

University of Groningen

Role of ST-Segment Resolution Alone and in Combination With TIMI Flow After Primary Percutaneous Coronary Intervention for ST-Segment–Elevation Myocardial Infarction

CAMI (China Acute Myocardial Infarction) Registry Study Group; Wu, Chao; Gao, Xiaojin; Li, Ling; Jing, Quanmin; Li, Weimin; Xu, Haiyan; Zhang, Wenbo; Li, Sidong; Zhao, Yanyan

Published in:
Journal of the American Heart Association

DOI:
[10.1161/JAHA.123.029670](https://doi.org/10.1161/JAHA.123.029670)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2023

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

CAMI (China Acute Myocardial Infarction) Registry Study Group, Wu, C., Gao, X., Li, L., Jing, Q., Li, W., Xu, H., Zhang, W., Li, S., Zhao, Y., Wang, Y., Li, W., Wu, Y., Hu, F., Jin, C., Qiao, S., Yang, J., & Yang, Y. (2023). Role of ST-Segment Resolution Alone and in Combination With TIMI Flow After Primary Percutaneous Coronary Intervention for ST-Segment–Elevation Myocardial Infarction. *Journal of the American Heart Association*, 12(14), Article e029670. <https://doi.org/10.1161/JAHA.123.029670>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.






Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

ORIGINAL RESEARCH

Role of ST-Segment Resolution Alone and in Combination With TIMI Flow After Primary Percutaneous Coronary Intervention for ST-Segment–Elevation Myocardial Infarction

Chao Wu, MD*; Xiaojin Gao , MD*; Ling Li, MB; Quanmin Jing, MD; Weimin Li, MD; Haiyan Xu, MD; Wenbo Zhang , PhD; Sidong Li , PhD; Yanyan Zhao, PhD; Yang Wang, PhD; Wei Li, PhD; Yongjian Wu, MD; Fenghuan Hu, MD; Chen Jin, MSc; Shubin Qiao, MD; Jingang Yang , MD; Yuejin Yang , MD; on behalf of the CAMI (China Acute Myocardial Infarction) Registry Study Group†

BACKGROUND: To evaluate the role of ST-segment resolution (STR) alone and in combination with Thrombolysis in Myocardial Infarction (TIMI) flow in reperfusion evaluation after primary percutaneous coronary intervention (PPCI) for ST-segment–elevation myocardial infarction by investigating the long-term prognostic impact.

METHODS AND RESULTS: From January 2013 through September 2014, we studied 5966 patients with ST-segment–elevation myocardial infarction enrolled in the CAMI (China Acute Myocardial Infarction) registry with available data of STR evaluated at 120 minutes after PPCI. Successful STR included STR $\geq 50\%$ and complete STR (ST-segment back to the equipotential line). After PPCI, the TIMI flow was assessed. The primary outcome was 2-year all-cause mortality. STR $< 50\%$, STR $\geq 50\%$, and complete STR occurred in 20.6%, 64.3%, and 15.1% of patients, respectively. By multivariable analysis, STR $\geq 50\%$ (5.6%; adjusted hazard ratio [HR], 0.45 [95% CI, 0.36–0.56]) and complete STR (5.1%; adjusted HR, 0.48 [95% CI, 0.34–0.67]) were significantly associated with lower 2-year mortality than STR $< 50\%$ (11.7%). Successful STR was an independent predictor of 2-year mortality across the spectrum of clinical variables. After combining TIMI flow with STR, different 2-year mortality was observed in subgroups, with the lowest in successful STR and TIMI 3 flow, intermediate when either of these measures was reduced, and highest when both were abnormal.

CONCLUSIONS: Post-PPCI STR is a robust long-term prognosticator for ST-segment–elevation myocardial infarction, whereas the integrated analysis of STR plus TIMI flow yields incremental prognostic information beyond either measure alone, supporting it as a convenient and reliable surrogate end point for defining successful PPCI.

REGISTRATION: URL: <https://www.clinicaltrials.gov>; Unique identifier: NCT01874691.

Key Words: acute myocardial infarction ■ ECG ■ outcome ■ reperfusion

Correspondence to: Jingang Yang, MD, and Yuejin Yang, MD, Department of Cardiology, Coronary Heart Disease Center, Fuwai Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College State Key Laboratory of Cardiovascular Disease, National Center for Cardiovascular Diseases, No. 167 N Lishi Rd, Xicheng District, Beijing, China. Email: jingangyang@126.com; yangyjf@126.com

*Drs C. Wu and X. Gao contributed equally.

†A complete list of the China Acute Myocardial Infarction Registry Study Group Investigators can be found in the Supplemental Material.

This article was sent to Jennifer Tremmel, MD, Associate Editor, for review by expert referees, editorial decision, and final disposition.

Supplemental Material is available at <https://www.ahajournals.org/doi/suppl/10.1161/JAHA.123.029670>

For Sources of Funding and Disclosures, see page 10.

© 2023 The Authors. Published on behalf of the American Heart Association, Inc., by Wiley. This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

JAHA is available at: www.ahajournals.org/journal/jaha

CLINICAL PERSPECTIVE

What Is New?

- The single-lead ST-segment resolution analyzed without core laboratories after primary percutaneous coronary intervention for ST-segment–elevation myocardial infarction is a strong independent predictor of long-term mortality in patients with a broad spectrum of clinical variables in the real-world practice.
- Approximately 20% of patients showed a discrepancy between Thrombolysis in Myocardial Infarction flow and ST-segment resolution, which could be used to categorize them into 2 subgroups: those with optimal epicardial blood flow but microvascular dysfunction, and those with unsatisfactory initial recanalization but potential blood flow restoration at a later time.

What Are the Clinical Implications?

- A combination of ST-segment resolution $\geq 50\%$ and Thrombolysis in Myocardial Infarction 3 flow could be defined as successful primary percutaneous coronary intervention in patients with ST-segment–elevation myocardial infarction.

Nonstandard Abbreviations and Acronyms

CAMI	China Acute Myocardial Infarction
IRA	infarct-related artery
PPCI	primary percutaneous coronary intervention
STR	ST-segment resolution
TIMI	Thrombolysis in Myocardial Infarction

Rapid mechanical reperfusion by the primary percutaneous coronary intervention (PPCI) represents the pivotal step in the current management of ST-segment–elevation myocardial infarction (STEMI), providing substantial prognostic benefits over fibrinolytic therapy.¹ However, there is still a guideline-level lack of definition on successful PPCI.^{2,3} Current diagnostic tools for myocardial reperfusion may be classified as invasive, such as intracoronary Doppler wire or angiography, or noninvasive, including ECG, myocardial contrast echocardiography, and cardiac magnetic resonance.^{4,5} Because of the dynamic nature of myocardial reperfusion,⁶ it is impractical for invasive indexes to reflect such a process, particularly outside the catheterization laboratory. In contrast, noninvasive tools could provide a more

reproducible assessment of microcirculation; however, except for ECG, most of them are neither feasible in the short-term nor cost-efficient.⁷

ST-segment resolution (STR), the simplest tool for reflecting microvascular obstruction at the cellular level,^{8,9} has been widely used as a surrogate end point in clinical trials evaluating reperfusion in STEMI. However, it has been questioned whether the impact of achieving STR on survival is robust in routine practice, given the conflicting results on its prognostic value have been reported in either randomized clinical trials or registry studies, probably attributable to inconstant methods and timing for ECG analysis.^{10–23} In addition, despite reports of infrequent disagreement between STR and angiographic index,^{11,17,18,22–24} it is unclear whether the combination of these indexes, which assess various aspects of microcirculatory integrity after reperfusion therapy, has additional long-term prognostic value in a real-world setting.

Using data derived from a large cohort of patients in the CAMI (China Acute Myocardial Infarction) registry, we sought to evaluate the long-term prognostic value of STR alone and in combination with Thrombolysis in Myocardial Infarction (TIMI) flow after PPCI for STEMI.

METHODS

Overview of the CAMI Registry and Data Collection

The CAMI registry is a prospective, nationwide, multicenter, observational study for acute myocardial infarction (AMI) care in China. The study design has been described previously (NCT01874691).^{25,26} In brief, we studied a total of 26 648 patients with acute myocardial infarction enrolled from 108 hospitals from 31 provinces and municipalities throughout mainland China between January 2013 and September 2014, with broad coverage of geographic regions, including urban and rural areas. These hospitals are the largest or central hospitals in their administrative areas (Data S1).²⁶ The CAMI registry was approved by the Ethics Committee of Fuwai Cardiovascular Hospital (No. 431). Written informed consent was obtained from eligible patients.

A comprehensive collection of data, including patient demographic factors, risk factors, medical history, reperfusion therapy, reasons for treatment plan, medications, procedures, and events, was conducted through a secure, web-based electronic data capture system (Data S2).²⁶ All information was collected using a standardized set of variables and predefined, standard, unified definitions, systematic data entry and transmission procedures, and rigorous data quality control. Enrollment, data collection, and follow-up were all performed by trained physicians at each participating site in a real-time manner, to ensure data accuracy

and reliability. Senior cardiologists were responsible for data quality control. Hospital sites underwent random on-site audits for the accuracy of diagnosis and variables based on medical records. The data that support the findings of this study are available from the corresponding author on reasonable request.

Study Population and ECG Analysis

The present substudy was conducted in patients with STEMI with qualifying post-PPCI ECGs. The final diagnosis of STEMI had to meet the third Universal Definition for Myocardial Infarction.²⁷ The qualifying ECGs should fulfill the following criteria: (1) ≥ 1 mm of ST-segment elevation in at least 2 contiguous leads; and (2) without bundle-branch block, ventricular pacing, or rhythm. STR was evaluated on the basis of ECGs acquired on admission and 120 minutes after PPCI in local participating hospitals, measuring in the single lead with the most prominent ST-segment elevation on the baseline. Patients were categorized by the degree of STR: $<50\%$, $\geq 50\%$, and complete STR (ie, ST-segment elevation back to the equipotential line). Successful STR included STR $\geq 50\%$ and complete STR.

Periprocedural Management

TIMI flow was used to evaluate reperfusion in the infarct-related artery (IRA) at the end of the procedure.²⁸ The existence of macroscopic thrombosis in the IRA during the angiography was recorded by operators. The periprocedural use of antiplatelet agents (including aspirin, clopidogrel, and glycoprotein IIb/IIIa inhibitors) and the use of parenteral anticoagulant during the procedure followed the STEMI guideline.²⁹

Outcomes

The primary clinical outcome was 2-year all-cause death. Follow-up data were obtained by telephone interview, follow-up letter, or clinic visit. All events were carefully checked and verified by an independent group of clinical physicians.

The secondary clinical outcome was in-hospital major adverse cardiac and cerebrovascular events, including all-cause death, reinfarction, and stroke.

Statistical Design and Analysis

Baseline characteristics and clinical outcomes for patients with different STR were compared. Continuous variables were expressed as mean \pm SD or median and interquartile range and were compared using the ANOVA or the Kruskal-Wallis test. Categorical variables were expressed as numbers and percentages and were compared using the Pearson χ^2 test or the Fisher exact test. Survival curves were constructed by the Kaplan-Meier method and compared by the

log-rank test. The adjusted associations between STR and 2-year all-cause mortality were examined by the development of the Cox proportional hazards regression model, which considered a group of baseline and procedural characteristics (ie, age, sex, hypertension, diabetes, history of myocardial infarction or stroke, symptom-to-balloon time, Killip class, cardiogenic shock, cardiac arrest, left ventricular ejection fraction, anterior infarction, and post-PCI TIMI flow) as covariates. Subgroup analyses were performed by including an interaction term in the proportional hazards model.

Subsequently, 4 groups were identified, including successful STR and TIMI 3 flow, successful STR and TIMI 0 to 2 flow, STR $<50\%$ and TIMI 3 flow, and STR $<50\%$ and TIMI 0 to 2 flow.

Two-sided $P < 0.05$ was considered statistically significant. All analyses were performed using SAS software version 9.4 (SAS Institute Inc, Cary, NC).

RESULTS

There were 5966 patients with STEMI treated with PPCI in the CAMI registry with data that could be evaluated for STR (Figure 1). Table S1 provides key baseline characteristics for all patients with STEMI with PPCI, the study cohort, and those excluded. Excluded subjects were more likely to have hyperlipidemia and a prior myocardial infarction history and less likely to receive PPCI within 12 hours after symptom onset. Included patients more frequently had single-vessel disease, had thrombosis in IRA, and used glycoprotein IIb/IIIa inhibitors. Rates of 2-year all-cause death were similar among 3 groups (Figure S1).

Baseline Characteristics

At 120 minutes after PPCI, STR $<50\%$, STR $\geq 50\%$, and complete STR could be achieved in 1227 (20.6%), 3837 (64.3%), and 902 (15.1%) patients, respectively. As shown in Table 1, median age and sex did not differ significantly between the groups. Patients with STR $<50\%$ had more diabetes, Killip class $\geq II$, and anterior infarction compared with those with STR $\geq 50\%$ and complete STR. There was no statistical difference in cardiogenic shock, cardiac arrest, and left ventricular ejection fraction among the 3 groups. A vast majority of the present cohort received periprocedural dual-antiplatelet therapy and could achieve post-PPCI TIMI 3 flow.

Clinical Outcomes

The in-hospital major adverse cardiac and cerebrovascular events were observed in 7.5% of the patients with STR $<50\%$, compared with 1.9% and 1.7% of those in the STR $\geq 50\%$ and complete STR group, respectively

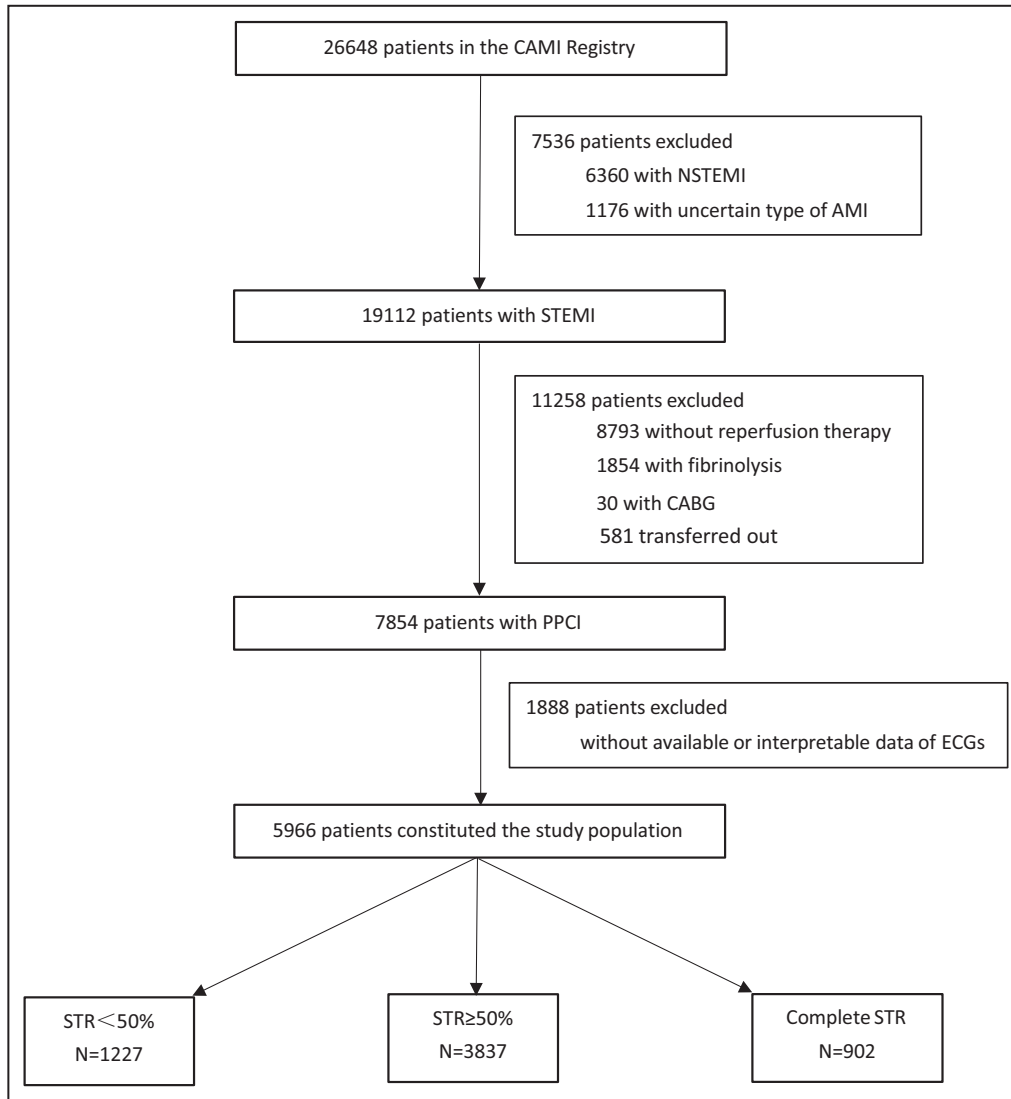


Figure 1. A flowchart for subject selection.

AMI indicates acute myocardial infarction; CABG, coronary artery bypass grafting; CAMI, China Acute Myocardial Infarction; NSTEMI, non-ST-segment-elevation myocardial infarction; PPCI, primary percutaneous coronary intervention; STEMI, ST-segment-elevation myocardial infarction; and STR, ST-segment resolution.

($P < 0.001$), which could be responsible for significantly higher mortality rate in patients with STR < 50%.

A complete clinical 2-year follow-up was obtained for 5698 patients (95.5%). The mortality rate was the highest in patients with STR < 50% (11.7%), intermediate in patients with STR ≥ 50% (5.6%), and lowest in patients with complete STR (5.1%). From day 0, Kaplan-Meier curves began to diverge for the all-cause mortality in favor of STR > 50% and complete STR for up to 2 years (Figure 2A). By multivariable analysis, both STR ≥ 50% (adjusted hazard ratio [HR], 0.45 [95% CI, 0.36–0.56]; $P < 0.001$) and complete STR (adjusted HR, 0.48 [95% CI, 0.34–0.67]; $P < 0.001$) were strongly associated with a reduced risk of 2-year all-cause mortality (Table 2). The

adjusted HR and 95% CI of STR with respect to 2-year mortality in the different subgroups of patients are shown in Figure 3. STR was an independent predictor of 2-year mortality across all the spectrums of clinical variables.

Subgroup Analysis

Both STR and post-PCI TIMI flow measures were available in 5480 patients (91.9%). A total of 4254 (77.6%), 179 (3.3%), 962 (17.6%), and 85 (1.5%) patients had successful STR and TIMI 3 flow (concordance), successful STR and TIMI 0 to 2 flow (discordance), STR < 50% and TIMI 3 flow (discordance), and STR < 50% and TIMI 0 to 2 flow (concordance), respectively. Thus, concordance between STR and TIMI flow occurred in 4339 of 5480

Table 1. Baseline Characteristics and Clinical Outcomes According to STR

Variable	STR <50% (n=1227)	STR ≥50% (n=3837)	Complete STR (n=902)	P value
Age, y	60.5±11.8	60.4±11.8	59.8±11.8	0.222
≤60y	591/1227 (48.2)	1828/3837 (47.6)	440/902 (48.8)	0.812
Female sex	253/1227 (20.6)	739/3837 (19.3)	195/902 (21.6)	0.220
Killip class ≥II	258/1225 (21.1)	710/3830 (18.5)	109/898 (12.1)	<0.001
Cardiogenic shock	53/1226 (4.3)	128/3830 (3.3)	30/901 (3.3)	0.086
Cardiac arrest	14/1224 (1.1)	49/3828 (1.3)	10/898 (1.1)	0.879
Current smoker	618/1218 (50.7)	1976/3811 (51.8)	495/899 (55.1)	0.596
Hypertension	595/1220 (48.8)	1810/3820 (47.4)	395/900 (43.9)	0.148
Diabetes	250/1218 (20.5)	683/3816 (17.9)	124/898 (13.8)	<0.001
Hyperlipidemia	71/1219 (5.8)	262/3814 (6.9)	78/899 (8.7)	0.026
Prior myocardial infarction	71/1219 (5.8)	169/3816 (4.4)	45/899 (5.0)	<0.001
Prior stroke	100/1218 (8.2)	281/3814 (7.4)	62/900 (6.9)	<0.001
Creatinine clearance, mL/min	86.6 (63.1–112.4)	86.3 (63.6–110.2)	86.8 (66.8–110.3)	0.813
Symptom-to-balloon time, h	6.0 (4.0–10.8)	5.7 (3.9–9.4)	5.7 (3.8–8.8)	0.075
≤12h	996/1210 (82.3)	3344/3763 (88.9)	811/896 (90.5)	<0.001
Periprocedural antithrombotic therapy				
Aspirin	1198/1223 (98.0)	3772/3815 (98.9)	888/898 (98.9)	0.059
Clopidogrel	1202/1216 (98.8)	3763/3792 (99.2)	886/891 (99.4)	0.297
GPI	489/1057 (46.3)	1641/3597 (45.6)	406/836 (48.6)	0.307
UFH	929/1051 (88.4)	3231/3581 (90.2)	782/837 (93.4)	<0.001
LMWH	94/1051 (8.9)	241/3581 (6.7)	43/837 (5.1)	0.004
Bivalirudin	14/1051 (1.3)	60/3581 (1.7)	4/837 (0.5)	0.012
LVEF, %	52.6±9.7	53.9±10.0	54.7±10.4	0.054
Single-vessel disease	377/1205 (31.1)	1267/3683 (34.4)	256/889 (28.8)	0.002
Anterior infarction	653/1225 (53.3)	1917/3813 (50.3)	319/900 (35.4)	<0.001
Thrombosis in IRA	760/1224 (62.1)	2497/3807 (65.6)	581/895 (64.9)	0.019
Device of intervention				<0.001
Thrombus aspiration	45/1055 (4.3)	102/3615 (2.8)	35/836 (4.2)	
Only PTCA	72/1055 (6.8)	160/3615 (4.4)	27/836 (3.2)	
Stent	938/1055 (88.9)	3353/3615 (92.8)	774/836 (92.6)	
Post-PCI TIMI flow				<0.001
0–2	85/1047 (8.1)	145/3597 (4.0)	34/836 (4.1)	
3	962/1047 (91.9)	3452/3597 (96.0)	802/836 (95.9)	
MACCE during hospitalization	92/1227 (7.5)	112/3835 (2.9)	21/902 (2.3)	<0.001
All-cause death	84/1227 (6.8)	74/3835 (1.9)	15/902 (1.7)	<0.001
Reinfarction	7/1225 (0.6)	18/3830 (0.5)	4/900 (0.4)	0.892
Stroke	7/1226 (0.6)	30/3830 (0.8)	3/901 (0.3)	0.249
2-y All-cause death	139/1185 (11.7)	203/3637 (5.6)	45/876 (5.1)	<0.001

Data are reported as mean±SD, number/total (percentage), or median (interquartile range). GPI indicates glycoprotein IIb/IIIa inhibitor; IRA, infarct-related artery; LMWH, low-molecular-weight heparin; LVEF, left ventricular ejection fraction; MACCE, major adverse cardiac and cerebrovascular event; PCI, percutaneous coronary intervention; PTCA, percutaneous transluminal coronary angioplasty; STR, ST-segment resolution; TIMI, Thrombolysis in Myocardial Infarction; and UFH, unfractionated heparin.

patients (79.2%), and discordance was present in 1141 of 5480 patients (20.8%). As shown in [Table 3](#), among patients with TIMI 0 to 2 flow, the incidence of thrombosis in the IRA was 74.6% for successful STR and 69.4% for STR<50%, and the proportion of patients using the glycoprotein IIb/IIIa inhibitors was 63.3% and 58.8%, respectively.

