PREDICT score

PREDICT A Score		PREDICT B Score	
Component	Points	Component	Points
GCS		NIHSS	
14–15	0	0–4	0
≤13	4	5–14	4
		≥15	7
Hours from onset to CT		Hours from onset to CT	
≤1	5	≤1	5
>1–2	4	>1–2	4
>2–3	3	>2–3	3
>3–4	2	>3–4	2
>4–5	1	>4–5	1
>5	0	>5	0
Warfarin use or INR >1.5		Warfarin use or INR >1.5	
Yes	6	Yes	7
No	0	No	0
CTA spot sign number		CTA spot sign number	
0 spots	0	0 spots	0
1 spot	4	1 spot	4
≥2 spots	8	≥2 spots	9

Hematoma expansion (HE) occurs in approximately one-third of patients with intracerebral hemorrhage (ICH) and is known to be a strong predictor of neurological deterioration as well as poor functional outcome.

A study of Lim et al. aimed to externally validate three risk prediction models of HE (PREDICT, 9-point, and BRAIN scores) in an Asian population.

A prospective cohort of 123 spontaneous ICH patients admitted to a tertiary hospital (certified stroke center) in Singapore was recruited. Logistic recalibrations were performed to obtain updated calibration slopes and intercepts for all models. The discrimination (c-statistic), calibration (Hosmer-Lemeshow test, le Cessie-van Houwelingen-Copas-Hosmer test, Akaike information criterion), overall performance (Brier score, R2), and clinical usefulness (decision curve analysis) of the risk prediction models were examined.

Overall, the recalibrated PREDICT performed best among the three models in our study cohort based on the novel matrix comprising of Akaike information criterion and c-statistic. The PREDICT model had the highest R2 (0.26) and lowest Brier score (0.14). Decision curve analyses showed that recalibrated PREDICT was more clinically useful than 9-point and BRAIN models over the greatest range of threshold probabilities. The two scores (PREDICT and 9-point) which incorporated computed tomography (CT) angiography spot sign outperformed the one without (BRAIN).

This is the first study to validate HE scores, namely PREDICT, 9-Point and BRAIN, in a multi-ethnic Asian ICH patient population. The PREDICT score was the best performing model in our study cohort, based on the performance metrics employed in this study. Our findings also showed support for CT angiography spot sign as a predictor of outcome after ICH. Although the models assessed are sufficient for risk stratification, the discrimination and calibration are at best moderate and could be

improved [1].

1)
Lim JX, Han JX, See AAQ, Lew VH, Chock WT, Ban VF, Pothiawala S, Lim WEH, McAdory LE, James ML, King NKK. External Validation of Hematoma Expansion Scores in Spontaneous Intracerebral Hemorrhage in an Asian Patient Cohort. Neurocrit Care. 2018 Oct 30. doi: 10.1007/s12028-018-0631-8. [Epub ahead of print] PubMed PMID: 30377910.