

**Supplementary Table 1 Procedure and disease codes used for patient selection**

Procedure and disease	Codes
Esophageal bypass surgery	K522-3*
Gastrojejunostomy	K662*, K662-2*
Duodenojejunostomy	K663*
Intestinal bypass surgery	K724*
Stoma surgery	K726*, K726-2*
Esophageal stenting	K522-2*
Gastroduodenal stenting	K651*
Colonic stenting	K735-4*
Malignant diseases	C000-C97†
Gastrointestinal perforation	J853†, K223†, K251†, K252†, K255†, K256†, K261†, K262†, K265†, K266†, K271†, K272†, K275†, K276†, K281†, K282†, K285†, K286†, K610-K614†, K630†, K631†, K650†, 1541010‡, 5192001‡, 5192002‡, 5301016‡, 8844903‡, 9983021‡, K520*, K521*, K637*, K637-2*, K639*, K639-3*, K647*, K712*, K737*, K745*
Gastrointestinal fistula	K316†, K383†, K603-K605†, K632†, K914†, N321†, N822-N824†

\* Japanese original procedure code

† ICD-10 code

‡ Japanese original disease code

**Supplementary Table 2 Procedure codes used to define adverse events**

<b>Adverse events</b>	<b>Japanese original procedure codes</b>
Perforation	K5201, K5202, K5203, K5204, K5211, K5212, K5213, K639, K639-3, K647
Endoscopic hemostasis	K654, K722

**Supplementary Table 3 ICD-10 codes of primary cancers and comorbidities**

	ICD-10 codes
<b>Primary cancer</b>	
Esophageal cancer	C150-C159
Gastric cancer	C160-C169
Pancreatic cancer	C250-C259
Colorectal cancer	C180-C20
Other cancers	C000-C97 (except for all of the above)
<b>Comorbidities</b>	
Atrial fibrillation	I480-I489
AIDS	B200-B229, B24
Arterial thrombosis	I740-I749
Carotid disease	I652, I720
Cerebrovascular disease	G450-G469, H340, I600-639, I64, I650-I699
Chronic heart failure	I099, I110, I130, I132, I255, I420, I425-I439, I500-I509, P290
Chronic kidney disease < stage 5	I120, I131, N032-N037, N052-N057, N180-N189, N19, N250, Z490-Z492, Z940, Z992
Chronic kidney disease stage 5	N185
Dementia	F000-F029, F03, F051, G300-G309, G311
DM without complications	E100, E101, E106, E108-E111, E116, E118-E121, E126, E128-E131, E136, E138-E141, E146, E148, E149
DM with complications	E102-E105, E107, E112-E117, E122-E125, E132-E135, E137, E142-E145, E147
Deep vein thrombosis	I800-I809, I820-I829
Hemiplegia	G041, G114, G801, G802, G810-G834, G839
Hypertension	I10, I110-I159
Dyslipidemia	E780-E785
Ischemic heart disease	I210-I229, I252

Liver disorder (mild)	B180-B189, K700-K703, K709, K713-K715, K717, K730-K749, K760, K762-K764, K768-K769, Z944
Liver disorder (severe)	I850, I859, I864, I982, K704, K711, K721, K729, K765-K767
Malignancy without metastasis	C000-C009, C01, C020-C69, C07, C080-C119, C12, C130-C189, C19, C20, C210-C229, C23, C240-C329, C33, C340-C349, C37, C380-C519, C52, C530-C549, C55, C56, C570-C570, C58, C600-C609, C61, C620-C639, C64, C65, C66, C670-C729, C73, C740-C769, C810-C969, C97
Malignancy with metastasis	C770-C809
Pulmonary embolism	I260-I269
Peripheral vascular disease	I700-I719, I731, I738, I739, I771, I790, I792, K551, K558, K559, Z958, Z959
Pulmonary disease	I278, I279, J40, J410 – J419, J42, J430-J459, J46, J47, J60, J61, J620-J639, J64, J65, J660-J679, J684, J701, J703
Rheumatic disease	M050-M069, M315, M320-M349, M351, M353, M360
Transient ischemic attack	G459
Peptic ulcer disease	K250-K289
Unstable angina disease	I200-I209
Valvular disease	I340-I379

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**Supplementary Table 4 Medication codes**

<b>Medication</b>	<b>Japanese original medication codes</b>
Aspirin	610443053, 611140017, 611140798, 611140849, 611140850, 620000065, 620000484, 620001952, 620004280, 620007816, 620008577, 620009301, 620072734, 621362001, 621374801, 621374901, 621375001, 621391201, 621419201, 621419401, 621675501, 621676502, 622258001, 622290301, 622341601
Thienopyridine	610461073, 613390007, 620003468, 620003469, 620814301, 620814502, 620814506, 620814511, 620814512, 620814521, 620814523, 620814531, 620814543, 620814601, 621374002, 622290301, 622336601, 622336701, 622401801, 622401901, 622405801, 622405901, 622406101, 622406201, 622407701, 622407801, 622411301, 622413301, 622413401, 622413501, 622413601, 622413701, 622414401, 622414501, 622416201, 622416301, 622418201, 622418301, 622420101, 622420201, 622420301, 622420501, 622420601, 622422201, 622422301, 622424101, 622424201, 622424301, 622425001, 622425101, 622425501, 622425601, 622425701, 622427501, 622427601, 622428401, 622428501, 622429501, 622429601, 622429701, 622430501, 622430601, 622430701, 622431201, 622431301, 622431501, 622431601, 622432801, 622432901, 622433001, 622433101, 622433201, 622433301, 622433401, 622434501, 622434601, 622435501, 622435601, 622438201, 622438301, 622439501, 622439601, 622439801, 622439901,

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622475500, 622486701, 622641701, 622641801  
Warfarin 610463227, 610463228, 613330001, 613330002,  
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621938101, 621940901, 622122601  
DOACs 622043301, 622043401, 622068301, 622068401,  
622080901, 622081001, 622224901, 622225001,  
622375201, 622449101, 622449201, 622576001,  
622576101, 622576201  
Other antiplatelet drugs 610421343, 610421344, 610422055, 610422056,  
610422206, 610422290, 610432021, 610444051,  
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NSAIDs

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620079325, 620079338, 620079345, 620081301,  
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621466202, 621466401, 621466601, 621534501,  
621623201, 621634301, 621635802, 621640201,  
621640501, 621808201, 621837703, 621837803,  
621936001, 621981502, 622011102, 622012401,  
622014601, 622022501, 622034902, 622051201,  
622058201, 622062601, 622066701, 622314000,  
622325600

Steroid

610408661, 610422253, 610431117, 610454071,  
612450051, 612450070, 612450096, 612450118,  
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620000697, 620002513, 620004294, 620004387,  
620004578, 620004620, 620005125, 620005126,  
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620006162, 620006903, 620006985, 620006986,  
620007078, 620008651, 620527133, 620527205,  
620530701, 620530801, 620531001, 620531101,  
620531301, 620531401, 620531501, 620531601,  
621559301, 621997701, 622359901

DOACs direct oral anticoagulants; NSAIDs, non-steroidal anti-inflammatory drugs