In the subgroup defined according to the post-PCI TIMI flow shown in [Figure 3](#), the risks of death at 2 years varied significantly according to the extent of STR. Among patients with TIMI 3 flow, successful STR was associated with lower 2-year mortality than STR<50% (4.8% versus 8.4%; unadjusted HR, 0.56 [95% CI, 0.43–0.72]). Similarly, in the group of

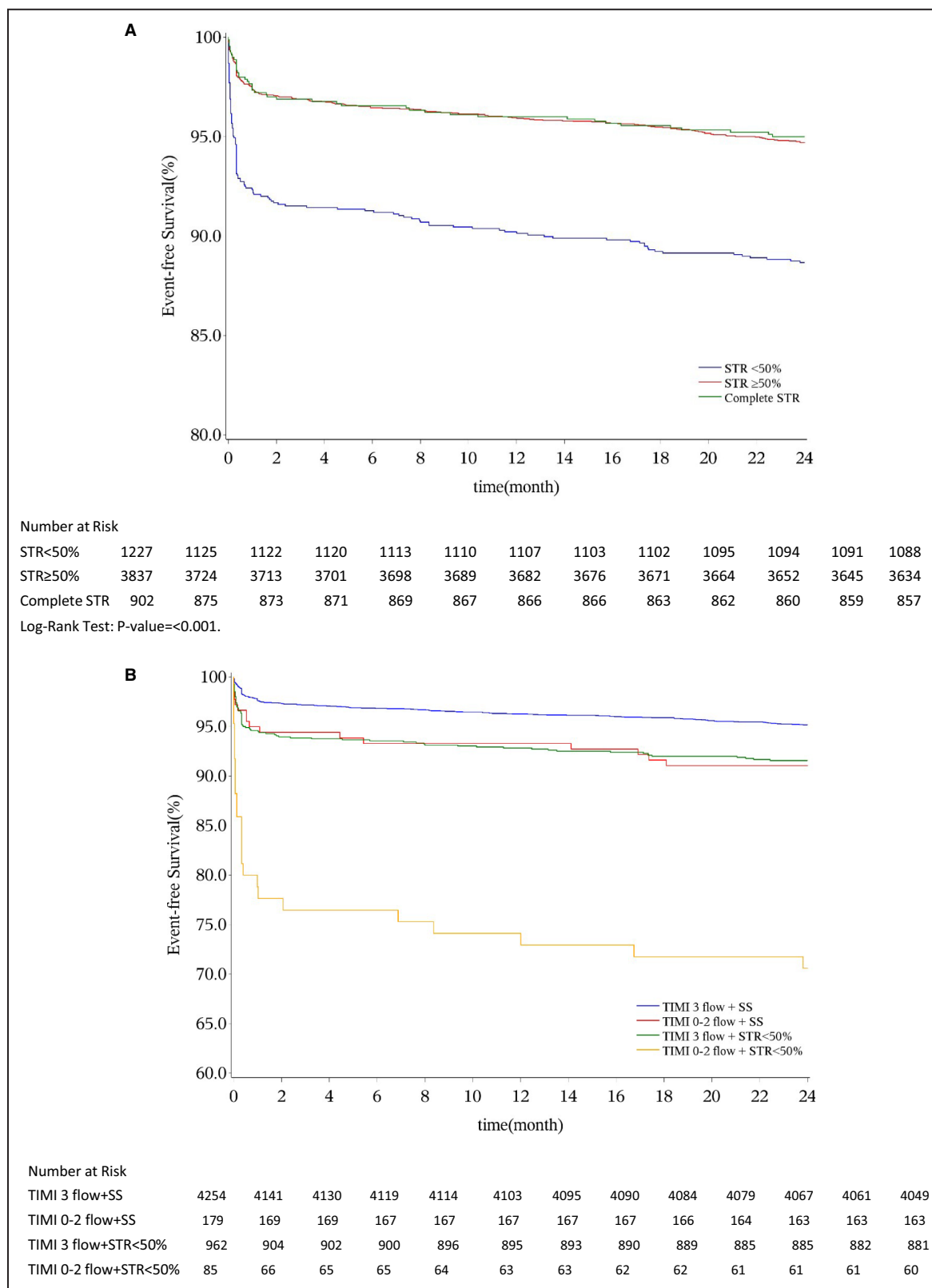


Figure 2. Kaplan-Meier curves for the 2-year all-cause mortality.

A, According to ST-segment resolution (STR). **B**, According to concordant/discordant STR and Thrombolysis in Myocardial Infarction (TIMI) flow. Log-rank test: $P<0.001$. Successful STR (SS) included STR $\geq 50\%$ and complete STR.

Table 2. Multivariate Predictors of 2-Year All-Cause Death

Variable	Adjusted HR (95% CI)	P value
STR \geq 50% (vs STR <50%)	0.45 (0.36–0.56)	<0.001
Complete STR (vs STR <50%)	0.48 (0.34–0.67)	<0.001
Aged \leq 60y	0.42 (0.33–0.54)	<0.001
Female sex	1.56 (1.25–1.94)	<0.001
Diabetes	1.21 (0.95–1.55)	0.131
Hypertension	0.94 (0.77–1.16)	0.584
Prior myocardial infarction	1.18 (0.79–1.77)	0.426
Prior stroke	1.58 (1.17–2.14)	0.003
Symptom-to-balloon time \leq 12 h	1.19 (0.87–1.61)	0.279
Killip class \geq II	2.46 (1.97–3.07)	<0.001
Cardiogenic shock	2.29 (1.63–3.24)	<0.001
Cardiac arrest	2.31 (1.32–4.03)	0.003
LVEF \geq 50%	0.79 (0.63–0.99)	0.039
Anterior infarction	1.10 (0.89–1.36)	0.388
Post-PCI TIMI 3 flow	0.16 (0.05–0.52)	0.002

HR indicates hazard ratio; LVEF, left ventricular ejection fraction; PCI, percutaneous coronary intervention; STR, ST-segment resolution; and TIMI, Thrombolysis in Myocardial Infarction.

TIMI 0 to 2 flow, 2-year mortality ranged from 8.9% in those with successful STR to 29.4% in those with STR <50% (unadjusted HR, 0.27 [95% CI, 0.14–0.51]; *P* for interaction=0.032).

DISCUSSION

We evaluated a large cohort of patients with STEMI focusing on the relationship between STR alone and in combination with TIMI flow after PPCI and long-term survival. The principal findings included the following: (1) Successful STR occurred in \approx 80% of patients and was associated with a substantial reduction in all-cause mortality at 2 years compared with STR <50% after adjusting for potential clinical confounders. In addition, STR was an independent predictor of 2-year mortality across a wide spectrum of clinical variables. (2) STR and TIMI flow were concordant in \approx 80% of patients. Successful STR predicted lower risks of 2-year mortality compared with STR <50% across different levels of TIMI flow, especially in TIMI 0 to 2 flow.

This study is the largest investigation to date about the long-term prognostic value of STR in the contemporary, real-world, clinical practice and further confirmed STR after PPCI was a reliable predictor of late survival. Although a group of studies has determined the prognostic significance of postprocedural STR in the current PPCI era, these results were derived from either randomized clinical trials, which were performed in a selected target population and using a core laboratory for ECG analysis (and thus might not be representative of real-world clinical practice)^{10–16}; or registry studies

restricted to examining modest-sized cohorts,^{17–21,23} a single-center design,^{17–21,23} relatively short-term follow-up,²² or preceded routine use of stent, glycoprotein IIb/IIIa inhibitor, P2Y₁₂ inhibitor, or statin,^{17–20} therapies known to improve myocardial perfusion and to reduce epicardial reocclusion after PPCI.³⁰ The sub-study of the APEX-AMI (Assessment of Pexelizumab in Acute Myocardial Infarction) trial (n=4866), a randomized clinical trial to assess the efficacy of pexelizumab at day-90 mortality, demonstrated that 6 STR methods measured in a core laboratory provided strong prognostic information on 90-day clinical outcomes.¹² Our study extended this implication of the single-lead STR obtained from multicenter clinician assessments in real-world settings across different levels of hospitals for a longer follow-up. The real-world study of the Lombardima Registry (n=3403) showed that STR was associated with 30-day mortality in patients with STEMI undergoing primary or facilitated PCI, except for those with post-PCI TIMI 0 to 2 flow and nonanterior infarction.²² We enrolled only PPCI-treated patients and further confirmed that STR had a robust predictive value of long-term mortality in a larger cohort across more subgroups, including post-PCI TIMI flow and infarct location. Our results suggest the post-PCI STR should be used routinely as a tool for assessing the efficacy of reperfusion therapy in the current PPCI era.

The finding of more patients who had diabetes, Killip class \geq II, prior myocardial infarction, and anterior infarction in the group of patients with STR <50% is consistent with earlier findings,^{13,22} in which patients without STR tended to have the worse risk profile at baseline. After multivariable analysis including the above characteristics, either STR >50% or complete STR remained an independent predictor of 2-year mortality, suggesting such comorbidities might not have impacted the prognostic value of STR.

Another clinically relevant finding of our study was that the assessment of both STR and TIMI flow, which reflect the different facets and pathophysiological processes of myocardial reperfusion, yields incremental long-term prognostic information beyond either measure alone. As expected, patients with both STR \geq 50% and TIMI 3 flow had the greatest survival, with >95% of patients still alive after 2 years. Conversely, the poorest survival was observed in patients with both STR <50% and TIMI 0 to 2 flow (29.4% 2-year mortality, a 6.1-fold increase; **Figure 2B**). Notably, the discordance between STR and TIMI flow in the present study (\approx 21%) represented the restoration of epicardial blood flow with microvascular dysfunction or unsatisfied initial recanalization with perhaps microcirculation restoration later. Previously, several small studies had highlighted a difference between TIMI flow and STR following PPCI (ranging from 24% to 36%).^{17,18,22,23} However, these earlier studies only demonstrated that

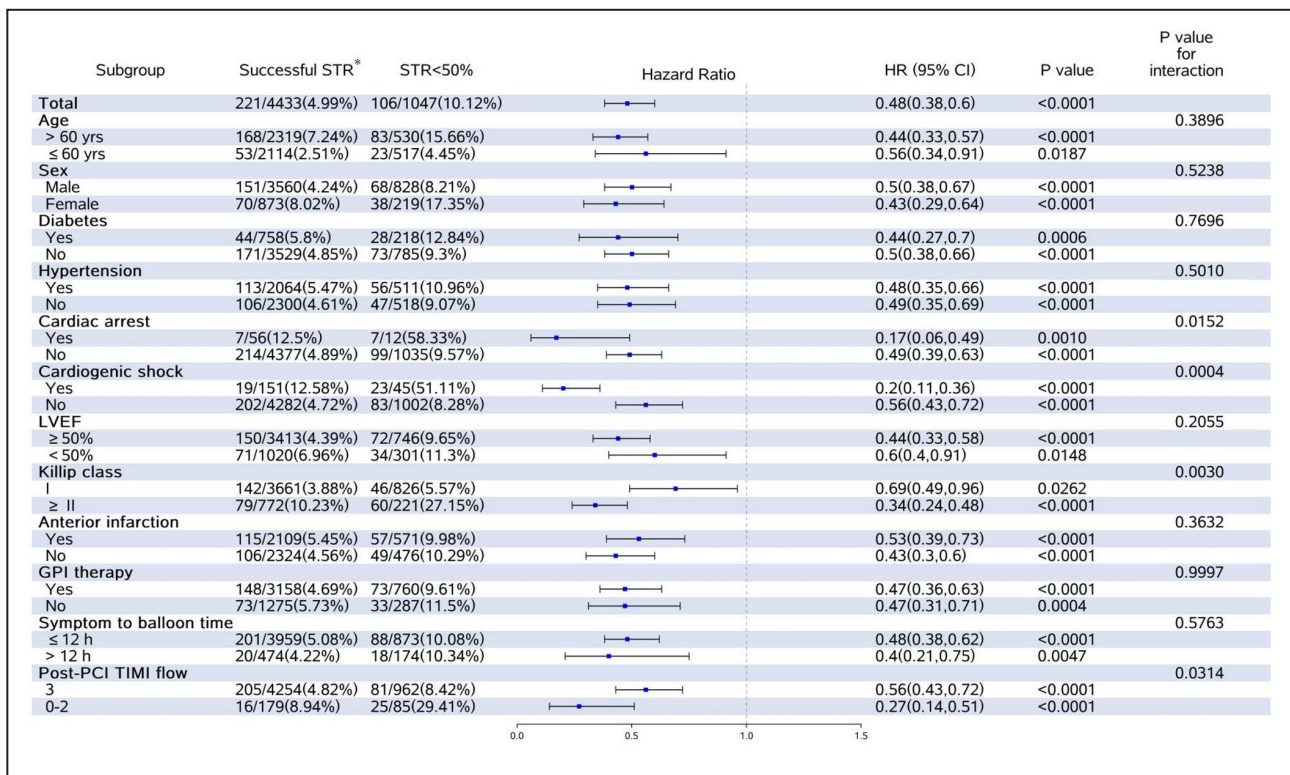


Figure 3. Unadjusted hazard ratios (HRs) for the 2-year all-cause mortality according to clinical or angiographic subgroups. *Successful ST-segment resolution (STR) included STR ≥50% and complete STR. GPI indicates glycoprotein IIb/IIIa inhibitor; LVEF, left ventricular ejection fraction; and PCI, percutaneous coronary intervention.

the absence of early STR after a successful PPCI procedure (TIMI flow ≥2) could indicate patients who are unlikely to benefit from the rapid restoration of flow in the IRA. Our study first demonstrated that among patients with TIMI 0 to 2 flow, approximately two-thirds could achieve successful STR, with relatively benign outcomes with the incidence of the 2-year mortality of 8.9% versus 29.4% in those with STR<50%. There was a significant interaction between STR and TIMI flow for long-term mortality, showing that TIMI 0 to 2 flow was associated with better risk reduction in 2-year mortality compared with TIMI 3 flow when the successful STR was attributed to both groups. Such a phenomenon might be explained by the subsequent restoration of blood flow caused by the periprocedural antiplatelet agents,³⁰ emphasizing the necessity for routinely evaluating STR after PPCI for all patients, and more aggressive antiplatelet therapy for those with obvious thrombus burden and temporary suboptimal patency in the IRA.

We evaluated the prognostic value of STR at a relatively late time with a large cohort of patients with PPCI in a real-world registry. In the thrombolytic era, STR is determined 90 to 180 minutes after the start of treatment.³¹ Compared with fibrinolysis, PPCI could lead to earlier patency of IRA, noted by the MONAMI (ST-Monitoring in Acute Myocardial Infarction) study,

which reported that most PPCI-treated patients, whether high or low risk, could achieve complete STR within 90 minutes.³² However, several studies have demonstrated that STR measured at 120 or even 180 minutes has a sufficient predictive value of adverse cardiovascular outcomes,^{10,20} suggesting analysis of STR at a relatively late time would improve the sensitivity for identification of patients with complete STR. Immediate STR analysis for reperfusion evaluation could miss the dynamic efficacy of such antiplatelet therapy on the microcirculation.^{33,34} Our results indicated that predicting long-term survival in patients with STEMI by 120 minutes STR after PPCI was acceptable.

Along with the widespread acceptance that the optimal reperfusion should be redefined as the restoration of normal coronary blood flow with favorable microcirculation,^{7,35} several indexes for assessing the myocardial infarction obtained from “myocardial blush,” intracoronary Doppler wire, and the tomographic or volumetric imaging techniques have been described.^{4,5} However, none of them could be applied just as STR in clinical practice because of the limited operational repeatability or cost efficiency. Nevertheless, still, a part of STEMI trials assessed procedural success merely through the angiographic assessment,^{36,37} and only the European Society of Cardiology guideline has

Table 3. Baseline Characteristics According to Concordant/Discordant STR and TIMI Flow

Characteristic	Successful STR*+TIMI 3 flow (n=4254)	Successful STR*+TIMI 0–2 flow (n=179)	STR <50%+TIMI 3 flow (n=962)	STR <50%+TIMI 0–2 flow (n=85)	P value
Age, y	60.2±11.7	61.7±12.6	60.0±11.7	61.6±13.4	0.107
≤60y	2035/4254 (47.8)	79/179 (44.1)	484/962 (50.3)	33/85 (38.8)	0.108
Female sex	840/4254 (19.7)	33/179 (18.4)	202/962 (21.0)	17/85 (20.0)	0.795
Killip class ≥II	735/4247 (17.3)	37/178 (20.8)	193/961 (20.1)	28/84 (33.3)	0.001
Cardiogenic shock	142/4248 (3.3)	9/178 (5.1)	32/962 (3.3)	13/84 (15.5)	0.001
Cardiac arrest	53/4245 (1.2)	3/177 (1.7)	10/960 (1.0)	2/84 (2.4)	0.729
Current smoker	2248/4229 (53.2)	71/178 (39.9)	502/954 (52.6)	33/85 (38.8)	0.013
Hypertension	1987/4238 (46.9)	77/178 (43.3)	469/956 (49.1)	42/85 (49.4)	0.726
Diabetes	727/4233 (17.2)	31/177 (17.5)	205/954 (21.5)	13/85 (15.3)	0.040
Hyperlipidemia	302/4233 (7.1)	15/177 (8.5)	58/955 (6.1)	4/85 (4.7)	0.121
Prior myocardial infarction	192/4234 (4.5)	10/178 (5.6)	51/955 (5.3)	4/85 (4.7)	0.441
Prior stroke	303/4232 (7.2)	12/178 (6.7)	75/954 (7.9)	10/85 (11.8)	0.046
Creatinine clearance, mL/min	87.0 (65.1–111.0)	84.8 (64.4–105.3)	90.6 (63.8–114.4)	70.3 (47.8–91.2)	0.815
Symptom-to-balloon time, h	5.7 (3.9–9.3)	6.0 (4.5–9.5)	6.2 (4.1–10.7)	5.7 (3.7–11.8)	0.711
≤12h	3725/4184 (89.0)	162/177 (91.5)	790/949 (83.2)	70/85 (82.4)	<0.001
Periprocedural antithrombotic therapy					
Aspirin	4194/4236 (99.0)	172/176 (97.7)	939/958 (98.0)	83/85 (97.6)	0.049
Clopidogrel	4184/4208 (99.4)	172/176 (97.7)	942/951 (99.1)	84/85 (98.8)	0.112
GPI	1923/4233 (45.4)	112/177 (63.3)	435/961 (45.3)	50/85 (58.8)	<0.001
UFH	3863/4216 (91.6)	132/177 (74.6)	859/955 (89.9)	62/85 (72.9)	<0.001
LMWH	241/4216 (5.7)	40/177 (22.6)	71/955 (7.4)	20/85 (23.5)	<0.001
Bivalirudin	62/4216 (1.5)	1/177 (0.6)	13/958 (98.2)	1/85 (1.2)	0.721
LVEF, %	54.0±9.9	53.1±11.6	52.6±9.3	51.7±9.3	0.248
Single-vessel disease	1396/4113 (33.9)	48/171 (28.1)	309/945 (32.7)	28/84 (33.3)	0.397
Anterior infarction	2035/4237 (48.0)	74/177 (41.8)	524/961 (54.5)	47/85 (55.3)	<0.001
Thrombosis in IRA	2802/4235 (66.2)	132/177 (74.6)	609/961 (63.4)	59/85 (69.4)	0.107
Device of intervention					
Thrombus aspiration	115/4242 (2.7)	19/179 (10.6)	34/959 (3.5)	10/85 (11.8)	<0.001
Only PTCA	168/4242 (4.0)	17/179 (9.5)	55/959 (5.7)	16/85 (18.8)	
Stent	3959/4242 (93.3)	143/179 (79.9)	870/959 (90.7)	59/85 (69.4)	

Data are reported as mean±SD, number/total (percentage), or median (interquartile range). GPI indicates glycoprotein IIb/IIIa inhibitor; IRA, infarct-related artery; LMWH, low-molecular-weight heparin; LVEF, left ventricular ejection fraction; PTCA, percutaneous transluminal coronary angioplasty; STR, ST-segment resolution; TIMI, Thrombolysis in Myocardial Infarction; and UFH, unfractionated heparin.

*Successful STR included STR ≥50% and complete STR.

recommended STR for assessing microvascular function after PPCI.³ We support that STR, especially in combination with TIMI flow, deserves a higher priority for defining successful PPCI in future STEMI trials, which aim to investigate the efficacy of new periprocedural pharmacotherapy or other adjunctive therapy for further improving reperfusion success, and in routine practice, for identification of patients at different risks of long-term mortality.

Some limitations to our study should be noted. First, data from the CAMI registry were collected nearly 10 years ago when the more potent antiplatelet agents with proven superior results, such as ticagrelor,³⁸ were rarely used in China.³⁹ In addition, there was a lack of uniform measurement standards for kinds

of laboratory tests across different levels of Chinese hospitals during that era, particularly for myocardial infarction markers. Therefore, further studies with more up-to-date data are necessary. Second, the present study cannot address the issue about the optimal timing for STR measurement because we used static ECG rather than continuous ST-segment monitoring. However, continuous ST monitoring is not widely available in clinical practice, which requires additional personnel and training and may be difficult to perform rapidly in acutely ill patients.³² Third, the relatively small sample size with discordance between STR and TIMI flow should be noted as a caution in interpreting our data, and we could not provide a mechanistic explanation for the subsequent achievement of STR ≥50% in

those with TIMI 0 to 2 flow. Fourth, the present results may not be applicable to other patients with STEMI with noninterpretable ST segments. Last, as a retrospective study, although several statistical adjustments were performed, we could not exclude the presence of unmeasured selection bias.

CONCLUSIONS

Single-lead STR after PPCI is a reliable long-term prognostic predictor in a real-world setting for patients with STEMI across a wide spectrum of baseline characteristics. The integrated analysis of STR and TIMI flow after PPCI could provide complementary prognostic information for patients with STEMI during long-term follow-up and should be strongly encouraged for successful reperfusion evaluation in routine practice.

ARTICLE INFORMATION

Received March 29, 2023; accepted June 19, 2023.

Affiliations

Department of Cardiology, Coronary Heart Disease Center (C.W., X.G., H.X., Y. Wu, F.H., C.J., S.Q., J.Y., Y.Y.) and Medical Research and Biometrics Center (L.L., Y.Z., Y. Wang, Wei Li), Fuwai Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, State Key Laboratory of Cardiovascular Disease, National Center for Cardiovascular Diseases, Beijing, China; Department of Cardiology, General Hospital of Shenyang Military Region, Shenyang, China (Q.J.); Department of Cardiology, The First Affiliated Hospital of Harbin Medical University, Harbin, China (Weimin Li); Department of Epidemiology, University Medical Center Groningen, Groningen, the Netherlands (W.Z.); and Division of Life Sciences and Medicine, University of Science and Technology of China, Hefei, China (S.L.).

