

Supplemental information

**A multicenter prospective study on the ESC
algorithm for the early diagnosis
of non-ST-elevation myocardial infarction**

Yahui Lin, Hong Zhan, Shukui Wang, Guozheng Zhang, Zi Ye, Caidong Liu, Dong Wang, Dongfang Gao, Qing Yang, Zebin Gong, Guangxun Feng, Min Liu, Wenke Li, Yanmin Yang, Jun Zhu, Zhou Zhou, and Yan Liang

Supplemental information

A Multicenter Prospective Study on the ESC Algorithm for the Early Diagnosis of Non-ST-Elevation Myocardial Infarction

**Running title: Rapid diagnostic algorithm NSTEMI: a prospective multicenter cohort
study in China**

Ya-hui Lin, Hong Zhan, Shu-kui Wang, Guo-zheng Zhang, Zi Ye, Cai-dong Liu, Dong Wang, Dong-fang Gao, Qing Yang, Ze-bin Gong, Guang-xun Feng, Min Liu, Wen-ke Li, Yan-min Yang, Jun Zhu, Zhou Zhou, Yan Liang

Figure S1 Study flowchart

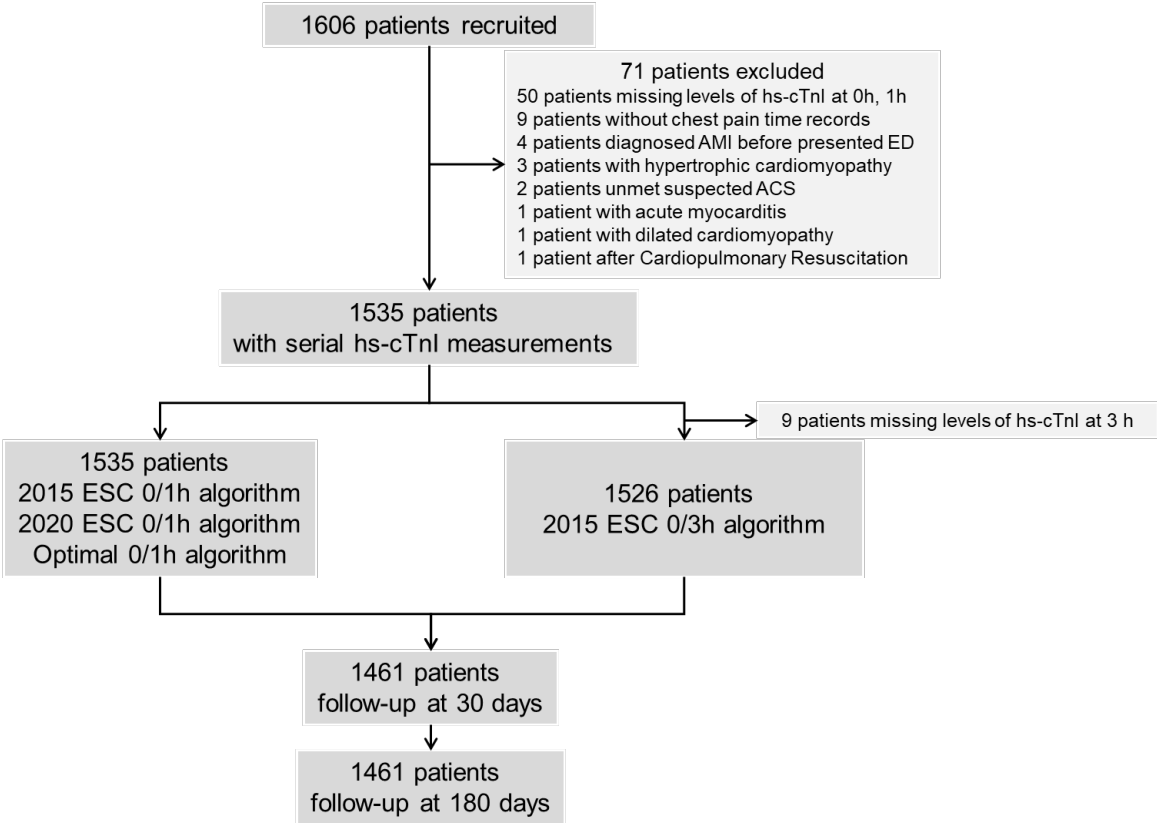
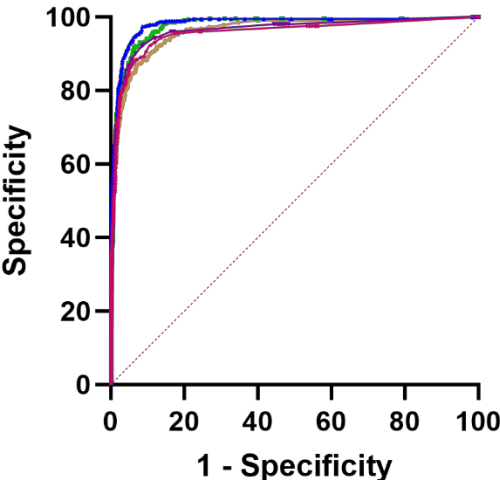


