Table I. The International Statistical Classification of Diseases Codes Used in Defining Stroke Population

| Codes by | ICD-9-CM | ICD-10-CM |
| :--- | :--- | :--- |
|  |  |  |
| Ischemic stroke | $433,434,435,438$ | I63, I64, G45, I69 |
| Hemorrhagic stroke | $430,431,432$ | I60, I61, I62 |
| ICD-9-CM, International Statistical Classification of Disease and Related Health Problems, |  |  |
| Ninth Revision, Clinical Modification; ICD-10-CM, International Statistical Classification of |  |  |
| Disease and Related Health Problems, Tenth Revision, Clinical Modification |  |  |

Table II. Oral Anticoagulant Codes

| Medication | Codes |
| :---: | :---: |
| Warfarin | "A043862100" "A050095100" "A050423100" "A050423100" |
|  | "A052559100" "AC43862100" "AC50095100" "AC50423100" |
|  | "AC52559100" "AC55271100" "B020346100" "B020354100" |
|  | "В020515100" "В020516100" "В023426100" "В023572100" |
|  | "В023573100" "ВС23572100" "ВС23573100" "Х000140100" |
| Rivaroxaban | "В025129100" "В025647100" "В025648100" "ВС25129100" |
|  | "ВС25647100" "ВС25648100" |
| Dabigatran | "В025458100" "В025459100" "ВС25458100" "ВС25459100" |
|  | "BC26233100" |
| Apixaban | "ВС26124100" "ВС26133100" |
| Edoxaban | "ВС26599100" "ВС26600100" "ВС26601100" |

Table III. Codes for Medical Comorbidities.

| Comorbidities | Disease Codes |
| :--- | :--- |
| Atrial fibrillation | ICD-9 of 427.31; ICD-10 of I48 |
| Peripheral arterial occlusion | ICD-9 of 440.2, 440.3; ICD-10 of I70.2, I70.3, I70.4, I70.5, |
| disease | I70.6, I70.7, I75.0 |
| Coronary heart disease | ICD-9 of 410, 411, 412, 413, 414; ICD-10 of I20, I21, I22, |
|  | I24, I25 |
| Chronic heart failure | ICD-9 of 428; ICD-10 of I50 |
| Hypertension | ICD-9 of 401, 402, 403, 404, 405; ICD-10 of I10, I11, I12, |
|  | I13, I15 |
| Diabetes mellitus | ICD-9 of 250; ICD-10of E08, E09, E10, E11, E13 |
| Hyperlipidemia | ICD-9 of 272; ICD-10 of E78 |
| Chronic kidney disease | ICD-9 of 580, 581, 582, 583, 584, 585, 586, 587, 588, 589; |
|  | ICD-10 of N00, N01, N02, N03, N04, N05, N06, N07, N08, |
|  | N10, N11, N14, N15, N17, N18, N19, N25, N27 |
| Chronic liver disease | ICD-9 of 570, 571, 572; ICD-10 of K70, K72, K73, K74, |
|  | K75, K76 |

Table IV. Oral Antiplatelet Codes


```
"A0424611G0" "A0424611G0" "A0424611G0" "A042774100" "A042774100" "A042774100"
"A042774100" "A042774100" "A042774100" "A042774100" "A042774100" "A042915100"
"A042915100" "A042915100" "A042915100" "A042915100" "A042915100" "A042915100"
"A0429151G0" "A0429151G0" "A042934100" "A042934100" "A042934100" "A042934100"
"A042934100" "A042934100" "A042934100" "A042934100" "A0429341G0" "A043139100"
"A043139100" "A043139100" "A043139100" "A043142 100" "A043142100" "A043142100"
"A043142100" "A043142100" "A043142100" "A043142 100" "A043142100" "A043142100"
"A043142100" "А043212100" "А043212100" "А043212100" "A043212100" "А043212100"
"A043212100" "А043212100" "А043212100" "A043254100" "A043254100" "A043254100"
"A043254100" "A043254100" "A043254100" "A043254100" "A043254100" "A043309100"
"A043309100" "A043309100" "A043309100" "A043309100" "A043309100" "A043309100"
"A0433091G0" "A0433091G0" "A043663100" "A043663100" "A043663100" "A043663100"
"A043663100" "A043663100" "A043663100" "A043663100" "A0436631G0" "A0436631G0"
"A043664100" "А043664100" "A043664100" "A043664100" "A043664100" "A043664100"
"A043664100" "A0436641G0" "A0436641G0" "A044016100" "A044016100" "A044016100"
"A044016100" "A044016100" "A044016100" "A0440161G0" "A044069100" "A044176100"
"A044176100" "A044176100" "A044176100" "A044176100" "A044176100" "A0441761G0"
"A0441761G0" "A044578100" "A044578100" "A044578100" "A044578100" "A044578100"
"A045015100" "A045015100" "A045015100" "A045015100" "A045015100" "A045072100"
"A045072100" "A048339100" "A0483391G0" "A048542100" "A048542100" "A048542100"
"A0485421G0" "A0495361G0" "A0495361G0" "A054863100" "A054863100" "A0548631G0"
"A0548631G0" "A0551041G0" "A0551041G0" "AC29754100" "AC37344100" "AC37344100"
"AC373441G0" "AC373441G0" "AC37702100" "AC41220100" "AC41511100" "AC415111G0"
"AC41814100" "AC418141G0" "AC42461100" "AC424611G0" "AC42774100" "AC42934100"
"AC43139100" "АС43142100" "AC43212100" "АС43254100" "AC43254100" "AC43309100"
"AC433091G0" "AC43663100" "AC43663100" "AC436631G0" "AC436631G0" "AC43664100"
"AC436641G0" "AC44176100" "AC44176100" "AC44176100" "AC441761G0" "AC441761G0"
"AC441761G0" "AC48542100" "AC495361G0" "AC548631G0" "AC54985100" "AC54985100"
"AC549851G0" "AC549851G0" "AC551041G0" "B008262100" "B008262100" "B017332100"
"В017332100" "В017332100" "В017332100" "В018755100" "В018755100" "В020365100"
"В020365100" "В020365100" "В020365100" "В023619100" "В023619100" "В023619100"
"В023919100" "В023919100" "В023919100" "В023919100" "В023919100" "В023919100"
"В024025100" "В024025100" "В024025100" "В024025100" "В024025100" "В024025100"
"B0240251G0" "B0240251G0" "B0240251G0" "BC23919100" "BC23919100" "BC23919100"
"BC23919100" "BC23919100" "BC24025100" "BC240251G0" "C001621100" "C001621100"
"N004155100" "N004155100" "N004155100" "N004155100" "N011693100" 'N011693100"
```