Acknowledgments

Author contributions: Jingang Yang and Chao Wu developed the research idea and designed the study; Quanmin Jing, Weimin Li, Haiyan Xu, Yongjia Wu, Fenghuan Hu, and Chen Jin collected data; Ling Li, Wenbo Zhang, Sidong Li, Yanyan Zhao, Yang Wang, and Wei Li were responsible for the data analysis; Chao Wu wrote the first draft of the article, which was reviewed by all authors. Xiaojin Gao, Shubin Qiao, and Yuejin Yang are the guarantors. The corresponding authors attest that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted.

Sources of Funding

This work was supported by the Chinese Academy of Medical Sciences Innovation Fund for Medical Sciences (2020-I2M-C&T-B-050) and the Twelfth Five-Year Planning Project of the Scientific and Technological Department of China (2011BAI11B02). The funders had no role in the design of the study, data collection and analysis, or manuscript preparation.

Disclosures

None.

Supplemental Material

Data S1–S2

Table S1

Figure S1

REFERENCES

- Keeley EC, Boura JA, Grines CL. Primary angioplasty versus intravenous thrombolytic therapy for acute myocardial infarction: a quantitative review of 23 randomised trials. *Lancet*. 2003;361:13–20. doi: 10.1016/S0140-6736(03)12113-7
- O’Gara PT, Kushner FG, Ascheim DD, Casey DE Jr, Chung MK, de Lemos JA, Ettinger SM, Fang JC, Fesmire FM, Franklin BA, et al. 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2013;127:e362–e425. doi: 10.1161/CIR.0b013e3182742cf6
- Ibanez B, James S, Agewall S, Antunes MJ, Bucciarelli-Ducci C, Bueno H, Caforio ALP, Crea F, Goudevenos JA, Halvorsen S, et al. 2017 ESC guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: the Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). *Eur Heart J*. 2017;39:119–177. doi: 10.1093/eurheartj/ehx393
- Niccoli G, Scalone G, Lerman A, Crea F. Coronary microvascular obstruction in acute myocardial infarction. *Eur Heart J*. 2016;37:1024–1033. doi: 10.1093/eurheartj/ehv484
- Niccoli G, Burzotta F, Galiuto L, Crea F. Myocardial no-reflow in humans. *J Am Coll Cardiol*. 2009;54:281–292. doi: 10.1016/j.jacc.2009.03.054
- Galiuto G, Gabrielli FA, Lombardo A, La Torre G, Scarà A, Rebuzzi AG, Crea F. Reversible microvascular dysfunction coupled with persistent myocardial dysfunction: implications for post-infarct left ventricular remodelling. *Heart*. 2007;93:565–571. doi: 10.1136/hrt.2006.091538
- McCartney PJ, Berry C. Redefining successful primary PCI. *Eur Heart J Cardiovasc Imaging*. 2019;20:133–135. doi: 10.1093/ehjci/jey159
- Kléber AG. ST-segment elevation in the electrocardiogram: a sign of myocardial ischemia. *Cardiovasc Res*. 2000;45:111–118. doi: 10.1016/S0008-6363(99)00301-6
- Schröder R. Prognostic impact of early ST-segment resolution in acute ST-elevation myocardial infarction. *Circulation*. 2004;110(21):e506–e510. doi: 10.1161/01.CIR.0000147778.05979.E6
- Berroc DH, Cohen MG, Spinetta AD, Ben MG, Rojas Matas CA, Gabay JM, Magni JM, Nogareda G, Oberti P, Von Schulz C, et al. Early reperfusion and late clinical outcomes in patients presenting with acute myocardial infarction randomly assigned to primary percutaneous coronary intervention or streptokinase. *Am Heart J*. 2003;146:E22–E1082. doi: 10.1016/S0002-8703(03)00424-1
- McLaughlin MG, Stone GW, Aymong E, Gardner G, Mehran R, Lansky AJ, Grines CL, Tchong JE, Cox DA, Stuckey T, et al. Prognostic utility of comparative methods for assessment of ST-segment resolution after primary angioplasty for acute myocardial infarction: the Controlled Abciximab and Device Investigation to Lower Late Angioplasty Complications (CADILLAC) trial. *J Am Coll Cardiol*. 2004;44:1215–1223.
- Buller CE, Fu Y, Mahaffey KW, Todaro TG, Adams P, Westerhout CM, White HD, van’t Hof AW, Van de Werf FJ, Wagner GS, et al. ST-segment recovery and outcome after primary percutaneous coronary intervention for ST-elevation myocardial infarction: insights from the Assessment of Pexelizumab in Acute Myocardial Infarction (APEX-AMI) trial. *Circulation*. 2008;118:1335–1346. doi: 10.1161/CIRCULATIONAHA.108.767772
- Sejsten M, Valeur N, Grande P, Nielsen TT, Clemmensen P; DANAMI-2 Investigators. Long-term prognostic value of ST-segment resolution in patients treated with fibrinolysis or primary percutaneous coronary intervention results from the DANAMI-2 (DANish trial in acute myocardial infarction-2). *J Am Coll Cardiol*. 2009;54:1763–1769. doi: 10.1016/j.jacc.2009.03.084
- Farkouh ME, Reiffel J, Dressler O, Nikolsky E, Parise H, Cristea E, Baran DA, Dizon J, Merab JP, Lansky AJ, et al. Relationship between ST-segment recovery and clinical outcomes after primary percutaneous coronary intervention: the HORIZONS-AMI ECG substudy report. *Circ Cardiovasc Interv*. 2013;6:216–223. doi: 10.1161/CIRCINTERVENTIONS.112.000142
- Spitaleri G, Brugaletta S, Scalone G, Moscarella E, Ortega-Paz L, Pernigotti A, Gomez-Lara J, Cequier A, Iñiguez A, Serra A, et al. Role of ST-segment resolution in patients with ST-segment elevation myocardial infarction treated with primary percutaneous coronary intervention (from the 5-year outcomes of the EXAMINATION [Evaluation of the Xience-V Stent in Acute Myocardial Infarction] trial). *Am J Cardiol*. 2018;121:1039–1045. doi: 10.1016/j.amjcard.2018.01.015
- Fabris E, van’t Hof A, Hamm CW, Lapostolle F, Lassen JF, Goodman SG, Ten Berg JM, Bolognese L, Cequier A, Chetibi M, et al. Clinical impact and predictors of complete ST segment resolution after primary percutaneous coronary intervention: a subanalysis of the ATLANTIC Trial. *Eur Heart J Acute Cardiovasc Care*. 2017;8:208–217. doi: 10.1177/2048872617727722

17. Claeys MJ, Bosmans J, Veenstra L, Jorens P, De Raedt H, Vrints CJ. Determinants and prognostic implications of persistent ST-segment elevation after primary angioplasty for acute myocardial infarction: importance of microvascular reperfusion injury on clinical outcome. *Circulation*. 1999;99:1972–1977. doi: 10.1161/01.CIR.99.15.1972
18. Matetzky S, Novikov M, Gruberg L, Freimark D, Feinberg M, Elian D, Novikov I, Di Segni E, Agranat O, Har-Zahav Y, et al. The significance of persistent ST elevation versus early resolution of ST segment elevation after primary PTCA. *J Am Coll Cardiol*. 1999;34:1932–1938. doi: 10.1016/S0735-1097(99)00466-0
19. Brodie BR, Stuckey TD, Hansen C, VerSteeg DS, Muncy DB, Moore S, Gupta N, Downey WE. Relation between electrocardiographic ST-segment resolution and early and late outcomes after primary percutaneous coronary intervention for acute myocardial infarction. *Am J Cardiol*. 2005;95:343–348. doi: 10.1016/j.amjcard.2004.09.031
20. De Luca G, Suryapranata H, Ottervanger JP, Hoorntje JC, Gosselink AT, Dambrink JH, de Boer MJ, van't Hof AW. Postprocedural single-lead ST-segment deviation and long-term mortality in patients with ST-segment elevation myocardial infarction treated by primary angioplasty. *Heart*. 2008;94:44–47. doi: 10.1136/hrt.2006.103556
21. Kumar S, Sivagangabalan G, Hsieh C, Ryding AD, Narayan A, Chan H, Burgess DC, Ong AT, Sadick N, Kovoov P. Predictive value of ST resolution analysis performed immediately versus at ninety minutes after primary percutaneous coronary intervention. *Am J Cardiol*. 2010;105:467–474. doi: 10.1016/j.amjcard.2009.10.017
22. Palmerini T, De Servi S, Politi A, Martinoni A, Musumeci G, Ettori F, Piccaluga E, Sangiorgi D, Lauria G, Repetto A, et al. Prognostic implications of ST-segment elevation resolution in patients with ST-segment elevation acute myocardial infarction treated with primary or facilitated percutaneous coronary intervention. *Am J Cardiol*. 2010;105:605–610. doi: 10.1016/j.amjcard.2009.10.037
23. Tomaszuk-Kazberuk A, Kozuch M, Bachorzewska-Gajewska H, Malyszko J, Dobrzycki S, Musial WJ. Does lack of ST-segment resolution still have prognostic value 6 years after an acute myocardial infarction treated with coronary intervention? *Can J Cardiol*. 2011;27:573–580. doi: 10.1016/j.cjca.2011.01.010
24. Shah A, Wagner GS, Granger CB, O'Connor CM, Green CL, Trollinger KM, Califf RM, Krucoff MW. Prognostic implications of TIMI flow grade in the infarct related artery compared with continuous 12-lead ST-segment resolution analysis. Reexamining the "gold standard" for myocardial reperfusion assessment. *J Am Coll Cardiol*. 2000;35:666–672. doi: 10.1016/S0735-1097(99)00601-4
25. Xu H, Li W, Yang J, Wiviott SD, Sabatine MS, Peterson ED, Xian Y, Roe MT, Zhao W, Wang Y, et al. The China Acute Myocardial Infarction (CAMI) Registry: a national long-term registry-research-education integrated platform for exploring acute myocardial infarction in China. *Am Heart J*. 2016;175:193–201.e3. doi: 10.1016/j.ahj.2015.04.014
26. Xu H, Yang Y, Wang C, Yang J, Li W, Zhang X, Ye Y, Dong Q, Fu R, Sun H, et al. Association of hospital-level differences in care with outcomes among patients with acute ST-segment elevation myocardial infarction in China. *JAMA Netw Open*. 2020;3:e2021677. doi: 10.1001/jamanetworkopen.2020.21677
27. Thygesen K, Alpert JS, Jaffe AS, Simoons ML, Chaitman BR, White HD; Writing group on behalf of the Joint ESC/ACCF/AHA/WHF Task Force for the Universal Definition of Myocardial Infarction. Third universal definition of myocardial infarction. *Glob Heart*. 2012;7:275–295. doi: 10.1016/j.gheart.2012.08.001
28. TIMI Study Group. The Thrombolysis in Myocardial Infarction (TIMI) trial. Phase I findings. *N Engl J Med*. 1985;312:932–936. doi: 10.1056/NEJM198504043121437
29. Chinese Society of Cardiology of Chinese Medical Association. 2010 Chinese Society of Cardiology (CSC) guidelines for the diagnosis and management of patients with ST-segment elevation myocardial infarction. *Chin J Cardiol*. 2010;38:675–690.
30. Kleinbongard P, Heusch G. A fresh look at coronary microembolization. *Nat Rev Cardiol*. 2022;19:265–280. doi: 10.1038/s41569-021-00632-2
31. de Lemos JA, Braunwald E. ST segment resolution as a tool for assessing the efficacy of reperfusion therapy. *J Am Coll Cardiol*. 2001;38:1283–1294. doi: 10.1016/S0735-1097(01)01550-9
32. Terkelsen CJ, Norgaard BL, Lassen JF, Poulsen SH, Gerdes JC, Sloth E, Gøtzsche LB, Romer FK, Thuesen L, Nielsen TT, et al. Potential significance of spontaneous and interventional ST-changes in patients transferred for primary percutaneous coronary intervention: observations from the ST-MONitoring in Acute Myocardial Infarction study (the MONAMI study). *Eur Heart J*. 2006;27:267–275. doi: 10.1093/eurheartj/ehi606
33. Ernst NM, Suryapranata H, Miedema K, Slingerland RJ, Ottervanger JP, Hoorntje JC, Gosselink AT, Dambrink JH, de Boer MJ, Zijlstra F, et al. Achieved platelet aggregation inhibition after different antiplatelet regimens during percutaneous coronary intervention for ST-segment elevation myocardial infarction. *J Am Coll Cardiol*. 2004;44:1187–1193. doi: 10.1016/j.jacc.2004.06.050
34. Hochholzer W, Trenk D, Frundi D, Blanke P, Fischer B, Andris K, Bestehorn HP, Büttner HJ, Neumann FJ. Time dependence of platelet inhibition after a 600-mg loading dose of clopidogrel in a large, unselected cohort of candidates for percutaneous coronary intervention. *Circulation*. 2005;111:2560–2564. doi: 10.1161/01.CIR.0000160869.75810.98
35. Roe MT, Ohman EM, Maas AC, Christenson RH, Mahaffey KW, Granger CB, Harrington RA, Califf RM, Krucoff MW. Shifting the open-artery hypothesis downstream: the quest for optimal reperfusion. *J Am Coll Cardiol*. 2001;37:9–18. doi: 10.1016/S0735-1097(00)01101-3
36. Kim JS, Park SM, Kim BK, Ko YG, Choi D, Hong MK, Seong IW, Kim BO, Gwon HC, Hong BK, et al. Efficacy of clotinab in acute myocardial infarction trial-ST elevation myocardial infarction (ECLAT-STEMI). *Circ J*. 2012;76:405–413. doi: 10.1253/circj.CJ-11-0676
37. Han YL, Liu JN, Jing QM, Ma YY, Jiang TM, Pu K, Zhao RP, Zhao X, Liu HW, Xu K, et al. The efficacy and safety of pharmacoinvasive therapy with prourokinase for acute ST-segment elevation myocardial infarction patients with expected long percutaneous coronary intervention-related delay. *Cardiovasc Ther*. 2013;31:285–290. doi: 10.1111/1755-5922.12020
38. Wallentin L, Becker RC, Budaj A, Cannon CP, Emanuelsson H, Held C, Horrow J, Husted S, James S, Katus H, et al. Ticagrelor versus clopidogrel in patients with acute coronary syndromes. *N Engl J Med*. 2009;361:1045–1057. doi: 10.1056/NEJMoa0904327
39. Working Group on Coronary Artery Disease; National Center for Cardiovascular Quality Improvement. Clinical performance and quality measures for adults with acute ST-elevation myocardial infarction in China. *Chin Circ J*. 2019;2020(35):313–325.

SUPPLEMENTAL MATERIAL

Data S1.

The China Acute Myocardial Infarction Registry Study Group

Investigators

Yuan Wu (Fuwai Hospital, Beijing); Hongwei Li (Beijing Friendship Hospital, Beijing); Changlin Lu (Beijing Tongren Hospital, Beijing); Shujun Cao (Beijing Daxing Hospital, Beijing); Dezhao Wang (Beijing Mentougou Hospital, Beijing); Guanglin Wei (Beijing Pinggu Hospital, Beijing); Jianbing Wang (Beijing Yanqing Hospital, Beijing); Ruiyan Zhang (Shanghai Jiaotong University Ruijin Hospital, Shanghai); Yawei Xu (Shanghai 10th Hospital, Shanghai); Zengyong Qiao (Shanghai Fengxian Hospital, Shanghai); Zheng Wan (Tianjin Medical School General Hospital, Tianjin); Yanjun Cao (Tianjin Baodi Hospital, Tianjin); Weiming Li (Haerbin Medical School 1st Affiliated Hospital, Heilongjiang); Shuqing Wang (Qiqihaer 1st Hospital, Heilongjiang); Gang Ma (Tailai Hospital, Heilongjiang); Yongchen Cai (Shuihua 1st Hospital, Heilongjiang); Yang Zheng (Jilin University 1st Hospital, Jilin); Xuxia Zhang (Tonghua Central Hospital, Jilin); Hongyan Guo (Huinan County Hospital, Jilin); Xiaozeng Wang (Shenyang Northern Hospital, Liaoning); Ling Sun (Fushun Central Hospital, Liaoning); Jianhua Wu (Xiuyan County Hospital, Liaoning); Fengying Chen (Neimonggu Medical College 1st Affiliated Hospital, Inner Mongolia); Ronghai Man (Chifeng Hospital, Inner Mongolia); Yanjie Li (Aohan Hospital, Inner Mongolia); Xianghua Fu (Hebei Medical School 2nd Affiliated Hospital, Hebei); Qingshen Wang (Qinhuangdao 1st Hospital, Hebei); Liying Zhang (Qinhuangdao 2nd Hospital, Hebei); Xiaoli Gao (North-China Oil-administration General Hospital, Hebei); Yali Hu (Changzhou Hospital, Hebei); Qun Zheng (Hengshui Hardison Hospital, Hebei); Bao Li (Shanxi Cardiovascular Hospital, Shanxi); Yuping Zhang (Changzhi Hospital, Shanxi); Yaohong Dong (Tunliu Hospital, Shanxi); Chuanyu Gao (Henan Provincial Hospital, Henan); Zhoushun Qin (Linzhou Hospital, Henan); Guorui Hou (Changyuan Hospital, Henan); Lingling Liu (Xinxiang Central Hospital, Henan); Shifeng Ren (Yanjin Hospital, Henan); Dezhou Wang (Ye County hospital, Henan); Xianting Luan (Pindingshan 2nd Hospital, Henan); Hui Liu (Anyang Prefecture Hospital, Henan); Liping Ma (Puyang People's Hospital, Henan); Chuntong Wang (Xihua Hospital, Henan); Zuyi Yuan (Xi'an Jiaotong University 1st Hospital, Shan'xi); Junnong Li (Weinan Central Hospital, Shan'xi); Yaofeng Yuan (Jiuquan Hospital, Gansu); Huide Liu (Jinta Hospital, Gansu); Shaobin Jia (Ningxia Medical College General Hospital, Ningxia); Xianghong Luo (Wuzhong Hospital, Ningxia); Yin Liu (Qinghai University Affiliated Hospital, Qinghai); Pinfa Liu (Qinhai Cardiovascular Hospital, Qinghai); Xianning Zhao (Xining 1st Hospital, Qinghai); Bao Ma (Hainan Prefectural Hospital of Qinghai, Qinghai); Yitong Ma (Xinjiang Medical College 1st Affiliated Hospital, Xinjiang); Mao Wang (Changji Hospital, Xinjiang); Shiming Gao (Fukang Hospital, Xinjiang); Hang Lu (Urumchi Friendship Hospital, Xinjiang); Lianqun Cui (Shandong Provincial Hospital, Shandong); Huanyi Zhang (Taian Central Hospital, Shandong);

Hongyan Zhang (Xintai Hospital, Shandong); Biao Xu (Nanjing University Gulou Hospital, Jiangsu); Shenghu He (Jiangsu North Hospital, Jiangsu); Qiang Fu (Xuzhou 1st Central Hospital, Jiangsu); Shihai Shen (Jiangyan Hospital, Jiangsu); Likun Ma (Anhui Provincial Hospital, Anhui); Bin Ning (Fuyang Hospital, Anhui); Jili Fan (Taihe Hospital, Anhui); Yong Sun (Zhejiang University 2rd Affiliated Hospital, Zhejiang); Lijiang Tang (Taizhou Enze medical Center, Zhejiang); Danlei Xu (Taizhou Hospital, Zhejiang); Lianglong Chen (Fujian Medical College Union Hospital, Fujian); Yan Wang (Xiamen Heart Center, Fujian); Ping Chen (Fuqing Hospital, Fujian); Kaihong Chen (Longyan 1st Hospital, Fujian); Daowen Wang (Wuhan Tongji Hospital, Hubei); Shuixian Peng (Jinzhou 1st Hospital, Hubei); Shuping Wan (Tianmen 1st Hospital, Hubei); Laxi Zhang (Gong'an Hospital, Hubei); Shenhua Zhou (Central South University Xiangya 2nd Hospital, Hunan); Jianping Zeng (Xiangtan Central Hospital, Hunan); Chonglun Zhou (Xiangxiang Hospital, Hunan); Haibo Zhang (Ya'an Hospital, Sichuan); Dechao Zhong (Zigong 1st Hospital, Sichuan); Yuquan Xiao (Danleng County Hospital, Sichuan); Lang Li (Guangxi Medical College 1st Affiliated Hospital, Guangxi); Hai Zhu (Beihai Hospital, Guangxi); Meisheng Lai (Hepu Hospital, Guangxi); Xiaoshu Cheng (Nanchang University 2nd Affiliated Hospital, Jiangxi); Junming Ye (Pingxiang Hospital, Jiangxi); Qishou Liu (Shangli Hospital, Jiangxi); Tianhe Yang (Guizhou Cardiovascular Hospital, Guizhou); Zhengqiang Yuan (Zhunyi 1st Hospital, Guizhou); Chengyuan Zhao (Honghuagang Hospital, Guizhou); Xianwen Jiang (Pan County Hospital, Guizhou); Jiyan Chen (Guangdong Provincial Hospital, Guangdong); Wei Wu (Guangzhou Traditional Chinese Medical College 1st Affiliated Hospital, Guangdong); Gaoxing Zhang (Jiangmen Hospital, Guangdong); Haiyuan Mai (Heshan Hospital, Guangdong); Tao Guo (Kunming Medical College 1st Affiliated Hospital, Yunnan); Yi Li (Yunnan St. John's Hospital, Yunnan); Xiaoming Liu (Chuxiong People's Hospital, Yunnan); Jinlong Xu (Yao'an Hospital, Yunnan); Gesang Luobu (Tibet People's Hospital, Tibet); Bin Li (Hainan Provincial Hospital, Hainan); Tiansong Wang (Sanya Hospital, Hainan); Dong Wang (Wenchang Hospital, Hainan)

