Sex Differences in 1-Year Health Status Following Percutaneous Coronary Intervention in Patients Without Acute Myocardial Infarction: Results From the China PEACE Prospective Study

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Background—Sex differences in health status outcomes after percutaneous coronary intervention among patients without acute myocardial infarction are not well described.

Methods and Results—A total of 2237 patients (33.4% women) without acute myocardial infarction undergoing percutaneous coronary intervention were enrolled from 39 Chinese tertiary hospitals in the PEACE (China Patient-centered Evaluative Assessment of Cardiac Events) prospective percutaneous coronary intervention study. Data were collected immediately before and 1 year following percutaneous coronary intervention. Health status was measured using the disease-specific Seattle Angina Questionnaire (SAQ) Angina Frequency and Quality of Life domains, as well as the SAQ Summary Score. Among the study population, women were older, more often single, had lower levels of education, and had a higher prevalence of cardiac risk factors such as hypertension and diabetes mellitus. Women had lower mean 1-year SAQ Angina Frequency scores (mean±SD, 91.0±17.3 versus 93.9±13.3; P<0.01), SAQ Quality of Life scores (mean±SD, 67.3±23.0 versus 70.6±21.6; P<0.01), and SAQ Summary Scores (mean±SD, 81.6±13.8 versus 84.8±11.9; P<0.01), a difference of marginal clinical significance that persisted after multivariable adjustment. A slightly larger improvement in the SAQ Summary Score was observed in women as compared with men (20.9±22.6 versus 18.5±21.3; P=0.007) in unadjusted analysis. However, women were less likely to achieve clinically significant improvement in SAQ Angina Frequency (adjusted odds ratio, 0.67; 95% CI, 0.45–1.00) and SAQ Quality of Life (adjusted odds ratio, 0.73; 95% CI, 0.56–0.96) after adjustment.

Conclusions—There were no clinically significant differences in 1-year health status outcomes and improvement in health status by sex among patients without acute myocardial infarction following percutaneous coronary intervention. However, female sex was associated with poorer 1-year health status and a lower likelihood of experiencing clinically significant improvement in health status.

Clinical Trial Registration—URL: https://www.clinicaltrials.gov/. Unique identifier: NCT01624922. (J Am Heart Assoc. 2020;9:e014421. DOI: 10.1161/JAHA.119.014421.)

Key Words: sex differences • health status • percutaneous coronary intervention

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Accompanying Appendix S1 and Table S1 are available at https://www.ahajournals.org/doi/suppl/10.1161/JAHA.119.014421

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Clinical Perspective

What Is New?

- There were no clinically significant differences in 1-year health status outcomes or improvement in health status by sex among patients without acute myocardial infarction following percutaneous coronary intervention.
- Female sex was associated with poorer 1-year health status and a lower likelihood of experiencing clinically improvement in health status.

What Are the Clinical Implications?

- Women can benefit as much as men from percutaneous coronary intervention with regard to their unadjusted health status outcomes.
- Further studies are needed to clarify the association between sex and health status following percutaneous coronary intervention.

Percutaneous coronary intervention (PCI) is a cornerstone in the treatment for patients with coronary artery disease (CAD), including those with and without acute myocardial infarction (AMI). Unlike patients with AMI, those undergoing PCI for stable coronary disease have substantially lower risks for death and major cardiovascular events, especially given the wide use of more-sensitive biomarkers of myocardial necrosis, such as troponins, as the key criteria for diagnosing AMI. Therefore, improving health status–related (symptoms, functioning, and quality of life) outcomes have become increasingly important for these patients.

Earlier studies have shown improved health status following PCI among stable patients. However, these studies did not stratify the population by sex. Whether women can benefit as much as men from PCI with regard to their health status outcomes remains unclear. Among patients undergoing PCI, women tend to have worse socioeconomic status than men and hence may experience greater barriers to access to follow-up care and have poor adherence to medications after discharge. Moreover, women more likely have other comorbidities and microvascular dysfunction, where PCI may be less effective in relieving symptoms. Thus, it is possible that women may have more residual symptoms and worse quality of life after PCI compared with men. However, data on sex-based differences in such outcomes for patients without AMI are sparse.

Data from China can provide a unique opportunity for investigating sex differences in patients’ health status after PCI. The volume of PCI procedures has increased substantially over the past decade, reaching 915,256 procedures in 2018, with 65% performed among patients without AMI. Understanding how women and men differ in symptoms and quality of life after PCI may help guide clinical decision making regarding PCI and inform better tailored care for the large number of women undergoing these procedures in China. Such information may also inform care for women in Western countries.

Using data from the China PEACE-Prospective PCI Study (China Patient-centered Evaluative Assessment of Cardiac Events Prospective Percutaneous Coronary Intervention Study), we sought to determine whether: (1) women have similar health status at 1 year after PCI among patients without AMI; (2) improvement in health status from baseline to 1 year following PCI differs by sex; and (3) such sex differences persist after adjustment for patients’ sociodemographics, clinical characteristics, treatment factors, and baseline health status.

Methods

Disclosure Statement The data and statistical code are not available to other researchers at this time.

Study Population and Study Design

The design of the China PEACE-Prospective PCI Study has been published previously. In brief, between 2012 and 2013, we enrolled 4,225 consecutive patients undergoing PCI for CAD who had at least 1 coronary stent implanted at 40 sites (39 participating tertiary hospitals) located in 18 provinces in China. For this study, we excluded patients who died during hospitalization (n=11), those with treatment withdrawal because of serious illness (n=1), those who were transferred out (n=8), and those with AMI (n=1968) and focused on participants without AMI (n=2237), including those with unstable angina (UA; n=1599) or stable CAD (n=638). Diagnosis of AMI was determined by the clinical discharge diagnosis terms recorded in medical charts.

The central ethics committee at the China National Centre of Cardiovascular Disease, local ethics committee at each participating hospital, and the Yale University Human Investigation Committee approved this study. The Chinese government funded the study and had no role in the study design, data collection, data analysis, data interpretation, or writing of the report. The study was registered on www.clinicaltrials.gov (NCT01624922).

Data Collection and Variable Definitions

We collected patients’ baseline characteristics and in-hospital treatment and complications by central medical chart abstraction and in-person interview by trained site investigators during the index hospitalization. Patients’ baseline characteristics
included social demographics, cardiac risk factors, comorbidities, and disease severity at admission. In-hospital treatment included number of vessels treated, complete versus incomplete revascularization, type of sent placed, access site, and medications used. In-hospital complications included AMI, stroke, target vessel revascularization, and bleeding events. Complete revascularization was defined as absence of diameter stenosis ≥50% in major coronary arteries or their side branches with a diameter ≥2.5 mm after successful stent implantation during index hospitalization. In contrast, incomplete revascularization was defined as the presence of diameter stenosis ≥50% in major coronary arteries or their side branches with a diameter ≥2.5 mm after successful stent implantation during index hospitalization.

