

Appendix 1

Assessment of RV enlargement by radiology reports

Radiology reports from the same cohort were classified as either positive or negative for RV enlargement using “regular expression” and as following steps: Sentences containing any of the keywords “heart strain”, “RV”, “ventricle”, or “septal bowing” were extracted from the “Cardiovascular” subsection of the structured report. Negative phrases such as “no”, “equivocal”, “less than”, and “<” were identified. If no negative phrase was detected, positive phrases such as “flattening”, “strain”, “enlarged”, “large”, “dilation”, “greater than”, “>”, or “septal bowing” were matched. Out of all reports identified in step 3, specific phrases such as “large”, “enlarged”, “dilatation”, or “greater than” in conjunction with “>” were matched to confirm an intentional reference to an RV/LV >1. Any structured reports that did not detect the keywords or if they were unstructured reports without the “Cardiovascular subsection”, were reviewed manually by a medical student and a senior cardio-thoracic radiologist with 14 years of experience. The narrative and impression of the reports were reviewed by a medical student after a training session with a senior attending radiologist to look for text that suggested RV enlargement and included terms like “RV strain”, “Right ventricle enlargement”, “RV dilated”, “RV dilatation”, “RV is enlarged or dilated”, “RV/LV >1”, “septal bowing”. In the training session, fifteen radiology reports were reviewed with the trainee and searched for the terms described above. The indeterminant cases annotated by the students were reviewed by the senior attending for final classification. Signs of RV strain include PA enlargement, septal flattening, RV enlargement or dilated IVC and reflux of contrast in the hepatic veins.

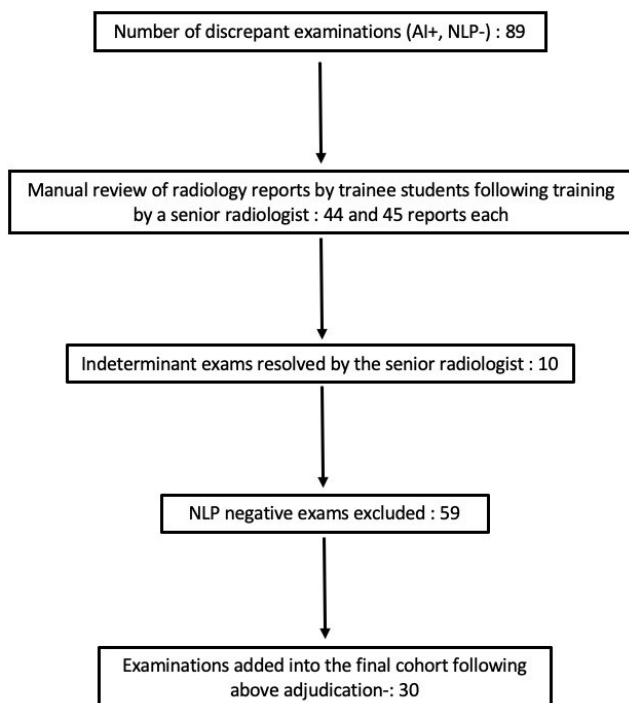


Figure S1 Adjudication process for the discrepant examinations i.e., AI positive and NLP negative, on CTPA for acute PE. AI, artificial intelligence; CTPA, computed tomography pulmonary angiography; NLP, natural language processing; PE, pulmonary embolism.

Vasopressors	Thrombolytics	Anticoagulants
Epinephrine, IV	Alteplase, IV	Heparin, IV
Norepinephrine, IV	Activase, IV	Argatroban, IV
Phenylephrine, IV	Streptokinase, IV	Bivalirudin, IV
Angiotensin II, IV		Low Molecular Weight Heparin, SC
	Tenecteplase, IV	
Dopamine, IV	Retepase, IV	Enoxaparin, SC
Milrinone, IV	Urokinase, IV	Fondaparinux, SC
Dobutamine, IV		Apixaban, PO
Vasopressin, IV		Rivaroxaban, PO
		Dabigatran, PO
		Warfarin, PO

Figure S2 Summary of vasopressors, thrombolytics, and anticoagulant medications.

Table S1 Automated right ventricle-to-left ventricle ≤ 1.18 and >1 stratified by various subgroups of demographics, simplified pulmonary embolism severity index score, and right ventricle enlargement by reports including indication for amount of missing data

Characteristic	≤ 1.18 (N=283)	>1.18 (N=125)	P value
Age	63 (48, 73)	69 (58, 77)	0.001
Missing	1	0	
Gender			0.30
Female	53% (150/282)	48% (60/125)	
Male	47% (132/282)	52% (65/125)	
Missing	1	0	
SpO ₂ lowest	92.0 (90.0, 94.0)	92.0 (89.0, 93.0)	0.008
Missing	1	0	
BP systolic lowest	109 (97, 121)	105 (95, 116)	0.20
Missing	1	0	
Temperature lowest	97.50 (97.20, 97.80)	97.30 (97.00, 97.80)	<0.001
Missing	2	0	
Temperature highest	98.40 (98.10, 98.90)	98.40 (98.00, 98.70)	0.065
Missing	2	0	
Heart rate highest	100 (88, 114)	108 (92, 122)	0.023
Missing	1	0	
History of cancer	23% (64/279)	23% (29/124)	>0.9
Missing	4	1	
History of CCPD	41% (115/279)	48% (59/124)	0.20
Missing	4	1	
sPESI score	1.5 \pm 1.3	2.0 \pm 1.2	<0.001
Missing	4	1	
sPESI high risk	76% (213/280)	91% (113/124)	<0.001
Missing	3	1	

Data are presented as median (Q1, Q3), % (n/N) or mean \pm SD. P values were calculated with the use of Wilcoxon rank sum test, Pearson's Chi-squared test. BP, blood pressure; CCPD, chronic cardio-pulmonary disease; sPESI, simplified pulmonary embolism severity index; SpO₂, blood oxygen saturation.