Full List of Hospitals in the China AMI Registry

Hospital	Province/Municipality	City	PI
Fuwai Hospital	Beijing	Beijing	Yuan Wu
Beijing Friendship Hospital	Beijing	Beijing	Hongwei Li
Beijing Tongren Hospital	Beijing	Beijing	Changlin Lu
Beijing Daxing Hospital	Beijing	Daxing	Shujun Cao
Beijing Mentougou Hospital	Beijing	Mentougou	Dezhao Wang
Beijing Pinggu Hospital	Beijing	Pinggu	Guanglin Wei
Beijing Yanqing Hospital	Beijing	Yanqing	Jianbing Wang
Shanghai Jiaotong University Ruijin Hospital	Shanghai	Shanghai	Ruiyan Zhang
Shanghai 10th Hospital	Shanghai	Shanghai	Yawei Xu
Shanghai Fengxian Hospital	Shanghai	Fengxian	Zengyong Qiao
Tianjin Medical School General Hospital	Tianjin	Tianjin	Zheng Wan
Tianjin Baodi Hospital	Tianjin	Baodi	Yan Jun Cao
Chongqing Medical School 2st Hospital	Chongqing	Chongqing	Yaohui Yin
Haerbin Medical School 1st Affiliated Hospital	Heilongjiang	Harbin	Weiming Li
Qiqihaer 1st Hospital	Heilongjiang	Qiqihar	Shuqing Wang
Tailai Hospital	Heilongjiang	Tailai	Gang Ma
Shuihua 1st Hospital	Heilongjiang	Shuihua	Yongchen Cai
Jilin University 1st Hospital	Jilin	Changchun	Yang Zheng
Tonghua Central Hospital	Jilin	Tonghua	Xuxia Zhang
Huinan County Hospital	Jilin	Huinan	Hongyan Guo
Shenyang Northern Hospital	Liaoning	Shenyang	Xiaozeng Wang
Fushun Central Hospital	Liaoning	Fushun	Ling Sun
Xiuyan County Hospital	Liaoning	Xiuyan	Jianhua Wu
Neimonggu Medical College 1st Affiliated Hospital	Inner Mongolia	Hohhot	Fengying Chen
Chifeng Hospital	Inner Mongolia	Chifeng	Ronghai Man
Aohan Hospital	Inner Mongolia	Aohan	Yanjie Li
Hebei Medcial School 2rd Affiliated Hospital	Hebei	Shijiazhuang	Xianghua Fu
Qinhuangdao 1st Hospital	Hebei	Qinhuangdao	Qingshen Wang
Qinhuangdao 2rd Hospital	Hebei	Changli	Liyang Zhang
North-China Oil-administration General Hospital	Hebei	Renqiu	Xiaoli Gao
Changzhou Hospital	Hebei	Changzhou	Yali Hu
Hengshui Hardison Hospital	Hebei	Hengshui	Qun Zheng
Shanxi Cardiovascular Hospital	Shanxi	Taiyuan	Bao Li
Changzhi Hospital	Shanxi	Changzhi	Yuping zhang
Tunliu Hospital	Shanxi	Tunliu	Yaohong Dong
Henan Provincial Hospital	Henan	Zhengzhou	Chuan Yu Gao
Linzhou Hospital	Henan	Linzhou	Zhoushun Qin
Changyuan Hospital	Henan	Changyuan	Guorui Hou
Xinxiang Central Hospital	Henan	Xinxiang	Lingling Liu
Yanjin Hospital	Henan	Yanjin	Shifeng Ren
Ye County hospital	Henan	Ye County	Dezhou wang
Pindingshan 2rd Hospital	Henan	Pindingshan	Xianting Luan
Anyang Prefecture Hospital	Henan	Anyang	Hui Liu
Puyang People's Hospital	Henan	Puyang	Liping Ma

Hospital	Province/Municipality	City	PI
Xihua Hospital	Henan	Xihua	Chuntong Wang
Xi'an Jiaotong University 1st Hospital	Shan' xi	Xi'an	Zuyi Yuan
Weinan Central Hospital	Shan' xi	Weinan	Junnong Li
Jiuquan Hospital	Gansu	Jiuquan	Yaofeng Yuan
Jinta Hospital	Gansu	Jinta	Huide Liu
Ningxia Medical College General Hospital	Ningxia	Yinchuan	Shaobin jia
Wuzhong Hospital	Ningxia	Wuzhong	Xianghong Luo
Qinghai University Affiliated Hospital	Qinghai	Xining	Yin Liu
Qinhai Cardiovascular Hospital	Qinghai	Xining	Pinfa Liu
Xining 1st Hospital	Qinghai	Xining	Xianning Zhao
Hainan Prefectural Hospital of Qinghai	Qinghai	Gonghe	Bao Ma
Xinjiang Medical College 1st Affiliated Hospital	Xinjiang	Urumchi	Yitong Ma
Changji Hospital	Xinjiang	Changji	Mao Wang
Fukang Hospital	Xinjiang	Fukang	Shiming Gao
Urumchi Friendship Hospital	Xinjiang	Urumchi	Hang Lu
Shandong Provincial Hospital	Shandong	Jinan	Lianqun Cui
Taian Central Hospital	Shandong	Taian	Huanyi Zhang
Xintai Hospital	Shandong	Xintai	Hongyan Zhang
Nanjing University Gulou Hospital	Jiangsu	Nanjin	Biao Xu
Jiangsu North Hospital	Jiangsu	Yangzhou	Shenghu He
Xuzhou 1st Central Hospital	Jiangsu	Xuzhou	Qiang Fu
Jiangyan Hospital	Jiangsu	Jiangyan	Shihai Shen
Anhui Provincial Hospital	Anhui	Hefei	Likun Ma
Fuyang Hospital	Anhui	Fuyang	Bin Ning
Taihe Hospital	Anhui	Taihe	Jili Fan
Zhejiang University 2nd Affiliated Hospital	Zhejiang	Hangzhou	Yong Sun
Taizhou Enze medical Center	Zhejiang	Taizhou	Lijiang tang
Taizhou Hospital	Zhejiang	Linhai	Danlei Xu
Fujian Medical College Union Hospital	Fujian	Fuzhou	Lianglong Chen
Xiamen Heart Center	Fujian	Xiamen	Yan Wang
Fuqing Hospital	Fujian	Fuqing	Ping chen
Longyan 1st Hospital	Fujian	Longyan	Kaihong Chen
Wuhan Tongji Hospital	Hubei	Wuhan	Daowen wang
Jinzhou 1st Hospital	Hubei	Jinzhou	Shuixian peng
Tianmen 1st Hospital	Hubei	Tianmen	Shuping Wan
Gong'an Hospital	Hubei	Gongan	Laxi Zhang
Central South University Xiangya 2nd Hospital	Hunan	Changsha	Shenhua Zhou
Xiangtan Central Hospital	Hunan	Xiangtan	Jianping Zeng
Xiangxiang Hospital	Hunan	Xiangxiang	Chonglun Zhou
Ya'an Hospital	Sichuan	Ya'an	Haibo zhang
Zigong 1st Hospital	Sichuan	Zigong	Dechao Zhong
Danleng County Hospital	Sichuan	Danleng	Yuquan Xiao
Guangxi Medical College 1st Affiliated Hospital	Guangxi	Nanning	Lang Li
Beihai Hospital	Guangxi	Beihai	Hai Zhu
Hepu Hospital	Guangxi	Hepu	Meisheng Lai
Nanchang University 2nd Affiliated Hospital	Jiangxi	Nanchang	Xiaoshu Cheng
Hospital	Province/Municipality	City	PI

Pingxiang Hospital	Jiangxi	Pingxiang	Junming Ye
Shangli Hospital	Jiangxi	Shangli	Qishou Liu
Guizhou Cardiovascular Hospital	Guizhou	Guiyang	Tianhe Yang
Zhunyi 1st Hospital	Guizhou	Zhunyi	Zhengqiang Yuan
Honghuagang Hospital	Guizhou	Honghuagan g	Chengyuan Zhao
Pan County Hospital	Guizhou	Pan	Xianwen Jiang
Guangdong Provincial Hospital	Guangdong	Guangzhou	Jiyan Chen
Guangzhou Traditional Chinese Medical College 1st Affiliated Hospital	Guangdong	Guangzhou	Wei Wu
Jiangmen Hospital	Guangdong	Jiangmen	Gaoxing Zhang
Heshan Hospital	Guangdong	Heshan	Haiyuan Mai
Kunming Medical College 1st Affiliated Hospital	Yunnan	Kunming	Tao Guo
Yunnan St. John' s Hospital	Yunnan	Kunming	Yi Li
Chuxiong People' s Hosptal	Yunnan	Chuxiong	Xiaoming Liu
Yao' an Hospital	Yunnan	Yao' an	Jinlong Xu
Tibet People' s Hospital	Tibet	Lahsa	Gesang Luobu
Hainan Provincial Hospital	Hainan	Haikou	Bin Li
Sanya Hospital	Hainan	Sanya	Tiansong Wang
Wenchang Hospital	Hainan	Wenchang	Dong Wang

Supplemental Methods

Data S2. Case Report Form of the CAMI Registry.

**Twelfth National Science and Technology
Support Program**

China Acute Myocardial Infarction Registration Form

(China Acute Myocardial Infarction Registry, CAMI Registry)

Report to the homepage

Registration hospital	_____	Center number	_____
Patient name	_____	Patient id	_____
Hospital number:	_____ <input type="checkbox"/> No		
gender:	<input type="checkbox"/> male <input type="checkbox"/> female		
type of certificate:	<input type="checkbox"/> ID number <input type="checkbox"/> officer certificate number <input type="checkbox"/> Passport number <input type="checkbox"/> Other ID number		
license number:	_____		
date of birth:	YYYY-MM-DD		
Patient's myocardial infarction date of visit:	YYYY-MM-DD hh:mm:ss		
Distance from onset:	<input type="checkbox"/> <3h <input type="checkbox"/> 3-6h <input type="checkbox"/> 6-12h <input type="checkbox"/> 12-24h <input type="checkbox"/> 1-7 days <input type="checkbox"/> Unknown		
First place of diagnosis:	<input type="checkbox"/> Emergency room <input type="checkbox"/> routine clinic <input type="checkbox"/> Foreign hospital referral <input type="checkbox"/> in-hospital ward		
Check in the ward:	<input type="checkbox"/> Emergency room <input type="checkbox"/> intensive care unit <input type="checkbox"/> Rescue bed or guard room in a general ward <input type="checkbox"/> Heart Medical ward <input type="checkbox"/> non-cardiac ward <input type="checkbox"/> Transfer to hospital without any treatment		
Admission diagnosis:	<input type="checkbox"/> STEMI <input type="checkbox"/> NSTEMI <input type="checkbox"/> Uncertain		
Home address	_____	<input type="checkbox"/> Unknown	
Postal code:	_____	<input type="checkbox"/> Unknown	
contact phone number:	_____		
	Mobile phone _	<input type="checkbox"/> Unknown	
	Family phone or landline	<input type="checkbox"/> Unknown	

1. Patient basic information

1.01 Ethnicity:	<input type="checkbox"/> Han nationality <input type="checkbox"/> non-Han <input type="checkbox"/> foreigner <input type="checkbox"/> Unknown
1.02 If it is non-Han:	_____Family
1.03 height:	_____cm
1.04 Weight:	_____kg
1.05 Marital status:	<input type="checkbox"/> already (re)married <input type="checkbox"/> Divorce <input type="checkbox"/> widowed <input type="checkbox"/> Unmarried <input type="checkbox"/> Unknown

1.06 Medical Insurance (multiple choices available):	<input type="checkbox"/> Basic medical insurance reimbursement <input type="checkbox"/> Commercial insurance <input type="checkbox"/> Public medical care (unit police) <input type="checkbox"/> New Rural Co., Ltd. <input type="checkbox"/> Army Pay <input type="checkbox"/> Foreign-related medical insurance <input type="checkbox"/> Self-pay <input type="checkbox"/> Unknown
1.07 Highest level of education:	<input type="checkbox"/> illiterate <input type="checkbox"/> Elementary school <input type="checkbox"/> Secondary / secondary school <input type="checkbox"/> College/University <input type="checkbox"/> graduate student <input type="checkbox"/> Unknown

1.08 Currently major occupations:	<input type="checkbox"/> Workers <input type="checkbox"/> State cadres/civil servants <input type="checkbox"/> military/police <input type="checkbox"/> farmers <input type="checkbox"/> rural cadres <input type="checkbox"/> individual business <input type="checkbox"/> private / joint venture entrepreneurs (president / general manager) <input type="checkbox"/> middle managers of enterprises <input type="checkbox"/> intellectuals (medical staff, teachers, researchers, Technician, Engineer) <input type="checkbox"/> Entertainment staff <input type="checkbox"/> Driver <input type="checkbox"/> Student <input type="checkbox"/> Retired cadres <input type="checkbox"/> Retired employees <input type="checkbox"/> Housewives <input type="checkbox"/> Unemployed <input type="checkbox"/> Others <input type="checkbox"/> No detailed
1.09 Living conditions:	<input type="checkbox"/> living alone <input type="checkbox"/> Living with a spouse <input type="checkbox"/> Living with children <input type="checkbox"/> Live with parents <input type="checkbox"/> with others

2. Clinical features

Clinical manifestation		
2.01 Location of the disease	<input type="checkbox"/> at home <input type="checkbox"/> Outside (public) <input type="checkbox"/> at work unit <input type="checkbox"/> in the hospital	
2.02 onset time	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
2.03 episode mode	<input type="checkbox"/> Sudden persistence <input type="checkbox"/> intermittent episode <input type="checkbox"/> Unknown	
2.04 Clinical symptoms	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Uncertain	
2.05 If "Yes", the most important The first symptom is	<input type="checkbox"/> Mainly with chest tightness or pain <input type="checkbox"/> special performance	
2.06 If it is mainly pain, with Main performance	<input type="checkbox"/> chest tightness (including sternal, neck and throat pain) <input type="checkbox"/> persistent chest pain <input type="checkbox"/> abdominal pain <input type="checkbox"/> Continuous upper abdominal pain <input type="checkbox"/> continued <input type="checkbox"/> Back pain <input type="checkbox"/> Pain in other parts of the teeth, jaw, etc. <input type="checkbox"/> short-term angina with multiple intermittent episodes	
2.07 The most severe pain lasts (or accumulate) time	<input type="checkbox"/> <20 minutes <input type="checkbox"/> 20~30 minutes <input type="checkbox"/> ≥ 30 minutes <input type="checkbox"/> Unknown	
2.08 Pain properties (multiple choices available)	<input type="checkbox"/> press sample <input type="checkbox"/> Dull dull pain <input type="checkbox"/> 刀刀样 <input type="checkbox"/> burning pain (spicy feeling) <input type="checkbox"/> tightening <input type="checkbox"/> stinging <input type="checkbox"/> difficult to describe <input type="checkbox"/> Unknown <input type="checkbox"/> Other (please fill in) _____	
2.09 Degree of pain	<input type="checkbox"/> Extremely unbearable <input type="checkbox"/> not violently tolerable <input type="checkbox"/> no pain <input type="checkbox"/> Unknown	
2.10 radiation pain	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown	
2.11 parts (multiple choices available)	<input type="checkbox"/> left upper limb <input type="checkbox"/> Left shoulder <input type="checkbox"/> Other (please fill in) _____	
2.12 accompanying symptoms (multiple choices are possible)	<input type="checkbox"/> sweat <input type="checkbox"/> nausea / vomiting <input type="checkbox"/> Black 朦 <input type="checkbox"/> Syncope (reverse) <input type="checkbox"/> <input type="checkbox"/> heart 悸 <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Weak <input type="checkbox"/> <input type="checkbox"/> Irritability <input type="checkbox"/> incontinence <input type="checkbox"/> Unknown <input type="checkbox"/> Other _____	
2.13 Containing nitroglycerin	<input type="checkbox"/> including service <input type="checkbox"/> not included <input type="checkbox"/> Unknown	
2.14 Can you ease?	<input type="checkbox"/> can alleviate <input type="checkbox"/> partial relief <input type="checkbox"/> can not alleviate <input type="checkbox"/> Unknown	
2.15 Chinese medicine (such as quick fix pill)	<input type="checkbox"/> including service <input type="checkbox"/> not included <input type="checkbox"/> Unknown	
2.16 Can you ease?	<input type="checkbox"/> can alleviate <input type="checkbox"/> partial relief <input type="checkbox"/> can not alleviate <input type="checkbox"/> Unknown	
2.17 If special performance is dominant, main performance	<input type="checkbox"/> shortness of breath, wheezing and other symptoms of heart failure <input type="checkbox"/> black sputum or syncope (fainted) <input type="checkbox"/> cardiac arrest <input type="checkbox"/> difficult to describe <input type="checkbox"/> Uncomfortable <input type="checkbox"/> Other _	
2.18 If it is based on special performance, Have chest pain in advance	<input type="checkbox"/> have <input type="checkbox"/> No	
Predisposing factor		
2.19 Predisposing factors:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown or uncertain	
	<input type="checkbox"/> physical stress (excessive physical activity or consumption)	
	<input type="checkbox"/> strenuous exercise <input type="checkbox"/> sudden increase in exercise <input type="checkbox"/> Traveling <input type="checkbox"/> Overwork fatigue <input type="checkbox"/> Other (please fill in) _____	
	<input type="checkbox"/> mental stress (mental stimulation or stress)	

	<input type="checkbox"/> angry and anxious <input type="checkbox"/> extremely happy <input type="checkbox"/> extremely sad <input type="checkbox"/> Extremely stressful work <input type="checkbox"/> Nightmare scare <input type="checkbox"/> Other (please fill in) _____
	<input type="checkbox"/> Lifestyle is too late (compared with usual)
	<input type="checkbox"/> Overeating or high-fat diet <input type="checkbox"/> a lot of smoking <input type="checkbox"/> heavy drinking <input type="checkbox"/> Drink a lot of coffee <input type="checkbox"/> Overnight entertainment (playing mahjong, games, internet, song and dance for a long time) <input type="checkbox"/> Excessive force defecation <input type="checkbox"/> Other (please fill in) _____

	<input type="checkbox"/> weather and environmental changes
	<input type="checkbox"/> Gale winds cool and stimulate <input type="checkbox"/> heat is hard to bear <input type="checkbox"/> Blow air conditioning during the heat cycle <input type="checkbox"/> Other (please fill in) _____
	<input type="checkbox"/> disease, surgery, trauma
	<input type="checkbox"/> acute infection <input type="checkbox"/> surgery <input type="checkbox"/> chest trauma <input type="checkbox"/> other parts of the wound
	<input type="checkbox"/> Others (please fill in) _____
Prodromal symptoms	
2.20 Prodromal symptoms (refer to whether angina pectoris occurs frequently in the first month before the onset of illness or new angina pectoris)	
	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
2.21 If yes, time:	<input type="checkbox"/> within 24 hours <input type="checkbox"/> within 1 week <input type="checkbox"/> within 1 month

3. Visits, first diagnosis, and condition assessment

Visit and referral	
3.01 Ways to come:	<input type="checkbox"/> First aid system (ambulance) sent <input type="checkbox"/> External hospital is coming <input type="checkbox"/> Family or others sent <input type="checkbox"/> Come to see yourself <input type="checkbox"/> In-hospital disease
3.02 If the emergency system is shipped, Call for help:	YYYY-MM-DD hh:mm:ss <input type="checkbox"/> Unknown
3.03 When the ambulance receives the patient between:	YYYY-MM-DD hh:mm:ss <input type="checkbox"/> Unknown
3.04 Arrival time:	YYYY-MM-DD hh:mm:ss <input type="checkbox"/> Unknown
3.05 Is it dissolved in an ambulance? bolt:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
3.06 If you transfer from the outer court, The first hospital time:	YYYY-MM-DD hh:mm:ss <input type="checkbox"/> Unknown
3.07 Is it given in other hospitals? Pre-Thrombolytic Therapy:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
3.08 Is it given in other hospitals? To the IIb/IIIa receptor antagonist:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
3.09 Urgent in other hospitals Diagnosis pci treatment:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Electrocardiogram	
3.10 The first electrocardiogram of the hospital time:	YYYY-MM-DD hh:mm:ss <input type="checkbox"/> Unknown

3.11 Main ECG features (\geq 2 leads, multiple choices):	<input type="checkbox"/> Abnormal Q wave <input type="checkbox"/> ST segment elevation (including T wave high tip) <input type="checkbox"/> ST segment down ($\geq 0.5\text{mm}$) <input type="checkbox"/> T wave deep (coronal T wave) <input type="checkbox"/> New hair completely left bundle branch block <input type="checkbox"/> New hair completely right beam Branch block <input type="checkbox"/> dynamic evolution <input type="checkbox"/> no change <input type="checkbox"/> non-new left bundle branch block <input type="checkbox"/> complete left bundle branch block <input type="checkbox"/> complete right bundle branch Block
3.12 parts (multiple choices possible):	<input type="checkbox"/> front wall (v1-v2) <input type="checkbox"/> front wall (v1-v3, 4) <input type="checkbox"/> <input type="checkbox"/> extensive front wall (v1-v5, 6) <input type="checkbox"/> high side wall (I,avL) <input type="checkbox"/> front side wall (v5, v6) <input type="checkbox"/> lower wall (II, III, avF) Posterior wall (V7-V9) <input type="checkbox"/> right

	Ventricular (v3r-v4r) <input type="checkbox"/> not easy to locate					
Emergency myocardial enzymology and injury markers Volunteer	<input type="checkbox"/> already done <input type="checkbox"/> not done					
project	First test value (within 12 hours of onset)			Highest value		
3.13CK-MB:	_____	<input type="checkbox"/> IU/L <input type="checkbox"/> ng/mL	<input type="checkbox"/> not done	_____	<input type="checkbox"/> IU/L <input type="checkbox"/> ng/mL	<input type="checkbox"/> not done
3.14TnT:	<input type="checkbox"/> Quantitative <input type="checkbox"/> Qualitative		<input type="checkbox"/> not done	_____ng/mL		<input type="checkbox"/> not done
	Qualitative:	<input type="checkbox"/> negative <input type="checkbox"/> positive				
	Quantitative:	_____ng/mL				
3.15TnI:	<input type="checkbox"/> Quantitative <input type="checkbox"/> Qualitative		<input type="checkbox"/> not done	_____ng/mL		<input type="checkbox"/> not done
	Qualitative:	<input type="checkbox"/> negative <input type="checkbox"/> positive				
	Quantitative:	_____ng/mL				
3.16hs-TnT:	_____ng/mL		<input type="checkbox"/> not done	_____ng/mL		<input type="checkbox"/> not done
3.17hs-TnI:	_____ng/mL		<input type="checkbox"/> not done	_____ng/mL		<input type="checkbox"/> not done
First diagnosis						
3.18 First diagnosis:	<input type="checkbox"/> STEMI (fill 4) <input type="checkbox"/> NSTEMI (fill 5) <input type="checkbox"/> Uncertain <input type="checkbox"/> Other _____					
3.19 Diagnosis basis (multiple selection):	<input type="checkbox"/> clinical symptoms and performance <input type="checkbox"/> ECG change or dynamic evolution <input type="checkbox"/> myocardial enzyme or myocardial damage markers <input type="checkbox"/> Abnormal rise such as echocardiographic segmental wall motion abnormalities <input type="checkbox"/> Image changes <input type="checkbox"/> Other					
Condition assessment						
3.20 Heart rate (hr) at the time of visit:	_____Times/minute					
3.21 Systolic / diastolic pressure:	_____ / _____	Diastolic blood pressure _____mmHg				
Episodes within 3.2224 hours Pain times	_____Times					
3.23 Heart failure at the time of treatment:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Uncertain					
3.24 Cardiogenic shock:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Uncertain					
3.25 malignant arrhythmia:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Uncertain					
3.26 arrhythmia type (can Multiple choice):	<input type="checkbox"/> room flutter / ventricular fibrillation <input type="checkbox"/> atrial flutter / atrial fibrillation <input type="checkbox"/> AVB <input type="checkbox"/> Other					
AVB	<input type="checkbox"/> ii degree ii type <input type="checkbox"/> iii degree <input type="checkbox"/> avb height					
3.27 cardiac arrest:	<input type="checkbox"/> have <input type="checkbox"/> No					
3.28 Killip Rating:	<input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV					
First aid measures and medication (in emergency department Subjects are filled out)	<input type="checkbox"/> Yes <input type="checkbox"/> No					
3.29 First aid medication (multiple choices available):	<input type="checkbox"/> Nitrate esters <input type="checkbox"/> morphine <input type="checkbox"/> Aspirin <input type="checkbox"/> Clopidogrel <input type="checkbox"/> Other (please fill in) _____					
3.30 vasoactive drugs (may Multiple choice):	<input type="checkbox"/> Dopamine <input type="checkbox"/> Dobutamine <input type="checkbox"/> Adrenaline <input type="checkbox"/> Sodium nitroprusside Inter-hydroxylamine <input type="checkbox"/> go to the kidney <input type="checkbox"/> Adenine <input type="checkbox"/> No					
3.31 Other medications (multiple choices)	<input type="checkbox"/> β blocker <input type="checkbox"/> statins <input type="checkbox"/> ACEI/ARB Amiodarone Lidocaine <input type="checkbox"/> Ato Product <input type="checkbox"/> diuretic <input type="checkbox"/> Other _____					

available):		
3.32 Special first aid measures:	Temporary pacing Device	<input type="checkbox"/> Yes <input type="checkbox"/> No
	IABP	<input type="checkbox"/> Yes <input type="checkbox"/> No
	ECG defibrillation	<input type="checkbox"/> Yes <input type="checkbox"/> No