## Clopidogrel

```
"A047589100""'A047589100" "A047589100" "A047589100""A047589100"" 'A047589100"
"A048062100" "A048062100" "A048649100" "A048649100"" "A048730100" "A048730100"
"A048730100" "A049224100" "A049224100" "A049224100"" "A049344100" "A049344100"
"A049719100" "A049719100" "A049967100""A049967100""'A050126100" "A050126100"
"A050241100" "A050241100""A052522100"" "A052522100""*A052522100" "A055026100"
"A055026100" "A055044100" "A055044100""A055044100""'A055044100""A055044100"
"A055044100" "A055044100" "A055428100" "A055428100" "A055428100""A057123100"
"A057123100" "A057123100""A057123100""A057123100""'A057123100""A057123 100"
"A057140100" "A057140100" "AA48649100" "AA48649100"" "AA48649100" "AA48649100"
"AA48730100""AA48730100" "AA48730100" "AA48730100""AA48730100" "AA48730100"
"AA49344100" "AA49344100" "AA49344100"" 'AA49344100" "AA49344100" "AA50126100"
"AA50126100""AA50126100""AA50126100" "AA50126100""AA50126100""AA57140100"
"AA57140100""AA57140100""AA57140100""AA57140100""AA57140100""AB48649100"
"AB48649100"" AB48649100" "AB48649100" "AB48730100" "AB48730100"" "AB48730100'
"AB49344100""AB49344100""AB49344100""AB49719100""AB49719100""AB49719100'
"AB49719100""AB49719100" "AB49719100" "AB49719100""'AB50126100"" 'AB50126100"
"AB50126100"" AB57819100" "AB57819100" "AB57819100" "AB57819100"" "AB57819100'
"AB58093100""AB58093100""AB58093100""AB58093100""AC48062100" "AC48062100"
"AC48062100"" AC48062100" "AC48062100" "AC48062100"" AC48062100"" "AC48649100"
"AC48649100" "AC48649100" "AC48649100" "AC48649100" "AC49224100" "AC49224100'
"AC49224100""AC49224100" "AC49224100" "AC49224100"" AC49344100" "AC49344100'
"AC49344100"" АС49719100" "АС49719100" "AC49967100"" AC49967100" "AC49967100'
"AC49967100"""AC49967100""AC49967100" "AC49967100" "AC50126100" "AC50126100'
"AC50126100"" AC50126100" "AC50241100" "AC50241100" "AC50241100" "AC50241100"
"AC50241100"""AC50241100"" "АС50241100"" AC52522100" "AC52522100"" AC52522100"
"AC52522100" "AC52522100"" AC52522100""AC55026100" "AC55026100"" AC55026100'
"AC55026100"" AC55026100" "AC55026100" "AC55026100" "AC55428100"" 'AC55428100'
"AC55428100" "AC55428100""AC55428100" "AC55428100" "AC57140100" "AC57140100'
"AC57140100" "AC57819100" "AC57819100" "AC57819100"" AC57819100"" "AC57819100'
"AC57819100"" 'АС58093100" "AC58093100" "AC58093100"" AC58093100" "AC58093100'
"АС58093100" "В022932100" "B022932100" "B022932100"" "В022932100" "В022932100"
"В024863100" "В024863100" "B024863100" "В025034100" "B025034100" "B025034100" "B025114100"
"В025114100" "В025114100"" "В025222100" "В025222100" "B025222100"" "B025222100" "B025326100"
"B025326100" "В025326100"""В026190100" "В026190100"" "В026335100"" "В026335100'
"BB25873100" "ВВ25873100" "ВВ25873100""ВВ25873100""ВВС22932100" "ВС22932100"
"ВС22932100" "ВС22932100" "ВС22932100""ВВ22932100""ВВС24863100" "ВС24863100"
"ВС24863100" "ВС24863100" "ВС24863100" "ВС25034100" "В С25034100" "В С25034100"
"ВС25034100" "ВС25034100" "ВС25034100" "ВС25114100"" "ВС25114100"" "ВС25114100"
"ВС25114100" "ВС25114100"" "ВС25114100"" "ВС25222100"" "ВС25222100" "ВС25326100"
"ВС25326100" "ВС25326100" "ВС25326100" "ВС25326100" "ВС25326100" "ВС25873 100"
```

```
"BC25873100" "ВС25873100" "ВС25873100" "ВС25873100" "ВС26190100" "ВС26190100"
"ВС26190100""ВВС26190100" "ВС26190100" "ВС26190100" "ВС26190100" "ВС26252100"
"ВС26252100" "ВС26252100" "ВС26252100" "ВС26252100" "ВС26252100" "ВС26335100"
"ВС26335100" "ВС26335100" "ВС26335100" "ВС26335100" "ВС26335100" "ВС27182100"
"BC27182100" "BC27182100"
```


## Prasugrel

"BC27361100" "BC27362100"

## Ticagrelor

"B025691100" "B025691100" "B025691100" "BC25691100" "BC25691100" "BC25691100" "BC25691100" "BC25691100" "BC25691100"

## Ticlopidine

```
"A028034100" "A028034100" "A028034100" "A028034100" "A028034100" "A028034100"
"A028034100" "A028034100" "A028034100" "A028034100" "A028034100" "A028034100"
"А028034100" "А031596100" "А031596100" "A031596100" "A031596100" "A031596100"
"А031596100" "A031596100" "A031596100" "A033091100""A033091100" "A033091100"
"A033091100" "A033091100" "A033091100" "A033091100" "A033091100" "A033675100"
"А033675100" "А033675100" "А033675100" "A033675100""A033675100""A033675100"
"А033675100" "A034016100" "A034016100" "A034016100" "A034016100" "A034016100"
"А034016100" "А034016100" "А034016100" "A034016100" "A034927100" "A034927100"
"A034927100""A034927100" "A034927100" "A034927100" "A034927100" "A034927100"
"А034927100" "А034927100" "A034927100" "A034927100" "A036396100" "A036396100"
"A036396100" "A036396100" "A036396100" "A036396100" "A036396100" "A036396100"
"А036756100" "А036756100" "А036756100""A036756100""A036756100""A036756100"
"А036756100" "А036756100" "А036756100" "А036756100" "А036756100" "А036756100"
"А036756100" "А036857100" "A036857100""A036857100""A036857100""A036857100"
"A036857100" "A036857100" "A037211100" "A037211100" "A037211100" "A037211100" "A037211100"
"A037211100" "A037211100" "A037211100" "A037211100" "A038262100" "A038262100" "A038262100"
"A038494100""A038494100" "A038494100" "A038494100" "A038494100" "A038494100"
"A038494100" "A038494100" "A038494100" "A038494100" "A038494100" "A039559100"
"А039559100""A039559100""A039559100""A039559100""A039559100""A039559100"
"А039559100" "A039559100" "A039559100" "A039559100""A039575100" "A039575100"
"A039575100" "A039575100" "A039575100" "A039575100" "A039575100" "A039575100"
"A039575100" "A039575100" "A041251100""A041251100""A041251100" "A041251100"
"A041251100" "A041251100" "A041251100" "A041251100" "A041251100" "A041251100" "A041251100"
"A041251100" "A042830100" "A042830100" "A042830100" "A042830100" "A042830100"
"A042830100""A042830100" "A042830100" "A042830100" "A043972100" "A043972100"
"A043972100" "A043972100" "A050174100" "A050174100" "A050174100" "A050174100"
"A050174100" "AB31596100" "AB31596100""AB31596100" "AB31596100" "AB31596100"
"AB31596100" "AB33091100" "AB33091100" "AB33091100" "AB33091100" "AB33091100"
```

