**Supplementary Table 1 Affiliations, ethics committee approval number, and number of cases in 49 participating hospitals**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No | Prefecture | Institutions | Department | Approval number in ethics committee  | Period of data collection | Registration period, months | Number of cases | Number of cases in each month |
| 1 | Tokyo | Tokyo Medical University | Department of Gastroenterological Endoscopy | T20190244 | 2013.01.02-2019.11.13 | 68 | 134 | 2.0 |
| 2 | Tokyo | National Center for Global Health and Medicine | Department of Gastroenterology and Hepatology | 3539 | 2010.01.19-2019.06.18 | 114 | 1375 | 12.1 |
| 3 | Tokyo | Tokyo Shinagawa Hospital | Department of Gastroenterology | 20-A-04 | 2014.07.28-2019.12.30 | 66 | 250 | 3.8 |
| 4 | Tokyo | Nippon Medical School, Graduate School of Medicine | Department of Gastroenterology | B-2020-147 | 2014.10.31-2019.12.23 | 68 | 538 | 7.9 |
| 5 | Chiba | Chiba Hokusoh Hospital, Nippon Medical School | Department of Gastroenterology | 802 | 2011.08.28-2019.12.23 | 89 | 188 | 2.1 |
| 6 | Saga | Saga Medical Center Koseikan | Department of Gastroenterology | 20-01-01-03  | 2013.01.02-2019.12.30 | 82 | 394 | 4.8 |
| 7 | Tokyo | St. Luke’s International University | Department of Gastroenterology | 20-R012 | 2014.01.03-2019.12.29 | 63 | 536 | 8.5 |
| 8 | Okayama | Kawasaki Medical School | Division of Endoscopy and Ultrasonography, and Department of Clinical Pathology and Laboratory Medicine | 3890 | 2014.03.27-2018.2.18 | 24 | 156 | 6.5 |
| 9 | Okayama | Kawasaki Medical School General Medical Center | Division of Endoscopy and Ultrasonography, and Department of Clinical Pathology and Laboratory Medicine | 3890 | 2012.02.07-2017.12.27 | 33 | 88 | 2.7 |
| 10 | Ibaraki | University of Tsukuba | Department of Gastroenterology, and Division of Endoscopic Center | R02-030 | 2013.01.02-2019.12.30 | 68 | 134 | 2.0 |
| 11 | Tokyo | Tokyo Metropolitan Bokutoh Hospital | Department of Gastroenterology | 02-024 | 2013.04.02-2019.12.31 | 90 | 808 | 9.0 |
| 12 | Kanagawa | Saiseikai Yokohamashi Tobu Hospital | Emergency and Critical Care Center | 20200030 | 2011.01.22-2019.12.17 | 58 | 131 | 2.3 |
| 13 | Tokyo | The University of Tokyo | Department of Gastroenterology | 2020067NI | 2010.01.04-2018.08.10 | 99 | 542 | 5.5 |
| 14 | Tokyo | Toranomon Hospital | Department of Gastroenterology | 2021 | 2011.04.02-2019.12.04 | 72 | 134 | 1.9 |
| 15 | Aichi | Nagoya University Hospital | Department of Endoscopy | 2020-0152 | 2016.01.02-2019.12.27 | 48 | 206 | 4.3 |
| 16 | Hiroshima | Hiroshima City Asa Citizens Hospital | Department of Gastroenterology | 02-1-24 | 2010.01.02-2019.12.27 | 117 | 517 | 4.4 |
| 17 | Fukuoka | National Hospital Organization Fukuokahigashi Medical Center | Department of Gastroenterology and Hepatology | 2020-臨-2 | 2017.04.02-20.9.12.3 | 48 | 107 | 2.2 |
| 18 | Nara | Nara City Hospital | Department of Gastroenterology and Hepatology, and Center for Digestive and Liver Diseases | NCH倫20-8 | 2013.05.02-2019.12.25 | 81 | 264 | 3.3 |
| 19 | Niigata | Graduate School of Medical and Dental Sciences, Niigata University | Division of Gastroenterology | 2020-0052 | 2010.8.28-2019.12.18 | 78 | 142 | 1.8 |
| 20 | Kanagawa | St Marianna University School of Medicine | Division of Gastroenterology and Hepatology, Department of Internal Medicine | 4802 | 2013.08.12-2019.12.13 | 63 | 343 | 5.4 |
| 21 | Oita | Oita University | Department of Gastroenterology | 1845 | 2010.03.06-2019.12.03 | 68 | 199 | 2.9 |
| 22 | Tokyo | Tokyo Saiseikai Central Hospital | Department of Internal Medicine | 2020-015-01 | 2017.01.09-2019.12.29 | 32 | 120 | 3.8 |
| 23 | Fukuoka | Fukuoka University Hospital | Department of Gastroenterological Endoscopy | U20-05-016 | 2016.03.30-2019.12.12 | 38 | 80 | 2.1 |
| 24 | Fukuoka | Fukuoka University Chikushi Hospital | Department of Gastroenterology | C20-052 | 2010.01.05-2017.03.04 | 50 | 199 | 4.0 |
| 25 | Osaka | Kitano Hospital, Tazuke Kofukai Medical Research Institute | Department of Gastroenterology and Hepatology | P200500400 | 2010.1.24-2019.12.21 | 154 | 586 | 3.8 |
| 26 | Fukuoka | Graduate School of Medical Sciences, Kyushu University | Department of Medicine and Clinical Science | 2020-289 | 2010.05.30-2019.12.25 | 70 | 101 | 1.4 |
| 27 | Miyazaki | University of Miyazaki Hospital | Department of Gastroenterology and Hepatology, and Center for Digestive Disease and Division of Endoscopy | 0-0734 | 2010.07.16-2019.10.20 | 89 | 142 | 1.6 |
| 28 | Okinawa | University of the Ryukyus Hospital | Department of Endoscopy | 1656 | 2016.01.04-2019.12.08 | 40 | 86 | 2.2 |
| 29 | Okinawa | Naha City Hospital | Department of Gastroenterology | 2004a4 | 2018.11.02-2019.12.26 | 15 | 121 | 8.1 |
| 30 | Kagoshima | Kagoshima University Graduate School of Medical and Dental Sciences | Digestive and Lifestyle Diseases | 200041疫 | 2019.02.26-2019.10.07 | 6 | 7 | 1.2 |
| 31 | Kagoshima | Kagoshima City Hospital | Department of Gastroenterology | 2020-25 | 2019.01.27-2019.12.27 | 11 | 45 | 4.1 |
| 32 | Kagoshima | Kagoshima Kouseiren Hospital | Department of Gastroenterology | 215 | 2019.01.03-2019.12.25 | 11 | 28 | 2.5 |
| 33 | Kagoshima | Kagoshima Medical Center | Department of Gastroenterology | 2020-22 | 2019.01.01-2019.12.25 | 12 | 40 | 3.3 |
| 34 | Kagoshima | Izumi General Medical Center | Department of Gastroenterology | 60 | 2019.01.08-2019.12.26 | 10 | 34 | 3.4 |
| 35 | Kagoshima | Kirishima City Medical Association Medical Center | Department of Gastroenterology | 202005 | 2019.01.16-2019.10.12 | 10 | 19 | 1.9 |
| 36 | Kagoshima | Kagoshima Prefectural Oshima Hospital | Department of Gastroenterology | 97 | 2018.12.25-2019.12.27 | 12 | 23 | 1.9 |
| 37 | Kyoto | National Hospital Organization Kyoto Medical Center | Department of Gastroenterology | 20-020 | 2011.05.31-2019.12.20 | 86 | 205 | 2.4 |
| 38 | Fukushima | Fukushima Medical University | Department of Gastroenterology | 一般2020-112 | 2013.12.07-2019.12.26 | 53 | 100 | 1.9 |
| 39 | Tokyo | Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital | Department of Gastroenterology | 2503 | 2010.06.15-2019.12.16 | 90 | 205 | 2.3 |
| 40 | Kanagawa | Kitasato University, School of Medicine | Department of Gastroenterology | C20-174 | 2010.10.07-2019.12.26 | 55 | 76 | 1.4 |
| 41 | Osaka | Suita Municipal Hospital | Department of Gastroenterology and Hepatology | 2020-研2 | 2011.03.04-2019.12.30 | 47 | 88 | 1.9 |
| 42 | Akita | Akita University Graduate School of Medicine | Department of Gastroenterology and Neurology | 2491 | 2010.09.22-2019.05.11 | 67 | 69 | 1.0 |
| 43 | Shizuoka | Japanese Red Cross Shizuoka Hospital | Department of Gastroenterology | 2020-06 | 2010.01.08-2019.12.30 | 73 | 173 | 2.4 |
| 44 | Aomori | Hirosaki University Hospital | Division of Endoscopy | 2020-32 | 2010.04.16-2019.12.28 | 78 | 112 | 1.4 |
| 45 | Kumamoto | Graduate School of Medical Sciences, Kumamoto University | Department of Gastroenterology and Hepatology | 2040 | 2010.01.03-2019.12.22 | 76 | 111 | 1.5 |
| 46 | Fukuoka | National Hospital Organization Kyushu Medical Center | Department of Gastroenterology | 20C065 | 2010.4.12-2019.12.23 | 59 | 82 | 1.4 |
| 47 | Iwate | Iwate Medical University | Department of Internal Medicine | MH2020-050 | 2015.01.07-2019.7.19 | 60 | 98 | 1.6 |
| 48 | Yamaguchi | Shuto General Hospital | Department of Gastroenterology | H31-24 | 2014.07.25-2019.08.19 | 43 | 114 | 2.7 |
| 49 | Saitama | National Defense Medical College | Department of Internal Medicine | 4217 | 2010.04.12-2019.12.07 | 61 | 92 | 1.5 |