We collected data on patients’ clinical outcomes from discharge to 1 year. In addition, we conducted follow-up interviews at 1, 6, and 12 month after index hospitalization to characterize clinical outcomes and health status using validated patient-reported outcome measures. For this study, we focused on 12-month outcomes. Clinical outcomes included all-cause death, cardiac death, nonfatal AMI, ischemic stroke, coronary revascularization, and a composite of major adverse cardiac events (including cardiac death, nonfatal AMI, ischemic stroke, and coronary revascularization). All the clinical cardiac events were adjudicated by trained cardiologists. Disease-specific (Seattle Angina Questionnaires [SAQ]) health status instruments translated into Chinese were administered by trained site investigators. If the relative of the patients, rather than the patient him- or herself answered phone survey, only the clinical outcomes were collected.

The SAQ is a 19-item disease-specific health status measure for patients with CAD. It has a 4-week recall period. The 5 domains of the SAQ include physical limitation, angina stability, angina frequency, treatment satisfaction, and quality of life. Each domain ranges from 0 to 100 points, with higher scores indicating higher levels of functioning, fewer symptoms, and greater quality of life or treatment satisfaction. The SAQ has similar psychometric properties in men and women and to validly quantify angina frequency as compared with daily diaries. In this study, we used SAQ-AF (SAQ Angina Frequency) score and SAQ-QoL (SAQ Quality of Life) score. For both SAQ-AF and SAQ-QoL scores, an increase of ≥10 points was considered a clinically significant improvement. Additionally, we used the SAQ-SS (SAQ Summary Score), which summarizes the physical limitation, angina frequency, and quality-of-life domains, to assess patients’ overall angina-related health status.

**Statistical Analysis**

We used frequency and percentages to describe categorical variables and means with SD or medians with interquartile ranges to describe continuous variables. We compared baseline characteristics between women and men using chi-squared tests, Student t tests, or Kruskall-Wallis tests as appropriate. Mean SAQ-AF, SAQ-QoL, and SAQ-SS at baseline and 12 months were calculated and plotted between women and men, and the change from baseline to 12 months was represented as density plots. Then, mean SAQ-AF, SAQ-QoL, and SAQ-SS at baseline and 1 year were compared between women and men, as well as the proportion of patients free of angina (SAQ-AF score≥100). Similarly, we compared mean change from baseline to 1 year in SAQ-AF, SAQ-QoL, and SAQ-SS, as well as the proportion of patients achieving clinically significant improvements from baseline in SAQ-AF and SAQ-QoL, between men and women. Likewise, all-cause mortality, cardiac death, stroke, AMI, coronary revascularization and a composite of major adverse cardiac events within 1 year following PCI were compared between women and men.

We tested the distribution of health status at 12 months. Both SAQ-QoL and SAQ-SS were normally distributed. However, SAQ-AF score was left-skewed. Thus, we modeled SAQ-QoL and SAQ-SS using linear regressions to investigate the independent effect of sex on 1-year health status. We also modeled the likelihood of being free of angina (SAQ-AF score≥100) and the likelihood of achieving clinical significance improvement in SAQ-AF score and SAQ-QoL score using logistic regression. For each of these regressions, we started with an unadjusted model (model 0), which only included sex. Then, we incrementally adjusted for additional covariates. The first model (model 1) included model sociodemographics (age, marital status, education, working status, and health insurance). The second model (model 2) added risk factors and comorbidities (hypertension, diabetes mellitus, hyperlipidemia, smoking status, body mass index >24 kg/m², family history of CAD, previous CAD, previous AMI, previous PCI, previous coronary artery bypass graft, previous stroke, peripheral artery disease, and heart failure) to model 1. The third model (model 3) added clinical characteristics at admission (eGFR, acute heart failure, acute stroke, and extent of CAD) to model 2. The fourth model (model 4) added treatment factors (number of vessels treated during PCI, stent implanted, access site, and medication during hospitalization) to model 3. The fifth model (model 5) added in-hospital complications (major bleeding, any bleeding, blood transfusion, stroke, AMI, target vessel revascularization, coronary artery bypass graft, and length of stay) to model 4. The sixth model (model 6) added baseline health status to model 5.

The proportion of missing data of health status at 1 year was 24.0% and 23.8% among patients with UA and stable CAD, respectively. Among this cohort, women had more patients with missing data at 1-year health status than men. Baseline characteristics of those patients with complete health status
data versus those with missing data at 1 year, overall and stratified by sex, among the cohorts are presented in Table S1. To minimize the effect of selection bias, we constructed a nonparsimonious, multivariable logistic regression model to determine the probability of having missing health status data. We then weighted each of the observed patients by inverse probability of the likelihood of having missing data to increase the contribution of the experience of those most likely to have missing follow-up assessments.  

Given that the missing values of the covariates in each model were rare (<2%), except for body mass index (<20%), missing values for covariates were imputed using multiple imputation. Specifically, we replaced each missing value with a set of values generated from its predictive distribution, given the observed data, and repeated this procedure to generate multiple imputed data sets. Each imputed data set was then analyzed separately using the corresponding modeling methods, and the final results were obtained by combining across all imputed data sets using Rubin’s rule to account for uncertainty of imputation. All comparisons were 2-sided, with statistical significance defined as \( P < 0.05 \). Statistical analyses were performed using SAS (version 9.4; SAS Institute Inc., Cary, NC) and R software (version 3.4.1; R Foundation for Statistical Computing, Vienna, Austria).

Results

Study Population and Baseline Characteristics

A total of 2237 patients without AMI undergoing PCI were included. Baseline characteristics are shown in Table 1. Median age was 63 years (interquartile range, 55–70). Women comprised 33.4%. Women were older, more often single, had a lower level of education, and were less likely to be employed and have urban insurance compared with men. Women were also less likely to be smokers and have a history of AMI and more likely to have hypertension, diabetes mellitus, hyperlipidemia, and worse renal function. During hospitalization, there were no significant sex differences in the number of vessels treated, proportion of complete revascularization, as well as use of medications and occurrence of complications during hospitalization. Women had a longer length of stay than men.

Clinical Outcomes

At 1 year after PCI, the rate of all-cause mortality was similar between men and women in this cohort (1.7% versus 1.5%; \( P = 0.716 \)). Similarly, the rate of the composite end point, major adverse cardiac events, did not differ significantly between women and men among this cohort (Table 2).

Unadjusted Sex Difference in Health Status

As shown in Table 3 and Figures 1 and 2, women had significantly lower baseline scores for SAQ-AF (58.5±30.4 versus 62.2±30.4; \( P < 0.01 \)), SAQ-QoL (52.7±24.0 versus 57.1±23.7; \( P < 0.01 \)), and SAQ-SS (60.9±20.0 versus 66.3±19.3; \( P < 0.01 \)). The proportion of patients without angina did not vary by sex (17.1% versus 20.3%; \( P = 0.196 \)). At 1 year, women had lower SAQ-AF scores (mean±SD, 91.0±17.3 versus 93.9±13.3; \( P < 0.01 \)), SAQ-QoL scores (mean±SD, 67.3±23.0 versus 70.6±21.6; \( P < 0.01 \)), SAQ-SS (81.6±13.8 versus 84.8±11.9; \( P < 0.01 \)) and a lower proportion of patients without angina (50.3% versus 57.1%; \( P < 0.01 \)) as compared with men. Of note, AF scores improved from baseline to 1 year in both men and women, and there were no sex differences in the change of SAQ-AF (33.9±33.5 versus 32.9±31.7; \( P = 0.343 \)) and SAQ-QoL scores (13.6±31.3 versus 12.6±30.6; \( P = 0.594 \)) or the proportion of patients who had a clinically significant improvement in SAQ-AF (54.6% versus 55.6%; \( P = 0.254 \)) and SAQ-QoL scores (36.4% versus 37.8%; \( P = 0.170 \)). However, women had a larger improvement of SAQ-SS (20.9±22.6 versus 18.5±21.3; \( P = 0.007 \)).