"AB33091100" "AB33091100" "AC31596100" "AC31596100" "AC31596100" "AC31596100"
"AC33091100" "AC33091100" "AC33091100" "AC33675100" "AC33675100" "AC33675100"
"АС 33675100 " "АС $33675100 "$ "АС $33675100 "$ "АС 34927100 " "AC34927100" "AC34927100"
"AC34927100" "AC34927100" "AC36396100" "AC36396100" "AC36396100" "AC36396100"
"AC36396100" "AC36396100" "AC36396100" "AC39575100" "AC39575100" "AC39575100"
"AC39575100" "AC39575100" "AC39575100" "AC41251100" "AC41251100" "AC41251100"
"AC41251100" "AC42830100" "AC42830100" "AC42830100" "AC42830100" "AC42830100"
"AC43972100" "AC43972100" "AC43972100" "AC43972100" "AC43972100" "AC50174100"
"AC50174100" "AC50174100" "AC50174100" "AC50174100" "B015133100" "B015133100"
"B015133100" "B015133100" "B015133100" "B015133100" "B018857100" "B018857100" "B018857100"
"В018857100" "B018857100" "B018857100" "B018857100" "B018857100" "B018857100" "B018857100"
"В018857100" "В018965100" "В018965100" "B018965100" "В018965100" "B018965100" "B018965100"
"В020841100" "В020841100" "B020841100" "B020841100" "B020841100" "B020841100" "B020841100"
"ВС18857100" "ВС18857100" "ВС18857100" "ВС18857100" "ВС18857100"

## Cilostazol

"А044124100" "A044124100" "A044136100" "A044136100" "A044136100" "A044136100" "А048377100" "A048377100" "A048377100" "A049008100" "A049008100" "A049008100" "А049189100" "А049189100" "A049189100" "A050027100" "A050027100" "A050034100" "А050034100" "A050034100" "A050429100" "A050429100" "A050429100" "A050429100" "A050429100" "AB44124100" "AB44124100" "AB44124100" "AB44124100" "AB44124100" "AB44124100" "AB44124100" "AB44136100" "AB44136100" "AB44136100" "AB44136100" "AB44136100" "AB44136100" "AB44136100" "AB49189100" "AB49189100" "AB49189100" "AB49189100" "AB49189100" "AB49189100" "AB49189100" "AC44124100" "AC44124100" "AC44124100" "AC44136100" "AC44136100" "AC44136100" "AC48377100" "AC48377100" "AC48377100" "AC48377100" "AC48377100" "AC48377100" "AC48377100" "AC49008100" "AC49008100" "AC49008100" "AC49008100" "AC49008100" "AC49008100" "AC49008100" "AC49189100" "AC49189100" "AC49189100" "AC50027100" "AC50027100" "AC50027100" "AC50027100" "AC50027100" "AC50027100" "AC50027100" "AC50027100" "AC50034100" "AC50034100" "AC50034100" "AC50034100" "AC50034100" "AC50034100" "AC50034100" "AC55010100" "AC55010100" "AC55010100""AC55010100" "AC55010100" "AC55010100" "AC55010100" "AC57814100" "AC57814100" "AC57814100" "AC57814100" "AC57814100" "AC57814100" "AC57814100" "B023004100" "B023004100" "B023004100" "B023004100" "В023004100" "В023004100" "В023004100" "B023004100" "В023005100" "B023005100" "B023005100" "В025249100" "В025249100" "B025993100" "B025993100" "B025993100" "B025993100" "B025994100" "В025994100" "B025994100" "B025994100" "BC25249100" "BC25249100" "BC25249100" "ВС25249100" "BC25249100" "BC25993100" "BC25993100" "BC25993100" "BC25993100" "BC25993100" "BC25994100" "BC25994100" "BC25994100" "BC25994100" "BC25994100"

```
Abciximab
"K000489221""K000489221""K000489221"
```


## Eptifibatide

"В023459229" "В023459229" "В023459229" "В023459229" "В023468255" "В023468255" "В023468255" "В023468255" "ВС23459229" "ВС23459229" "ВС23459229" "ВС23468255" "ВС23468255" "ВС23468255" "ВС23468255" "ВС23468255"

## Tirofiban

"В022606248" "B022606248" "B022606248" "B022606248" "BC22606248" "BC22606248"

## Dipyridamole

"A001941100" "A001941100" "A001941100" "A001941100" "A001941100" "A001941100" "A001941100"
"A001941100" "A0019411G0" "A0019411G0" "A003853100" "A003853100" "A003853100"
"А003853100" "A005200100" "A005200100" "A005200100" "A005200100" "A005200100"
"А005200100" "A005200100" "A005414100" "A005414100" "A005414100" "A005414100"
"А006394100" "А006394100" "А007799212" "A007799212" "А007799212" "А008380100" "А008380100" "А008380100" "А008380100" "A008380100" "A009983100" "A009983100" "A009983100" "A0099831G0" "A010802100" "A010802100" "A010802100" "A010802100" "А012383100" "А012383100" "А012383100" "А012383100" "А013634100""А013634100" "А013634100" "А013634100" "А013634100" "А013634100" "А013634100" "A013634100" "A013634100" "A0136341G0" "A0136341G0" "A013752100" "A013752100" "A013752100" "A013801100" "A013801100" "A013801100" "A013801100" "A013801100" "A013801100" "A013801100" "A013801100" "A0138011G0" "A0138011G0" "A014256100" "A014256100" "A014256100"

```
"A015511100""A015511100" "A015511100" "A015511100" "A015511100" "A015734100" "A015734100"
```

"А015734100" "А015734100" "А015990100" "A015990100" "A015990100" "А017350212"
"A017350212" "A017350212" "A017350212" "A017350212" "A017350212" "A017573100"
"А017573100""А017573100" "А017573100" "A017573100""A017737100""А017737100"
"А017737100" "А017737100" "А017737100" "А017872212" "А017872212""А017872212"
"А017872212" "А017872212" "А017872212" "А017872212""А019034100""А019034100"
"А019034100" "А019138100" "А019138100" "А019138100" "А019138100" "А019502100"
"А019502100" "A019502100" "A019627100" "A019627100" "A019627100" "A019627100"
"А019796100" "А019796100" "А019796100" "А019894100" "А019894100" "А019894100"
"А019895100" "А019895100" "А019895100" "A019895100" "A019895100" "A019895100"
"A019895100" "A019895100" "A019895100" "A0198951G0" "A0198951G0" "A020095100"
"А020095100" "А021566100" "А021566100" "А021566100" "А021566100" "A021711100"
"А021711100" "А021711100" "А022187100" "A022187100" "А022187100" "А022187100"
"А022723100""А022723100" "А022723100" "А022723100""A022723100""А022802100"
"А022802100" "А022802100" "А023317212" "А023317212" "А023317212" "А023317212"
"А023321100" "А023321100" "A023321100" "A023321100" "A023321100" "A023644100"
"А023644100" "A023644100" "A023644100" "A024356100" "A024356100" "A024356100"
"A024356100" "A024772212" "A024772212" "A024772212" "A024772212" "A024772212"
"А024772212" "A025272100" "А025272100" "A025272100" "A025272100" "A025406100"
"А025406100" "A025406100" "A025406100" "A025431100" "A025431100" "A025431100"