**Supplementary Table 2 Survey items: Baseline characteristics, diagnoses, procedures, and clinical outcomes**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Category | Clinical factors | Definition | Example | Characteristics　 of value | Number of items | Missing value |
| Baseline characteristics | Date of data collection |  | 2030/11/11 | Date | 1 | 0 |
| Baseline characteristics | Participating hospitals | 　 | X hospital | Free comment | 2 | 0 |
| Baseline characteristics | Research number | 　 | 1 | Free comment | 3 | 0 |
| Baseline characteristics | Case number | 　 | 1234567 | Free comment | 4 | 0 |
| Baseline characteristics | Date of admission | 　 | 2019/3/18 | Date | 5 | 0 |
| Baseline characteristics | Number of ambulances | ​Number of ambulances accepted by each facility per year in 2018. | 3,000 | Continuous value | 6 | 0 |
| Baseline characteristics | 24/7 colonoscopy | ​Facilities with a physician who can perform colonoscopy 24 hours a day | 1 | Categorical variable | 7 | 0 |
| Baseline characteristics | Date of onset of hematochezia | Enter the same date if it is the same as the information on admission | 2019/7/5 | Date | 8 | 0 |
| Baseline characteristics | Date of discharge |  | 2019/7/5 | Date | 9 | 0 |
| Baseline characteristics | Date of fasting |  | 2019/12/16 | Date | 10 | 0 |
| Baseline characteristics | Date of starting diet |  | 2019/12/12 | Date | 11 | 0 |
| Baseline characteristics | Age | number, unknown, NA | 86 | Continuous value | 12 | 0 |
| Baseline characteristics | Sex | female, 0; male, 1 | 1 | Categorical variable | 13 | 0 |
| Baseline characteristics | Blood type | Type　O,　O;　 type　A, A; type　B, B; type　AB, 　AB | A | Categorical variable | 14 | 510 (4.8) |
| Baseline characteristics | Height | rounding off, unknown, NA | 162 | Continuous value | 15 | 572 (5.4) |
| Baseline characteristics | Body weight | first decimal place, unknown, NA | 53.3 | Continuous value | 16 | 438 (4.2) |
| Baseline characteristics | Alcohol | current drinker, 1; non-drinker or ever drinker, 0; unknown, NA | 0 | Categorical variable | 17 | 1,465 (13.9) |
| Baseline characteristics | Smoking | never, 0; current smoking, 1; ever, 2 | 2 | Categorical variable | 18 | 1,197 (11.3) |
| Baseline characteristics | Performance status | asymptomatic (Fully active, able to carry on all predisease activities without restriction), 0; Symptomatic but completely ambulatory (Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature. For example, light housework, office work), 1; symptomatic, <50% in bed during the day (Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours), 2; symptomatic, >50% in bed, but not bedbound (Capable of only limited self-care, confined to bed or chair 50% or more of waking hours), 3; bedbound (Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair), 4; unknown, NA | 4 | Categorical variable | 19 | 126 (1.2) |
| Baseline characteristics | Systolic blood pressure (mmHg) | number, unknown, NA | 189 | Continuous value | 20 | 209 (2.0) |
| Baseline characteristics | Heart rate (/minutes) | number, unknown, NA | 95 | Continuous value | 21 | 230 (2.2) |
| Baseline characteristics | Syncope/ loss of consciousness | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 22 | 19 (0.2) |
| Baseline characteristics | Abdominal pain | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 23 | 20 (0.2) |
| Baseline characteristics | Fever | presence, 1 (e.g., >37.0℃) ; absence, 0; unknown, NA | 0 | Categorical variable | 24 | 23 (0.2) |
| Baseline characteristics | Diarrhea | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 25 | 36 (0.3) |
| Baseline characteristics | Hematochezia | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 26 | 0 |
| Baseline characteristics | Tarry stool | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 27 | 22 (0.2) |
| Baseline characteristics | Hemoglobin (g/dl) | first exam date after visiting the hospital, unknown, NA | 7.1  | Continuous value | 28 | 14 (0.1) |
| Baseline characteristics | White blood cell (/ul) | first exam date after visiting the hospital, unknown, NA | 5,930 | Continuous value | 29 | 13 (0.1) |
| Baseline characteristics | Platelet count (/ul) | first exam date after visiting the hospital, unknown, NA | 22.2 | Continuous value | 30 | 17 (0.2) |
| Baseline characteristics | Albumin (/dl) | first exam date after visiting the hospital, unknown, NA | 2.6 | Continuous value | 31 | 503 (4.8) |
| Baseline characteristics | PT-INR | first exam date after visiting the hospital, unknown, NA | 1.22 | Continuous value | 32 | 1,367 (13.0) |
| Baseline characteristics | Hematocrit (%) | first exam date after visiting the hospital, unknown, NA | 21.7 | Continuous value | 33 | 29 (0.3) |
| Baseline characteristics | Blood urea nitrogen (mg/dl) | first exam date after visiting the hospital, unknown, NA | 62.0 | Continuous value | 34 | 80 (0.8) |
| Baseline characteristics | Creatinine (mg/dl) | first exam date after visiting the hospital, unknown, NA | 1.09 | Continuous value | 35 | 84 (0.8) |
| Baseline characteristics | CRP (mg/dl) | first exam date after visiting the hospital, unknown, NA | 5.9 | Continuous value | 36 | 285 (2.7) |
| Baseline characteristics | History of bowel resection | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 37 | 4 (0.04) |
| Baseline characteristics | History of chemotherapy  | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 38 | 26 (0.2) |
| Baseline characteristics | History/ treatment of radiation | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 39 | 20 (0.2) |
| Baseline characteristics | History of angioectasia | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 40 | 3 (0.03) |
| Baseline characteristics | History of IBD | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 41 | 3 (0.03) |
| Baseline characteristics | History of diverticular bleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 42 | 10 (0.1) |
| Baseline characteristics | History of ischemic colitis | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 43 | 3 (0.03) |
| Baseline characteristics | Diabetes mellitus, uncomplicated | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 44 | 2 (0.02) |
| Baseline characteristics | Diabetes mellitus, end-organ damage | presence, 1 (e.g., retinitis, nephropathy and retinopathy); absence, 0; unknown, NA | 0 | Categorical variable | 45 | 2 (0.02) |
| Baseline characteristics | Hemiplegia | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 46 | 10 (0.1) |
| Baseline characteristics | CVA or TIA | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 47 | 4 (0.04) |
| Baseline characteristics | COPD | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 48 | 2 (0.02) |
| Baseline characteristics | Dementia | presence, 1 (e.g., disorder of memory, apraxia, alogia and agnosis, interfere with social life); absence, 0; unknown, NA | 0 | Categorical variable | 49 | 10 (0.1) |
| Baseline characteristics | Connective tissue disease | presence, 1 (e.g., RA, SLE, SJS, MCTD); absence, 0; unknown, NA | 0 | Categorical variable | 50 | 2 (0.02) |
| Baseline characteristics | Myocardial infarction | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 51 | 2 (0.02) |
| Baseline characteristics | Chronic heart failure | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 52 | 4 (0.04) |
| Baseline characteristics | Peptic ulcer disease | presence, 1 (e.g., gastric ulcer, duodenal ulcer); absence, 0; unknown, NA | 0 | Categorical variable | 53 | 2 (0.02) |
| Baseline characteristics | Moderate CKD | presence, 1 (e.g., eGFR<60, creatinine >3 mg/dL (27 mmol/L)); absence, 0; unknown, NA | 0 | Categorical variable | 54 | 4 (0.04) |
| Baseline characteristics | Severe CKD | presence, 1 (e.g., on dialysis, status post-kidney); absence, 0; unknown, NA | 0 | Categorical variable | 55 | 2 (0.02) |
| Baseline characteristics | Peripheral vascular disease | presence, 1 (e.g., peripheral arterial disease, ASO and TAO); absence, 0; unknown, NA | 0 | Categorical variable | 56 | 2 (0.02) |
| Baseline characteristics | Leukemia/ myeloma | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 57 | 2 (0.02) |
| Baseline characteristics | AIDS | presence, 1 (e.g., HIV positive with AIDS index or CD4<100); absence, 0; unknown, NA | 0 | Categorical variable | 58 | 11 (0.1) |
| Baseline characteristics | Solid tumor, localized | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 59 | 9 (0.1) |
| Baseline characteristics | Solid tumor, metastatic | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 60 | 2 (0.02) |
| Baseline characteristics | Liver disease, mild | presence, 1 (e.g., mild: chronic hepatitis (or cirrhosis without portal hypertension)); absence, 0; unknown, NA | 0 | Categorical variable | 61 | 3 (0.03) |
| Baseline characteristics | Liver disease, moderate to severe | presence, 1 (e.g., Severe: cirrhosis and portal hypertension with variceal bleeding history, moderate = cirrhosis and portal hypertension but no variceal bleeding); absence, 0; unknown, NA | 0 | Categorical variable | 62 | 3 (0.03) |
| Baseline characteristics | Malignant lymphoma | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 63 | 2 (0.02) |
| Baseline characteristics | Hypertension | presence, 1 (e.g., drug user); absence, 0; unknown, NA | 0 | Categorical variable | 64 | 2 (0.02) |