Independent Association of Sex With 1-Year Health Status Scores and Clinically Significant Improvement in Health Status

Among the 2237 patients without AMI at baseline, 535 (23.9%) did not have follow-up health status scores at 1 year. By fitting model 0 (ie, unadjusted model where sex is the only risk factor), women had −3.5 and −3.4 points lower in SAQ-QoL scores and SAQ-SS, respectively, as compared with men (95% CI for parameter coefficients, −5.7 to −1.2 and −4.6 to −2.1, respectively; Figure 3). After adjusting for potential confounders, women still had significantly lower SAQ-QoL scores (−3.2 points; 95% CI, −5.9 to −0.5) and SAQ-SS (−2.7 points, 95% CI −4.2 to −1.2) at 1 year compared with men. Similarly, women were less likely to be free of angina after PCI as compared with men, even after adjusting for confounders (odds ratio, 0.63; 95% CI, 0.49–0.81). After adjusting for confounders, women were less likely to achieve clinically significant improvement in SAQ-AF (odds ratio, 0.67; 95% CI, 0.45–1.00) and SAQ-QoL scores (odds ratio, 0.73; 95% CI, 0.56–0.96) as compared with men (Figure 4).

Discussion

To our knowledge, this is the first study to explore sex differences in long-term health status outcomes following PCI among patients without AMI in China. Among this cohort recruited from real-word practice, women were more likely to
| Sociodemographics |
|-------------------|
| Age, y, mean (SD)  | 62.26 (10.0) | 61.09 (10.4) | 64.6 (8.9) |
| Age, median (IQR)  | 63 (55, 70) | 61 (54, 69) | 65 (59, 71) |
| Married, n (%)     | 2026 (90.6) | 1402 (94.1) | 624 (83.5) |
| Education          | 312 (13.9) | 270 (18.1) | 42 (5.6) |
| Currently/ever work, n (%) | 1915 (85.6) | 1361 (91.3) | 554 (74.2) |
| Health insurance, n (%) | 16.8 | 0.0002 |
| Urban insurance    | 1543 (69) | 1070 (71.8) | 473 (63.3) |
| Rural cooperative medical service/None | 691 (30.9) | 418 (28.1) | 273 (36.5) |
| Unknown            | 3 (0.1) | 2 (0.2) | 1 (0.1) |

| Cardiac risk factors, n (%) |
|----------------------------|
| Hypertension                | 1545 (69.1) | 947 (63.6) | 598 (80.1) |
| Diabetes mellitus           | 671 (30.0) | 396 (26.6) | 275 (36.8) |
| Hyperlipidemia              | 1113 (49.8) | 712 (47.8) | 401 (53.7) |
| Current smoker              | 828 (37.0) | 772 (51.8) | 56 (7.5) |
| BMI ≥24 kg/m²               | 1133 (50.6) | 754 (50.6) | 379 (50.7) |
| Family history of CAD       | 253 (11.3) | 162 (10.9) | 91 (12.2) |

| Medical history, n (%) |
|------------------------|
| Previous AMI            | 373 (16.7) | 287 (19.3) | 86 (11.5) |
| Previous PCI            | 373 (16.7) | 274 (18.4) | 99 (13.3) |
| Previous CABG           | 15 (0.7) | 10 (0.7) | 5 (0.7) |
| Previous stroke         | 356 (15.9) | 205 (13.8) | 151 (20.2) |
| Congestive heart failure| 772 (34.5) | 493 (33.1) | 279 (37.3) |

| Clinical characteristics at admission, n (%) |
|---------------------------------------------|
| eGFR <60 mL/min per 1.73 m²                 | 245 (11.0) | 123 (8.3) | 122 (16.3) |
| Acute heart failure                        | 17 (0.8) | 10 (0.7) | 7 (0.9) |
| Acute stroke                               | 53 (2.4) | 34 (2.3) | 19 (2.5) |

| Extent of CAD, n (%) |
|----------------------|
| One-vessel disease    | 961 (43.0) | 655 (44.0) | 306 (41.0) |
| Two-vessel disease    | 803 (35.9) | 529 (35.5) | 274 (36.7) |
| Three-vessel disease  | 458 (20.5) | 298 (20) | 160 (21.4) |
| Nonobstructive        | 15 (0.7) | 8 (0.5) | 7 (0.9) |

| LM disease, n (%) |
|-------------------|
| 119 (5.3) | 83 (5.6) | 36 (4.8) |

| Treatments, n (%) |
|-------------------|
| No. of vessels treated during PCI | 5.6688 | 0.1289 |
| Zero-vessel         | 12 (0.5) | 9 (0.6) | 3 (0.4) |
| One-vessel          | 1660 (74.2) | 1090 (73.2) | 570 (76.3) |
| Two-vessel          | 539 (24.1) | 369 (24.8) | 170 (22.8) |
| Three-vessel        | 26 (1.2) | 22 (1.5) | 4 (0.5) |

| Complete vs incomplete revascularization |
|-----------------------------------------|
| 1.4224 | 0.4911 |

| Complete |
|----------|
| 225 (10.1) | 146 (9.8) | 79 (10.6) |
be older and have poorer socioeconomic conditions and more cardiovascular risk factors. Nevertheless, there were no significant differences in treatment and 1-year clinical outcomes by sex. In this context, although women had lower baseline scores of health status, there were no clinically significant differences in unadjusted health status scores at 1 year or likelihood to achieve clinically significant improvements in health status. However, after adjustment for important confounders, women had lower health status scores at 1 year and were less likely to be free of angina or to achieve clinically significant improvements in health status 1 year after PCI. Our findings provide a more complete picture of sex differences in health status outcomes after PCI among stable patients. This information is important for identifying the opportunities for improvement in the care of coronary artery disease for women without AMI.

In our study, we used patients without AMI, including those labeled as UA and stable CAD, as our study population. In real practice, the diagnosis of UA is increasingly controversial. More patients labeled with UA previously were diagnosed as non-ST-segment–elevation MI with the use of troponin, particularly high-sensitivity troponin, resulting in uncertainty of the diagnosis of UA and decreased risk of this cohort. Overdiagnosis of UA may occur because of external factors, such as reporting appropriateness or differences in reimbursement. Therefore, assessing health status outcomes after PCI among this clearly defined population may provide practical insight for real clinical practice.
We observed slightly lower average unadjusted 1-year SAQ-AF and SAQ-QoL scores in women compared with men; however, the difference did not reach the threshold for what is defined as a clinically significant difference, given that a mean difference of >5 points between groups is considered clinically significant. Nevertheless, we observed that women had lower health status scores in symptoms and quality of life at 1 year and were less likely to be free of angina after PCI. Previous studies have shown that observed lower scores at 1 year is largely attributable to lower baseline scores. However, these sex differences persisted even after adjustment for covariates and baseline health status in this study. Several potential reasons may account for these findings.

