=199)
Estimated difference, 0.127 (95% credible interval, 0.035 to 0.219)



Bottom Line: Rapid surgical minimally invasive evacuation of LOBAR ICH, improves outcomes and lowers the need for prolonged ICU stay and decompressive hemicraniectomy