| Baseline characteristics | Dyslipidemia | presence, 1 (e.g., drug user); absence, 0; unknown, NA | 0 | Categorical variable | 65 | 3 (0.03) |
| Baseline characteristics | NSAIDs | prior drug use (e.g., Loxoprofen, Diclofenac, Ibuprofen, Zaltoprofen, Mefenamic, Etodolac, Indomethacin) within 1 month | 1 | Categorical variable | 66 | 2 (0.02) |
| Baseline characteristics | COX-2 selective inhibitors | prior drug use within 1 month | 0 | Categorical variable | 67 | 2 (0.02) |
| Baseline characteristics | Low-dose aspirin | prior drug use (e.g., Aspirin) within 1 month | 0 | Categorical variable | 68 | 2 (0.02) |
| Baseline characteristics | Thienopyridine | prior drug use (e.g., Clopidogrel, Prasugrel, Ticlopidine) within 1 month | 0 | Categorical variable | 69 | 2 (0.02) |
| Baseline characteristics | Cilostazol | prior drug use within 1 month | 0 | Categorical variable | 70 | 2 (0.02) |
| Baseline characteristics | Other antiplatelet drug | prior drug use (e.g., Dipyridamole, Beraprost, etc.) within 1 month | 0 | Categorical variable | 71 | 2 (0.02) |
| Baseline characteristics | Warfarin | prior drug use within 1 month | 0 | Categorical variable | 72 | 2 (0.02) |
| Baseline characteristics | DOACs | prior drug use (e.g., Rivaroxaban, Apixaban, Dabigatran, Edoxaban) within 1 month | 0 | Categorical variable | 73 | 2 (0.02) |
| Baseline characteristics | Acetaminophen | prior drug use (e.g., Acetaminophen, Paracetamol, etc.) within 1 month | 0 | Categorical variable | 74 | 2 (0.02) |
| Baseline characteristics | Corticosteroid | prior drug use (e.g., Prednisolone, Dexamethasone, Betamethasone, etc.) within 1 month | 0 | Categorical variable | 75 | 2 (0.02) |
| Diagnosis | CT of the abdomen/pelvis | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 76 | 0 |
| Diagnosis | Contrast enhanced CT | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 77 | 0 |
| Diagnosis | Urgent CT | over 24h after visiting the hospital, 0; within 24h after visiting the hospital, 1; no exam, NA | 1 | Categorical variable | 78 | 0 |
| Diagnosis | Time to CT scan | time after visiting the hospital | 3 | Continuous value | 79 | 0 |
| Diagnosis | Date of CT examination | 　 | 2019/3/18 | Date | 80 | 0 |
| Diagnosis | Extravasation on CT | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 81 | 0 |
| Diagnosis | Location of extravasation | ileum, 1; cecum, 2; ascending, 3; transverse, 4; descending, 5; sigmoid, 6; rectum, 7 | 3 | Categorical variable | 82 | 0 |
| Diagnosis | Colonic diverticular bleeding on CT | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 83 | 0 |
| Diagnosis | Enterocolitis on CT | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 84 | 0 |
| Diagnosis | Tumor lesion on CT | presence, 1 (e.g., colorectal cancer, metastatic tumor, etc.); absence, 0; unknown, NA | 1 | Categorical variable | 85 | 0 |
| Diagnosis | Other diagnosis on CT | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 86 | 0 |
| Diagnosis | Name of other diagnosis on CT | free comment if other diagnosis is present | Rectal ulcer | Free comment | 87 | 0 |
| Diagnosis | Colonoscopic examination | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 88 | 0 |
| Diagnosis | Date of colonoscopy | first date of endoscopy, including the first day of hospitalization | 2019/12/09 | Date | 89 | 0 |
| Diagnosis | Time to colonoscopy | time after visiting the hospital (rounding off) | 3 | Continuous value | 90 | 0 |
| Diagnosis | SRH on endoscopy | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 91 | 0 |
| Diagnosis | SRH type | active bleeding, 1; visible vessel, 2; adherent clot, 3 | 2 | Categorical variable | 92 | 0 |
| Diagnosis | SRH location | ileum, 1; cecum, 2; ascending, 3; transverse, 4; descending, 5; sigmoid, 6; rectum, 7 | 3 | Categorical variable | 93 | 0 |
| Diagnosis | Diverticular bleeding (definitive) | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 94 | 0 |
| Diagnosis | Diverticular bleeding (presumptive) | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 95 | 0 |
| Diagnosis | Ischemic colitis | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 96 | 0 |
| Diagnosis | Post-endoscopic procedure bleeding | absence, 0; after ESD, 1; after polypectomy, 2; after EMR, 3; other hemostatic, 4 | 0 | Categorical variable | 97 | 0 |
| Diagnosis | Rectal ulcer | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 98 | 0 |
| Diagnosis | IBD | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 99 | 0 |
| Diagnosis | Hemorrhoid bleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 100 | 0 |
| Diagnosis | Angioectasia | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 101 | 0 |
| Diagnosis | Colorectal cancer | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 102 | 0 |
| Diagnosis | Metastatic tumor | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 103 | 0 |
| Diagnosis | Other tumor | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 104 | 0 |
| Diagnosis | Polyp | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 105 | 0 |
| Diagnosis | Infectious colitis | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 106 | 0 |
| Diagnosis | Radiation colitis | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 107 | 0 |
| Diagnosis | Non-specific colitis | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 108 | 0 |
| Diagnosis | Drug-induced ulcer | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 109 | 0 |
| Diagnosis | Non-specific ulcer | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 110 | 0 |
| Diagnosis | Colorectal varix | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 111 | 0 |
| Diagnosis | Dieulafoy ulcer | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 112 | 0 |
| Diagnosis | Post-operative anastomotic bleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 113 | 0 |
| Diagnosis | Meckel's diverticular bleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 114 | 0 |
| Diagnosis | Anal lesion | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 115 | 0 |
| Diagnosis | Diverticulitis | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 116 | 0 |
| Diagnosis | Small bowel bleeding (definitive) | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 117 | 0 |
| Diagnosis | Small bowel bleeding (presumptive) | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 118 | 0 |
| Diagnosis | UGIB | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 119 | 0 |
| Diagnosis | Name of other diagnosis | free comment | 0 | Free comment | 120 | 0 |
| Diagnosis | Unknown | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 121 | 0 |
| Diagnosis | 2nd　colonoscopic examination | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 122 | 0 |
| Diagnosis | Date of 2nd colonoscopy | first date of endoscopy, including the first day of hospitalization | 2019/12/09 | Date | 123 | 0 |
| Diagnosis | Time to 2nd colonoscopy | time after visiting the hospital (rounding off) | 3 | Categorical variable | 124 | 0 |
| Diagnosis | SRH on 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 125 | 0 |
| Diagnosis | SRH type on 2nd endoscopy | active bleeding, 1; exposed vessel, 2; adherent clot, 3 | 2 | Categorical variable | 126 | 0 |
| Diagnosis | SRH location on 2nd endoscopy | ileum, 1; cecum, 2; ascending, 3; transverse, 4; descending, 5; sigmoid, 6; rectum, 7 | 3 | Categorical variable | 127 | 0 |
| Diagnosis | Diverticular bleeding (definitive) at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 128 | 0 |
| Diagnosis | Diverticular bleeding (presumptive) at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 129 | 0 |
| Diagnosis | Ischemic colitis at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 130 | 0 |
| Diagnosis | Post-endoscopic procedure bleeding at 2nd endoscopy | absence, 0; after ESD, 1; after polypectomy, 2; after EMR, 3; other hemostatic, 4 | 2 | Categorical variable | 131 | 0 |
| Diagnosis | Rectal ulcer at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 132 | 0 |
| Diagnosis | IBD at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 133 | 0 |
| Diagnosis | Hemorrhoid bleeding at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 134 | 0 |
| Diagnosis | Angioectasia at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 135 | 0 |
| Diagnosis | Colorectal cancer at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 136 | 0 |
| Diagnosis | Metastatic tumor at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 137 | 0 |
| Diagnosis | Other tumor at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 138 | 0 |
| Diagnosis | Polyp at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 139 | 0 |
| Diagnosis | Infectious colitis at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 140 | 0 |
| Diagnosis | Radiation colitis at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 141 | 0 |
| Diagnosis | Non-specific colitis at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 142 | 0 |
| Diagnosis | Drug-induced ulcer at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 143 | 0 |
| Diagnosis | Non-specific ulcer at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 144 | 0 |
| Diagnosis | Colorectal varix at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 145 | 0 |
| Diagnosis | Dieulafoy ulcer at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 146 | 0 |