$$
\begin{aligned}
& \text { "A025431100" "A025431100" "A025431100"" A025431100""A025686100" "A025686100" } \\
& \text { "A025686100" "A025686100" "A025686100" "A025686100" "A0256861G0" "A0256861G0" } \\
& \text { "A025851100" "A025851100" "A025851100"" A026008100"" "A026008100" "A026008100" } \\
& \text { "A026008100" "A026008100" "A026521100" "A026521100"" "A026521100" "A026770100" } \\
& \text { "A026770100" "A026770100"" } \mathrm{A} 027445100 " \text { "A027445100" "A027445100" "A027445100" } \\
& \text { "A027445100" "A027445100" "A027445100" "A027445100"" } \mathrm{A} 027511100 \text { " "A027511100" } \\
& \text { "А027512100""A027512100""A027512100" "A027512100"" } \mathrm{A} 027512100 " \text { "A027512100" } \\
& \text { "A027512100" "A028454100" "A028454100" "A028454100"" } \mathrm{A} 028454100 \text { " "A028454100" } \\
& \text { "A028454100" "A028454100" "A028454100" "A0284541G0" "A0284541G0" "A0284541G0" } \\
& \text { "А028507100" "A028507100" "A028507100" "A028507100"" } \mathrm{A} 028507100 \text { ""A028507100" } \\
& \text { "A028507100" "A028507100" "A028507100'" "A028507100" "A028507100" "A028592100" } \\
& \text { "A028592100" "A028592100" "A028592100'" "A028592100" "A028592100" "A028592100" } \\
& \text { "A028592100" "A0285921G0" "A0285921G0" "A029432100" "A029432100" "A029432100" } \\
& \text { "A029432100" "A029432100" "A029432100" "A029432100"" A029432100" "A029432 100" } \\
& \text { "А029432100" "A029432100" "A029432100" "A029432100" "A029432100" "A029432100" } \\
& \text { "А029765100" "A029765100" "A029765100" "A029766100"" } \mathrm{A} 029766100 \text { " "A029766100" } \\
& \text { "А029766100" "A029766100" "A029766100" "A030336100"" "A030336100" "A031228100" } \\
& \text { "A03 1228100"" } \mathrm{A} 031228100 " \text { "A031228100" "A031228100""A031228100"" } \mathrm{A} 031228100 \text { " } \\
& \text { "A03 1228100" "A031228100" "A031323100"" "A031323100" "A031323100" "A031323100" } \\
& \text { "A031323100""A031323100""A031323100""A031323100""A031323100""A032046100" } \\
& \text { "A032046100" "A032046100" "A032046100" "A032046100" "A0320461G0" "A0320461G0' } \\
& \text { "A032530100" "A032530100" "A032530100" "A032530100""A032530100"" } \mathrm{A} 032530100 \text { " } \\
& \text { "A032530100" "A0325301G0" "A0325301G0" "A033622100" "A033622100" "A033622100" } \\
& \text { "A033622100" "A034584100" "A034584100" "A034584100"" } \mathrm{A} 034584100 \text { " "A034584100" } \\
& \text { "A0345841G0" "A037644100" "A037644100" "A037644100" "A0376441G0" "A0376441G0" } \\
& \text { "A038495100" "A038495100" "A038495100" "A038495100"" } \mathrm{A} 039042100 \text { ""A039042100" } \\
& \text { "A039042100" "A0390421G0" "A0390421G0"" A040976100" "A040976100" "A040976100" } \\
& \text { "A041288100" "A041288100" "A041288100" "A041288100""A041548100"" A041548100" } \\
& \text { "A041548100" "A041548100" "A041548100" "A041548100""A041548100""A0415481G0" } \\
& \text { "A0415481G0"" } \mathrm{A} 041877100 " \text { "A041877100" "A041898100" "A041898100" "A041898100" } \\
& \text { "A041898100""A042535100""A042535100""A042535100" "A042535100""A042535100" } \\
& \text { "А042535100" "А042535100" "A042535100" "A042535100"" } \mathrm{A} 043040100 \text { " "A043040100" } \\
& \text { "А043040100" "A043040100" "A043040100" "A043040100"" } \mathrm{A} 043040100 \text { " "A043040100" } \\
& \text { "А043630100" "А043630100" "A043630100" "A043630100"" } \mathrm{A} 043630100 \text { " "A043630100" } \\
& \text { "A045312100""A045312100" "A045312100" "AC01941100" "AC019411G0" "AC05200100" } \\
& \text { "AC05200100" "AC08380100" "AC10802100" "AC13634100" "AC13634100" "AC136341G0" } \\
& \text { "AC136341G0" "AC13801100""AC138011G0" "AC17350212" "AC19138100""AC19627100" }
\end{aligned}
$$

```
"AC256861G0" "AC27445100"" AC27445100" "AC27445100" "AC27445100" "AC27445100"
"AC27445100" "AC274451G0" "AC284541G0" "AC284541G0" "AC285071G0" "AC285071G0"
"AC28592100" "AC28592100" "AC28592100" "AC28592100" "AC28592100" "AC28592100"
"AC28592100" "AC285921G0" "AC294321G0" "AC294321G0" "AC31228100" "AC31228100"
"AC31228100" "AC31228100"" AC3 1228100" "AC31228100" "AC312281G0" "AC32046100"
"AC32046100"" AC32046100" "AC32046100" "AC32046100" "AC32046100" "AC32046100"
"AC32046100" "AC320461G0" "AC32530100" "AC32530100" "AC32530100" "AC32530100"
"AC32530100""AC325301G0" "AC325301G0" "AC325301G0" "AC325301G0" "AC325301G0"
"AC34584100" "AC37644100" "AC376441G0" "AC39042100" "AC390421G6" "AC41548100"
"AC41548100" "AC415481G0" "AC415481G0" "AC41877100" "AC41877100" "AC41877100"
"AC41877100""AC41877100" "AC42535100" "AC42535100"" AC42535100" "AC42535100"
"AC42535100" "AC42535100" "AC42535100" "AC425351G0" "AC43040100" "AC43040100"
"AC43040100" "AC43040100""AC43040100""AC43040100""AC43040100" "AC430401G0"
"AC43630100" "AC43630100" "AC43630100" "AC43630100" "AC43630100" "AC43630100"
"AC45312100""AC57891100""AC578911G0" "B004606212" "B004606212" "B004606212"
"В004606212" "В004606212" "В004606212" "В008358100" "В008358100" "В008358100" "В008358100"
"В008358100" "В008358100" "В009073100"" "В009073 100" "В009073100" "В009073100"" "В009073100"
"B009073100" "B009073100"""B009073100"",B0090731G0" "B0090731G0"" "B013267212"
"В013267212" "В013267212" "В013267212" "В013267212" "В013318100" "В013318100" "В013318100"
"В013318100" "В013590100" "B013590100"" "В013590100" "В013590100""ВВ013590100""'В013590100"
"В013590100" "В014345212" "В014345212" "В014345212" "В014345212" "В014602100" "В014602100"
"В014602100" "В014602100" "В016102100"" "В016102100" "В016102100" "В016102100" "В016141100"
"В016141100" "В016141100"" "В018442100" "В018442100" "В018471100"" "В018471100" "В018471100"
"В020244100" "В020244100" "В020244100" "В020244100" "В023385212" "В023385212" "В0233852 12"
"В023385212" "В023919100" "В023919100"" "В023919100" "В023919100" "В023919100" "В023919100"
"BC23919100" "BC23919100" "BC23919100" "BC23919100" "BC23919100" "N000163100"
"N000163100" "N000163100" "N001036100" "N001036100"" "N001036100" "N001036100"
"N001036100" "N004907212" "N004907212""N0049072 12" "N004907212" "N006489212"
"N006489212" "N006489212" "N008511100" "N008511100" "N008511100" "N011074100"" N011074100"
"N011074100" "N013361100" "N013361100" "N013361100"" "N013361100" "N015343212"
"N015343212" "N015343212" "N015343212""N015343221" "N015343221" "N015343221"
"NC06489212" "NC15343212
```

