Supplemental Material

Clot-Based Radiomics Predict a Mechanical Thrombectomy Strategy for Successful Recanalization in Acute Ischemic Stroke

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Supplementary Table I:
The Radiomics Quality Score (RQS)

Supplementary Table II:
TRIPOD Checklist: Prediction Model Development and Validation

Supplementary Table I:
The Radiomics Quality Score (RQS)

	Comments	**Points**
1	Imaging protocol is documented but NCCT images are not publicly available, due to IRB constrains.	1
2	No segmentation or robustness to segmentation variabilities realized	0
3	Not phantom study realized.	0
4	No imaging at multiple time point: only pre-therapeutic NCCT were used in our analysis.	0
5	Univariate feature selection of RF performed on the training cohort.	3
6	No multivariable analysis with non-radiomic features: Only imaging features were used in the current model.	0
7	RF selected are related to the literature in the discussion section.	1
8	Results are reported on the independent validation cohort, along with their 95% confidence interval, to reduce the risk of overfitting and reporting overly optimistic results.	1
9	We report discrimination statistics, notably AUC of ROC curve, along with their 95% confidence interval. We also used cross-validation in the development of the model.	1
10	Calibration statistics are reported on the training cohort, along with their 95% confidence interval. Resampling method using Nested-CV was used in model development.	2
11	Our study was not prospectively registered in a trial database.	0
12	Validation is based on an independent dataset from the same institute.	2
13	Our classification is compared to a gold standard, the mTICI score on angiography.	2
14	The clinical utility includes the reduction of time to successful reperfusion, the reduction in number of MTB attempts and the potential reduction of procedural complications.	2
15	Cost-effectiveness analysis was not done in this study.	0
16	The RF are defined and publically available via pyradiomics. The model and its weights will be made available upon acceptance of the paper.	2
	Total points of this study	17/36

Supplementary Table II:
TRIPOD Checklist: Prediction Model Development and Validation

Section			Checklist Item	Page
Title and abstract				
Title	1	D;V	Identify the study as developing and/or validating a multivariable prediction model, the target population, and the outcome to be predicted.	1
Abstract	2	D;V	Provide a summary of objectives, study design, setting, participants, sample size, predictors, outcome, statistical analysis, results, and conclusions.	2
Introduction				
Background and objectives	3a	D;V	Explain the medical context (including whether diagnostic or prognostic) and rationale for developing or validating the multivariable prediction model, including references to existing models.	3
	3b	D;V	Specify the objectives, including whether the study describes the development or validation of the model or both.	4
Methods				
Source of data	4a	D;V	Describe the study design or source of data (e.g., randomized trial, cohort, or registry data), separately for the development and validation data sets, if applicable.	5
	4b	D;V	Specify the key study dates, including start of accrual; end of accrual; and, if applicable, end of follow-up.	5
Participants	5a	D;V	Specify key elements of the study setting (e.g., primary care, secondary care, general population) including number and location of centres.	5
	5b	D;V	Describe eligibility criteria for participants.	5
	5c	D;V	Give details of treatments received, if relevant.	5
Outcome	6a	D;V	Clearly define the outcome that is predicted by the prediction model, including how and when assessed.	6-7
	6b	D;V	Report any actions to blind assessment of the outcome to be predicted.	5
Predictors	7a	D;V	Clearly define all predictors used in developing or validating the multivariable prediction model, including how and when they were measured.	6-7
	7b	D;V	Report any actions to blind assessment of predictors for the outcome and other predictors.	5
Sample size	8	D;V	Explain how the study size was arrived at.	5
Missing data	9	D;V	Describe how missing data were handled (e.g., complete-case analysis, single imputation, multiple imputation) with details of any imputation method.	5
Statistical analysis methods	10a	D	Describe how predictors were handled in the analyses.	6-7
	10b	D	Specify type of model, all model-building procedures (including any predictor selection), and method for internal validation.	6-7
	10c	V	For validation, describe how the predictions were calculated.	7
	10d	D;V	Specify all measures used to assess model performance and, if relevant, to compare multiple models.	7
	10e	V	Describe any model updating (e.g., recalibration) arising from the validation, if done.	NA
Risk groups	11	D;V	Provide details on how risk groups were created, if done.	NA
Development vs. validation	12	V	For validation, identify any differences from the development data in setting, eligibility criteria, outcome, and predictors.	5
Results				
Participants	13a	D;V	Describe the flow of participants through the study, including the number of participants with and without the outcome and, if applicable, a summary of the follow-up time. A diagram may be helpful.	Fig 1
	13b	D;V	Describe the characteristics of the participants (basic demographics, clinical features, available predictors), including the number of participants with missing data for predictors and outcome.	Tab 2
	13c	V	For validation, show a comparison with the development data of the distribution of important variables (demographics, predictors and outcome).	NA
Model development	14a	D	Specify the number of participants and outcome events in each analysis.	8-9
	14b	D	If done, report the unadjusted association between each candidate predictor and outcome.	Fig 3
Model specification	15a	D	Present the full prediction model to allow predictions for individuals (i.e., all regression coefficients, and model intercept or baseline survival at a given time point).	NA
	15b	D	Explain how to the use the prediction model.	NA
Model performance	16	D;V	Report performance measures (with CIs) for the prediction model.	8-9
Model-updating	17	V	If done, report the results from any model updating (i.e., model specification, model performance).	NA
Discussion				
Limitations	18	D;V	Discuss any limitations of the study (such as nonrepresentative sample, few events per predictor, missing data).	11
Interpretation	19a	V	For validation, discuss the results with reference to performance in the development data, and any other validation data.	NA
	19b	D;V	Give an overall interpretation of the results, considering objectives, limitations, results from similar studies, and other relevant evidence.	9-11
Implications	20	D;V	Discuss the potential clinical use of the model and implications for future research.	11
Other information				
Supplementary information	21	D;V	Provide information about the availability of supplementary resources, such as study protocol, Web calculator, and data sets.	S.Tab 1, 2
Funding	22	D;V	Give the source of funding and the role of the funders for the present study.	12

Items relevant only to the development of a prediction model are denoted by D, items relating solely to a validation of a prediction model are denoted by V, and items relating to both are denoted D;V.