| Diagnosis | Postoperative anastomotic bleeding at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 147 | 0 |
| Diagnosis | Meckel's diverticular bleeding at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 148 | 0 |
| Diagnosis | Anal lesion at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 149 | 0 |
| Diagnosis | Diverticulitis at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 150 | 0 |
| Diagnosis | Small bowel bleeding (definitive) at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 151 | 0 |
| Diagnosis | Small bowel bleeding (presumptive) at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 152 | 0 |
| Diagnosis | UGIB at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 153 | 0 |
| Diagnosis | Name of other diagnosis at 2nd endoscopy | free comment | 0 | Free comment | 154 | 0 |
| Diagnosis | Unknown at 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 155 | 0 |
| Procedures | Type of bowel prep | PEG, 1; PEG + enema, 2; enema, 3 | 1 | Categorical variable | 156 | 0 |
| Procedures | Endoscopic cap use | absence, 0; long, 1; short, 2; ST　hood, 3; other, 4 | 0 | Categorical variable | 157 | 0 |
| Procedures | Waterjet scope use | ​waterjet scope use or use of waterjet in view of endoscopic image, 1; absence, 0; unknown, NA | 1 | Categorical variable | 158 | 0 |
| Procedures | PEG use in water jet scope | PEG in waterjet presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 159 | 0 |
| Procedures | Conservative therapy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 160 | 0 |
| Procedures | Endoscopic therapy | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 161 | 0 |
| Procedures | Secondary endoscopic therapy | indirect clipping, 1; direct clipping, 2; band ligation, 3; Snare ligation,4; HSE, 5; OTSC, 6; coagulation,7; other therapy, 8 | 1 | Categorical variable | 162 | 0 |
| Procedures | Additional comment of endoscopic therapy | free comment | 0 | Free comment | 163 | 0 |
| Procedures | Success of endoscopic therapy | completion, 1; no completion, 2 | 0 | Categorical variable | 164 | 0 |
| Procedures | Type of treatment of failure | clipping, 1; band, 2; HSE, 3; OTSC, 4; coagulation, 5; other therapy, 6 | 1 | Categorical variable | 165 | 0 |
| Procedures | Post-endoscopy perforation or diverticulitis | no complication, 0; perforation, 1; diverticulitis, 2 (imaging diagnosis with abdominal pain and/or fever); other, 3 | 1 | Categorical variable | 166 | 0 |
| Procedures | Location of perforation/ diverticulitis | ileum, 1; cecum, 2; ascending, 3; transverse, 4; descending, 5; sigmoid, 6; rectum, 7 | 3 | Categorical variable | 167 | 0 |
| Procedures | IVR/ TAE | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 168 | 0 |
| Procedures | Surgery | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 169 | 0 |
| Procedures | Barium impaction therapy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 170 | 0 |
| Procedures | Type of bowel prep for 2nd endoscopy | PEG, 1; PEG + enema, 2; enema, 3 | 1 | Categorical variable | 171 | 0 |
| Procedures | Endoscopic cap use for 2nd endoscopy | absence, 0; long, 1; short, 2; ST hood, 3; other, 4 | 0 | Categorical variable | 172 | 0 |
| Procedures | Waterjet scope use for 2nd endoscopy | ​waterjet scope use or use of waterjet in view of endoscopic image, 1; absence, 0; unknown, NA | 1 | Categorical variable | 173 | 0 |
| Procedures | PEG use in water jet scope for 2nd endoscopy | PEG in waterjet presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 174 | 0 |
| Procedures | 2nd 　conservative therapy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 175 | 0 |
| Procedures | 2nd 　endoscopic therapy | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 176 | 0 |
| Procedures | Type of treatment at 2nd endoscopy | indirect clipping, 1; direct clipping, 2; band ligation, 3; Snare ligation,4; HSE, 5; OTSC, 6; coagulation,7; other therapy, 8 | 1 | Categorical variable | 177 | 0 |
| Procedures | Additional comment of therapy at 2nd endoscopy | free comment | 0 | Free comment | 178 | 0 |
| Procedures | Success of therapy at 2nd endoscopy | completion, 1; no completion ,2 | 0 | Categorical variable | 179 | 0 |
| Procedures | Type of treatment of failure at 2nd endoscopy | clipping, 1; band, 2; HSE, 3; OTSC, 4; coagulation, 5; other therapy, 6 | 1 | Categorical variable | 180 | 0 |
| Procedures | Post-2nd endoscopy perforation or diverticulitis | no complication, 0; perforation, 1; diverticulitis, 2 (imaging diagnosis with abdominal pain and/or fever); other, 3 | 1 | Categorical variable | 181 | 0 |
| Procedures | IVR/ TAE after 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 182 | 0 |
| Procedures | Surgery after 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 183 | 0 |
| Procedures | Barium impaction therapy after 2nd endoscopy | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 184 | 0 |
| Procedures | Conservative therapy for rebleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 185 | 0 |
| Procedures | Endoscopic therapy for rebleeding | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 186 | 0 |
| Procedures | Types of endoscopic therapy for rebleeding | clipping, 1; band ligation, 2; HSE, 3; OTSC, 4; coagulation, 5; other therapy, 6 | 1,3 | Categorical variable | 187 | 0 |
| Procedures | IVR/ TAE for rebleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 188 | 0 |
| Procedures | Surgery for rebleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 189 | 0 |
| Procedures | Other therapy for rebleeding | free comment | 0 | Free comment | 190 | 0 |
| Procedures | Conservative therapy for 2nd rebleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 191 | 0 |
| Procedures | Endoscopic therapy for 2nd rebleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 192 | 0 |
| Procedures | Types of endoscopic therapy for 2nd rebleeding | clipping, 1; band ligation, 2; HSE, 3; OTSC, 4; coagulation, 5; other therapy, 6 | 1 | Categorical variable | 193 | 0 |
| Procedures | IVR/ TAE for 2nd rebleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 194 | 0 |
| Procedures | Surgery for 2nd rebleeding | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 195 | 0 |
| Procedures | Other therapy for 2nd rebleeding | free comment | Barium impaction therapy | Free comment | 196 | 0 |
| Outcomes | Rebleeding | ​bleeding > 24 h after admission | 1 | Categorical variable | 197 | 0 |
| Outcomes | Date of rebleeding | 　 | 2019/6/17 | Date | 198 | 0 |
| Outcomes | Overt bleeding at rebleeding | presence, 1 (e.g., hematochezia or bloody stools); absence, 0; unknown, NA | 1 | Categorical variable | 199 | 0 |
| Outcomes | Decreased hemoglobin > 2 (g/dl) at rebleeding | presence, 1 (e.g., decreased by ≥ 2 points compared with the most recent data at the time of rebleeding); absence, 0; unknown, NA | 1 | Categorical variable | 200 | 0 |
| Outcomes | Blood pressure<100 mmHg at rebleeding | presence, 1 (​e.g., lowest BP at rebleeding); absence, 0; unknown, NA | 1 | Categorical variable | 201 | 1 (0.01) |
| Outcomes | Heart rate>100 /minute at rebleeding | Presence (​highest pulse at rebleeding), 1; absence, 0 | 0 | Categorical variable | 202 | 2 (0.02) |
| Outcomes | 2nd 　rebleeding | ​bleeding > 24 h after admission | 1 | Categorical variable | 203 | 3 (0.03) |
| Outcomes | 2nd 　date of rebleeding | 　 | 2019/6/20 | Date | 204 | 0 |
| Outcomes | Overt bleeding at 2nd rebleeding | presence, 1 (e.g., hematochezia or bloody stools); absence, 0; unknown, NA | 1 | Categorical variable | 205 | 0 |
| Outcomes | Decreased hemoglobin > 2 (g/dl) at 2nd rebleeding | presence, 1 (e.g., decreased by ≥ 2 points compared with the most recent data at the time of rebleeding); absence, 0; unknown, NA | 1 | Categorical variable | 206 | 0 |
| Outcomes | Blood pressure<100 mmHg at 2nd rebleeding | presence (​e.g., lowest BP at rebleeding), 1; absence, 0; unknown, NA | 1 | Categorical variable | 207 | 0 |
| Outcomes | Heart rate>100 /minute at 2nd rebleeding | (​highest pulse at rebleeding), 1; absence, 0 | 1 | Categorical variable | 208 | 0 |
| Outcomes | Occurrence of ACS | presence, 1 (e.g., acute myocardial infarction or angina pectoris); absence, 0; unknown, NA | 0 | Categorical variable | 209 | 0 |
| Outcomes | Occurrence of cerebrovascular disease | presence (e.g. TIA, ​cerebral infarction), 1; absence, 0; unknown, NA | 0 | Categorical variable | 210 | 0 |
| Outcomes | Occurrence of PE/ DVT | presence, 1; absence, 0; unknown, NA | 0 | Categorical variable | 211 | 0 |
| Outcomes | Occurrence of death | presence, 1; absence, 0; unknown, NA | 1 | Categorical variable | 212 | 0 |
| Outcomes | ​Direct cause of death | free comment | Pneumonia | Free comment | 213 | 0 |
| Outcomes | ​Indirect cause of death | free comment | Pancreatic cancer | Free comment | 214 | 0 |
| Outcomes | Number of blood transfusions | number, unknown, NA | 7 | Continuous value | 215 | 29 (0.3) |
| Outcomes | ​Date of confirmation of final patient visit after discharge | 　 | 2019/12/09 | Date | 216 | 0 |
| Outcomes | Date of rebleeding after discharge | 　 | 2019/12/09 | Date | 217 | 0 |
| Outcomes | Date of death after discharge | 　 | 2019/12/09 | Date | 218 | 0 |
| Outcomes | ​Number of rebleedings after discharge | number, unknown, NA | 5 | Continuous value | 219 | 0 |