Table V. Baseline Characteristics of Ischemic Stroke Population before Inverse Probability of Treatment Weighting

|  | NOACS |  | Warfarin |  | Total | SMD |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| N | 37,129 | $48.87 \%$ | 38,840 | $51.13 \%$ | 75,969 |  |  |
| Age (mean, SD) | 74.966 | 9.498 | 70.046 | 12.689 | 72.451 | 11.509 | 0.439 |
| Gender |  |  |  |  |  |  |  |
| Male | 19,994 | $53.85 \%$ | 21,001 | $54.07 \%$ | 40,995 | $53.96 \%$ | -0.004 |
| Female | 17,135 | $46.15 \%$ | 17,839 | $45.93 \%$ | 34,974 | $46.04 \%$ |  |
| Comorbidity |  |  |  |  |  |  |  |
| PAOD | 991 | $2.67 \%$ | 1,515 | $3.90 \%$ | 2,506 | $3.30 \%$ | 0.069 |
| CHD | 20,920 | $56.34 \%$ | 19,985 | $51.45 \%$ | 40,905 | $53.84 \%$ | -0.098 |
| CHF | 14,040 | $37.81 \%$ | 14,327 | $36.89 \%$ | 28,367 | $37.34 \%$ | -0.019 |
| HTN | 33,628 | $90.57 \%$ | 33,413 | $86.03 \%$ | 67,041 | $88.25 \%$ | -0.142 |
| DM | 17,410 | $46.89 \%$ | 18,575 | $47.82 \%$ | 35,985 | $47.37 \%$ | 0.019 |
| Hyperlipidemia | 22,626 | $60.94 \%$ | 20,781 | $53.50 \%$ | 43,407 | $57.14 \%$ | -0.151 |
| CKD | 11,757 | $31.67 \%$ | 13,199 | $33.98 \%$ | 24,956 | $32.85 \%$ | 0.049 |
| Liver Disease | 8,163 | $21.99 \%$ | 7,314 | $18.83 \%$ | 15,477 | $20.37 \%$ | -0.078 |
| Medical History |  |  |  |  |  |  |  |
| Warfarin | 14,008 | $37.73 \%$ | 25,951 | $66.82 \%$ | 39,959 | $52.60 \%$ | 0.609 |
| Antiplatelets | 34,139 | $91.95 \%$ | 34,323 | $88.37 \%$ | 68,462 | $90.12 \%$ | -0.120 |
| Event time (mean, SD) | 626.600 | 505.600 | 995.700 | 730.500 | 815.308 | 657.088 |  |
| AF, Atrial Fibrillation; PAOD, Peripheral arterial occlusion disease; CHD, Coronary heart |  |  |  |  |  |  |  |
| disease; CHF, Chronic heart failure; CKD, chronic kidney disease; HTN, Hypertension; DM, |  |  |  |  |  |  |  |
| Diabetes mellitus; SD, standard deviation; SMD, Standardized mean difference |  |  |  |  |  |  |  |

Table VI. Baseline Characteristics of Ischemic Stroke Population after Inverse Probability of Treatment Weighting

|  | NOACS |  | Warfarin |  | Total |  | SMD |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{N}_{\mathrm{w}}$ | 75,319 | $49.54 \%$ | 76,727 | $50.46 \%$ | $152,046.0$ |  |  |
| Age (mean,SD) | 72.732 | 16.276 | 72.801 | 16.269 | 72.716 | 16.272 | 0.003 |
| Gender |  |  |  |  |  |  |  |
| Male | 40,037 | $53.16 \%$ | 35,420 | $46.16 \%$ | 75,457 | $49.63 \%$ | -0.014 |
| Female | 35,282 | $46.84 \%$ | 41,307 | $53.84 \%$ | 76,589 | $50.37 \%$ |  |
| Comorbidity |  |  |  |  |  |  |  |
| PAOD | 2,677 | $3.55 \%$ | 2,606 | $3.40 \%$ | 5,283 | $3.47 \%$ | -0.009 |
| CHD | 41,347 | $54.90 \%$ | 42,329 | $55.17 \%$ | 83,676 | $55.03 \%$ | 0.005 |
| CHF | 29,058 | $38.58 \%$ | 29,492 | $38.44 \%$ | 58,550 | $38.51 \%$ | -0.003 |
| HTN | 66,449 | $88.22 \%$ | 67,922 | $88.52 \%$ | 134,371 | $88.38 \%$ | 0.009 |
| DM | 35,556 | $47.21 \%$ | 36,428 | $47.48 \%$ | 71,983 | $47.34 \%$ | 0.005 |
| Hyperlipidemia | 42,746 | $56.75 \%$ | 43,997 | $57.34 \%$ | 86,743 | $57.05 \%$ | 0.012 |
| CKD | 25,554 | $33.93 \%$ | 25,882 | $33.73 \%$ | 51,436 | $33.83 \%$ | -0.004 |
| Liver Disease | 15,636 | $20.76 \%$ | 16,090 | $20.97 \%$ | 31,726 | $20.87 \%$ | 0.005 |
| Medical history |  |  |  |  |  |  |  |
| Warfarin | 39,259 | $52.12 \%$ | 39,869 | $51.96 \%$ | 79,128 | $52.04 \%$ | -0.003 |
| Antiplatelets | 67,926 | $90.19 \%$ | 69,406 | $90.46 \%$ | 137,332 | $90.32 \%$ | 0.009 |

$\mathrm{N}_{\mathrm{w}}$ : expressed by weighted number, percentage, mean and SD.
AF, Atrial Fibrillation; PAOD, Peripheral arterial occlusion disease; CHD, Coronary heart disease; CHF, Chronic heart failure; CKD, chronic kidney disease; HTN, Hypertension; DM, Diabetes mellitus; SD, standard deviation; SMD, Standardized mean difference

