Supplemental Table S1. Definitions of baseline covariates

| Diagnosis | ICD-10-CM code or prescription code | Diagnostic definition |
|---|---|---|
| **Atrial fibrillation** | I48 | Admission≥1 or outpatient department≥2 |
| **Hypertension** | I10-I13, I15 | Admission≥1 or outpatient department≥2 |
| **Diabetes mellitus** | E10-E14 | Admission≥1 or outpatient department≥2 |
| **Heart failure** | I11.0, I13.0, I13.2, I42, I50 | Admission≥1 or outpatient department≥2 |
| **Chronic kidney disease** | I12, I13, N00-05, N07, N11, N14, N17-19, Z49, Q61 | Admission or outpatient department≥1 |
| **End-stage renal disease** | N185, Z49 | Admission or outpatient department≥1 |
| **Liver cirrhosis** | K74, K702, K703, K717, K761 | Admission or outpatient department≥1 |
| **Myocardial infarction** | I21, I22, I23 | Admission≥1 or outpatient department≥2 |
| **Ischemic stroke** | I63, I64 | Admission≥1 or outpatient department≥2 |
| **Intracranial hemorrhage** | I60-62 | Admission≥1 or outpatient department≥2 |
| **GI bleeding** | I85.0, K22.1, K22.8, K25.0, K25.2, K25.4, K25.6, K26.0, K26.2, K26.4, K26.6, K27.0, K27.2, K27.4, K27.6, K28.0, K28.2, K28.4, K28.6, K29.0, K31.8, K55.2, K57.0, K57.1, K57.2, K57.3, K57.4, K57.5, K57.8, K57.9, K62.5, K66.1, K92.0, K92.1, K92.2 | Admission≥1 or outpatient department≥2 |
| **PCI** | M6561, M6562, M6563, M6564, M6565, M6566 | Operation codes |
| **CABG** | O1640, O1641, O1645, O1646, O1647, O1648, O1649 | Operation codes |
| **DOAC dose** | | |
| **Low dose** | | Dabigatran 110mg, rivaroxaban |

| | | |
|---|---|---|
| **Standard dose** | | 10mg/15mg, apixaban 2.5mg, or edoxaban 15mg/30mg |
| | | Dabigatran 150mg, rivaroxaban 20mg, apixaban 5mg, or edoxaban 60mg |
| **Drug-eluting stent** | J5083001, J5083002, J5083011, J5083029, J5083040, J5083046, J5083070, J5083101, J5083137, J5083140, J5083173, J5083201, J5083213, J5083237, J5083240, J5083273, J5083301, J5083401, J5083501, J5231221, J5231294, J8083033, J8083089, J8083129, J8083340, J8083440, J8083473, J5231306, J5231045, J5231065, J5083006, J5083013, J5083042, J5083073, J5083113, J8083073, J8083373 | Material codes at the time of PCI |

GI = gastrointestinal; PCI = percutaneous coronary intervention; CABG = coronary artery bypass graft; DOAC = direct oral anticoagulant.

Supplemental Table S2. Definitions of study outcomes

| Outcomes | ICD-10-CM code | Diagnostic definition |
|---|---|---|
| **MACE** | | A composite event of cardiovascular death, myocardial infarction, ischemic stroke or systemic thromboembolism |
| **Cardiovascular death*** | I00.X-I99.X or R96, R98, R99 | Recorded as a major cause of death |
| **Myocardial infarction** | I21, I22, I23 | Major diagnosis for admission during the study period |
| **Ischemic stroke** | I63, I64 | Major diagnosis for admission during the study period |
| **Systemic thromboembolism** | I74, I26, I80.2 | Major diagnosis for admission during the study period |
| **Major bleeding** | | Major diagnosis of ICH, GI bleeding or other critical area bleeding for admission during the study period |
| **ICH** | I60-62 | Major diagnosis for admission during the study period |
| **GI bleeding** | I85.0, K22.1, K22.8, K25.0, K25.2, K25.4, K25.6, K26.0, K26.2, K26.4, K26.6, K27.0, K27.2, K27.4, K27.6, K28.0, K28.2, K28.4, K28.6, K29.0, K31.8, | Major diagnosis for admission during the study period |

| | | |
|---|---|---|
| | K55.2, K57.0, K57.1, K57.2, K57.3, K57.4, K57.5, K57.8, K57.9, K62.5, K66.1, K92.0, K92.1, K92.2 | |
| **Other critical area bleeding** | D62, H05.2, H35.6, H43.1, J94.2, M25.0, I312, I319 | Major diagnosis for admission during the study period |
| **Any critical anatomical site bleeding** | | New diagnosis of ICH, GI bleeding or other critical area bleeding for either admission or outpatient visit, during the study period |

*Causes of deaths were identified by the data provided from the Korean national statistical office.

MACE = major adverse cardiovascular event; ICH = intracranial hemorrhage; GI = gastrointestinal.