	CPR	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Hypothermia	<input type="checkbox"/> Yes <input type="checkbox"/> No

4. Stem emergency reperfusion therapy

4.01 Whether to accept the first emergency Reperfusion therapy:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.02 If no, the main reason:	<input type="checkbox"/> chest pain symptoms are significantly reduced or have disappeared <input type="checkbox"/> ecg in the st segment uplifted significantly down or close to the equipotential line <input type="checkbox"/> family members disagree because of fear of treatment risk <input type="checkbox"/> Patients or their families do not agree because the economy cannot withstand <input type="checkbox"/> has exceeded the emergency reperfusion time window <input type="checkbox"/> have contraindications <input type="checkbox"/> History of gastrointestinal bleeding <input type="checkbox"/> History of intracranial hemorrhage <input type="checkbox"/> recent history of trauma or surgery <input type="checkbox"/> history of chest compressions <input type="checkbox"/> The patient is critically ill <input type="checkbox"/> ready to transfer <input type="checkbox"/> Symptoms are not typical and are not diagnosed in time <input type="checkbox"/> Other	
4.03 Only urgent in the hospital Diagnosis and reperfusion therapy:	<input type="checkbox"/> Thrombolytic <input type="checkbox"/> Emergency pci <input type="checkbox"/> Emergency cabg	
Thrombolytic therapy		
4.04 The doctor decides the time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.05 Informed consent time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.06 Thrombolysis start time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.07 Thrombolytic site:	<input type="checkbox"/> Emergency department of the hospital <input type="checkbox"/> This hospital (severe) ward <input type="checkbox"/> Other	
4.08 thrombolytic distance onset time:	<input type="checkbox"/> <3 hours <input type="checkbox"/> within 3-6 hours <input type="checkbox"/> 6-12 hours <input type="checkbox"/> 12-24 hours <input type="checkbox"/> 1-3 days	
4.09 thrombolytic drugs:	<input type="checkbox"/> Streptokinase <input type="checkbox"/> Staphylokinase <input type="checkbox"/> rtPA <input type="checkbox"/> Other (please fill in)	
4.10 Total dose of thrombolytic drugs:	_____	<input type="checkbox"/> mg <input type="checkbox"/> IU
4.11 With or without thrombolysis complications:	<input type="checkbox"/> have <input type="checkbox"/> No	
4.12 If yes, type:	<input type="checkbox"/> bleeding <input type="checkbox"/> Allergies <input type="checkbox"/> Other _____	
4.13 Clinical judgment of thrombolytic effect:	<input type="checkbox"/> re-pass <input type="checkbox"/> not re-opened <input type="checkbox"/> Uncertain	
4.14 Further processing:	<input type="checkbox"/> drug treatment <input type="checkbox"/> remedy pci <input type="checkbox"/> Transfer to a higher level hospital remedial pci	
Emergency pci		
4.15 Proposed emergency pci type:	<input type="checkbox"/> Emergency direct pci treatment (not thrombolysis) remedial pci after thrombolysis failure Conventional coronary angiography and pci after thrombolysis <input type="checkbox"/> STEMI <input type="checkbox"/> STEMI	
4.16 The doctor decides the time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown

4.17 Signing informed consent time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.18 When the patient enters the cath lab between:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.19 emergency pci from the onset of illness between:	<input type="checkbox"/> <3 hours <input type="checkbox"/> 3-6 hours <input type="checkbox"/> 6-12 hours <input type="checkbox"/> 12-24 hours <input type="checkbox"/> 1-3 days <input type="checkbox"/> 3 days or more	
4.20 Interventional approach:	<input type="checkbox"/> radial artery <input type="checkbox"/> femoral artery <input type="checkbox"/> crown through the radial artery, pci transfemoral artery	
Emergency coronary angiography results		

4.21 seen in emergency coronary angiography (coronary syndrome score map, please indicate dominant, ira, stenosis and timi blood flow, a, b, and c are often found only in anatomical conditions when there are more coronary branches)

Right advantage (16 segments) Left advantage (15 segments)

Right dominance

Left dominance

Digital location of anatomy of coronary lesions and its degree of severe stenosis (only recorded intraocular stenosis $\geq 50\%$ lesion segment)

Right coronary artery (rca)		Left circumflex (lcx)	
1. Right coronary artery proximal segment	_____ %	11. Rotating branch Near section	_____ %
2. Right coronary artery	_____ %	12. The middle branch	_____ %
3. Right coronary artery distal segment	_____ %	12a. First blunt Marginal branch	_____ %
4. Right crown - posterior descending branch	_____ %	12b. Second blunt Marginal branch	_____ %
16. Right crown - posterior branch	_____ %	13. Rotating branch Far section	_____ %
16a. The first crown of the right crown - the posterior support	_____ %	14. Left rear side support	_____ %
16b. Right crown - second branch of the posterior support	_____ %	14a. Left rear side Branch a	_____ %
16c. The right crown - the third branch of the posterior support	_____ %	14b. Left rear side Branch b	_____ %
		15. Cyclotron - Post-fall	_____ %
5. Left main trunk	_____ %	<input type="checkbox"/> opening <input type="checkbox"/> Body <input type="checkbox"/> Bifurcation	
Left anterior descending (lad)			
6. The vicinity of the front descending branch	_____ %		
7. Middle section of the former descending branch	_____ %		
8. anterior descending apex segment	_____ %		
9. The first diagonal	_____ %		

branch	
9a. The first diagonal branch a	_____ %
10. The second diagonal branch	_____ %
10a. Second diagonal branch a	_____ %
4.22 Emergency coronary angiography results (Multiple choice):	<input type="checkbox"/> single-vessel disease <input type="checkbox"/> double-vessel disease <input type="checkbox"/> three-vessel disease <input type="checkbox"/> lm lesion <input type="checkbox"/> Normal <input type="checkbox"/> plaque or < 50% narrow
4.23 First infarct related coronary artery:	<input type="checkbox"/> LM <input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX <input type="checkbox"/> Dia <input type="checkbox"/> OM <input type="checkbox"/> PDA <input type="checkbox"/> PLA <input type="checkbox"/> bridge blood tube <input type="checkbox"/> Uncertain
4.24 First infarct related coronary artery	_____ segment <input type="checkbox"/> difficult to determine

Location:		
4.25 The heaviest degree of stenosis:	_____%	
4.26 timi blood flow:	<input type="checkbox"/> 0 <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III	
4.27 First infarct-related coronary artery Significant thrombosis:	<input type="checkbox"/> No thrombosis <input type="checkbox"/> primary thrombus <input type="checkbox"/> Stent thrombosis	
4.28 Possible causes of stent thrombosis:	<input type="checkbox"/> Clopidogrel resistance <input type="checkbox"/> Aspirin resistance <input type="checkbox"/> bracket malapposition <input type="checkbox"/> pci is discontinued within one year after surgery Antiplatelet drugs <input type="checkbox"/> Uncertain	
Clopidogrel resistance basis	<input type="checkbox"/> Determination of platelet aggregation rate <input type="checkbox"/> thrombus elasticity diagram <input type="checkbox"/> clinical suspicion	
Aspirin resistance basis	<input type="checkbox"/> Determination of platelet aggregation rate <input type="checkbox"/> thrombus elasticity diagram <input type="checkbox"/> clinical suspicion	
Bad bracket attachment	<input type="checkbox"/> IVUS <input type="checkbox"/> OCT <input type="checkbox"/> angiographic judgment	
Pci stopped taking drugs within one year after surgery Type of object	<input type="checkbox"/> Aspirin <input type="checkbox"/> Clopidogrel <input type="checkbox"/> Both are disabled	
Pci treatment of first infarct-related coronary artery		
4.29 pci treatment of first infarction Related coronary:	<input type="checkbox"/> No <input type="checkbox"/> Yes	
4.30 If no, reason:	<input type="checkbox"/> timi blood flow has reached level 3 (do not have to do) <input type="checkbox"/> have pci contraindications <input type="checkbox"/> The patient is critically ill or has a disease Anatomy of high risk, the doctor decided not to do <input type="checkbox"/> Patient or family refused <input type="checkbox"/> Other _____	
4.31 If yes, the final pci method:	<input type="checkbox"/> Simple thrombus aspiration device <input type="checkbox"/> pure ptca <input type="checkbox"/> bracket placement	
4.32 Balloon expansion time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.33 If the stent is placed, the branch Frame type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing	
4.34 bms number:	_____ One	
4.35 des number:	_____ One	
Final timi blood after 4.36 pci flow:	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
4.37 With or without coronary intervention disease:	<input type="checkbox"/> have <input type="checkbox"/> No	
4.38 If yes, type:	<input type="checkbox"/> no reflow (timi0~1 level) <input type="checkbox"/> slow blood flow (timi2 level) <input type="checkbox"/> Acute thrombosis in the stent <input type="checkbox"/> Coronary artery rupture (caused by balloon or stent) <input type="checkbox"/> Coronary artery perforation (caused by guide wire) <input type="checkbox"/> Pericardial tamponade <input type="checkbox"/> Need emergency cabg <input type="checkbox"/> Ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> cardiovascular breakdown <input type="checkbox"/> hand Death on the platform <input type="checkbox"/> Other _____	
4.39 emergency pci intraoperative anticoagulation Agent:	<input type="checkbox"/> Unfractionated heparin <input type="checkbox"/> Low molecular weight heparin <input type="checkbox"/> Bivaludine <input type="checkbox"/> Other <input type="checkbox"/> Unknown	

4.40pci intraoperative blood application Plate IIb/IIIa antagonist:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.41 If yes, dose:	<input type="checkbox"/> full amount	<input type="checkbox"/> half to full <input type="checkbox"/> half amount <input type="checkbox"/> less than half
4.42 Application method:	<input type="checkbox"/> Intravenous intravenous	<input type="checkbox"/> Intracoronary artery <input type="checkbox"/> coronary artery plus
Second infarct-related coronary artery		
4.43 Second infarction-related coronary artery	<input type="checkbox"/> have <input type="checkbox"/> No	
4.44 Second infarction-related coronary artery	<input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX <input type="checkbox"/> LM <input type="checkbox"/> Dia <input type="checkbox"/> OM <input type="checkbox"/> PDA <input type="checkbox"/> PLA	
4.45 Second infarct-related coronary artery	_____segment	<input type="checkbox"/> difficult to determine

Part		
4.46 The heaviest degree of stenosis	_____ %	
4.47 timi blood flow	<input type="checkbox"/> 0 <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III	
4.48 Second infarct related coronary artery Significant thrombosis	<input type="checkbox"/> primary thrombus <input type="checkbox"/> Stent thrombosis <input type="checkbox"/> No thrombosis	
4.49 pci treatment of second infarction Related coronary	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.50 If no, the reason	<input type="checkbox"/> timi blood flow has reached level 3 (do not have to do) <input type="checkbox"/> have pci contraindications <input type="checkbox"/> The patient is critically ill or has a disease Anatomy of high risk, the doctor decided not to do <input type="checkbox"/> Patient or family refused <input type="checkbox"/> Other _____	
4.51 If yes, the final pci method	<input type="checkbox"/> Simple thrombus aspiration device placement <input type="checkbox"/> Other _____ <input type="checkbox"/> pure ptca <input type="checkbox"/> bracket	
4.52 When the first balloon is expanded between:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.53 If the stent is placed, the branch Frame type	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing	
4.54 bms number:	_____ One	
4.55 des number:	_____ One	
Final timi blood after 4.56 pci flow:	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
4.57 When the last integral angiography between:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.58 with or without coronary intervention disease:	<input type="checkbox"/> have <input type="checkbox"/> No	
4.59 If yes, type:	<input type="checkbox"/> no reflow (timi0~1 level) <input type="checkbox"/> slow blood flow (timi2 level) <input type="checkbox"/> Acute thrombosis in the stent <input type="checkbox"/> Coronary artery rupture (caused by balloon or stent) <input type="checkbox"/> Coronary artery perforation (caused by guide wire) <input type="checkbox"/> Pericardial tamponade <input type="checkbox"/> Need emergency cabg <input type="checkbox"/> Ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> cardiovascular breakdown <input type="checkbox"/> hand <input type="checkbox"/> Death on the platform <input type="checkbox"/> Other _____	
Pci treatment of non-infarct related coronary artery		
4.60 non-infarct related coronary artery is No line pci treatment:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.61 If yes, reason:	<input type="checkbox"/> Non-ira severe stenosis or occlusion (timi<3) <input type="checkbox"/> suspected myocardial ischemia <input type="checkbox"/> Experience judgment <input type="checkbox"/> its he _____	
4.62 non-infarct for interventional therapy Related blood vessels:	<input type="checkbox"/> LM <input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX <input type="checkbox"/> Dia <input type="checkbox"/> OM <input type="checkbox"/> PDA <input type="checkbox"/> PLA <input type="checkbox"/> bridge blood tube <input type="checkbox"/> Uncertain	
4.63 Whether to place the bracket:	<input type="checkbox"/> Yes <input type="checkbox"/> No	

4.64 If the stent is placed, the branch Frame type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing
4.65bms number:	_____One
4.66des number:	_____One
Final timi blood after 4.67pci flow:	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
4.68 With or without coronary intervention disease:	<input type="checkbox"/> have <input type="checkbox"/> No

4.69 If yes, type:	<input type="checkbox"/> no reflow (timi0~1 level) <input type="checkbox"/> slow blood flow (timi2 level) <input type="checkbox"/> Acute thrombosis in the stent <input type="checkbox"/> Coronary artery rupture (caused by balloon or stent) <input type="checkbox"/> Coronary artery perforation (caused by guide wire) <input type="checkbox"/> Pericardial tamponade <input type="checkbox"/> Need emergency cabg Ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> Other <input type="checkbox"/> cardiovascular collapse Collapse <input type="checkbox"/> Death on the operating table _____			
4.70 There are no lesions with residual $\geq 70\%$ stenosis (≥ 2.5 mm blood vessels) without interventional therapy	<input type="checkbox"/> have <input type="checkbox"/> No			
4.71 intraoperative contrast agent type	<input type="checkbox"/> Ultravist <input type="checkbox"/> Iodoxacol <input type="checkbox"/> Iodine <input type="checkbox"/> Other			
4.72 Contrast dosage	_____ml			
Myocardial reperfusion				
4.73 Before reperfusion therapy (including thrombolysis or emergency pci),	St segment lift	_____	Maximum elevation	_____mm
	Highest number of leads			
4.74 The above lead after two hours St fall degree:	<input type="checkbox"/> <50% <input type="checkbox"/> >50% <input type="checkbox"/> close to the equipotential line			
4.75 Is the symptom relieved by half? the above	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain			
Original ECG upload	Two ecg two hours before and after thrombolysis or emergency intervention			
ECG 1				
ECG 2				
Emergency cabg				
4.76 Emergency cabg:	<input type="checkbox"/> Survival at discharge <input type="checkbox"/> died at the time of discharge			

Stem emergency reperfusion treatment time course (24-hour system, as before)

2.02 onset time	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
Patient's myocardial infarction date of visit:	YYYY-MM-DD hh:mm:ss	
3.10 The first electrocardiogram of the hospital time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.04 The doctor decides the time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.05 Informed consent time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.06 Thrombolysis start time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.16 The doctor decides the time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.17 Signing informed consent time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown

4.18 When the patient enters the cath lab between:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.32 Balloon expansion time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown

4.52 When the first balloon is expanded between:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
4.57 When the last integral angiography between:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown

5.NSTEMI emergency reperfusion therapy

5.01 Whether emergency revascularization:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
5.02 If yes, the emergency testimony is:	<input type="checkbox"/> persistent myocardial ischemia, drug can not control or recurrent <input type="checkbox"/> hemodynamic instability (hypotension, rest) g) <input type="checkbox"/> ECG instability (fast or chronic malignant arrhythmia affecting hemodynamics, etc.) <input type="checkbox"/> cardiac insufficiency (heart failure or pulmonary edema) <input type="checkbox"/> Other (please fill in) _____		
5.03 Emergency revascularization Sick time:	<input type="checkbox"/> <3 hours <input type="checkbox"/> 3-6 hours <input type="checkbox"/> 6-12 hours <input type="checkbox"/> 12-24 hours <input type="checkbox"/> 1-3 days <input type="checkbox"/> 3-7 days		
5.04 Emergency Revascularization Method:	<input type="checkbox"/> Emergency pci <input type="checkbox"/> Emergency cabg		
Emergency pci			
5.05 Emergency pci route:	<input type="checkbox"/> radial artery <input type="checkbox"/> femoral artery <input type="checkbox"/> initiate through the radial artery, pci transfemoral artery		
Emergency coronary angiography results			
5.06 seen in emergency coronary angiography (coronary syndrome score map, please indicate dominant, ira, stenosis and timi blood flow, a, b, and c are often found only in anatomical conditions when there are more coronary branches)	<input type="checkbox"/> Right advantage (16 segments) <input type="checkbox"/> Left advantage (15 segments)		
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <input type="checkbox"/> Right dominance </div> <div style="text-align: center;"> <input type="checkbox"/> Left dominance </div> </div>			
Digital location of anatomy of coronary lesions and its degree of severe stenosis (only recorded intraocular stenosis ≥ 50% lesion segment)			
Right coronary artery (rca)		Left circumflex (lcx)	
1. Right coronary artery proximal segment	_____ %	11. Rotating branch Near section	_____ %
2. Right coronary artery	_____ %	12. The middle branch	_____ %
3. Right coronary artery distal segment	_____ %	12a. First blunt Marginal branch	_____ %
4. Right crown - posterior descending branch	_____ %	12b. Second blunt Marginal branch	_____ %

16. Right crown - posterior branch	_____ %	13. Rotating branch Far section	_____ %
16a. The first crown of the right crown - the posterior branch support	_____ %	14. Left rear side support	_____ %
16b. Right crown - second branch of the posterior branch support	_____ %	14a. Left rear side Branch a	_____ %
16c. The right crown - the third branch of the posterior branch	_____ %	14b. Left rear side	_____ %

support		Branch b	
		15. Cyclotron - Post-fall	_____ %
5. Left main trunk	_____ %	<input type="checkbox"/> opening	<input type="checkbox"/> Body <input type="checkbox"/> Bifurcation
Left anterior descending (lad)			
6. The vicinity of the front descending branch	_____ %		
7. Middle section of the former descending branch	_____ %		
8. anterior descending apex segment	_____ %		
9. The first diagonal branch	_____ %		
9a. The first diagonal branch a	_____ %		
10. The second diagonal branch	_____ %		
10a. Second diagonal branch a	_____ %		
5.07 Emergency coronary angiography results (Multiple choice):	<input type="checkbox"/> single-vessel disease 50% narrow	<input type="checkbox"/> double-vessel disease <input type="checkbox"/> lm lesion <input type="checkbox"/> Normal	<input type="checkbox"/> three-vessel disease <input type="checkbox"/> plaque or <
5.08 First infarct related coronary artery:	<input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX	<input type="checkbox"/> LM <input type="checkbox"/> DIA <input type="checkbox"/> OM	<input type="checkbox"/> pda <input type="checkbox"/> pla <input type="checkbox"/> bridge blood tube <input type="checkbox"/> Uncertain
5.09 First infarct related coronary artery Location:	_____ segment	<input type="checkbox"/> difficult to determine	
5.10 The heaviest degree of stenosis:	_____ %		
5.11 timi blood flow*:	<input type="checkbox"/> 0 <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III		
5.12 First infarct related coronary artery Significant thrombosis:	<input type="checkbox"/> No thrombosis	<input type="checkbox"/> primary thrombus	<input type="checkbox"/> Stent thrombosis
5.13 Possible causes of stent thrombosis:	<input type="checkbox"/> Clopidogrel resistance Antiplatelet drugs <input type="checkbox"/> Uncertain	<input type="checkbox"/> Aspirin resistance	<input type="checkbox"/> bracket malapposition <input type="checkbox"/> pci is discontinued within one year after surgery
Clopidogrel resistance basis	<input type="checkbox"/> Determination of platelet aggregation rate <input type="checkbox"/> clinical suspicion	<input type="checkbox"/> thrombus elasticity diagram	
Aspirin resistance basis	<input type="checkbox"/> Determination of platelet aggregation rate <input type="checkbox"/> clinical suspicion	<input type="checkbox"/> thrombus elasticity diagram	
Bad bracket attachment	<input type="checkbox"/> IVUS <input type="checkbox"/> OCT	<input type="checkbox"/> angiographic judgment	
Pci stopped taking drugs within one year after surgery Type of object	<input type="checkbox"/> Aspirin <input type="checkbox"/> Clopidogrel	<input type="checkbox"/> Both are disabled	
Pci treatment of first infarct-related coronary artery			
5.14 pci treatment of first infarction Related coronary:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
5.15 If no, reason:	<input type="checkbox"/> timi blood flow has reached level 3 (do not have to do) <input type="checkbox"/> have pci contraindications <input type="checkbox"/> The patient is critically ill or has a disease Anatomy of high risk, the doctor decided not to do <input type="checkbox"/> Patient or family refused <input type="checkbox"/> Other _____		

