

Supplementary Information

If the patients have diagnostic code twice or more in a year, we defined the patients had the corresponding disease. Korean standard classification of disease and cause of death-7 (KCD-7) was used for definition of disease. KCD-7 reflects the update of the International Classification of Diseases (ICD-10), and refined the Korean subtype disease and rare disease to improve medical terms. Codes could be in any field of the encounter claim (primary or secondary diagnoses).

Table S1. The list of KCD-7 diagnostic codes of diseases in the study.

| Category | | KCD-7 |
|----------------------------|---|----------|
| Corresponding disease | | |
| Gastroesophageal diseases | Gastroesophageal reflux disease | K21 |
| | Other diseases of esophagus | K22 |
| PUD | Gastric ulcer | K25 |
| | Duodenal ulcer | K26 |
| | Peptic ulcer, site unspecified | K27 |
| | Gastrojejunal ulcer | K28 |
| Dyspepsia | Functional dyspepsia | K30 |
| IBD | Crohn's disease | K50 |
| | Ulcerative colitis | K51 |
| IBS | Irritable bowel syndrome | K58 |
| Migraine | Migraine | G43 |
| Excluded diseases | | |
| Neuropsychiatric disorders | Anxiety disorders | F40, F41 |
| | Bipolar affective disorders | F31 |
| | Depressive disorders | F32, F33 |
| | Sleep disorders | G47 |
| | Epilepsy | G40, G41 |
| Other headaches | Headaches other than migraines | G44, R51 |
| Cerebrovascular diseases | Transient cerebral ischemic attacks and related syndromes | G45 |
| | Vascular syndromes of brain in cerebrovascular diseases | G46 |
| | Cerebrovascular diseases | I60-69 |
| Cardiovascular diseases | Angina pectoris | I20 |
| | Myocardial infarction | I21, I22 |
| | Certain current complications following acute myocardial infarction | I23 |
| | Ischemic heart diseases | I24, I25 |

PUD: peptic ulcer disease, IBD: Inflammatory bowel disease, IBS: Irritable bowel syndrome.

Table S2. Migraine medication classification.

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|-----------------------------|-----------------|--|
| Acute treatment | NSAIDs | Aspirin, Aceclofenac, Celecoxib, Cinnoxicam, Clonixin lysinate, Dexibuprofen, Dexketoprofen, Diclofenac, Epolamine, Etodolac, Etoricoxib, Flufenamic acid, Ibuprofen, Ibuprofen, Indometacin, Ketorolac, Ketorolac tromethamine, Lornoxicam, Loxoprofen, Mefenamic acid, Meloxicam, Morniflumate, Nabumetone, Naproxen, Nimesulide, Pelubipirofen, Piroxicam, Polmacoxib, Pranoprofen, Proglumetacin maleate, Propacetamol, Sulindac, Talniflumate, Tiaprofenic acid, Tolmetin, Zaltoprofen, Tolfenamic acid |
| | Triptans | Almotriptan, Frovatriptan, Naratriptan, Sumatriptan, Zolmitriptan |
| | Ergot | Ergotamine |
| | Others | Acetaminophen, Tramadol |
| | β blockers | Atenolol, Bisoprolol, Metoprolol, Nadolol, Nebivolol, Propranolol |
| Preventive treatment | ACEi, ARB | Candesartan, Lisinopril, Telmisartan |
| | CCB | Cinnarizine, Flunarizine, Nicardipine, Nifedipine, Nimodipine, Verapamil |
| | Anticonvulsants | Carbamazepine, Divalproex, Gabapentin, Levetiracetam, Topiramate, Valproate sodium, Zonisamide |
| | Antidepressants | Amitriptyline, Clonidine, Doxepin, Fluoxetine, Nortriptyline, Venlafaxine |
| | | NSAIDs: Nonsteroidal anti-inflammatory drugs, ACEi: Angiotensin-converting enzyme inhibitors, ARB: Angiotensin-converting enzyme blocker, CCB: Calcium channel blockers. |