Figure S2 The accuracy of hs-cTnI in diagnosing AMI at different time points



	AUC	Compared to 0h	Compared to 1h	Compared to 3h	Compared to 0-1h
0h	0.961 (0.949-0.972)				
1h	0.975 (0.967-0.984)	p<0.001			
3h	0.981 (0.973-0.989)	p<0.001	p<0.001		
0-1h	0.963 (0.951-0.975)	p=0.559	p=0.020	p<0.001	
0-3h	0.955 (0.942-0.969)	p=0.652	p=0.002	p<0.001	p=0.209

Figure S3 Diagnostic performance of the 2015 ESC 0/3-hour algorithm using hs-cTnI

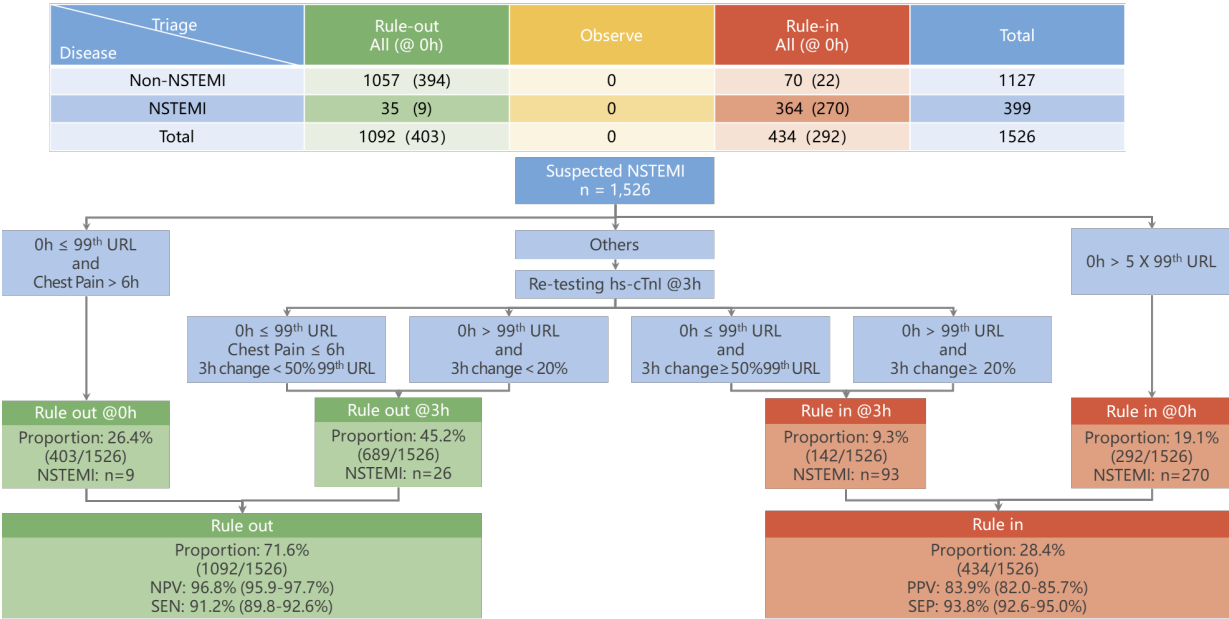


Illustration of the derived algorithm and test characteristics of the cohorts.

NPV, negative predictive value; SEN, sensitivity; PPV, positive predictive value; SEP, specificity.