**Table 2. Clinical Outcomes of Patients Without AMI During 1 Year Post-PCI Stratified by Sex**

| Outcome                                      | Overall (n=2237) | Men (n=1490) | Women (n=747) | Statistic | P Value |
|----------------------------------------------|------------------|--------------|---------------|-----------|---------|
| All-cause death, n (%)                       | 36 (1.6)         | 25 (1.7)     | 11 (1.5)      | 0.1324    | 0.7159  |
| Cardiac death, n (%)                         | 21 (0.9)         | 14 (0.9)     | 7 (0.9)       | 0.0000    | 0.9954  |
| Nonfatal AMI, n (%)                          | 10 (0.4)         | 5 (0.3)      | 5 (0.7)       | 1.2455    | 0.2644  |
| Ischemic stroke, n (%)                       | 12 (0.5)         | 7 (0.5)      | 5 (0.7)       | 0.3713    | 0.5423  |
| Coronary revascularization, n (%)            | 77 (3.4)         | 50 (3.4)     | 27 (3.6)      | 0.1002    | 0.7516  |
| MACE, n (%)                                  | 111 (5.0)        | 72 (4.8)     | 39 (5.2)      | 0.1594    | 0.6897  |

AMI indicates acute myocardial infarction; MACE, major adverse cardiovascular events; PCI, percutaneous coronary intervention.

**Table 3. Health Status of Patients Without AMI at 1 Year Post-PCI Stratified by Sex**

| Outcome                                      | Overall (n=2237) | Men (n=1490) | Women (n=747) | Statistics | P Value |
|----------------------------------------------|------------------|--------------|---------------|------------|---------|
| **SAQ-AF score (mean, SD)**                  |                  |              |               |            |         |
| Baseline                                     | 61.0 (30.4)      | 62.2 (30.4)  | 58.5 (30.4)   | −2.7410    | 0.0061  |
| 1 y                                          | 93.0 (14.8)      | 93.9 (13.3)  | 91.0 (17.3)   | −3.1800    | 0.0015  |
| Change from baseline to 1 y                  | 33.2 (32.2)      | 32.9 (31.7)  | 33.9 (33.5)   | 0.9479     | 0.3432  |
| Clinically significant improvement from baseline to 1 y | 1237.0 (55.3) | 829.0 (55.6) | 408.0 (54.6) | 2.7376     | 0.2544  |
| **SAQ-QoL score (mean, SD)**                 |                  |              |               |            |         |
| Baseline                                     | 55.6 (23.9)      | 57.1 (23.7)  | 52.7 (24.0)   | −4.0840    | <0.0001 |
| 1 y                                          | 69.5 (22.1)      | 70.6 (21.6)  | 67.3 (23.0)   | −2.5980    | 0.0094  |
| Change from baseline to 1 y                  | 12.9 (30.8)      | 12.6 (30.6)  | 13.6 (31.3)   | 0.5327     | 0.5943  |
| Clinically significant improvement from baseline to 1 y | 835.0 (37.3) | 563.0 (37.8) | 272.0 (36.4) | 3.5413     | 0.1702  |
| **SAQ-SS score (mean, SD)**                  |                  |              |               |            |         |
| Baseline                                     | 64.5 (19.7)      | 66.3 (19.3)  | 60.9 (20.0)   | −5.8790    | <0.0001 |
| 1 y                                          | 83.7 (12.6)      | 84.8 (11.9)  | 81.6 (13.8)   | −4.1490    | <0.0001 |
| Change from baseline to 1 y                  | 19.3 (21.8)      | 18.5 (21.3)  | 20.9 (22.6)   | 2.6952     | 0.0070  |
| The patients without angina (SAQ-AF score=100), n (%) | 430.0 (19.2) | 302.0 (20.3) | 128.0 (17.1) | 3.2592     | 0.1960  |
| 1 y                                          | 1227.0 (54.9)    | 851.0 (57.1) | 376.0 (50.3)  | 9.8420     | 0.0073  |

AMI indicates acute myocardial infarction; PCI, percutaneous coronary intervention, SAQ-AF, Seattle Angina Questionnaire Angina Frequency; SAQ-QoL, Seattle Angina Questionnaire Quality of Life; SAQ-SS, Seattle Angina Questionnaire Summary Score.
at 1 year. Further studies on other psychosocial factors, such as depression, anxiety, and return to work, are needed to clarify the mechanisms for this difference in health status between women and men.

Although women had slightly lower scores in health status outcomes at baseline and 1 year, we found that women achieved similar magnitude of benefit from PCI in reducing frequency of angina and quality of life, even slightly greater.

**Figure 1.** Mean Seattle Angina Questionnaire (SAQ) scores stratified by sex at baseline and 1 year.

**Figure 2.** Distribution of Seattle Angina Questionnaire (SAQ) scores stratified by sex at baseline, 1 year, and the change form baseline to 1 year.
improvement in overall health status, as compared with men. However, after adjustment of important covariates particularly baseline health status, risk factors, and comorbidities, female sex was associated with less likelihood to derive improvements in health status. The mechanism is not clear. Overall, in this cohort, women had lower baseline scores in health status and more risk factors and comorbidities, as compared with men, which were considered as the strongest factors for improvement after PCI. This higher likelihood of improvement was offset by the effect of female sex, resulting in a similar likelihood of improvement between women and men. These findings could be valuable for physicians treating women with PCI aiming to increase their quality of life as they treat men when this procedure is indicated. On the other hand, additional intervention may be needed to achieve the therapeutic goal of stable CAD care and reduce the disparity in outcomes between men and women.

Limitations
The findings of this study should be interpreted in the context of several limitations. First, similar to other longitudinal, observational studies, such as TRIUMPH (Translational Research Investigating Underlying Disparities in Acute Myocardial Infarction Patients’ Health Status) and PREMIER (Prospective Registry Evaluating Outcomes After Myocardial Infarction Patients’ Health Status),

Figure 3. Independent effect of sex on health status at 1 year post-PCI among patients without AMI. (A) Possibility of being free of angina (Seattle Angina Questionnaire Angina Frequency score = 100 vs < 100). (B) Seattle Angina Questionnaire Quality of Life score. (C) Seattle Angina Questionnaire Summary Score. AMI indicates acute myocardial infarction; OR, odds ratio; PCI, percutaneous coronary intervention; SAQ, Seattle Angina Questionnaire.

Figure 4. Independent effect of sex on clinically significant improvement in health status from baseline to 1 year post-PCI among the patients without AMI. (A) Possibility of achieving clinically significant improvement in SAQ-AF score; (B) Possibility of achieving clinically significant improvement in SAQ-QoL score. Seattle Angina Questionnaire summary score. AMI indicates acute myocardial infarction; OR, odds ratio; PCI, percutaneous coronary intervention; SAQ, Seattle Angina Questionnaire; SAQ-AF, Seattle Angina Questionnaire Angina Frequency; SAQ-QoL, Seattle Angina Questionnaire Quality of Life.