5.16 If yes, the final pci method:	<input type="checkbox"/> Simple thrombus aspiration device <input type="checkbox"/> pure ptca <input type="checkbox"/> bracket placement
5.17 If the stent is placed, the branch Frame type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing
5.18bms number:	_____One
5.19des number:	_____One
Final timi blood after 5.20pci flow:	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
5.21 With or without coronary intervention	<input type="checkbox"/> have <input type="checkbox"/> No

disease:	
5.22 If yes, type:	<input type="checkbox"/> no reflow (timi0~1 level) <input type="checkbox"/> slow blood flow (timi2 level) <input type="checkbox"/> Acute thrombosis in the stent <input type="checkbox"/> Coronary artery rupture (caused by balloon or stent) <input type="checkbox"/> Coronary artery perforation (caused by guide wire) <input type="checkbox"/> Pericardial tamponade <input type="checkbox"/> Need emergency cabg <input type="checkbox"/> Ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> cardiovascular breakdown <input type="checkbox"/> hand Death on the platform <input type="checkbox"/> Other _____
5.23 emergency pci intraoperative anticoagulation Agent:	<input type="checkbox"/> Unfractionated heparin <input type="checkbox"/> Low molecular weight heparin <input type="checkbox"/> Bivaludine <input type="checkbox"/> Other
5.24 PCI intraoperative application Iib/III a antagonist:	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.25 If yes, dose:	<input type="checkbox"/> full amount <input type="checkbox"/> half to full <input type="checkbox"/> half amount <input type="checkbox"/> less than half
5.26 Application method:	<input type="checkbox"/> Intravenous <input type="checkbox"/> Intracoronary artery <input type="checkbox"/> coronary artery plus intravenous
Second infarct-related coronary artery	
5.27 Second infarct related coronary artery:	<input type="checkbox"/> have <input type="checkbox"/> No
5.28 Second infarct related coronary artery for:	<input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX <input type="checkbox"/> LM <input type="checkbox"/> Dia <input type="checkbox"/> OM <input type="checkbox"/> PDA <input type="checkbox"/> PLA
5.29 Second infarct-related coronary artery Location:	_____ segment <input type="checkbox"/> difficult to determine
5.30 The heaviest degree of stenosis:	_____ %
5.31 timi blood flow:	<input type="checkbox"/> 0 <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III
5.32 Second infarct related coronary artery Significant thrombosis:	<input type="checkbox"/> primary thrombus <input type="checkbox"/> Stent thrombosis <input type="checkbox"/> No thrombosis
5.33 pci treatment of second infarction Related coronary:	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.34 If no, reason:	<input type="checkbox"/> timi blood flow has reached level 3 (do not have to do) <input type="checkbox"/> have pci contraindications <input type="checkbox"/> The patient is seriously ill or Anatomy of high risk, the doctor decided not to do <input type="checkbox"/> Patient or family refused <input type="checkbox"/> Other _____
5.35 If yes, the final pci method:	<input type="checkbox"/> Simple thrombus aspiration device <input type="checkbox"/> pure ptca <input type="checkbox"/> bracket placement <input type="checkbox"/> Other
5.36 If the stent is placed, the branch Frame type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing
5.37 bms number:	_____ One
5.38 des number:	_____ One
Final timi blood after 5.39 pci flow:	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
5.40 with or without coronary intervention disease:	<input type="checkbox"/> have <input type="checkbox"/> No

5.41 If yes, type:	<input type="checkbox"/> no reflow (timi0~1 level) <input type="checkbox"/> slow blood flow (timi2 level) <input type="checkbox"/> Acute thrombosis in the stent <input type="checkbox"/> Coronary artery rupture (caused by balloon or stent) <input type="checkbox"/> Coronary artery perforation (caused by guide wire) <input type="checkbox"/> Pericardial tamponade <input type="checkbox"/> Need emergency cabg Ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> cardiovascular breakdown* <input type="checkbox"/> Death on the operating table <input type="checkbox"/> Other _____
Pci treatment of non-infarct related coronary artery	
5.42 Non-infarct related coronary artery is No line pci treatment:	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.43 If yes, reason:	<input type="checkbox"/> Non-ira severe stenosis or occlusion (timi<3) <input type="checkbox"/> suspected myocardial ischemia <input type="checkbox"/> Experience judgment <input type="checkbox"/> its

	he _____
5.44 Non-infarct for interventional therapy Related blood vessels:	<input type="checkbox"/> LM <input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX <input type="checkbox"/> Dia <input type="checkbox"/> OM <input type="checkbox"/> PDA <input type="checkbox"/> PLA <input type="checkbox"/> bridge tube <input type="checkbox"/> Uncertain <input type="checkbox"/> blood
5.45 Whether to place the bracket:	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.46 If the stent is placed, the branch Frame type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing
5.47bms number:	_____One
5.48des number:	_____One
5.49PCI After TIMI blood flow: the final	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
5.50 with or without coronary intervention disease:	<input type="checkbox"/> have <input type="checkbox"/> No
5.51 If yes, type:	<input type="checkbox"/> no reflow (timi0~1 level) <input type="checkbox"/> slow blood flow (timi2 level) <input type="checkbox"/> Acute thrombosis in the stent <input type="checkbox"/> Coronary artery rupture (caused by balloon or stent) <input type="checkbox"/> Coronary artery perforation (caused by guide wire) <input type="checkbox"/> Pericardial tamponade <input type="checkbox"/> Need emergency cabg <input type="checkbox"/> Ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> cardiovascular breakdown <input type="checkbox"/> hand Death on the platform <input type="checkbox"/> Other _____
5.52 There are no residual $\geq 70\%$ stenosis ($\geq 2.5\text{mm}$ blood vessels) lesions without interventional treatment	<input type="checkbox"/> have <input type="checkbox"/> No
5.53 intraoperative contrast agent type	<input type="checkbox"/> Iopromide <input type="checkbox"/> Iodoxacol injection <input type="checkbox"/> Iodine <input type="checkbox"/> Other
5.54 Contrast dosage	_____ml
Emergency cabg	
5.55 Emergency cabg:	<input type="checkbox"/> Survival at discharge <input type="checkbox"/> died at the time of discharge

6. Risk factors and past medical history

Risk factor	
6.01 High blood pressure:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.02 Time:	_____year
6.03 Treatment:	<input type="checkbox"/> Adhere to treatment <input type="checkbox"/> Intermittent treatment <input type="checkbox"/> Never treated
6.04 Hyperlipidemia:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.05 Type:	<input type="checkbox"/> High cholesterol <input type="checkbox"/> Triglyceride high <input type="checkbox"/> Both are high <input type="checkbox"/> Unknown
6.06 Time:	_____year
6.07 Treatment:	<input type="checkbox"/> adhere to treatment <input type="checkbox"/> intermittent treatment <input type="checkbox"/> never treated
6.08 Treatment:	<input type="checkbox"/> diet control <input type="checkbox"/> statins <input type="checkbox"/> Non-statin drugs <input type="checkbox"/> Unknown <input type="checkbox"/> No
6.09 Diabetes:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.10 Time:	_____year
6.11 Treatment:	<input type="checkbox"/> adhere to treatment <input type="checkbox"/> intermittent treatment <input type="checkbox"/> never treated
6.12 Main treatment methods:	<input type="checkbox"/> diet control <input type="checkbox"/> Oral medication <input type="checkbox"/> Insulin <input type="checkbox"/> Insulin + oral medication
6.13 History of smoking:	<input type="checkbox"/> Current smoking (within 1 month) <input type="checkbox"/> Smoking in the past, has been banned > 1 year <input type="checkbox"/> Smoking in the past, has been quit > January <input type="checkbox"/>

	Never smoke
6.14 Smoking time:	_____year
6.15 Average daily count:	_____support
6.16 History of drinking:	<input type="checkbox"/> Drinking regularly <input type="checkbox"/> occasional drinking (social drinking only) <input type="checkbox"/> Never drink alcohol

6.17 Time:	_____year		
6.18 Frequent drinking frequency:	_____Times/week		
6.19 Types of regular drinks:	<input type="checkbox"/> liquor <input type="checkbox"/> beer <input type="checkbox"/> wine <input type="checkbox"/> Yellow wine or rice wine <input type="checkbox"/> Other		
6.20 Regular drinking:	_____MI liquor/time	_____MI beer /time	_____MI wine/time
6.21 Family history of early onset coronary heart disease:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
6.22 If yes, members:	<input type="checkbox"/> father <input type="checkbox"/> mother <input type="checkbox"/> Brother <input type="checkbox"/> sister		
6.23 Eating habits:	<input type="checkbox"/> Hi fat <input type="checkbox"/> hi light <input type="checkbox"/> Uncertain		
6.24 Sports:	<input type="checkbox"/> Regular exercise <input type="checkbox"/> not exercising regularly <input type="checkbox"/> Uncertain		
6.25 Whether to sleep at night:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain		
6.26 If women, menstrual history:	<input type="checkbox"/> has been menopausal <input type="checkbox"/> not menopause <input type="checkbox"/> Uncertain		
6.27 History of Contraceptives:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain		
Past medical history			
6.28 History of previous angina:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
6.29 If yes, the course of the disease:	_____	<input type="checkbox"/> year <input type="checkbox"/> month	<input type="checkbox"/> day
6.30 History of previous myocardial infarction:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
6.31 If yes, the number of myocardial infarction:	- _____Time s	<input type="checkbox"/> Uncertain	
6.32 myocardial infarction:	<input type="checkbox"/> front wall <input type="checkbox"/> non-front wall <input type="checkbox"/> Both have <input type="checkbox"/> Uncertain		
6.33 First MI time:	_____	<input type="checkbox"/> year <input type="checkbox"/> month	<input type="checkbox"/> day
6.34 Emergency coronary revascularization / Reperfusion:	<input type="checkbox"/> Emergency thrombolysis <input type="checkbox"/> Emergency pci <input type="checkbox"/> not done <input type="checkbox"/> Unknown		
6.35 at least one crown Arterial \geq 50% stenosis	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
6.36 elective coronary intervention:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown		
6.37 If yes, the number:	_____Times		
6.38 During the first intervention between:	_____year	_____month	
6.39 Last interventional treatment time:	_____year	_____month	
6.40 Co-inserted bracket:	_____Pie	<input type="checkbox"/> Uncertain	
6.41 History of previous coronary artery bypass:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown		
6.42 If yes, time:	_____year	<input type="checkbox"/> Unknown	
6.43 History of previous heart failure:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown		
6.44 History of previous strokes:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown		
6.45 If yes, type:	<input type="checkbox"/> brain hemorrhage <input type="checkbox"/> cerebral thrombosis / embolism <input type="checkbox"/> Unknown		
6.46 First time:	_____Years ago		

6.47 History of peripheral vascular disease:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.48 Time of diagnosis:	_____ Years ago
6.49 parts (multiple choices possible):	<input type="checkbox"/> lower extremity artery <input type="checkbox"/> carotid artery <input type="checkbox"/> renal artery <input type="checkbox"/> subclavian, upper extremity arteries <input type="checkbox"/> 髀 radial artery <input type="checkbox"/> Inaccurate set
6.50 History of aortic disease:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.51 If yes, type:	<input type="checkbox"/> aortic dissection <input type="checkbox"/> 腹 abdominal aortic aneurysm <input type="checkbox"/> Other (please fill in) _____
6.52 Chronic renal insufficiency:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.53 If yes, the time of diagnosis:	_____ Years ago

6.54 Whether dialysis:	<input type="checkbox"/> have <input type="checkbox"/> No
6.55 History of chronic obstructive pulmonary disease:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.56 Time of diagnosis:	_____ Years ago
6.57 Rheumatic immune system diseases:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.58 If yes, name:	_____
6.59 Time of diagnosis:	_____ Years ago
6.60 History of oncology:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.61 If yes, name:	_____
6.62 Time of diagnosis:	_____ Years ago
6.63 Treatment (multiple selection):	<input type="checkbox"/> surgery <input type="checkbox"/> Radiotherapy <input type="checkbox"/> Chemotherapy <input type="checkbox"/> untreated
6.64 Are you taking non-steroidal Anti-inflammatory drugs?	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.65 Is I taking immunization? Inhibitor:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.66 Previous digestive ulcer disease history:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.67 History of previous liver disease:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown
6.68 History of previous bleeding:	<input type="checkbox"/> have <input type="checkbox"/> No <input type="checkbox"/> Unknown

7. medical treatment

	Pre-infarction week	During hospitalization	
7.01 Aspirin:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Stop after use
		Load (300mg)	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Maintenance amount	_____mg/day <input type="checkbox"/> not applicable
		If it is used Stop again, take the medicine	_____day <input type="checkbox"/> not applicable
		If not used or discontinued, the reason (may be more selected)	<input type="checkbox"/> History of bleeding (including history of brain, digestive tract or skin bleeding) <input type="checkbox"/> Hemorrhagic complications <input type="checkbox"/> Allergies <input type="checkbox"/> Gastrointestinal discomfort <input type="checkbox"/> Preparing for surgical bypass surgery <input type="checkbox"/> Other adverse reactions <input type="checkbox"/> No <input type="checkbox"/> Ming <input type="checkbox"/> not applicable

7.02p2y12 receptor inhibitor (including thienopyridines)	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Stop after use	
	If yes, kind class	<input type="checkbox"/> Clopidogrel 普拉普拉格 替 格里洛 <input type="checkbox"/> not applicable	<input type="checkbox"/> Unknown
	Load	<input type="checkbox"/> 300mg <input type="checkbox"/> 600mg <input type="checkbox"/> 180mg <input type="checkbox"/> No	

		Maintenance amount	_____ mg/d
		If it is used	_____ day
		Stop again, take the medicine	<input type="checkbox"/> not applicable
		If not used or discontinued, the reason (may be more selected)	<input type="checkbox"/> History of previous bleeding (including history of brain, digestive tract or skin bleeding, etc.) <input type="checkbox"/> bleeding complications <input type="checkbox"/> Allergies <input type="checkbox"/> Leukopenia <input type="checkbox"/> thrombocytopenia <input type="checkbox"/> Other adverse reactions <input type="checkbox"/> Preparing for surgical bypass surgery <input type="checkbox"/> The reason is unknown <input type="checkbox"/> not applicable
7.03 Other antiplatelet drugs:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not detailed	<input type="checkbox"/> cilostazol <input type="checkbox"/> Pan Shengding <input type="checkbox"/> Unknown <input type="checkbox"/> No	
7.04 GPIIb/IIIa receptor antagonist:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
		If yes, application time	_____ hour
7.05 Heparin (excluding interventional procedures):	<input type="checkbox"/> Yes <input type="checkbox"/> No		
		If yes, drugs (may be more selected)	<input type="checkbox"/> ordinary heparin <input type="checkbox"/> Low molecular weight heparin <input type="checkbox"/> sulfa heparin sodium <input type="checkbox"/> its
		dose	<input type="checkbox"/> full amount <input type="checkbox"/> half amount <input type="checkbox"/> half amount full amount (unusual heparin, if Adjusted by aPTT, for the full amount)
		Application persistence time	_____ day
7.06 Oral Anticoagulant:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No <input type="checkbox"/> Not detailed	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Stop after use	
		If used, drugs kind	<input type="checkbox"/> Warfarin <input type="checkbox"/> Xa factor inhibitor (Saban class) <input type="checkbox"/> Other
		Indication (selected)	<input type="checkbox"/> atrial fibrillation <input type="checkbox"/> left ventricular thrombus <input type="checkbox"/> pulmonary embolism <input type="checkbox"/> Aspirin allergy Alternative <input type="checkbox"/> After valve replacement <input type="checkbox"/> deep vein thrombosis <input type="checkbox"/> Other
7.07 Statins:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not detailed	Statins Whether the load is loaded	<input type="checkbox"/> Yes <input type="checkbox"/> No
		If yes, load drugs	Simvastatin Lovastatin statin <input type="checkbox"/> Pitavastatin <input type="checkbox"/> Xuezhikang <input type="checkbox"/> Atorvastatin Pravastatin Fluvastatin 瑞瑞苏 <input type="checkbox"/> clinical blindness <input type="checkbox"/> not applicable

	Load dose	_____mg/d	
	Conventional statin medicine	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Stop after use	
	If yes or Use, start the main drug	Simvastatin <input type="checkbox"/> Atorvastatin Pravastatin Lovastatin Fluvastatin 瑞瑞苏 statin <input type="checkbox"/> Pitavastatin <input type="checkbox"/> Xuezhikang <input type="checkbox"/> clinical blindness <input type="checkbox"/> not applicable	
	Maintenance dose	_____mg/d	
	If you stop taking medicine, Medication time	_____day	<input type="checkbox"/> not applicable

		If not served Use, change or discontinue, reason	<input type="checkbox"/> Previous liver disease <input type="checkbox"/> liver adverse reactions <input type="checkbox"/> muscles are not <input type="checkbox"/> Good reaction <input type="checkbox"/> Other adverse reactions <input type="checkbox"/> I think blood lipids are not high and do not need medication <input type="checkbox"/> The reason is unknown <input type="checkbox"/> not applicable	
7.08 Nitrate drugs:	<input type="checkbox"/> Yes <input type="checkbox"/> No No details	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Stop after use		
7.09 β Receptor blockers:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Stop after use		
7.10 Calcium antagonists:	<input type="checkbox"/> Yes <input type="checkbox"/> No No details	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Stop after use		
7.11 ACEI/ARB:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Stop after use		
7.12 Antiarrhythmic drugs:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Is it	<input type="checkbox"/> If yes, type	<input type="checkbox"/> Ib <input type="checkbox"/> Ic <input type="checkbox"/> iii class
7.13 Aldosterone antagonists:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
7.14 Diuretics:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
7.15 Non-statin lipid-lowering drugs:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
7.16 gastric acid inhibitor:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Is it	<input type="checkbox"/> If	<input type="checkbox"/> PPI <input type="checkbox"/> h2 receptor antagonist
7.17 Oral Chinese medicine:	<input type="checkbox"/> Is it detailed <input type="checkbox"/> No	<input type="checkbox"/> Is it	<input type="checkbox"/> If yes (during hospitalization)	<input type="checkbox"/> Fufang Danshen tablets or dropping pills <input type="checkbox"/> Tongxinluo other

7.18 intravenous Chinese medicine:	<input type="checkbox"/> Is it detailed	<input type="checkbox"/> Yes <input type="checkbox"/> No
------------------------------------	---	--

8. Laboratory inspection

project	First test value	extremum		Last test value (before discharge)
8.01Glu:	_____	<input type="checkbox"/> mmol/L <input type="checkbox"/> mg/dL <input type="checkbox"/> not done	Highest value _____	<input type="checkbox"/> mmol/L <input type="checkbox"/> Mg/dL <input type="checkbox"/> not done
8.02Cr:	_____	<input type="checkbox"/> μ mol/L <input type="checkbox"/> mg/dL <input type="checkbox"/> not done	Highest value _____	<input type="checkbox"/> μ mol/L <input type="checkbox"/> Mg/dL <input type="checkbox"/> not done
Creatinine clearance	_____	Lowest value _		
8.03Hb:	_____g/L	<input type="checkbox"/> not done	Lowest value _____g/L	<input type="checkbox"/> not done
8.04 Hematocrit:	_____%	Lowest value_%		
8.05Plt:	_____x10 ⁹ /L	Lowest value_x10 ⁹ /L		_____x10 ⁹ /L
8.06WBC:	_____x10 ⁹ /L	Highest value_x10 ⁹ /L		
8.07 Neutral:	_____%	Highest value_%		
8.08NT-prBNP:	_____pg/mL	<input type="checkbox"/> not done	Highest value pg/mL	
8.09BNP:	_____pg/mL	<input type="checkbox"/> not done	Highest value pg/mL	
8.10TC:	_____	<input type="checkbox"/> mmol/L <input type="checkbox"/> mg/dL <input type="checkbox"/> Not done		
8.11LDL-C:	_____	<input type="checkbox"/> mmol/L <input type="checkbox"/> mg/dL <input type="checkbox"/> Not done		
8.12HDL-C:	_____	<input type="checkbox"/> mmol/L <input type="checkbox"/> mg/dL		
8.13TG:	_____	<input type="checkbox"/> mmol/L <input type="checkbox"/> mg/dL <input type="checkbox"/> Not done		
8.14K+:	_____mmol/L	Lowest value_mmol/L		
8.15Na+:	_____mmol/L	Lowest value_mmol/L		
8.16Cl-:	_____mmol/L	Lowest value_mmol/L		
8.17 Total bilirubin:	_____μmol/L			
8.18 Direct bilirubin:	_____μmol/L			
8.19GOT:	_____IU/L	Highest value_IU/L		
8.20GPT:	_____IU/L	Highest value_IU/L		
8.21HbA1C:	_____%	<input type="checkbox"/> not done		
8.22:Hs-CRP	_____mg/L	<input type="checkbox"/> not done		Highest value_mg/L

Echocardiography		
8.23 First admission:	YYYY-M M-DD	<input type="checkbox"/> not done
8.24 left ventricular end diastolic diameter LVEDd:	_____mm	
8.25 Left ventricular ejection fraction:	_____%	
8.26 segmental wall motion difference often:	<input type="checkbox"/> weakened exercise (ventricular aneurysm)	<input type="checkbox"/> Movement disappears <input type="checkbox"/> contradictory movement <input type="checkbox"/> No

9. Emergency revascularization

9.01 Emergency revascularization again:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9.02 If yes, reason:	<input type="checkbox"/> Myocardial ischemia in the original myocardial infarction or st segment elevation in the ECG (re-stalk) <input type="checkbox"/> original location suspect <input type="checkbox"/> Acute or subacute thrombosis in the stent <input type="checkbox"/> myocardial ischemia or infarction in non-infarcted areas	
9.03 If yes, the method (may be more selected):	<input type="checkbox"/> Thrombolytic <input type="checkbox"/> PCI <input type="checkbox"/> CABG	
9.04 The doctor decides the time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
9.05 Signing informed consent time:	YYYY-MM-DD hh:mm:ss	<input type="checkbox"/> Unknown
Starting with 9.06 (needle) : ol ve	Di ss : ol ve bo It m we Ti m we bet we en	YYYY-MM-DD hh:mm:ss <input type="checkbox"/> Unknown
9.07 Location of thrombolysis:	<input type="checkbox"/> ambulance <input type="checkbox"/> First hospital <input type="checkbox"/> Emergency department of the hospital <input type="checkbox"/> This hospital (severe) ward	
9.08 Time to thrombolysis:	<input type="checkbox"/> <3 hours <input type="checkbox"/> within 3-6 hours <input type="checkbox"/> 6-12 hours <input type="checkbox"/> 12-24 hours <input type="checkbox"/> 1-3 days	
9.09 thrombolytic drugs:	<input type="checkbox"/> Streptokinase <input type="checkbox"/> Urokinase <input type="checkbox"/> rtPA <input type="checkbox"/> staphylokinase <input type="checkbox"/> Other	
9.10 Total dose of thrombolytic drugs:	_____	<input type="checkbox"/> mg <input type="checkbox"/> IU
9.11 With or without thrombolysis complications:	<input type="checkbox"/> have <input type="checkbox"/> No	
9.12 If yes, type:	<input type="checkbox"/> bleeding <input type="checkbox"/> Allergies <input type="checkbox"/> Other	
9.13 Clinical judgment of thrombolytic effect:	<input type="checkbox"/> re-pass <input type="checkbox"/> not re-opened <input type="checkbox"/> Uncertain	
9.14 Further processing:	<input type="checkbox"/> drug treatment <input type="checkbox"/> remedy pci <input type="checkbox"/> Transfer to a higher level hospital remedial pci	
Interventional therapy		
9.15 If you make another crown, the result (Multiple choice):	<input type="checkbox"/> Emergency placement of the stent with occlusion of thrombus <input type="checkbox"/> Emergency placement of the stent is smooth, but some of the thrombus into the stent is smooth without thrombus <input type="checkbox"/> Unimplanted stents, other vessels, acute occlusion or severe stenosis <input type="checkbox"/> The same emergency crown <input type="checkbox"/> Emergency treatment <input type="checkbox"/> and first	