Figure S4 Sensitivity and NPV of each hs-cTnI at different concentrations

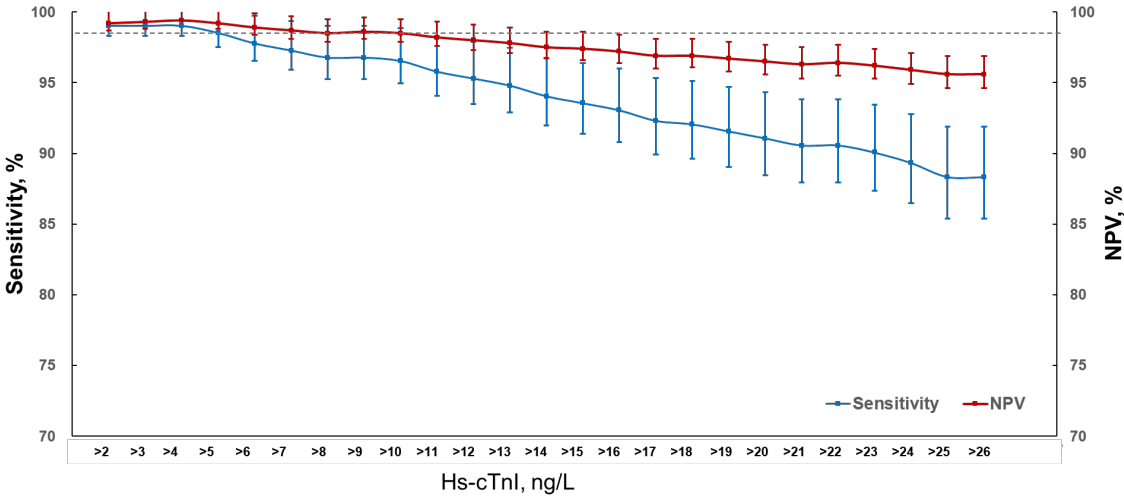


Figure S5 Comparison of the prognostic performance of the algorithms in Rule-out group

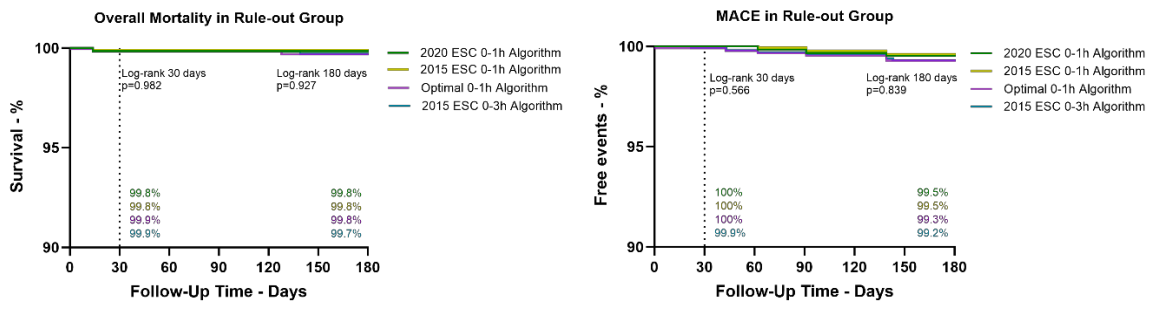


Figure S6 Comparison of the prognostic performance of the algorithms in Observed group

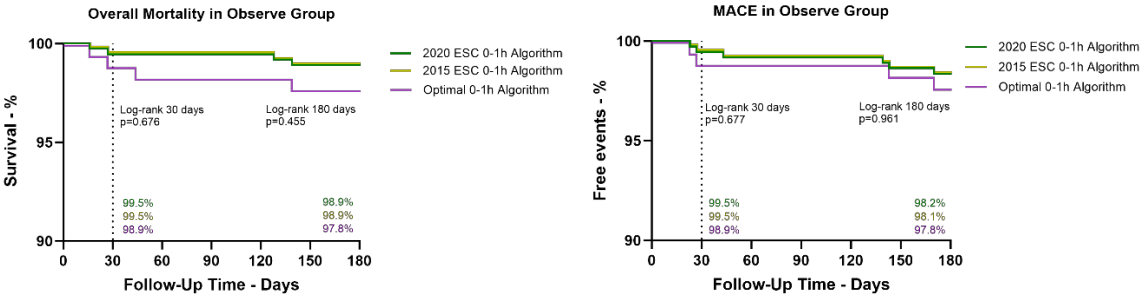


Figure S7 Comparison of the prognostic performance of the algorithms in Rule-in group