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Infarctions: Events and Recovery),\textsuperscript{35,36} we could only enroll and follow up patients who consented to participate in the study. Hence, our findings may not generalize to all patients without AMI. Second, 23.9% of patients were missing health status data. To prevent potential biased estimation of sex differences in health status outcomes, we estimated the potential bias by performing a sensitivity analysis comparing baseline characteristics for men and women with and without complete health status data (Table S1). Furthermore, we constructed nonparsimonious, multivariable logistic regression models to determine the probability of having missing data. We then weighted each of the observed patients by inverse probability of the likelihood to have missing data, so that we preferentially weighted the experience of those most like the patients who were missing follow-up assessments. Additionally, in this study, telephone interviews were conducted when in-person interviews were not feasible, and patient-reported outcomes, such as SAQ, were assessed. However, if the patients’ relatives answered the call, the patient-reported outcomes would not be asked and assessed. Thus, the lack of follow-up data for these patients was primarily attributed to relevant questions not asked when the patients’ relatives completed the interview (469; 21.0%), rather than that they definitely had worse clinical outcomes. Thus, the effect of missing data on the result we estimated was small. Third, we did not collect information on additional treatments or comorbidities within 1 year after PCI, which could potentially affect patients’ 1-year health status. Finally, the Chinese PEACE (Patient-centered Evaluative Assessment of Cardiac Events) prospective study was conducted 6 years ago; the analysis in this study may not completely reflect the current situation because of the change of treatment pattern and socioeconomic conditions.

Conclusions

There was no clinically significant difference in 1-year health status outcomes and improvement in health status by sex among patients without AMI following PCI. However, women had poorer 1-year health status and a lower likelihood of deriving clinically improvement in health status. Further studies are needed to clarify the association between sex and health status following PCI.

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Disclosures

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SUPPLEMENTAL MATERIAL
**Appendix. Full list of hospitals in the China PEACE prospective PCI study**