9.16 If it is a stent thrombus, Possible Causes:	<input type="checkbox"/> Clopidogrel resistance <input type="checkbox"/> Aspirin resistance <input type="checkbox"/> bracket malapposition <input type="checkbox"/> pci postoperative discontinuation of double anti-antibody Platelet drug <input type="checkbox"/> Uncertain
Clopidogrel resistance basis	<input type="checkbox"/> thrombus elasticity diagram <input type="checkbox"/> Clinical judgment <input type="checkbox"/> Other _____
Aspirin resistance basis	<input type="checkbox"/> thrombus elasticity diagram <input type="checkbox"/> Clinical judgment <input type="checkbox"/> Other _____
Bad bracket attachment	<input type="checkbox"/> IVUS <input type="checkbox"/> OCT <input type="checkbox"/> Other _____
Pci stopped taking drugs within one year after surgery Type of object	<input type="checkbox"/> Aspirin <input type="checkbox"/> Clopidogrel <input type="checkbox"/> Unknown
Infarction or ischemia related blood vessels again pci	
9.17 The infarct or ischemic phase	<input type="checkbox"/> Yes <input type="checkbox"/> No

Guanxi pci:	
9.18 If yes, interventional therapy Blood vessels (represented by numbers):	<input type="checkbox"/> LM <input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX <input type="checkbox"/> Dia <input type="checkbox"/> OM <input type="checkbox"/> PDA <input type="checkbox"/> PLA <input type="checkbox"/> bridge tube <input type="checkbox"/> Uncertain <input type="checkbox"/> blood
9.19 Re-intervention method:	<input type="checkbox"/> Simple thrombus aspiration device <input type="checkbox"/> Simple ptca <input type="checkbox"/> bracke Place <input type="checkbox"/> No
9.20 If the stent is placed, the branch Frame type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing
9.21bms number:	_____One
9.22des number:	_____One
9.23 With or without coronary intervention disease:	<input type="checkbox"/> have <input type="checkbox"/> No
9.24 If yes, type:	<input type="checkbox"/> no reflow (timi0~1 level) <input type="checkbox"/> slow blood flow (timi2 level) <input type="checkbox"/> Acute thrombosis in the stent <input type="checkbox"/> Coronary artery rupture (caused by balloon or stent) <input type="checkbox"/> Coronary artery perforation (caused by guide wire) <input type="checkbox"/> Pericardial tamponade <input type="checkbox"/> Need emergency cabg <input type="checkbox"/> cardiovascular breakdown <input type="checkbox"/> Death on the operating table <input type="checkbox"/> Ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest <input type="checkbox"/> Stop/cardiopulmonary resuscitation <input type="checkbox"/> Other _____
Non-infarct or ischemia-related coronary line pci	
9.25 Non-infarct or ischemia related Coronary line pci:	<input type="checkbox"/> Yes <input type="checkbox"/> No
9.26 If yes, reason:	<input type="checkbox"/> non-ira severe occlusion <input type="checkbox"/> suspected myocardial ischemia <input type="checkbox"/> Other
9.27 Non-infarct or ischemia related Coronary pci:	<input type="checkbox"/> LM <input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX <input type="checkbox"/> Dia <input type="checkbox"/> OM <input type="checkbox"/> PDA <input type="checkbox"/> PLA <input type="checkbox"/> bridge tube <input type="checkbox"/> Uncertain <input type="checkbox"/> blood
9.28 Whether to place the bracket:	<input type="checkbox"/> Yes <input type="checkbox"/> No
9.29 If yes, bracket type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing
9.30bms number:	_____One
9.31des number:	_____One
9.32 Non-infarct related coronary artery Complications:	<input type="checkbox"/> have <input type="checkbox"/> No
9.33 If yes, type:	<input type="checkbox"/> no reflow (timi0~1 level) <input type="checkbox"/> slow blood flow (timi2 level) <input type="checkbox"/> Acute thrombosis in the stent <input type="checkbox"/> coronary artery rupture <input type="checkbox"/> Coronary perforation <input type="checkbox"/> heart pack stuffing <input type="checkbox"/> Need emergency cabg <input type="checkbox"/> Ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiovascular breakdown <input type="checkbox"/> Death on the operating table <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> Other _____
9.34 There are no lesions with residual $\geq 70\%$ stenosis ($\geq 2.5\text{mm}$ blood vessels) without interventional therapy	
	<input type="checkbox"/> have <input type="checkbox"/> No
9.35 Whether IABP sup to apply port hold:	<input type="checkbox"/> Yes <input type="checkbox"/> No
9.36 If yes, application time:	<input type="checkbox"/> Insert before intervention <input type="checkbox"/> Insert in the intervention <input type="checkbox"/> Insert after intervention

9.37 emergency pci intraoperative anticoagulation Agent:	<input type="checkbox"/> Unfractionated heparin <input type="checkbox"/> Other	<input type="checkbox"/> Low molecular weight heparin	<input type="checkbox"/> Bivaludine
9.38 PCI Intraoperative application IIb/IIIa antagonist:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
9.39 If yes, dose:	<input type="checkbox"/> full amount than half	<input type="checkbox"/> between half and full	<input type="checkbox"/> half amount <input type="checkbox"/> less
9.40 Application method:	<input type="checkbox"/> Intravenous intravenous	<input type="checkbox"/> Intracoronary artery	<input type="checkbox"/> coronary artery plus
9.41 intraoperative contrast agent type	<input type="checkbox"/> You Weixian	威威派克	<input type="checkbox"/> Iodine <input type="checkbox"/> Other
9.42 Contrast dosage	_____ml		
9.43 Emergency cabg:	<input type="checkbox"/> Survival at discharge <input type="checkbox"/> died at the time of discharge		

10. Elective revascularization

10.01 elective revascularization:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
10.02 If yes, the specific method:	<input type="checkbox"/> elective pci <input type="checkbox"/> elective cabg		
10.03 Specific time:	YYYY-MM-DD hh:mm:ss		
10.04 If yes, from the time of onset between:	<input type="checkbox"/> 1-3 days <input type="checkbox"/> 3-7 days <input type="checkbox"/> 7-14 days <input type="checkbox"/> 14-28 days <input type="checkbox"/> 28 days or more		
10.05 Timing pci Reasons:	<input type="checkbox"/> myocardial ischemia <input type="checkbox"/> elective PC (I did not undergo emergency PCI) <input type="checkbox"/> infarct-related extravascular extravasation Staged PCI		
10.06 Interventional approach:	桡 radial artery <input type="checkbox"/> femoral artery <input type="checkbox"/> crown through the radial artery, pci transfemoral artery		
10.07 Is it the first time after the onset? Crown production:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Coronary angiography results	<input type="checkbox"/> For the first time <input type="checkbox"/> Review		
10.08 Review coronary angiography, knot fruit:	<input type="checkbox"/> Same as the first result <input type="checkbox"/> Emergency pci placed in the stent placement stent thrombosis <input type="checkbox"/> emergency pci placement stent occlusion		
10.09 First angiography, basic coronary angiography (coronary artery syntax score map, please indicate dominant, ira, stenosis) And TIMI blood flow, a, b and c are often only seen in the anatomy of the coronary branch)			
		<input type="checkbox"/> Right advantage (16 segments) <input type="checkbox"/> Left advantage (15 segments)	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <input type="checkbox"/> Right dominance </div> <div style="text-align: center;"> <input type="checkbox"/> Left dominance </div> </div>			
Digital location of anatomy of coronary lesions and its degree of stenosis (limited to the most severe stenosis of ≥50% of stenotic lesions)			
Right coronary artery (rca)		Left circumflex (lcx)	
1. Right coronary artery proximal segment	_____ %	11. Rotating branch Near section	_____ %
2. Right coronary artery	_____ %	12. The middle branch	_____ %
3. Right coronary artery distal segment	_____ %	12a. First blunt Marginal branch	_____ %
4. Right crown - posterior descending branch	_____ %	12b. Second blunt Marginal branch	_____ %
16. Right crown - posterior branch	_____ %	13. Rotating branch Far section	_____ %

16a. The first crown of the right crown - the posterior branch support	_____ %	14. Left rear side support	_____ %
16b. Right crown - second branch of the posterior branch support	_____ %	14a. Left rear side Branch a	_____ %
16c. The right crown - the third branch of the posterior branch support	_____ %	14b. Left rear side Branch b	_____ %

Left anterior descending (lad)	15. Cyclotron - Post-fall	_____ %
5. Left main trunk	_____ %	<input type="checkbox"/> opening <input type="checkbox"/> Body <input type="checkbox"/> Bifurcation
6. The vicinity of the front descending branch	_____ %	
7. Middle section of the former descending branch	_____ %	
8. anterior descending apex segment	_____ %	
9. The first diagonal branch	_____ %	
9a. The first diagonal branch a	_____ %	
10. The second diagonal branch	_____ %	
10a. Second diagonal branch a	_____ %	
10.10 coronary angiography results (can Multiple choice):	<input type="checkbox"/> single-vessel disease <input type="checkbox"/> double-vessel disease <input type="checkbox"/> three-vessel disease <input type="checkbox"/> lm lesion <input type="checkbox"/> Normal <input type="checkbox"/> plaque or < 50% narrow	
10.11 Presumed infarct-related coronary artery:	_____ segment	
10.12 Degree of stenosis:	_____ %	
10.13 timi blood flow*:	<input type="checkbox"/> 0 <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III	
10.14 ira obvious blood at the lesion bolt:	<input type="checkbox"/> primary thrombus <input type="checkbox"/> Stent thrombosis <input type="checkbox"/> No	
Pci treatment of infarct-related coronary artery		
10.15 Infarct-related coronary artery Pci treatment:	<input type="checkbox"/> Yes <input type="checkbox"/> Emergency has been done <input type="checkbox"/> No	
10.16 If no, reason:	<input type="checkbox"/> Slight stenosis (<70%) <input type="checkbox"/> pci contraindications <input type="checkbox"/> high risk lesions (thrombosis or significant instability) <input type="checkbox"/> coronary multi-vessel disease is not suitable for pci, preferred cabg <input type="checkbox"/> High-risk patients (diabetes, etc.), preferred cabg <input type="checkbox"/> The patient is critically ill and the doctor decides not to do it. <input type="checkbox"/> Patient or family refused <input type="checkbox"/> Other	
10.17 Final infarct related lesions Intervention method:	<input type="checkbox"/> Simple thrombus aspiration device <input type="checkbox"/> pure ptca <input type="checkbox"/> bracket placement	
10.18 Bracket placement type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing	
10.19 bms number:	_____	
10.20 des number:	_____	
10.21 Infarct-related blood vessels pci After the residual stenosis:	_____ %	
10.22 With or without coronary intervention disease:	<input type="checkbox"/> have <input type="checkbox"/> No	

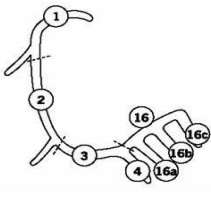
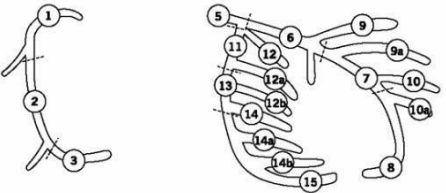
10.23 If yes, type (multiple choices possible):	<input type="checkbox"/> no reflow (timi0~1) <input type="checkbox"/> slow blood flow (timi2) <input type="checkbox"/> acute thrombosis in the stent <input type="checkbox"/> coronary rupture (caused by balloon or stent) <input type="checkbox"/> coronary perforation (caused by guide wire) <input type="checkbox"/> pericardial tamponade <input type="checkbox"/> urgent Cabg <input type="checkbox"/> ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> cardiovascular collapse * <input type="checkbox"/> hand Death on the platform <input type="checkbox"/> other
Non-infarct related coronary line pci	
10.24 Non-infarct related coronary artery is No line pci:	<input type="checkbox"/> Yes <input type="checkbox"/> No
10.25 If yes, interventional therapy Non-infarct related vascular lesions:	<input type="checkbox"/> LM <input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX <input type="checkbox"/> Dia <input type="checkbox"/> OM <input type="checkbox"/> PDA <input type="checkbox"/> PLA <input type="checkbox"/> bridge <input type="checkbox"/> blood tube <input type="checkbox"/> Uncertain
10.26 Whether to place the bracket:	<input type="checkbox"/> Yes <input type="checkbox"/> No

10.27 If yes, bracket type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing					
10.28bms number:	_____One					
10.29des number:	_____One					
10.30 There are no interventions for the presence or absence of residual $\geq 70\%$ stenosis (≥ 2.5 mm blood vessels):						
	<input type="checkbox"/> have <input type="checkbox"/> No					
10.31 With or without non-infarct related crown Vascular vascular intervention complications:	<input type="checkbox"/> have <input type="checkbox"/> No					
10.32 If yes, type (multiple choices possible):	<input type="checkbox"/> no reflow (timi0~1) <input type="checkbox"/> slow blood flow (timi2) <input type="checkbox"/> acute thrombosis in the stent <input type="checkbox"/> coronary rupture (caused by balloon or stent) <input type="checkbox"/> coronary perforation (caused by guide wire) <input type="checkbox"/> pericardial tamponade <input type="checkbox"/> urgent Cabg <input type="checkbox"/> ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> cardiovascular collapse * <input type="checkbox"/> hand Death on the platform <input type="checkbox"/> other					
10.33 Whether to apply iabp support hold:	<input type="checkbox"/> Yes <input type="checkbox"/> No					
10.34 If yes, application time:	<input type="checkbox"/> Insert before intervention		<input type="checkbox"/> Insert in the intervention		<input type="checkbox"/> Insert after intervention	
10.35pci intraoperative anticoagulant:	<input type="checkbox"/> Unfractionated heparin		<input type="checkbox"/> Low molecular weight heparin		<input type="checkbox"/> Bivaludine	
	<input type="checkbox"/> Other		<input type="checkbox"/> Unknown			
10.36pci intraoperative platelets IIb/IIIa antagonist:	<input type="checkbox"/> Yes <input type="checkbox"/> No					
10.37 If yes, dose:	<input type="checkbox"/> full amount		<input type="checkbox"/> half to full		<input type="checkbox"/> half amount <input type="checkbox"/> less than half	
10.38 Application method:	<input type="checkbox"/> Intravenous intravenous		<input type="checkbox"/> Intracoronary artery		<input type="checkbox"/> coronary artery plus	
10.39pci before and after the test:						
project	Last time before surgery			Within 72 hours after surgery		
CK-MB	_____	<input type="checkbox"/> IU/L	<input type="checkbox"/> not done	_____	<input type="checkbox"/> IU/L	<input type="checkbox"/> not done
		<input type="checkbox"/> ng/mL			<input type="checkbox"/> ng/mL	
TnT	_____ng/mL	<input type="checkbox"/> not done		_____ng/mL	<input type="checkbox"/> not done	
TnI	_____ng/mL	<input type="checkbox"/> not done		_____ng/mL	<input type="checkbox"/> not done	
Cr	_____	<input type="checkbox"/> μ mol/L <input type="checkbox"/> mg/dL		_____	<input type="checkbox"/> μ mol/L	<input type="checkbox"/> not done
					<input type="checkbox"/> mg/dL	
10.40 Is stem cell migration? plant:	<input type="checkbox"/> Yes <input type="checkbox"/> No					
10.41 intraoperative contrast agent type	<input type="checkbox"/> You Weixian		威威派克		<input type="checkbox"/> Iodine <input type="checkbox"/> Other	
10.42 Contrast dosage	_____ml					
Elective cabg						
10.43 Elective cabg:	<input type="checkbox"/> died at the time of discharge		<input type="checkbox"/> Survival at discharge			

Re-elected revascularization

10.01 elective revascularization:	<input type="checkbox"/> Yes <input type="checkbox"/> No
-----------------------------------	--

10.02 If yes, the specific method:	<input type="checkbox"/> elective pci <input type="checkbox"/> elective cabg
10.03 Specific time:	YYYY-MM-DD hh:mm:ss
10.04 If yes, from the time of onset between:	<input type="checkbox"/> 1-3 days <input type="checkbox"/> 3-7 days <input type="checkbox"/> 7-14 days <input type="checkbox"/> 14-28 days <input type="checkbox"/> 28 days or more

10.05 Timing pci Reasons:	<input type="checkbox"/> myocardial ischemia <input type="checkbox"/> elective PC (I did not undergo emergency PCI) <input type="checkbox"/> infarct-related extravascular extravasation Staged PCI		
10.06 Interventional approach:	桡 radial artery <input type="checkbox"/> femoral artery <input type="checkbox"/> crown through the radial artery, pci transfemoral artery		
10.07 Is it the first time after the onset? Crown production:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Coronary angiography results	<input type="checkbox"/> For the first time <input type="checkbox"/> Review		
10.08 Review coronary angiography, knot fruit:	<input type="checkbox"/> Same as the first result <input type="checkbox"/> Emergency pci placed in the stent placement stent thrombosis <input type="checkbox"/> emergency pci placement stent occlusion		
10.09 First angiography, basic coronary angiography (coronary artery syntax score map, please indicate dominant, ira, stenosis) And TIMI blood flow, a, b and c are often only seen in the anatomy of the coronary branch)			
		<input type="checkbox"/> Right advantage (16 segments) <input type="checkbox"/> Left advantage (15 segments)	
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <input type="checkbox"/> Right dominance  </div> <div style="text-align: center;"> <input type="checkbox"/> Left dominance  </div> </div>			
Digital location of anatomy of coronary lesions and its degree of stenosis (limited to the most severe stenosis of ≥50% of stenotic lesions)			
Right coronary artery (rca)		Left circumflex (lcx)	
1. Right coronary artery proximal segment	_____ %	11. Rotating branch Near section	_____ %
2. Right coronary artery	_____ %	12. The middle branch	_____ %
3. Right coronary artery distal segment	_____ %	12a. First blunt Marginal branch	_____ %
4. Right crown - posterior descending branch	_____ %	12b. Second blunt Marginal branch	_____ %
16. Right crown - posterior branch	_____ %	13. Rotating branch Far section	_____ %
16a. The first crown of the right crown - the posterior branch support	_____ %	14. Left rear side support	_____ %
16b. Right crown - second branch of the posterior branch support	_____ %	14a. Left rear side Branch a	_____ %
16c. The right crown - the third branch of the posterior branch	_____ %	14b. Left rear side Branch b	_____ %

support			
Left anterior descending (lad)		15. Cyclotron - Post-fall	_____ %
5. Left main trunk	_____ %	<input type="checkbox"/> opening	<input type="checkbox"/> Body <input type="checkbox"/> Bifurcation
6. The vicinity of the front descending branch	_____ %		
7. Middle section of the former descending branch	_____ %		
8. anterior descending apex segment	_____ %		
9. The first diagonal branch	_____ %		
9a. The first diagonal branch a	_____ %		

10. The second diagonal branch	_____ %
10a. Second diagonal branch a	_____ %
10.10 coronary angiography results (can Multiple choice):	<input type="checkbox"/> single-vessel disease <input type="checkbox"/> double-vessel disease <input type="checkbox"/> three-vessel disease <input type="checkbox"/> lm lesion <input type="checkbox"/> Normal <input type="checkbox"/> plaque or < 50% narrow
10.11 Presumed infarct-related coronary artery:	_____ segment
10.12 Degree of stenosis:	_____ %
10.13 timi blood flow*:	<input type="checkbox"/> 0 <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III
10.14 ira obvious blood at the lesion bolt:	<input type="checkbox"/> primary thrombus <input type="checkbox"/> Stent thrombosis <input type="checkbox"/> No
Pci treatment of infarct-related coronary artery	
10.15 Infarct-related coronary artery Pci treatment:	<input type="checkbox"/> Yes <input type="checkbox"/> Emergency has been done <input type="checkbox"/> No
10.16 If no, reason:	<input type="checkbox"/> Slight stenosis (<70%) <input type="checkbox"/> pci contraindications <input type="checkbox"/> high risk lesions (thrombosis or significant instability) <input type="checkbox"/> coronary multi-vessel disease is not suitable for pci, preferred cabg <input type="checkbox"/> High-risk patients (diabetes, etc.), preferred cabg <input type="checkbox"/> The patient is critically ill and the doctor decides not to do it. <input type="checkbox"/> Patient or family refused <input type="checkbox"/> Other
10.17 Final infarct related lesions Intervention method:	<input type="checkbox"/> Simple thrombus aspiration device <input type="checkbox"/> pure ptca <input type="checkbox"/> bracket placement
10.18 Bracket placement type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing
10.19 bms number:	_____
10.20 des number:	_____
10.21 Infarct-related blood vessels pci After the residual stenosis:	_____ %
10.22 With or without coronary intervention disease:	<input type="checkbox"/> have <input type="checkbox"/> No
10.23 If yes, type (multiple choices possible):	<input type="checkbox"/> no reflow (timi0~1) <input type="checkbox"/> slow blood flow (timi2) <input type="checkbox"/> acute thrombosis in the stent <input type="checkbox"/> coronary rupture (caused by balloon or stent) <input type="checkbox"/> coronary perforation (caused by guide wire) <input type="checkbox"/> pericardial tamponade <input type="checkbox"/> urgent Cabg <input type="checkbox"/> ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> cardiovascular collapse * <input type="checkbox"/> hand Death on the platform <input type="checkbox"/> other
Non-infarct related coronary line pci	
10.24 Non-infarct related coronary artery is No line pci:	<input type="checkbox"/> Yes <input type="checkbox"/> No
10.25 If yes, interventional therapy Non-infarct related vascular lesions:	<input type="checkbox"/> LM <input type="checkbox"/> LAD <input type="checkbox"/> RCA <input type="checkbox"/> LCX <input type="checkbox"/> Dia <input type="checkbox"/> OM <input type="checkbox"/> PDA <input type="checkbox"/> PLA <input type="checkbox"/> bridge blood tube <input type="checkbox"/> Uncertain
10.26 Whether to place the bracket:	<input type="checkbox"/> Yes <input type="checkbox"/> No
10.27 If yes, bracket type:	<input type="checkbox"/> BMS <input type="checkbox"/> DES <input type="checkbox"/> Two kinds of mixing