Abbreviations: IQR, interquartile range; PT-INR, international normalized ratio of prothrombin time; CRP, C-reactive protein; IBD, inflammatory bowel disease; CVA, cerebral vascular accident; TIA, transient ischemic attacks; COPD, chronic obstructive pulmonary disease; RA, rheumatoid arthritis; SLE, systemic lupus erythematosus; SJS, Sjogren's syndrome; MCTD, mixed connective tissue disease; CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; ASO, arteriosclerosis obliterans; TAO, thromboangiitis obliterans; AIDS, acquired immune deficiency syndrome; HIV, human immunodeficiency virus; CD4, cluster of differentiation 4; NSAIDs, non-steroidal anti-inflammatory drugs; COX, cyclooxygenase; DOAC, direct oral anticoagulants; CT, computer tomography; SRH, Stigmata of recent hemorrhage; ESD, endoscopic submucosal dissection; EMR, endoscopic mucosal resection; IBD, inflammatory bowel disease; UGIB, upper gastrointestinal bleeding; PEG, polyethylene glycol; HSE, hypertonic saline epinephrine; OTSC, over the scope clip; IVR, interventional radiology; TAE, transarterial arterial embolization; BP, blood pressure; ACS, acute coronary syndrome; PE, pulmonary embolism; DVT, deep vein thrombosis.