| Hospital / Province / Municipality | City | Staff | Initials | Title                          |
|------------------------------------|------|-------|----------|--------------------------------|
| 1 Air Force General Hospital, PLA  | Beijing | Jianchang Wang | JCW | Chief physician                |
| 2 Anhui Provincial Hospital        | Hefei | Congchun Huang | CCH | Chief physician                |
|                                    |       | Haitao Zhang | HTZ | Associate chief physician      |
|                                    |       | Xiangyong Kong | XYK | Resident doctor                |
| 3 Baotou Central Hospital          | Baotou | Ruiping Zhao | RPZ | Chief physician                |
|                                    |       | Wei Du | WD | Resident doctor                |
|                                    |       | Hongyu Li | HYL | Resident doctor                |
| 4 China-Japan Union Hospital of Jilin University | Changchun | Ping Yang | PY | Chief physician                |
|                                    |       | Zhaohui Feng | ZHF | Nurse-in-Charge                 |
|                                    |       | Cuimony Mao | CYM | Attending physician            |
|                                    |       | Bing Li | BL | Resident doctor                |
| 5 First Hospital of Shanxi Medical University | Taiyuan | Qinghua Han | QHH | Chief physician                |
|                                    |       | Liqin Duan | LQD | Associate chief physician      |
|                                    |       | Chunrong Jin | CRJ | Associate chief physician      |
| 6 Fujian Provincial Hospital       | Fuzhou | Yansong Guo | YSG | Chief physician                |
|                                    |       | Feng Lin | FL | Associate chief physician      |
|                                    |       | Xingjing Chen | XJC | Attending physician            |
| 7 Fuwai Hospital                  | Beijing | Yongjian Wu | YJW | Chief physician                |
|                                    |       | Jianjun Li | JLL | Chief physician                |
|                                    |       | Chenggang Zhu | CGZ | Associate chief physician      |
|                                    |       | Yanmeng Tian | YMT | Resident doctor                |
|                                    |       | Qian Dong | QD | Nurse                          |
| 8 General Hospital of China FAW Group Corporation | Changchun | Hongtao Pan | HTP | Associate chief physician      |
| 9 Guilin People's Hospital         | Guilin | Lei Sun | LS | Attending physician            |
|                                    |       | Peng Gao | PG | Resident doctor                |
|                                    |       | Yanni Zhuang | YNZ | Resident doctor                |
|                                    |       | Wei Li | WL | Resident doctor                |
| 10 Inner Mongolia People's Hospital | Huhehot | Yajun Han | YJH | Chief physician                |
|                                    |       | Ping Zhao | PZ | Resident doctor                |
|                                    |       | Weiyi Zhao | WYZ | Resident doctor                |
| 11 Inner Mongolia Baogang Hospital | Baotou | Zhiping Ge | ZPG | Chief physician                |
|                                    |       | Huihua Wen | HHW | Associate chief physician      |
|                                    |       | Qiaoling Liu | QLL | Chief physician                |
|                                    |       | Yongdong Li | YDL | Chief physician                |
| 12 Jiangxi Provincial People's Hospital | Nanchang | Lang Hong | LH | Chief physician                |
|                                    |       | Linfeng Li | LFL | Associate chief physician      |
|                                    |       | Lihua Yuan | LHY | Co-chief nurse                 |
|                                    |       | Yun Li | YL | Nurse-in-Charge                 |
| 13 Jinghai County                 | Tianjin | Peihua Zhao | PHZ | Chief physician                |
| Hospital /Municipality | Province/Municipality | City | Staff               | Initials | Title                        |
|------------------------|-----------------------|------|--------------------|----------|------------------------------|
| Hospital               |                       |      | Jingsheng Sun      | JSS      | Attending physician          |
|                        |                       |      | Rengui Chai        | RGC      | Resident doctor              |
| 14 Nanyang Central     | Henan                 | Nanyang | Shouzhong Yang     | SZY      | Chief physician              |
| Hospital               |                       |      | Yudong Li          | YDL      | Chief physician              |
|                        |                       |      | Jianbu Gao         | JBG      | Associate chief physician    |
|                        |                       |      | Songyu Zhang       | SYZ      | Attending physician          |
| 15 Qingdao Fuwai       | Shandong              | Qingdao | Ying Yang          | YY       | Associate chief physician    |
| Hospital               |                       |      | Guixin Wu          | GXW      | Attending physician          |
|                        |                       |      | Jiajia Mao         | JLM      | Nurse                        |
|                        |                       |      | Cheng Zheng        | CZ       | Admin                        |
| 16 Qinghai Cardiovascular and Cerebrovascular Hospital | Qinghai | Xining | Huiping Bian       | HPB      | Chief physician              |
|                        |                       |      | Bo Chen            | BC       | Associate chief physician    |
|                        |                       |      | Jiandong Cao       | JDC      | Attending physician          |
| 17 Qinzhou Second People's Hospital | Guangxi | Qinzhou | Hua Yan            | HY       | Chief physician              |
|                        |                       |      | Liyuan Chen        | LYC      | Associate chief physician    |
|                        |                       |      | Qixia Liu          | QXL      | Resident doctor              |
|                        |                       |      | Lin Chen           | LC       | Attending physician          |
| 18 Shanxi Cardiovascular Hospital | Shanxi | Taiyuan | Bao Li             | BL       | Chief physician              |
|                        |                       |      | Bin Yang           | BY       | Associate chief physician    |
|                        |                       |      | Jianhua Li         | JHL      | Resident doctor              |
|                        |                       |      | Jianhong Wang      | JHW      | Resident doctor              |
| 19 Shenyang Northern Hospital | Liaoning | Shenyang | Yaling Han         | YLH      | Chief physician              |
|                        |                       |      | Xiaozeng Wang      | XZW      | Chief physician              |
|                        |                       |      | Haiwei Liu         | HWL      | Associate chief physician    |
| 20 Shanghai Jiao Tong University School of Medicine | Jiangsu | Suzhou | Feng Liu           | FL       | Chief physician              |
|                        |                       |      | Xiangfei Meng      | XFM      | Attending physician          |
|                        |                       |      | Bo Shao            | BS       | Attending physician          |
|                        |                       |      | Zhanling Liao      | ZLL      | Resident doctor              |
| 21 TEDA International Cardiovascular Hospital | Tianjin | Tianjin | Zhigang Liu        | ZGL      | Chief physician              |
|                        |                       |      | Wenbin Jing        | WBJ      | Chief physician              |
|                        |                       |      | Zhipeng Guo        | ZPG      | Associate chief physician    |
| 22 The Affiliated Hospital of Qingdao University | Shandong | Qingdao | Changyong Zhou     | CYZ      | Chief physician              |
|                        |                       |      | Yini Wang          | YNW      | Attending physician          |
|                        |                       |      | Tao Yu             | TY       | Resident doctor              |
| 23 The First Affiliated Hospital of Fujian Medical University | Fujian | Fuzhou | Jinxiu Lin         | JXL      | Chief physician              |
|                        |                       |      | Dajun Chai         | DJC      | Associate chief physician    |
|                        |                       |      | Wenxiang Zhao      | WXZ      | Resident doctor              |
| 24 Tongji Hospital of Tongji Medical College, Huazhong University of Science and Technology | Wuhan | Wuhan | Daowen Wang        | DWW      | Chief physician              |
|                        |                       |      | Jiangang Jiang     | JGJ      | Chief physician              |
|                        |                       |      | Xiaqing Shen       | XQS      | Nurse-in-Charge              |
|   | Hospital                                         | Province/Municipality | City       | Staff            | Initials | Title                  |
|---|-------------------------------------------------|-----------------------|------------|------------------|----------|------------------------|
| 25| The First Hospital of Jilin University          | Jilin                 | Changchun  | Yang Zheng       | YZ       | Chief physician        |
|   |                                                 |                       |            | Zhaoxi Liu       | XZL      | Resident doctor        |
|   |                                                 |                       |            | Wenqian Zhou     | WQZ      | Resident doctor        |
|   |                                                 |                       |            | Lin Zou          | LZ       | Resident doctor        |
| 26| The Fourth Affiliated Hospital of China Medical University | Liaoning             | Shenyang   | Yuanzhe Jin      | YZJ      | Chief physician        |
|   |                                                 |                       |            | Xiaohong Zhang   | XHZ      | Attending physician    |
|   |                                                 |                       |            | Xueying Zhang    | XYZ      | Attending physician    |
| 27| The People’s Hospital of Liaoning Province      | Liaoning              | Shenyang   | Zhanquan Li      | ZQL      | Chief physician        |
|   |                                                 |                       |            | Ying Liu         | YL       | Chief physician        |
|   |                                                 |                       |            | Qian Yu          | QY       | Attending physician    |
|   |                                                 |                       |            | Yan Xing         | YX       | Resident doctor        |
| 28| The Second Affiliated Hospital of Harbin Medical University | Heilongjiang         | Harbin     | Bo Yu            | BY       | Chief physician        |
| 29| The Affiliated Hospital of Xuzhou Medical University | Jiangsu              | Xuzhou     | Dongye Li        | DYL      | Chief physician        |
|   |                                                 |                       |            | Yuanyuan Luo     | YYL      | Chief physician        |
|   |                                                 |                       |            | Hong Zhu         | HZ       | Chief physician        |
| 30| The Second Affiliated Hospital of Xuzhou Medical College | Jiangsu              | Xuzhou     | Shuo Zhang       | SZ       | Chief physician        |
|   |                                                 |                       |            | Shuang Yang      | SY       | Associate chief physician |
|   |                                                 |                       |            | Jianqi Feng      | JQF      | Associate chief physician |
| 31| The Second Affiliated Hospital of Zhengzhou University | Henan                | Zhengzhou  | Xianen Fa        | XNF      | Chief physician        |
|   |                                                 |                       |            | Lihua Zhang      | LHZ      | Chief physician        |
|   |                                                 |                       |            | Liqiang Sun      | LQS      | Attending physician    |
|   |                                                 |                       |            | Lei Liu          | LL       | Resident doctor        |
| 32| The Second Hospital of Dalian Medical University | Liaoning             | Dalian     | Peng Qu          | PQ       | Chief physician        |
|   |                                                 |                       |            | Hongyan Wang     | HYW      | Associate chief physician |
|   |                                                 |                       |            | Dayuan Lou       | DYL      | Associate chief physician |
|   |                                                 |                       |            | Dajun Yuan       | DJY      | Associate chief physician |
| 33| The First Affiliated Hospital of Zhengzhou University | Henan                | Zhengzhou  | Zhenwen Huang    | ZWH      | Chief physician        |
|   |                                                 |                       |            | Lili Zhang       | LLZ      | Resident doctor        |
| 34| Union Hospital, Tongji Medical College, Huazhong University of Science and Technology | Hubei                | Wuhan      | Nianguo Dong     | NGD      | Chief physician        |
|   |                                                 |                       |            | Yan Long         | YL       | Resident doctor        |
|   |                                                 |                       |            | Jiaxin Wei       | JXW      | Resident doctor        |
| 35| Wuhan Asia Heart Hospital                       | Hubei                | Wuhan      | Xi Su            | XS       | Chief physician        |
|   |                                                 |                       |            | Songzhi Zhao     | SZZ      | Attending physician    |
|   |                                                 |                       |            | Wei Wu           | WW       | Attending physician    |
|   |                                                 |                       |            | Yujing Fan       | YJF      | Resident doctor        |
| Hospital          | Province/Municipality | City     | Staff                | Initials | Title                         |
|-------------------|-----------------------|----------|----------------------|----------|-------------------------------|
| Xiangtan Central Hospital | Hunan                | Xiangtan | He Huang             | HH       | Chief physician               |
|                   |                       |          | Jianping Zeng        | JPZ      | Chief physician               |
|                   |                       |          | Mingxing Wu         | MXW      | Associate chief physician     |
|                   |                       |          | Yi Zhou              | YZ       | Associate chief physician     |
| Xuzhou Central Hospital | Jiangsu              | Xuzhou   | Qiang Fu             | QF       | Chief physician               |
|                   |                       |          | Zhenyong Li          | ZYL      | Associate chief physician     |
|                   |                       |          | Peng Wei             | PW       | Resident doctor               |
|                   |                       |          | Yi Lu                | YL       | Resident doctor               |
| Xuzhou First People's Hospital | Jiangsu       | Xuzhou   | Hongju Zhang         | HJZ      | Chief physician               |
|                   |                       |          | Liuxiao Jun          | LXJ      | Attending physician           |
|                   |                       |          | Ming Hu              | MH       | Nurse-in-Charge               |
|                   |                       |          | Wei Li               | WL       | Nurse practitioner            |
| Zhengzhou Central Hospital | Henan           | Zhengzhou| Lin Zhang            | LZ       | Associate chief physician     |
|                   |                       |          | Yumei Guo            | YMG      | Associate chief physician     |
|                   |                       |          | Huiling Sun          | HLS      | Attending physician           |
Table S1. Baseline characteristics of patients who completed 1-year assessment vs. those missing 1-year data.