10.28bms number:	_____One
10.29des number:	_____One
10.30 There are no interventions for the presence or absence of residual $\geq 70\%$ stenosis (≥ 2.5 mm blood vessels):	
	<input type="checkbox"/> have <input type="checkbox"/> No
10.31 With or without non-infarct related crown Vascular vascular intervention complications:	<input type="checkbox"/> have <input type="checkbox"/> No
10.32 If yes, type (may be more	<input type="checkbox"/> no reflow (timi0~1 level) <input type="checkbox"/> slow blood flow (timi2 level) <input type="checkbox"/> Acute thrombosis in the stent <input type="checkbox"/> crown

selected):	Arterial rupture (caused by balloon or stent) <input type="checkbox"/> Coronary artery perforation (caused by guide wire) <input type="checkbox"/> heart pack stuffing <input type="checkbox"/> Need emergency cabg <input type="checkbox"/> Ventricular tachycardia / ventricular fibrillation <input type="checkbox"/> cardiac arrest / cardiopulmonary resuscitation <input type="checkbox"/> cardiovascular breakdown* <input type="checkbox"/> Death on the operating table <input type="checkbox"/> Other					
10.33 Whether to apply iabp support hold:	<input type="checkbox"/> Yes <input type="checkbox"/> No					
10.34 If yes, application time:	<input type="checkbox"/> Insert before intervention		<input type="checkbox"/> Insert in the intervention		<input type="checkbox"/> Insert after intervention	
10.35 pci intraoperative anticoagulant:	<input type="checkbox"/> Unfractionated heparin		<input type="checkbox"/> Low molecular weight heparin		<input type="checkbox"/> Bivaludine	
	<input type="checkbox"/> Other		<input type="checkbox"/> Unknown			
10.36 pci intraoperative platelets IIb/IIIa antagonist:	<input type="checkbox"/> Yes <input type="checkbox"/> No					
10.37 If yes, dose:	<input type="checkbox"/> full amount		<input type="checkbox"/> half to full		<input type="checkbox"/> half amount <input type="checkbox"/> less than half	
10.38 Application method:	<input type="checkbox"/> Intravenous intravenous		<input type="checkbox"/> Intracoronary artery		<input type="checkbox"/> coronary artery plus	
10.39 pci before and after the test:						
project	Last time before surgery			Within 72 hours after surgery		
CK-MB	_____	<input type="checkbox"/> IU/L	<input type="checkbox"/> not done	_____	<input type="checkbox"/> IU/L	<input type="checkbox"/> not done
		<input type="checkbox"/> ng/mL			<input type="checkbox"/> ng/mL	
TnT	_____ ng/mL	<input type="checkbox"/> not done		_____ ng/mL	<input type="checkbox"/> not done	
TnI	_____ ng/mL	<input type="checkbox"/> not done		_____ ng/mL	<input type="checkbox"/> not done	
Cr	_____	<input type="checkbox"/> μ mol/L <input type="checkbox"/> mg/dL		_____	<input type="checkbox"/> μ mol/L	<input type="checkbox"/> not done
					<input type="checkbox"/> mg/dL	
10.40 Is stem cell migration? plant:	<input type="checkbox"/> Yes <input type="checkbox"/> No					
10.41 intraoperative contrast agent type	<input type="checkbox"/> You Weixian		威威派克 <input type="checkbox"/> Iodine		<input type="checkbox"/> Other	
10.42 Contrast dosage	_____ ml					
Elective cabg						
10.43 Elective cabg:	<input type="checkbox"/> died at the time of discharge <input type="checkbox"/> Survival at discharge					

11. Major complications and adverse events during hospitalization

11.01 Heart Failure (Newly Developed) Born or aggravated):	<input type="checkbox"/> have <input type="checkbox"/> No
11.02 Cardiogenic shock:	<input type="checkbox"/> have <input type="checkbox"/> No
11.03 Mechanical complications:	<input type="checkbox"/> have <input type="checkbox"/> No
11.04 If yes, type (may be more selected):	<input type="checkbox"/> interventricular perforation <input type="checkbox"/> papillary muscle break <input type="checkbox"/> Free wall rupture <input type="checkbox"/> subacute heart rupture with pericardial pressure Plug (or pseudo-ventricular aneurysm)
11.05 Whether surgery:	<input type="checkbox"/> Yes <input type="checkbox"/> No
11.06 Severe arrhythmia:	<input type="checkbox"/> have <input type="checkbox"/> No

11.07 If there is, type (may be more selected):	Ventricular tachycardia / ventricular fibrillation fibrillation <input type="checkbox"/> sinus stop / severe bradycardia	<input type="checkbox"/> atrial flutter / atrial <input type="checkbox"/> AVB <input type="checkbox"/> Other
Avb type:	<input type="checkbox"/> ii type <input type="checkbox"/> iii type <input type="checkbox"/> avb height	
11.08 Special treatment:	<input type="checkbox"/> Temporary pacemaker <input type="checkbox"/> Other	<input type="checkbox"/> permanent pacemaker <input type="checkbox"/> ICD <input type="checkbox"/> CRT <input type="checkbox"/> No
11.09 recurrent myocardial ischemia:	<input type="checkbox"/> Yes <input type="checkbox"/> No	

11.10 Myocardium during hospitalization infarction:	<input type="checkbox"/> Yes <input type="checkbox"/> No
11.11 If yes, location and condition:	<input type="checkbox"/> original part <input type="checkbox"/> non-original parts <input type="checkbox"/> Stent thrombosis <input type="checkbox"/>
	time <input type="checkbox"/> acute <input type="checkbox"/> subacute
11.12 Cardiac arrest:	<input type="checkbox"/> have <input type="checkbox"/> No
11.13 Whether to apply iabp support hold:	<input type="checkbox"/> Yes <input type="checkbox"/> No
11.14 If yes, application time:	<input type="checkbox"/> No intervention (only iabp) <input type="checkbox"/> Insert before intervention <input type="checkbox"/> Insert in the intervention <input type="checkbox"/> Insert after intervention
11.15 Other special support Treatment:	<input type="checkbox"/> ECMO <input type="checkbox"/> Cryogenic treatment <input type="checkbox"/> No
11.16 cerebrovascular events / stroke in:	<input type="checkbox"/> have <input type="checkbox"/> No
11.17 If yes, time:	YYYY-MM-DD hh:mm:ss
11.18 If yes, type:	<input type="checkbox"/> brain hemorrhage <input type="checkbox"/> cerebral infarction <input type="checkbox"/> bleeding after cerebral infarction <input type="checkbox"/> Uncertain
11.19 Other bleeding events:	<input type="checkbox"/> have <input type="checkbox"/> No
11.20 If there is, the bleeding site (Multiple choice):	<input type="checkbox"/> puncture site <input type="checkbox"/> gastrointestinal tract <input type="checkbox"/> Urinary tract <input type="checkbox"/> retroperitoneal <input type="checkbox"/> Other
11.21 Hemoglobin decline:	<input type="checkbox"/> No <input type="checkbox"/> Mild decline (<3g/dL) <input type="checkbox"/> Moderate (3-5g/dL) <input type="checkbox"/> severe decline (>5g/dL)
11.22 Clinical intervention (multiple choices possible):	<input type="checkbox"/> No <input type="checkbox"/> Surgery to stop bleeding <input type="checkbox"/> Endoscopic hemostasis <input type="checkbox"/> Drug hemostasis <input type="checkbox"/> partial oppression
11.23 Whether blood transfusion:	<input type="checkbox"/> Yes <input type="checkbox"/> No
11.24 Acute pulmonary embolism:	<input type="checkbox"/> have <input type="checkbox"/> No
11.25 Peripheral artery during hospitalization embolism:	<input type="checkbox"/> have <input type="checkbox"/> No
	If yes, part _____
11.26 Allergies:	<input type="checkbox"/> contrast agent allergy <input type="checkbox"/> Other drug allergies <input type="checkbox"/> No
11.27 Death:	<input type="checkbox"/> Yes <input type="checkbox"/> No
11.28 If yes, time:	YYYY-MM-DD hh:mm:ss
11.29 Direct cause of death (multiple choices possible):	<input type="checkbox"/> Cardiac sudden death <input type="checkbox"/> cardiogenic shock <input type="checkbox"/> heart failure <input type="checkbox"/> cardiac mechanical complications (ventricular septal perforation, free wall rupture, mitral chordae rupture, etc.) <input type="checkbox"/> interventional complications <input type="checkbox"/> multiple organ failure <input type="checkbox"/> cerebral hemorrhage <input type="checkbox"/> lung Infection <input type="checkbox"/> cerebral infarction <input type="checkbox"/> allergies <input type="checkbox"/> major bleeding (puncture site or other organ bleeding) <input type="checkbox"/> Other

12. Discharge status and expenses

12.01 Discharge status:	<input type="checkbox"/> Survival <input type="checkbox"/> death
12.02 At the time of discharge, ami class*:	<input type="checkbox"/> 1 type <input type="checkbox"/> 2 type <input type="checkbox"/> 3 type <input type="checkbox"/> 4b <input type="checkbox"/> 4c

12.03 Emergency Room:	_____ day	_____ small Time	_____ minute
12.04 Intensive care unit days:	_____ day		
12.05 Hospitalized General Ward:	_____ day		
12.06 Emergency room costs:	_____ yuan	<input type="checkbox"/> Unknown	
12.07 ward hospitalization expenses:	_____ yuan	<input type="checkbox"/> Unknown	

	Among them, the material fee:	_____yuan
	inspection fee:	_____yuan
	Surgery Fees:	_____yuan
	Drug fee:	_____yuan
12.08 Discharged with medicine (multiple choice):	<input type="checkbox"/> Aspirin <input type="checkbox"/> Clopidogrel <input type="checkbox"/> cilostazol <input type="checkbox"/> B β blocker <input type="checkbox"/> Nitrate <input type="checkbox"/> <input type="checkbox"/> him <input type="checkbox"/> Ting drugs <input type="checkbox"/> ACEI/ARB <input type="checkbox"/> Antiarrhythmic drugs <input type="checkbox"/> calcium antagonist <input type="checkbox"/> Digoxin <input type="checkbox"/> diuretic <input type="checkbox"/> Chinese patent medicine	
traditional Chinese medicine:	<input type="checkbox"/> Fufang Danshen tablets or dropping pills <input type="checkbox"/> Tong Xin Luo <input type="checkbox"/> Other	
12.09 After leaving the hospital:	<input type="checkbox"/> discharged according to discharge conditions <input type="checkbox"/> transferred to our hospital for surgery <input type="checkbox"/> Automatic discharge (because the condition deteriorates, End-of-life) <input type="checkbox"/> Automatic discharge (non-disease reasons, survival) <input type="checkbox"/> Transfer to a higher level hospital (pci or cabg) <input type="checkbox"/> <input type="checkbox"/> Transfer to other medical institutions for rehabilitation <input type="checkbox"/> <input type="checkbox"/> Transfer to other departments of this hospital or other hospital (due to other diseases)	
12.10 Does the patient participate in it? His clinical trial or research:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
12.11 If yes, type (may be more selected):	<input type="checkbox"/> Other registration studies <input type="checkbox"/> Research on diagnosis <input type="checkbox"/> <input type="checkbox"/> Research on treatment intervention methods or strategies <input type="checkbox"/> Research <input type="checkbox"/> New drug clinical trial <input type="checkbox"/> Clinical trials on interventions or stents <input type="checkbox"/> Other	

Follow-up record

Whether to contact the patient or family member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, follow-up date:	YYYY-MM-DD	
If no, the reason:	<input type="checkbox"/> Survival, but refused to follow up <input type="checkbox"/> The phone cannot be contacted <input type="checkbox"/> Unknown	
Follow-up form:	<input type="checkbox"/> outpatient follow-up <input type="checkbox"/> telephone follow-up <input type="checkbox"/> Transfer to higher level hospitals for follow-up	
Major cardiovascular events		
death:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	If yes, when between:	YYYY-MM-DD
	cause of death:	<input type="checkbox"/> cardiogenic <input type="checkbox"/> non-cardiac <input type="checkbox"/> Uncertain
AMI:	<input type="checkbox"/> have <input type="checkbox"/> No	
	If there is, then between:	YYYY-MM-DD
	Whether the bracket Internal thrombus:	<input type="checkbox"/> definitely <input type="checkbox"/> very likely <input type="checkbox"/> possible <input type="checkbox"/> No

	If yes or Yes, time:	<input type="checkbox"/> acute <input type="checkbox"/> subacute <input type="checkbox"/> late <input type="checkbox"/> super late
Visiting or hospitalized due to heart failure:	<input type="checkbox"/> have <input type="checkbox"/> No	
PCI:	<input type="checkbox"/> have <input type="checkbox"/> No	
	If there is, then between:	YYYY-MM-DD
	If yes, suitable Should be symptomatic :	<input type="checkbox"/> emergency department <input type="checkbox"/> Due to myocardial ischemia <input type="checkbox"/> Expected (asymptomatic)
	Lesion:	<input type="checkbox"/> primary lesion <input type="checkbox"/> Stenosis or thrombus in the stent
Stem cell transplantation	<input type="checkbox"/> Yes <input type="checkbox"/> No	

CABG:	<input type="checkbox"/> have <input type="checkbox"/> No	
	If there is, then between:	YYYY-MM-DD
	If there is:	<input type="checkbox"/> emergency department <input type="checkbox"/> elective period
Stroke:	<input type="checkbox"/> have <input type="checkbox"/> No	
	If there is, then between:	YYYY-MM-DD
	Types of:	<input type="checkbox"/> brain hemorrhage <input type="checkbox"/> cerebral infarction <input type="checkbox"/> with blood after infarction
Serious bleeding events:	<input type="checkbox"/> have <input type="checkbox"/> No	
	If there is, then between:	YYYY-MM-DD
	Bleeding site:	<input type="checkbox"/> brain <input type="checkbox"/> Respiratory tract <input type="checkbox"/> gastrointestinal tract <input type="checkbox"/> Urinary system <input type="checkbox"/> Other
Rehospitalization:	<input type="checkbox"/> have <input type="checkbox"/> No	
	If yes, the original because:	<input type="checkbox"/> Because of heart <input type="checkbox"/> non-cardiac causes
Quality of Life:	<input type="checkbox"/> Rest at home (poor state before myocardial infarction) <input type="checkbox"/> work but poor state before myocardial infarction has been restored <input type="checkbox"/> The original work Or living state	
Medication (since the last visit to this time)		
aspirin:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine <input type="checkbox"/> Intermittent or suspended and resumed	
	If yes, agent the amount:	_____mg/d
	If you stop taking medicine, time:	YYYY-MM-DD <input type="checkbox"/> Unclear
	Reason for withdrawal (Multiple choice):	<input type="checkbox"/> bleeding <input type="checkbox"/> gastrointestinal discomfort <input type="checkbox"/> Other adverse reactions <input type="checkbox"/> Prepare for surgery or operation <input type="checkbox"/> patients automatically stop taking drugs <input type="checkbox"/> The reason is unknown
Other antiplatelet drugs	P2y12 receptor inhibitor	
	<input type="checkbox"/> Yes <input type="checkbox"/> No resumed <input type="checkbox"/> stop taking medicine <input type="checkbox"/> Intermittent or suspended and resumed <input type="checkbox"/> Unknown	
	If yes, medicine Object:	<input type="checkbox"/> Clopidogrel 普拉pragre 替 格里洛 <input type="checkbox"/> Unknown
	dose:	_____ <input type="checkbox"/> mg/d <input type="checkbox"/> g/d
	If you stop taking medicine, time:	YYYY-MM-DD <input type="checkbox"/> Unclear
	Reason for withdrawal (Multiple choice):	<input type="checkbox"/> bleeding <input type="checkbox"/> Other adverse reactions <input type="checkbox"/> Prepare for surgery or operation <input type="checkbox"/> You can't buy this medicine locally. <input type="checkbox"/> Patient stop <input type="checkbox"/> The reason is unknown
	Other drugs:	<input type="checkbox"/> cilostazol <input type="checkbox"/> Pan Shengding <input type="checkbox"/> Other <input type="checkbox"/> No

Statins	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine <input type="checkbox"/> interrupted		
	If you stop taking medicine, time	YYYY-MM-DD	<input type="checkbox"/> Unclear
	Reason for withdrawal (multiple choice)	<input type="checkbox"/> Liver adverse reactions <input type="checkbox"/> Muscle adverse reactions <input type="checkbox"/> Other reactions <input type="checkbox"/> Patient stop <input type="checkbox"/> Unknown	
Beta blocker	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine		

Nitrate	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
ACEI/ARB	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Calcium antagonist	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Anticoagulant (warfarin)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Non-statin lipid-lowering drugs	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Spirolactone	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Diuretic	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
traditional Chinese medicine	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Tongxin network	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Compound Danshen Dripping Pills	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Digoxin	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Ppi gastric acid inhibitor	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> stop taking medicine	
Average monthly drug fee	_____yuan	<input type="checkbox"/> not applicable
Auxiliary inspection	Ultrasound	<input type="checkbox"/> already done <input type="checkbox"/> not done
	As done, left room Ejection fraction	_____ %
	Left ventricular end diastolic diameter LVEDd	_____mm
Ultrasound segmental wall motion often	<input type="checkbox"/> No <input type="checkbox"/> weakened exercise movement (ventricular aneurysm) <input type="checkbox"/> Movement disappears <input type="checkbox"/> contradictory	
Coronary ct	<input type="checkbox"/> already done <input type="checkbox"/> not done	
	If done, shows whether the bracket is unobstructed	<input type="checkbox"/> Yes <input type="checkbox"/> No

Follow-up 2 (6 months after

onset) Follow-up 3 (12 months

after onset) Follow-up 4 (18

months after onset) Follow-up 5

(24 months after onset)

I confirm that the case is completed and the doctor's signature is accurately studied.

_____date_____/_____/_____

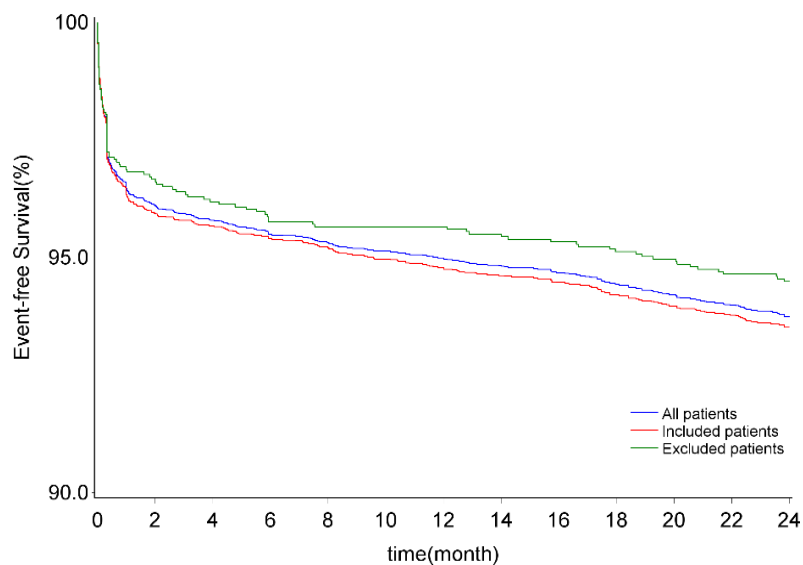
Table S1. Baseline characteristics according to inclusion status in the present study.

	All patients (n=7854)	Included patients (n=5966)	Excluded patients (n=1888)	P value
Age, y	60.3 ±11.9	60.3 ±11.8	60.5 ±12.2	0.832
≤ 60 y	3757/7854(47.8%)	2856/5963(47.9%)	898/1888(47.6%)	0.969
Female	1558/7854(19.8%)	1187/5966(19.9%)	371/1888(19.7%)	0.973
Hypertension	3693/7808(47.3%)	2800/5940(47.1%)	893/1868(47.8%)	0.250
Current smoker	4055/7786(52.1%)	3089/5928(52.1%)	966/1858(52.0%)	0.334
Diabetes	1419/7796(18.2%)	1057/5932(17.8%)	362/1864(19.4%)	0.409
Hyperlipidemia	646/7799(8.3%)	411/5932(6.9%)	235/1867(12.6%)	<0.001
Prior myocardial infarction	405/7796(5.2%)	285/5934(4.8%)	120/1862(6.4%)	<0.001
Prior stroke	567/7786(7.3%)	443/5932(7.5%)	124/1854(6.7%)	<0.001
Killip class ≥ II	1410/7817(18.0%)	1077/5953(18.1%)	333/1864(17.9%)	0.976
Cardiogenic shock	269/7829(3.4%)	211/5957(3.5%)	58/1872(3.1%)	0.911
Cardiac arrest	99/7820(1.3%)	73/5950(1.2%)	26/1870(1.4%)	0.862
Symptom to balloon time, hours	5.7(3.9-9.7)	5.7(3.9-9.4)	5.7(3.8-11.0)	0.826
≤12h	6714/7726(86.9%)	5151/5869(87.8%)	1563/1857(84.2%)	<0.001
Periprocedural antithrombotic therapy				
Aspirin	7681/7792(98.6%)	5858/5936(98.7%)	1823/1856(98.2%)	0.357
Clopidogrel	7662/7739(99.0%)	5851/5899(99.2%)	1811/1840(98.4%)	0.024
GPI	3208/7145(44.9%)	2536/5490(46.2%)	672/1655(40.6%)	<0.001
UFH	6473/7138(84.5%)	4942/5469(90.4%)	1531/1669(91.7%)	0.110
LMWH	6270/7172(87.4%)	4799/5478(87.6%)	1471/1694(86.8%)	0.677
Bivalirudin	101/7138(1.4%)	78/5469(1.4%)	23/1669(1.4%)	0.989
Creatinine clearance, mL/min	86.9(64.0-111.8)	86.3(64.1-110.4)	89.0(63.6-117.4)	0.090
LVEF	53.8 ±10.0	53.7±10.0	53.8±10.1	0.398
Single vessel disease	2421/7541(32.1%)	1900/5777(32.9%)	521/1764(29.5%)	0.030
Anterior infarction	3772/7716(48.9%)	2889/5938(48.7%)	883/1778(49.7%)	0.756
Thrombosis in IRA	4869/7683(63.4%)	3838/5926(64.8%)	1031/1757(58.7%)	<0.001
Device of intervention				0.386
Thrombus aspiration	322/7176(4.5%)	259/5506(4.7%)	63/1670(3.8%)	
Only PTCA	228/7176(3.2%)	182/5506(3.3%)	46/1670(2.8%)	
Stent	6626/7176(92.3%)	5065/5506(92.0%)	1561/1670(93.5%)	
Post-PCI TIMI flow				0.998
0-2	345/7134(4.8%)	264/5480(4.8%)	81/1654(4.9%)	
3	6789/7134(95.2%)	5216/5480(95.2%)	1573/1654(95.1%)	

Data are reported as mean ± SD, n/total n (%), or median (interquartile range).

Abbreviations: STR, ST-segment resolution; GPI, glycoprotein IIb/IIIa inhibitor; UFH, unfractionated heparin; LMWH, low molecular weight heparin; LVEF: left ventricular ejection fraction; IRA, infarct-related artery; PTCA, percutaneous transluminal coronary angioplasty; PCI, percutaneous coronary intervention; TIMI, Thrombolysis in Myocardial Infarction. MACCE, major adverse cardiac and cerebrovascular events.

Figure S1. Kaplan–Meier curves for the 2-year all-cause mortality according to inclusion status in the present study.



Time points (months)	0	6	12	18	24
All patients	7854	7500	7461	7417	7363
Included patients	5966	5692	5655	5621	5579
Excluded patients	1888	1808	1806	1796	1784

Log-Rank Test: P-value=0.316