**Supplementary Table 3 Diagnosis based on first colonoscopy with CT**

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Value | Number of cases | Missing value |
| Diverticular bleeding | 6531 (63.2) | 10,342 | 0 |
| Diverticular bleeding (definitive) | 2020 (19.5) | 10,342 | 0 |
| Diverticular bleeding (presumptive) | 4511 (43.6) | 10,342 | 0 |
| Ischemic colitis | 939 (9.1) | 10,342 | 0 |
| Post-procedure bleeding | 461 (4.5) | 10,342 | 0 |
| Post-procedure bleeding, ESD | 141 (1.4) | 10,342 | 0 |
| Post-procedure bleeding, polypectomy | 73 (0.7) | 10,342 | 0 |
| Post-procedure bleeding, EMR | 220 (2.1) | 10,342 | 0 |
| Post-procedure bleeding, biopsy | 16 (0.2) | 10,342 | 0 |
| Post-procedure bleeding, other therapy | 12 (0.1) | 10,342 | 0 |
| Rectal ulcer | 249 (2.4) | 10,342 | 0 |
| IBD | 208 (2.0) | 10,342 | 0 |
| Hemorrhoid bleeding | 186 (1.8) | 10,342 | 0 |
| Angioectasia | 117 (1.1) | 10,342 | 0 |
| Colorectal cancer  | 158 (1.5) | 10,342 | 0 |
| Metastatic tumor | 15 (0.2) | 10,342 | 0 |
| Other tumor | 9 (0.1) | 10,342 | 0 |
| Polyp | 36 (0.4) | 10,342 | 0 |
| Infectious colitis | 134 (1.3) | 10,342 | 0 |
| Radiation colitis | 65 (0.6) | 10,342 | 0 |
| Non-specific colitis | 46 (0.4) | 10,342 | 0 |
| Drug-induced ulcer | 14 (0.1) | 10,342 | 0 |
| Non-specific ulcer | 55 (0.5) | 10,342 | 0 |
| Colorectal varix | 25 (0.2) | 10,342 | 0 |
| Dieulafoy ulcer | 13 (0.1) | 10,342 | 0 |
| Postoperative anastomotic bleeding | 15 (0.2) | 10,342 | 0 |
| Meckel's diverticular bleeding | 9 (0.1) | 10,342 | 0 |
| Anal lesion | 12 (0.1) | 10,342 | 0 |
| Diverticulitis | 7 (0.1) | 10,342 | 0 |
| Small bowel bleeding | 226 (2.2) | 10,342 | 0 |
| Small bowel bleeding (definitive) | 105 (1.0) | 10,342 | 0 |
| Small bowel bleeding (presumptive) | 121 (1.2) | 10,342 | 0 |
| UGIB | 152 (1.5) | 10,342 | 0 |
| Other diagnosis | 39 (0.4) | 10,342 | 0 |
| Unknown | 630 (6.1) | 10,342 | 0 |