Table VII. Baseline Characteristics of Hemorrhagic Stroke Population before Inverse Probability of Treatment Weighting

|  | NOACS |  | Warfarin |  | Total |  | SMD |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| N | 2,711 | $42.00 \%$ | 3,743 | $58.00 \%$ | 6,454 |  |  |
| Age (mean, SD) | 73.018 | 11.167 | 66.691 | 13.798 | 69.349 | 13.134 | 0.504 |
| Gender |  |  |  |  |  |  |  |
| Male | 1,557 | $57.43 \%$ | 2,114 | $56.48 \%$ | 3,671 | $56.88 \%$ | 0.019 |
| Female | 1,154 | $42.57 \%$ | 1,629 | $43.52 \%$ | 2,783 | $43.12 \%$ |  |
| Comorbidity |  |  |  |  |  |  |  |
| PAOD | 66 | $2.43 \%$ | 135 | $3.61 \%$ | 201 | $3.11 \%$ | 0.069 |
| CHD | 1,379 | $50.87 \%$ | 1,652 | $44.14 \%$ | 3,031 | $46.96 \%$ | -0.135 |
| CHF | 997 | $36.78 \%$ | 1,312 | $35.05 \%$ | 2,309 | $35.78 \%$ | -0.036 |
| HTN | 2,479 | $91.44 \%$ | 3,103 | $82.90 \%$ | 5,582 | $86.49 \%$ | -0.258 |
| DM | 1,208 | $44.56 \%$ | 1,617 | $43.20 \%$ | 2,825 | $43.77 \%$ | -0.027 |
| Hyperlipidemia | 1,377 | $50.79 \%$ | 1,600 | $42.75 \%$ | 2,977 | $46.13 \%$ | -0.162 |
| Kidney Disease | 830 | $30.62 \%$ | 1,246 | $33.29 \%$ | 2,076 | $32.17 \%$ | 0.057 |
| Liver Disease | 667 | $24.60 \%$ | 783 | $20.92 \%$ | 1,450 | $22.47 \%$ | -0.088 |
| Medical History |  |  |  |  |  |  |  |
| Warfarin | 892 | $32.90 \%$ | 2,379 | $63.56 \%$ | 3,271 | $50.68 \%$ | 0.645 |
| Antiplatelets | 2,210 | $81.52 \%$ | 2,776 | $74.17 \%$ | 4,986 | $77.25 \%$ | -0.178 |
| Event time (mean, SD) 565.800 | 475.300 | 901.700 | 692.600 | 760.594 | 632.889 |  |  |
| AF, Atrial Fibrillation; CHD, Coronary heart disease; CHF, Chronic heart failure; CKD, |  |  |  |  |  |  |  |
| chronic kidney disease; DM, Diabetes mellitus; HTN, Hypertension; NOAC, non-vitamin K |  |  |  |  |  |  |  |
| antagonist oral anticoagulants; PAOD, Peripheral arterial occlusion disease; SD, standard |  |  |  |  |  |  |  |
| deviation; SMD, Standardized mean difference |  |  |  |  |  |  |  |

Table VIII. Baseline Characteristics of Hemorrhagic Stroke Population after Inverse Probability of Treatment Weighting

|  | NOACS |  | Warfarin |  | Total |  | SMD |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{N}_{\mathrm{w}}$ | 6,453 | $49.87 \%$ | 6,487 | $50.13 \%$ | $12,939.2$ |  |  |
| Age (mean, SD) | 68.960 | 22.274 | 69.393 | 17.129 | 69.177 | 19.457 | -0.035 |
| Gender |  |  |  |  |  |  |  |
| Male | 3,577 | $55.43 \%$ | 3,692 | $56.93 \%$ | 7,269 | $56.18 \%$ | -0.030 |
| Female | 2,876 | $44.57 \%$ | 2,794 | $43.07 \%$ | 5,670 | $43.82 \%$ |  |
| Comorbidity |  |  |  |  |  |  |  |
| PAOD | 214 | $3.32 \%$ | 211 | $3.25 \%$ | 425 | $3.28 \%$ | -0.004 |
| CHD | 3,006 | $46.59 \%$ | 3,090 | $47.64 \%$ | 6,097 | $47.12 \%$ | 0.021 |
| CHF | 2,244 | $34.78 \%$ | 2,326 | $35.86 \%$ | 4,570 | $35.32 \%$ | 0.023 |
| HTN | 5,561 | $86.19 \%$ | 5,617 | $86.59 \%$ | 11,178 | $86.39 \%$ | 0.012 |
| DM | 2,799 | $43.39 \%$ | 2,874 | $44.30 \%$ | 5,673 | $43.84 \%$ | 0.018 |
| Hyperlipidemia | 2,956 | $45.81 \%$ | 3,011 | $46.42 \%$ | 5,967 | $46.12 \%$ | 0.012 |
| Kidney Disease | 2,150 | $33.33 \%$ | 2,129 | $32.82 \%$ | 4,279 | $33.07 \%$ | -0.011 |
| Liver Disease | 1,528 | $23.69 \%$ | 1,535 | $23.66 \%$ | 3,064 | $23.68 \%$ | -0.001 |
| Medical History |  |  |  |  |  |  |  |
| Warfarin | 3,243 | $50.25 \%$ | 3,261 | $50.27 \%$ | 6,503 | $50.26 \%$ | 0.000 |
| Antiplatelets | 5,048 | $78.23 \%$ | 5,040 | $77.69 \%$ | 10,087 | $77.96 \%$ | -0.013 |

$\mathrm{N}_{\mathrm{w}}$ : expressed by weighted number, percentage, mean and SD.
AF, Atrial Fibrillation; CHD, Coronary heart disease; CHF, Chronic heart failure; CKD, chronic kidney disease; DM, Diabetes mellitus; HTN, Hypertension; NOAC, non-vitamin K antagonist oral anticoagulants; PAOD, Peripheral arterial occlusion disease; SD, standard deviation; SMD, Standardized mean difference

Table IX. Incidence Rates of Different Types of Hemorrhagic Stroke for All Stroke Patients at Baseline Taking NOACs or Warfarin

|  | $\begin{aligned} & \text { Total population } \\ & (N=82,423) \end{aligned}$ | $\begin{gathered} \text { NOACs } \\ (N=39,840) \end{gathered}$ | $\begin{gathered} \text { Warfarin } \\ (N=42,583) \end{gathered}$ | Crude HR | Adjusted HR | Adjusted HR under IPTW ${ }^{\dagger}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Intracerebral hemorrhage (ICH) |  |  |  |  |  |  |
| Total person-years | 187193.47 | 68965.57 | 118227.90 |  |  |  |
| Follow-up years | $2.27 \pm 1.81$ | $1.73 \pm 1.39$ | $2.78 \pm 2.00$ |  |  |  |
| Event number | 630 | 180 | 450 |  |  |  |
| Incidence rate ${ }^{\text {¢ }}$ | 0.337 | 0.261 | 0.381 | 0.58 (0.49~0.69) ${ }^{* * *}$ | 0.56 (0.46~0.68) ${ }^{* * *}$ | 0.59 (0.52~0.66) ${ }^{* * *}$ |
| Subdural hemorrhage (SDH) |  |  |  |  |  |  |
| Total person-years | 187624.64 | 69062.52 | 118562.12 |  |  |  |
| Follow-up years | $2.28 \pm 1.81$ | $1.73 \pm 1.39$ | $2.78 \pm 2.00$ |  |  |  |
| Event number | 133 | 33 | 100 |  |  |  |
| Incidence rate ${ }^{\text {¢ }}$ | 0.071 | 0.048 | 0.084 | 0.50 (0.33~0.74)*** | $0.52(0.34 \sim 0.81){ }^{* *}$ | 0.49 (0.38~0.65) ${ }^{* * *}$ |
| Subarachnoid hemorrhage (SAH) |  |  |  |  |  |  |
| Total person-years | 187733.25 | 69094.52 | 118638.72 |  |  |  |
| Follow-up years | $2.28 \pm 1.81$ | $1.73 \pm 1.39$ | $2.79 \pm 2.00$ |  |  |  |
| Event number | 43 | 16 | 27 |  |  |  |
| Incidence rate ${ }^{\text {¢ }}$ | 0.023 | 0.023 | 0.023 | 0.93 (0.50~1.76) | 1.01 (0.49~2.06) | 1.11 (0.72~1.70) |

Abbreviations: HR, hazard ratio; $N$, number, NOAC, non-vitamin K antagonist oral anticoagulants; IPTW, inverse probability of treatment weighting. * $p<$ $0.05, * * p<0.01, * * * p<0.001$.
$\dagger$ Adjusted for age, gender, baseline stroke type, atrial fibrillation, peripheral arterial occlusive disease, coronary heart disease, chronic heart failure, hypertension, diabetes mellitus, use of warfarin, and use of antiplatelets.
\# Incidence rate denotes events/total person-years (per 100 person-years).