|                              | Overall |                | Complete |                | Missing |                |
|------------------------------|---------|----------------|----------|----------------|---------|----------------|
|                              | Complete (n = 1702) | Missing (n = 535) | P-Value | Women (n = 555) | Men (n = 1147) | P-Value | Women (n = 192) | Men (n = 343) | P-Value |
| **Socio-demographics**        |         |                |          |                |          |                |         |          |        |
| Age, mean (SD)               | 61.56(9.85) | 64.49(10.21) | <.0001 | 63.98(8.9)   | 60.39(10.08) | <.0001 | 66.41(8.44) | 63.41(10.94) | 0.0004 |
| Age, median (IQR)            | 62(55,69) | 65(58,72) | <.0001 | 64(58,71)   | 61(53,68) | <.0001 | 68(60,73) | 64(55,72) | 0.0022 |
| Married, n (%)               | 1551(91.1) | 475(88.8) | 0.1058 | 465(83.8)   | 1086(94.7) | 0.0000 | 159(82.8) | 316(92.1) | 0.0011 |
| Education (high school or higher education), n (%) | 247(14.5) | 65(12.1) | 0.1688 | 32(5.8) | 215(18.7) | 0.0000 | 10(5.2) | 55(16) | 0.0002 |
| Currently/ever work, n (%)   | 1472(86.5) | 443(82.8) | 0.0343 | 424(76.4) | 1048(91.4) | 0.0000 | 130(67.7) | 313(91.3) | 0.0000 |
| Health insurance, n (%)      | 0.0147 | 0.0026 | 0.0279 | 0.0014 | 0.0012 | 0.0018 |
| Urban insurance              | 1201(70.6) | 342(63.9) | 363(65.4) | 838(73.1) | 110(57.3) | 232(67.6) | 0.0021 |
| Rural cooperative medical service/None | 499(29.3) | 192(35.9) | 192(34.6) | 307(26.8) | 81(42.2) | 111(32.4) | 0.0001 |
| Unknown                      | 2(0.1) | 1 (0.2%) | 0(0) | 2(0.2) | 1(0.5) | 0(0) | 0.0001 |
| **Cardiac risk factors, n (%)** |         |                |          |                |          |                |         |          |        |
| Hypertension                 | 1170(68.7) | 375(70.1) | 0.5555 | 436(78.6) | 734(64) | 0.0000 | 162(84.4) | 213(62.1) | 0.0000 |
| Diabetes                     | 501(29.4) | 170(31.8) | 0.3029 | 200(36) | 301(26.2) | 0.0000 | 75(39.1) | 95(27.7) | 0.0068 |
| Hyperlipidemia               | 856(50.3) | 257(48) | 0.3626 | 294(53) | 562(49) | 0.1241 | 107(55.7) | 150(43.7) | 0.0077 |
| Current smoker              | 637(37.4) | 191(35.7) | 0.4709 | 36(6.5) | 601(52.4) | 0.0000 | 20(10.4) | 171(49.9) | 0.0000 |
| BMI>=24kg/m2                 | 893(52.5) | 240(44.9) | 0.0021 | 295(53.2) | 598(52.1) | 0.6937 | 84(43.8) | 156(45.5) | 0.6994 |
| Family history of CAD        | 192(11.3) | 61(11.4) | 0.9385 | 69(12.4) | 123(10.7) | 0.2962 | 22(11.5) | 39(11.4) | 0.9755 |
| Medical history, n (%) |          |          |          |          |          |          |          |          |          |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Prior CAD              | 965(56.7)| 313(58.5)| 0.4614   | 309(55.7)| 656(57.2)| 0.5538   | 105(54.7)| 208(60.6)| 0.1800   |
| Prior MI               | 267(15.7)| 106(19.8)| 0.0255   | 58(10.5)| 209(18.2)| 0.0000   | 28(14.6)| 78(22.7)| 0.0232   |
| Prior PCI              | 279(16.4)| 94(17.6)| 0.5239   | 73(13.2)| 206(18)  | 0.0120   | 26(13.5)| 68(19.8)| 0.0670   |
| Prior CABG             | 12(0.7) | 3(0.6)   | 0.7213   | 5(0.9)  | 7(0.6)   | 0.5018   | 0(0)     | 3(0.9)   | 0.1938   |
| Prior stroke           | 251(14.7)| 105(19.6)| 0.0071   | 110(19.8)| 141(12.3)| 0.0000   | 41(21.4)| 64(18.7)| 0.4515   |
| Congestive heart failure| 599(35.2)| 173(32.3)| 0.2253   | 220(39.6)| 379(33)  | 0.0076   | 59(30.7)| 114(33.2)| 0.5521   |

| Clinical characteristics at admission |          |          |          |          |          |          |          |          |          |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| eGFR, mean (SD)                       | 80.65(19.11)| 84.85(25.14)| 0.0005   | 75.73(17.95)| 83.02(19.21)| <.0001  | 80.92(22.99)| 87.08(26.05)| 0.0071   |
| eGFR, median (IQR)                    | 79.49    | 82.36    | 0.0113   | 75.46    | 81.56    | <.0001   | 79.46    | 83.27    | 0.0084   |
| Acute heart failure, n (%)            | 14(0.8)  | 3(0.6)   | 0.5430   | 5(0.9)  | 9(0.8)   | 0.8034   | 2(1)     | 1(0.3)   | 0.2651   |
| Acute Stroke, n (%)                   | 40(2.4)  | 13(2.4)  | 0.9158   | 15(2.7) | 25(2.2)  | 0.5043   | 4(2.1)   | 9(2.6)   | 0.6969   |
| Extent of CAD, n (%)                  | 0.0033   |          |          | 0.5809   |          |          |          | 0.1289   |
| 1-vessel disease                      | 765(44.9)| 196(36.6)| 236(42.5)| 529(46.1)| 70(36.5)| 126(36.7)|          |          |          |
| 2-vessel disease                      | 599(35.2)| 204(38.1)| 204(36.8)| 395(34.4)| 70(36.5)| 134(39.1)|          |          |          |
| 3-vessel disease                      | 326(19.2)| 132(24.7)| 111(20) | 215(18.7)| 49(25.5)| 83(24.2)|          |          |          |
| Non-obstructive                      | 12(0.7) | 3(0.6)   | 4(0.7)   | 8(0.7)  | 3(1.6)  | 0(0)     |          |          |          |
| LM disease                            | 88(5.2) | 31(5.8)  | 0.5748   | 26(4.7) | 62(5.4) | 0.5290   | 10(5.2) | 21(6.1) | 0.6642   |