Abbreviations: IQR, interquartile range; ESD, endoscopic submucosal dissection; EMR, endoscopic mucosal resection; IBD, inflammatory bowel disease; UGIB, upper gastrointestinal bleeding.

**Supplementary Table 4 Endoscopic procedures among patients undergoing second colonoscopy (N=1,992)**

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Value | Number of cases | Missing value |
| Type of bowel prep for 2nd endoscopy, PEG or enema | 1,580 (79.3) | 1,992 | 0 |
| Type of bowel prep for 2nd endoscopy, PEG | 1,314 (66.0) | 1,992 | 0 |
| Type of bowel prep for 2nd endoscopy, enema | 298 (15.0) | 1,992 | 0 |
| Endoscopic cap use for 2nd endoscopy | 1,501 (75.4) | 1,992 | 0 |
| Endoscopic cap use for 2nd endoscopy, long | 389 (19.5) | 1,992 | 0 |
| Endoscopic cap use for 2nd endoscopy, short | 1,105 (55.5) | 1,992 | 0 |
| Endoscopic cap use for 2nd endoscopy, ST hood | 6 (0.3) | 1,992 | 0 |
| Endoscopic cap use for 2nd endoscopy, other | 1 (0.1) | 1,992 | 0 |
| PEG use in water jet scope for 2nd endoscopy | 82 (4.1) | 1,992 | 0 |
| 2nd conservative therapy | 1,151 (57.8) | 1,992 | 0 |
| 2nd endoscopic therapy | 786 (39.5) | 1,992 | 0 |
| Type of treatment at 2nd endoscopy, indirect clipping | 358 (18.0) | 1,992 | 0 |
| Type of treatment at 2nd endoscopy, direct clipping | 133 (6.7) | 1,992 | 0 |
| Type of treatment at 2nd endoscopy, band ligation | 194 (9.7) | 1,992 | 0 |
| Type of treatment at 2nd endoscopy, Snare ligation | 25 (1.3) | 1,992 | 0 |
| Type of treatment at 2nd endoscopy, HSE | 8 (0.4) | 1,992 | 0 |
| Type of treatment at 2nd endoscopy, OTSC | 0 | 1,992 | 0 |
| Type of treatment at 2nd endoscopy, coagulation | 63 (3.2) | 1,992 | 0 |
| Type of treatment at 2nd endoscopy, other endoscopic therapy | 17 (0.9) | 1,992 | 0 |
| Success of therapy at 2nd endoscopy | 725 (36.4) | 1,992 | 0 |
| Type of treatment of failure at 2nd endoscopy, clipping | 37 (1.9) | 1,992 | 0 |
| Type of treatment of failure at 2nd endoscopy, band ligation | 7 (0.4) | 1,992 | 0 |
| Type of treatment of failure at 2nd endoscopy, failure, HSE | 7 (0.4) | 1,992 | 0 |
| Type of treatment of failure at 2nd endoscopy, OTSC | 0 | 1,992 | 0 |
| Type of treatment of failure at 2nd endoscopy, coagulation | 2 (0.1) | 1,992 | 0 |
| Type of treatment of failure at 2nd endoscopy, other therapy | 7 (0.4) | 1,992 | 0 |
| IVR after 2nd endoscopy | 19 (0.2) | 10,342 | 0 |
| Surgery after 2nd endoscopy | 17 (0.2) | 10,342 | 0 |
| Barium impaction therapy after 2nd endoscopy | 50 (0.5) | 10,342 | 0 |

Abbreviations: IQR, interquartile range; PEG, polyethylene glycol; HSE, hypertonic saline epinephrine; OTSC, over the scope clip; IVR, interventional radiology.

**Supplementary Table 5 Association of bleeding etiologies with adverse outcomes estimated by the Cox proportional hazard model (n=1,0342)**

|  |  |  |
| --- | --- | --- |
|  | **30-day rebleeding** | **In-hospital mortality** |
|  | Hazard ratio (95%CI) | P-value | Hazard ratio (95%CI) | P-value |
| Diverticular bleeding | 2.81 (2.49-3.17) | <0.001 | 0.23 (0.13-0.40) | <0.001 |
| Ischemic colitis | 0.15 (0.11-0.22) | <0.001 | 0.46 (0.15-1.46) | 0.190 |
| Malignancy | 0.38 (0.22-0.64) | <0.001 | 2.39 (1.33-4.28) | 0.003 |
| Infectious colitis | 0.12 (0.04-0.37) | <0.001 | 1.50 (0.47-4.78) | 0.488 |
| IBD | 0.42 (0.26-0.67) | <0.001 | NA\* |  |
| Radiation colitis | 1.04 (0.59-1.83) | 0.898 | NA\* |  |
| Other colitis | 0.46 (0.25-0.86) | 0.015 | 1.19 (0.29-4.85) | 0.807 |
| Colorectal angioectasia | 0.97 (0.65-1.47) | 0.899 | 1.38 (0.34-5.60) | 0.654 |
| Rectal ulcer | 1.06 (0.79-1.42) | 0.71 | 2.51 (1.38-4.57) | 0.003 |
| Hemorrhoids | 0.41 (0.24-0.71) | 0.001 | NA\* |  |
| Post-endoscopy bleeding | 0.29 (0.19-0.43) | <0.001 | NA\* |  |
| Small bowel bleeding | 1.25 (0.95-1.64) | 0.115 | 0.80 (0.29-2.18) | 0.656 |
| UGIB | 0.17 (0.07-0.42) | <0.001 | 3.21 (1.54-6.66) | 0.002 |
| Unknown etiology | 0.50 (0.37-0.66) | <0.001 | 4.13 (2.55-6.69) | <0.001 |

Note. Etiologies associated with rebleeding and death were evaluated by Cox proportional hazards model which estimate hazard ratios and 95% confidence intervals (CI). Bleeding etiologies with 50 or more cases were included in the analysis. Other diagnosis includes various bleeding etiologies (Table 2), which are difficult to interpret and were not included in the analysis. \*The number of patients who develop death with the factor was none.