Table X. Incidence Rates of Different Types of Hemorrhagic Stroke among the Ischemic Stroke Population Taking NOACs or Warfarin

| Variable | Ischemic stroke population $(N=75,969)$ | $\begin{gathered} \text { NOACs } \\ (N=37,129) \end{gathered}$ | $\begin{gathered} \text { Warfarin } \\ (N=38,840) \\ \hline \end{gathered}$ | Crude HR | Adjusted HR | Adjusted HR under IPTW ${ }^{\dagger}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Intracerebral hemorrhage (ICH) |  |  |  |  |  |  |
| Total person-years | 173384.50 | 64643.83 | 108740.67 |  |  |  |
| Follow-up years | $2.28 \pm 1.81$ | $1.74 \pm 1.39$ | $2.80 \pm 2.00$ |  |  |  |
| Event number | 297 | 88 | 209 |  |  |  |
| Incidence rate ${ }^{\ddagger}$ | 0.171 | 0.136 | 0.192 | $0.59(0.46 \sim 0.76)^{* * *}$ | $0.48(0.36 \sim 0.63){ }^{* * *}$ | $0.54(0.46 \sim 0.64)^{* * *}$ |
| Subdural hemorrhage (SDH) |  |  |  |  |  |  |
| Total person-years | 173574.84 | 64681.27 | 108893.57 |  |  |  |
| Follow-up years | $2.28 \pm 1.81$ | $1.74 \pm 1.39$ | $2.80 \pm 2.00$ |  |  |  |
| Event number | 58 | 20 | 38 |  |  |  |
| Incidence rate ${ }^{\ddagger}$ | 0.033 | 0.031 | 0.035 | 0.73 (0.42~1.26) | 0.49 (0.27~0.90)* | $0.52(0.35 \sim 0.75)^{* * *}$ |
| Subarachnoid hemorrhage (SAH) |  |  |  |  |  |  |
| Total person-years | 173627.81 | 64703.99 | 108923.82 |  |  |  |
| Follow-up years | $2.29 \pm 1.81$ | $1.74 \pm 1.39$ | $2.80 \pm 2.00$ |  |  |  |
| Event number | 21 | 6 | 15 |  |  |  |
| Incidence rate ${ }^{\ddagger}$ | 0.012 | 0.009 | 0.014 | 0.55 (0.21~1.43) | 0.55 (0.19~1.58) | 0.75 (0.40~1.43) |

Abbreviations: HR, hazard ratio; IPTW, inverse probability of treatment weighting; NOAC, non-vitamin K antagonist oral anticoagulant

* $p<0.05,{ }^{* *} p<0.01,{ }^{* * *} p<0.001$.
${ }^{\dagger}$ Adjusted for age, gender, atrial fibrillation, peripheral arterial occlusive disease, coronary heart disease, chronic heart failure, hypertension, diabetes mellitus, use of warfarin, and use of antiplatelets.
\# Incidence rate denotes events/total person-years (per 100 person-years).

Table XI. Incidence Rates of Different Types of Hemorrhagic Stroke among the Hemorrhagic Stroke Population Taking NOACs or Warfarin
$\left.\begin{array}{lcccccc}\hline & \begin{array}{c}\text { Hemorrhagic stroke } \\ \text { population } \\ (N=6454)\end{array} & \text { NOACs } & \text { Warfarin } & \text { Crude HR } & \text { Adjusted HR } & \begin{array}{c}\text { Adjusted HR under } \\ \text { IPTW }\end{array} \\ & & & & \\ (N=3711)\end{array}\right]$

[^0]* $p<0.05$, ** $p<0.01$, *** $p<0.001$.
${ }^{\dagger}$ Adjusted for age, gender, atrial fibrillation, peripheral arterial occlusive disease, coronary heart disease, chronic heart failure, hypertension, diabetes mellitus, use of warfarin, and use of antiplatelets.
${ }^{\ddagger}$ Incidence rate denotes events/total person-years (per 100 person-years)

Table XII. Risk of Recurrent Stroke among Stroke Patients Using Various Doses of NOACs

| NOACs | Subgroups by different dose | Comparison of subgroups | Crude HR | Adjusted HR $\dagger$ | Adjusted HR under IPTW |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { Rivaroxaban } \\ & (N=19,783) \end{aligned}$ | Low dose: 9,613 (48.6\%) | Standard dose vs. warfarin | 0.68 (0.59~0.77)*** | 0.66 (0.57~0.76)*** | 0.65 (0.50~0.71) ${ }^{* * *}$ |
|  | Standard dose: 10,170 (51.4\%) | Low dose vs. warfarin | 0.65 (0.56~0.75)*** | 0.67 (0.58~0.78)*** | 0.65 (0.60~0.71)*** |
|  | (missing: 904) | Standard vs. low dose | 1.04 (0.87~1.25) | 0.99 (0.82~1.19) | 1.00 (0.90~1.11) |
| $\begin{aligned} & \hline \text { Dabigatran } \\ & (N=11,997) \end{aligned}$ | Low dose: 10,677 (89.0\%) | Standard dose vs. warfarin | 0.84 (0.64~1.10) | 0.84 (0.63~1.10) | 0.68 (0.58~0.79)*** |
|  | Standard dose: 1320 (11.0\%) | Low dose vs. warfarin | 0.76 (0.68~0.85)*** | 0.72 (0.64~0.81) ${ }^{* * *}$ | 0.78 (0.74~0.83)*** |
|  | (missing: 93) | Standard vs. low dose | 1.10 (0.82~1.47) | 1.17 (0.87~1.56) | 0.86 (0.74~1.01) |
| Apixaban$(N=4,998)$ | Low dose: 2991 (59.8\%) | Standard dose vs. warfarin | 0.63 (0.45~0.89)** | 0.66 (0.46~0.93)* | 0.47 (0.41~0.54)*** |
|  | Standard dose: 2007 (40.2\%) | Low dose vs. warfarin | 0.51 (0.37~0.70)*** | 0.49 (0.35~0.68)*** | 0.56 (0.50~0.63)** |
|  | (missing: 124) | Standard vs. low dose | 1.25 (0.79~1.98) | 1.34 (0.84~2.13) | 0.84 (0.72~0.99)* |
| Edoxaban$(N=1,918)$ | Low dose: 1281 (66.8\%) | Standard dose vs. warfarin | 0.92 (0.46~1.85) | 0.82 (0.46~1.86) | 0.35 (0.28~0.43)*** |
|  | Standard dose: 637 (33.2\%) | Low dose vs. warfarin | 0.27 (0.11~0.66)** | 0.28 (0.12~0.68)** | 0.18 (0.14~0.23)*** |
|  | (missing: 23) | Standard vs. low dose | 3.36 (1.01~10.27)* | 3.26 (1.07~9.97)* | $1.95(1.43 \sim 2.65)^{* * *}$ |

Abbreviations: HR, hazard ratio; IPTW, inverse probability of treatment weighting; NOAC, non-vitamin K antagonist oral anticoagulant.