| Treatments, n (%)                    |          |          |          |          |          |          |          |          |          |
|--------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| No. of vessels treated during PCI    | 0.0489   |          |          |          | 0.1852   |          |          |          | 0.6011   |
| 0-vessel                             | 7(0.4)   | 5(0.9)   | 1(0.2)   | 6(0.5)  | 2(1)     | 3(0.9)   |          |          |          |
| 1-vessel                             | 1260(74)| 400(74.8)| 421(75.9)| 839(73.1)| 149(77.6)| 251(73.2)|          |          |          |
|                         | 2-vessel | 3-vessel | Complete vs. incomplete revascularization | Complete | Incomplete | Unknown | Stent | DES | BMS | Unknown | Access site | Medications during hospitalization, n (%) | In hospital complications, n ( %) |
|-------------------------|---------|---------|------------------------------------------|---------|-----------|---------|-------|-----|-----|---------|-------------|------------------------------------------|-------------------------------|
|                         | 410(24.1) | 129(24.1) |                                         | 129(23.2) | 281(24.5) | 41(21.4) | 88(25.7) |     |    |       |            | Aspirin 1559(91.6) 487(91) 0.6806 510(91.9) 1049(91.5) 0.7612 179(93.2) 308(89.8) 0.1826 | Major bleeding 0(0) 1(0.2) 0.0744 23(4.1) 43(3.7) 0.6922 1(0.5) 0(0) 0.1810 |
|                         | 129(23.2) | 129(23.2) |                                         | 21(1.8) | 21(1.8) | 21(1.8) | 21(1.8) |     |    |       |            | Clopidogrel/ Ticagrelor 1695(99.6) 531(99.3) 0.3319 554(99.8) 1141(99.5) 0.3001 190(99) 341(99.4) 0.5548 |                         |
|                         | 510(91.9) | 510(91.9) |                                         | 1049(91.5) | 1049(91.5) | 1049(91.5) | 1049(91.5) |     |    |       |            | Statins 1679(98.6) 530(99.1) 0.4495 550(99.1) 1129(98.4) 0.2629 190(99) 340(99.1) 0.8473 |                         |
|                         | 179(93.2) | 179(93.2) |                                         | 308(89.8) | 308(89.8) | 308(89.8) | 308(89.8) |     |    |       |            | Beta-blocker 1388(81.6) 418(78.1) 0.0802 461(83.1) 927(80.8) 0.2633 148(77.1) 270(78.7) 0.6610 |                         |
|                         | 308(89.8) | 308(89.8) |                                         | 270(78.7) | 270(78.7) | 270(78.7) | 270(78.7) |     |    |       |            | ACEI/ARB 1080(63.5) 363(67.9) 0.0638 356(64.1) 724(63.1) 0.6812 130(67.7) 233(67.9) 0.9580 |                         |
|                         | 233(67.9) | 233(67.9) |                                         | 233(67.9) | 233(67.9) | 233(67.9) | 233(67.9) |     |    |       |            | In hospital complications, n ( %) |                         |
| Complete vs. incomplete | 0.0019   | 0.0019   |                                         | 0.3600   | 0.3600    | 0.5330   | 0.5330 |     |    |       |            |                          |                         |
| revascularization       |          |          |                                         |          |          |          |          |     |    |       |            |                          |                         |
| Complete                | 170(10)  | 170(10)  |                                         | 56(10.1) | 114(9.9) | 23(12)  | 32(9.3) |     |    |       |            |                          |                         |
| Incomplete              | 755(44.4)| 755(44.4)|                                         | 56(10.1) | 114(9.9) | 23(12)  | 32(9.3) |     |    |       |            |                          |                         |
| Unknown                 | 777(45.7)| 777(45.7)|                                         | 56(10.1) | 114(9.9) | 23(12)  | 32(9.3) |     |    |       |            |                          |                         |
| Stent                   | 0.7306   | 0.7306   |                                         | 0.6474   | 0.6474    | 0.2674   | 0.2674 |     |    |       |            |                          |                         |
| DES                     | 1610(94.6) | 1610(94.6)|                                         | 1087(94.8) | 1087(94.8) | 178(92.7) | 326(95) |     |    |       |            |                          |                         |
| BMS                     | 0.0(0.0) | 0.0(0.0) |                                         | 0.0(0.0) | 0.0(0.0) | 0.0(0.0) | 0.0(0.0) |     |    |       |            |                          |                         |
| Unknown                 | 92(5.4)  | 92(5.4)  |                                         | 32(5.8)  | 32(5.8)  | 14(7.3) | 17(5)  |     |    |       |            |                          |                         |
| Access site             | 0.9629   | 0.9629   |                                         | 0.0469   | 0.0469    | 0.0907   | 0.0907 |     |    |       |            |                          |                         |
| Radial                  | 1531(90) | 1531(90) |                                         | 1030(89.8) | 1030(89.8) | 167(87) | 315(91.8) |     |    |       |            |                          |                         |
| Femoral                 | 132(7.8) | 132(7.8) |                                         | 84(7.3)  | 84(7.3)  | 17(8.9) | 23(6.7) |     |    |       |            |                          |                         |
| Others                  | 39(2.3)  | 39(2.3)  |                                         | 33(2.9)  | 33(2.9)  | 8(4.2)  | 5(1.5)  |     |    |       |            |                          |                         |
| Condition                  | Count (Percent) | Count (Percent) | Chi-sq | p-Value | Count (Percent) | Count (Percent) | Chi-sq | p-Value | Count (Percent) | Count (Percent) |
|---------------------------|-----------------|-----------------|--------|---------|-----------------|-----------------|--------|---------|-----------------|----------------|
| Any bleeding              | 66 (3.9)        | 22 (4.1)        | 0.8078 | 0.398   | 10 (5.2)        | 12 (3.5)        | 0.3394 |
| Blood transfusion         | 3 (0.2)         | 3 (0.6)         | 0.1337 | 0.718   | 2 (0.2)         | 1 (0.3)         | 0.2651 |
| Stroke                    | 63 (3.7)        | 22 (4.1)        | 0.6648 | 0.416   | 10 (5.2)        | 12 (3.5)        | 0.3394 |
| MI                        | 22 (1.3)        | 9 (1.7)         | 0.5013 | 0.490   | 4 (2.1)         | 5 (1.5)         | 0.5894 |
| TVR                       | 10 (0.6)        | 5 (0.9)         | 0.3909 | 0.566   | 3 (1.6)         | 2 (0.6)         | 0.2588 |
| CABG                      | 2 (0.1)         | 0 (0)           | 0.4276 | 0.514   | 1 (0.5)         | 0 (0)           | 0.1810 |
| Length of stay, mean (SD) | 10.24 (5.21)    | 10 (4.63)       | 0.3091 | 0.541   | 10.38 (4.88)    | 9.78 (4.47)     | 0.1501 |
| Length of stay, median (IQR) | 9 (7,12)       | 9 (7,12)        | 0.4228 | 0.530   | 9 (7,13)        | 9 (7,12)        | 0.1674 |

ACE-I = angiotensin-converting-enzyme inhibitor; ARB = angiotensin receptor blocker; BMI = body mass index; BMS: bare mental stent; CABG = coronary artery bypass grafting; CAD: coronary heart disease; DES: drug eluting stent; IQR = interquartile range; MI: myocardial infarction; PCI = percutaneous coronary intervention; SD = standard deviation; TVR: target vessel revascularization.