Abbreviations: CI, confidential interval; IBD, inflammatory bowel disease; UGIB, upper gastrointestinal bleeding.

**Supplementary Table 6 Final diagnoses between patients with and without colonoscopy**

|  |  |  |  |
| --- | --- | --- | --- |
| **Factor** | **No-colonoscopy****(n=1,276)** | **Colonoscopy (n=9,066)** | **p-value** |
| CT of the abdomen/pelvis | 1,032 (80.9) | 6,117 (67.5) | <0.001 |
| Contrast-enhanced CT | 736 (57.7) | 4,504 (49.7) | <0.001 |
| Urgent CT | 1,015 (98.4) | 5,953 (97.3) | 0.051 |
| **Final diagnosis** |  |  |  |
| Diverticular bleeding | 449 (35.2) | 6,126 (67.6) | <0.001 |
| Ischemic colitis | 429 (33.6) | 512 (5.7) | <0.001 |
| Malignancy | 14 (1.1) | 179 (2.0) | 0.030 |
| Infectious colitis | 37 (2.9) | 97 (1.1) | <0.001 |
| IBD | 12 (0.9) | 198 (2.2) | 0.003 |
| Radiation colitis | 1 (0.1) | 65 (0.7) | 0.007 |
| Other colitis | 10 (0.8) | 107 (1.2) | 0.210 |
| Angioectasia | 4 (0.3) | 129 (1.4) | 0.001 |
| Rectal ulcer | 1 (0.1) | 256 (2.8) | <0.001 |
| Hemorrhoids | 8 (0.6) | 176 (1.9) | 0.001 |
| Post-endoscopy bleeding | 7 (0.6) | 456 (5.0) | <0.001 |
| Small bowel bleeding | 20 (1.6) | 226 (2.5) | 0.042 |
| UGIB | 131 (10.3) | 22 (0.2) | <0.001 |
| Other | 16 (1.3) | 128 (1.4) | 0.652 |
| Unknown etiology | 137 (10.7) | 389 (4.3) | <0.001 |

Note. Data are presented as n (%). Urgent CT was defined as performed within 24 hours of the hospital visit.

Abbreviations: CT, computed tomography; IBD, inflammatory bowel disease; UGIB, upper gastrointestinal bleeding.

**Supplementary Table 7 Association of bleeding etiologies with adverse outcomes in patients who did not undergo colonoscopy (n=1,276)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **30-day rebleeding** | **In-hospital mortality** | **Need for surgery** |
|  | Absent | Present | P-value | Absent | Present | P-value | Absent | Present | P-value |
| Diverticular bleeding | 35 (4.2) | 59 (13.1) | <0.001 | 28 (3.4) | 3 (0.7) | 0.001 | 10 (1.2) | 4 (0.9) | 0.416 |
| Ischemic colitis | 80 (9.5) | 14 (3.3) | <0.001 | 30 (3.5) | 1 (0.2) | <0.001 | 12 (1.4) | 2 (0.5) | 0.100 |
| Malignancy | 92 (7.3) | 2 (14.3) | 0.276 | 28 (2.2) | 3 (21.4) | 0.004 | 14 (1.1) | 0 | 0.856 |
| Infectious colitis | 94 (7.6) | 0 | 0.056 | 30 (2.4) | 1 (2.7) | 0.603 | 14 (1.1) | 0 | 0.661 |
| IBD | 94 (7.4) | 0 | 0.398 | 31 (2.5) | 0 | 0.743 | 14 (1.1) | 0 | 0.875 |
| Other colitis | 94 (7.4) | 0 | 0.464 | 31 (2.5) | 0 | 0.781 | 14 (1.1) | 0 | 0.895 |
| Small bowel bleeding | 92 (7.3) | 2 (10.0) | 0.440 | 30 (2.4) | 1 (5.0) | 0.391 | 10 (0.8) | 4 (20.0) | <0.001 |
| UGIB | 92 (8.0) | 2 (1.5) | 0.002 | 23 (2.0) | 8 (6.1) | 0.004 | 13 (1.1) | 1 (0.8) | 0.570 |
| Unknown etiology | 80 (7.0) | 14 (10.2) | 0.176 | 17 (1.5) | 14 (10.2) | <0.001 | 14 (1.2) | 0 | 0.386 |
|  | **Need for IVR** | **Need for transfusion** | **Need for transfusion ≥4 units** |
|  | Absent | Present | P-value | Absent | Present | P-value | Absent | Present | P-value |
| Diverticular bleeding | 11 (1.3) | 26 (5.8) | <0.001 | 161 (19.5) | 127 (28.3) | <0.001 | 121 (14.6) | 90 (20.0) | 0.013 |
| Ischemic colitis | 37 (4.4) | 0 | <0.001 | 280 (33.1) | 8 (1.9) | <0.001 | 207 (24.4) | 4 (0.9) | <0.001 |
| Malignancy | 36 (2.9) | 1 (7.1) | 0.339 | 281 (22.3) | 7 (50.0) | 0.014 | 205 (16.2) | 6 (42.9) | 0.008 |
| Infectious colitis | 37 (3.0) | 0 | 0.331 | 284 (22.9) | 4 (10.8) | 0.055 | 209 (16.9) | 2 (5.4) | 0.041 |
| IBD | 37 (2.9) | 0 | 0.701 | 285 (22.6) | 3 (25.0) | 0.531 | 209 (16.5) | 2 (16.7) | 0.615 |
| Other colitis | 37 (2.9) | 0 | 0.744 | 288 (22.8) | 0 | 0.077 | 211 (16.7) | 0 | 0.163 |
| Small bowel bleeding | 31 (2.5) | 6 (30.0) | <0.001 | 273 (21.7) | 15 (75.0) | <0.001 | 200 (15.9) | 11 (55.0) | <0.001 |
| UGIB | 35 (3.1) | 2 (1.5) | 0.249 | 215 (18.8) | 73 (55.7) | <0.001 | 150 (13.1) | 61 (46.6) | <0.001 |
| Unknown etiology | 37 (3.3) | 0 | 0.027 | 252 (22.1) | 36 (26.3) | 0.272 | 189 (16.6) | 22 (16.1) | 0.873 |

Note. Bleeding etiologies and outcomes with 10 or more cases were included in the analysis. Other diagnosis includes various bleeding etiologies (Table 2), which are difficult to interpret and were not included in the analysis. Data are presented as n (%).

Abbreviations: IBD, inflammatory bowel disease; UGIB, upper gastrointestinal bleeding.