* $\mathrm{p}<0.05,{ }^{* *} \mathrm{p}<0.01,{ }^{* * *} \mathrm{p}<0.001$.
$\dagger$ Adjusted for age, gender, baseline stroke type, atrial fibrillation, peripheral arterial occlusion disease, coronary heart disease, chronic heart failure, hypertension, diabetes mellitus, use of warfarin, and use of antiplatelets.

Table XIII. Recurrent Stroke among Stroke Patients with Morbid Obesity Using Various NOACs

| Population of all <br> types of stroke | Exposure | Primary outcome |  | Secondary outcome |  |
| :--- | :--- | :---: | :---: | :---: | :---: |
|  | Recurrent stroke | Recurrent ischemic stroke | Recurrent hemorrhagic stroke |  |  |
| Crude HR | NOACs | $0.862(0.389 \sim 1.909)$ | $0.861(0.318 \sim 2.239)$ | $0.873(0.232 \sim 3.284)$ |  |
|  | Rivaroxaban | $0.883(0.355 \sim 2.199)$ | $0.998(0.333 \sim 2.997)$ | $0.689(0.133 \sim 3.579)$ |  |
|  | Dabigatran | $0.599(0.136 \sim 2.642)$ | $0.465(0.059 \sim 3.684)$ | $0.856(0.099 \sim 7.372)$ |  |
|  | Apixaban | $1.625(0.361 \sim 7.313)$ | $1.307(0.161 \sim 10.595)$ | $2.176(0.245 \sim 19.362)$ |  |
|  | NOACs | $0.715(0.290 \sim 1.762)$ | $1.021(0.329 \sim 3.167)$ | $0.371(0.066 \sim 2.076)$ |  |
| Adjusted HR $^{\dagger}$ | Rivaroxaban | $0.999(0.368 \sim 2.707)$ | $1.317(0.396 \sim 4.375)$ | $0.481(0.062 \sim 3.723)$ |  |
|  | Dabigatran | $0.522(0.097 \sim 2.805)$ | $0.702(0.068 \sim 7.282)$ | $0.533(0.030 \sim 9.399)$ |  |
|  | Apixaban | $2.033(0.328 \sim 12.613)$ | $1.751(0.172 \sim 17.827)$ | $1.625(0.032 \sim 83.758)$ |  |
|  | NOACs | $0.787(0.414 \sim 1.496)$ | $1.309(0.602 \sim 2.846)$ | $0.292(0.076-1.128)$ |  |
| Adjusted HR under | Rivaroxaban | $1.071(0.540 \sim 2.124)$ | $1.716(0.763 \sim 3.862)$ | $0.376(0.080 \sim 1.776)$ |  |
| IPTW | Dabigatran | $0.272(0.065 \sim 1.143)$ | $0.518(0.077 \sim 3.499)$ | $0.217(0.021 \sim 2.225)$ |  |
|  | Apixaban | $1.426(0.316 \sim 6.445)$ | $1.133(0.145 \sim 8.874)$ | $1.121(0.042 \sim 30.070)$ |  |

[^1]* $p<0.05$, ** $p<0.01$, *** $p<0.001$.
$\dagger$ Adjusted for age, gender, baseline stroke type, atrial fibrillation, peripheral arterial occlusion disease, coronary heart disease, chronic heart failure, hypertension, diabetes mellitus, use of warfarin, and use of antiplatelets.

Table XIV. Number and Proportions of Stroke Patients were Treated with Standard and Low Dose NOACs

| $\mathrm{N}=38,696$ |  |  |  |
| :--- | :--- | :--- | :--- |
| Dose | Standard | 14,134 | $36.53 \%$ |
|  | low-dose | 24,562 | $63.47 \%$ |

Patients with missing dosage information ( $N=1,144$ ).
NOAC, non-vitamin K antagonist oral anticoagulants

Table XV. The Number and Proportions of Stroke Patients Treated with NOACs and Warfarin by Days of Prescription

|  | NOACs |  | Warfarin |  | Total |  | $P$ value |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean | SD | Mean | SD | Mean | SD |  |  |  |  |  |  |
| $N$ | 38,696 | $50.76 \%$ | 37,535 | $49.24 \%$ | 76,231 |  |  |  |  |  |  |  |
| Use days | 330.800 | 378.000 | 466.900 | 631.500 | 397.800 | 523.000 |  |  |  |  |  |  |
| $1-30$ days | 7,072 | $18.28 \%$ | 8,431 | $22.46 \%$ | 15,503 | $20.34 \%$ |  |  |  |  |  |  |
| 31-90 days | 5,910 | $15.27 \%$ | 5,506 | $14.67 \%$ | 11,416 | $14.98 \%$ |  |  |  |  |  |  |
| 91-180 days | 5,738 | $14.83 \%$ | 4,518 | $12.04 \%$ | 10,256 | $13.45 \%$ | $<.0001$ |  |  |  |  |  |
| 181-360 days | 7,363 | $19.03 \%$ | 5,064 | $13.49 \%$ | 12,427 | $16.30 \%$ |  |  |  |  |  |  |
| $>360$ days | 12,613 | $32.60 \%$ | 14,016 | $37.34 \%$ | 26,629 | $34.93 \%$ |  |  |  |  |  |  |
| Missing | 1,144 | 5,048 |  |  |  |  |  |  |  | 6,192 |  |  |

N, number; NOAC, non-vitamin K antagonist oral anticoagulants; SD, standard deviation

Table XVI. The median follow-up time for NOACs

| NOACs | All types of stroke | Ischemic stroke | Hemorrhagic stroke |
| :--- | :--- | :--- | :--- |
| Rivaroxaban | $1.69 \pm 1.26$ years | $1.70 \pm 1.26$ years | $1.62 \pm 1.25$ years |
| Dabigatran | $2.23 \pm 1.61$ years | $2.24 \pm 1.61$ years | $2.07 \pm 1.54$ years |
| Apixaban | $1.04 \pm 0.77$ years | $1.04 \pm 0.77$ years | $0.97 \pm 0.74$ years |
| Edoxaban | $0.44 \pm 0.32$ years | $0.44 \pm 0.32$ years | $0.45 \pm 0.33$ years |

NOAC, non-vitamin K antagonist oral anticoagulants


[^0]:    Abbreviations: HR, hazard ratio; IPTW, inverse probability of treatment weighting; NOAC, non-vitamin K antagonist oral anticoagulant.

[^1]:    Abbreviations: HR, hazard ratio ;NOAC, non-vitamin $K$ antagonist oral anticoagulant.