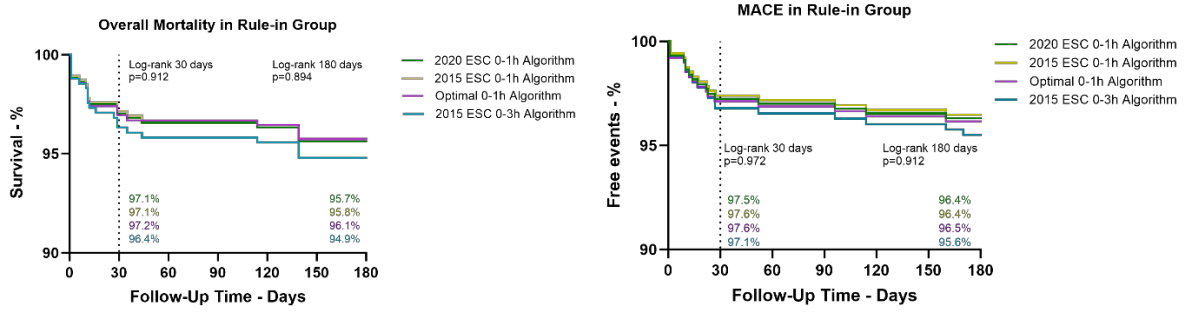


Table S1 Time between the first and second blood draws for serial hs-cTnI measurements

	0-1 h time interval	0-3 h time interval
Mean Time	1:00	2:58
Median Time	1:00	3:00
10th, 90th	0:57, 1:05	2:48, 3:05

Table S2 Blood concentrations of hs-cTnI

	0 h	1 h	3 h		Δ0-1 h Change	Δ0-3 h Change
	Overall					
Non-NSTEMI N=1133	3 (2, 8)	3 (2, 8)	3 (2, 9)		0 (0, 1)	1 (0, 1)
NSTEMI N=402	403* (79, 2066)	496* (125, 2352)	780* (199, 2946)		65* (15, 331)	200* (41, 979)
	Chest pain > 3 hours					
Non-NSTEMI N=731	3 (2, 9)	3 (2, 9)	4 (2, 10)		0 (0, 1)	1 (0, 1)
NSTEMI N=301	507* (132, 2587)	645* (179, 3015)	933* (229, 3070)		77* (17, 341)	209* (41, 963)
	Chest pain ≤ 3 hours					
Non-NSTEMI N=402	3 (2, 7)	3 (2, 7)	3 (2, 8)		1 (0, 1)	1 (0, 1)
NSTEMI N=101	89*† (25, 692)	165*† (52, 921)	416*† (109, 1723)		36*† (11, 247)	186* (41, 1142)

The median (25th, 75th), ng/L; * Indicates $P < 0.05$ for non-NSTEMI patients. † Indicates $P < 0.05$ for patients with Chest pain > 3 hours.

Table S3 Demographic and clinical information of two patients with a diagnosis of myocardial infarction missed by the hs-cTnI 0/1-hour algorithm

Patient ID		1145	1802
Age		60	59
Sex		Female	Female
Time from CPO to first study blood draw, h		1 h10 min	7 h
History of coronary artery disease		No	No
History of previous MI		No	No
History of PCI		No	No
History of CABG		No	No
History of hypertension		No	No
History of diabetes		Yes	No
History of hypercholesterolemia		Yes	No
History of previous stroke		No	No
History of previous Heart Failure		No	No
History of kidney dysfunction		No	No
History of peripheral artery disease		No	No
hs-cTnI (ng/L; peak value underlined)	0 h	<2	<2
	1 h	<2	<2
	3 h	<2	<2
ST-depression		No	No
T-inversion		No	No
RWMA		No	No
ECHO		Normal	LV motion incoordination
Clinical discharge diagnosis		NSTEMI	NSTEMI
Medicine treatment		Yes	Yes
CABG performed		No	No
PCI performed		No	No
NSTEMI type			