**Supplemental Material**

**Tables**

**Table S1**. Number of patient-months analyzed for prescription rates in each year.

**A**. Number of patient-months with prescribed antihypertensive drugs in the MDV database (for Figure 1, Figure S1)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Hypertensive patients  | 313,512 | 922,554 | 1,507,579 | 1,858,503 | 2,917,533 | 3,890,561 | 4,191,666 |
|  with heart failure | 92,814 | 267,242 | 430,379 | 553,565 | 926,689 | 1,281,787 | 1,404,008 |
|  <65 years | 22,013 | 60,069 | 96,782 | 121,585 | 195,137 | 266,107 | 280,051 |
| ≥65, <75 years | 26,785 | 74,650 | 115,190 | 147,143 | 250,359 | 349,917 | 387,193 |
|  ≥75 years | 44,016 | 132,523 | 218,407 | 284,837 | 481,193 | 665,763 | 736,764 |

**B**. Number of patient-months with prescribed antihypertensive drugs in the JMDC database (for Figure 1, Figure S2)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Hypertensive patients | 410,713 | 574,914 | 712,991 | 1,208,118 | 1,382,924 | 1,382,732 |
|  with heart failure | 38,490 | 55,721 | 70,483 | 119,084 | 143,501 | 148,194 |
|  hospitals | 18,444 | 25,464 | 31,375 | 52,444 | 61,978 | 62,549 |
|  clinics | 20,630 | 31,088 | 40,133 | 68,265 | 83,551 | 87,717 |

**C**. Number of patient-months with first-line treatment with antihypertensive drugs, as single or plural classes, in the JMDC database (for Figure 2, Figure S3)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Hypertensive patients | 2325 | 5927 | 10,509 | 16,271 | 20,476 | 19,914 |
|  with heart failure | 127 | 316 | 656 | 919 | 1306 | 1310 |
|  <65 years | 117 | 277 | 596 | 826 | 1132 | 1142 |
|  ≥65, <70 years | 9 | 39 | 60 | 93 | 173 | 167 |
|  hospitals | 76 | 198 | 429 | 557 | 831 | 799 |
|  clinics | 51 | 118 | 227 | 362 | 475 | 511 |

**D**. Number of patient-months with prescribed diuretics in the MDV database (for Figure 3, Figure S4)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Hypertensive patients | 79,819 | 238,125 | 392,852 | 491,771 | 779,787 | 1,021,772 | 1,074,335 |
|  with heart failure  | 42,327 | 119,315 | 194,285 | 247,460 | 407,698 | 553,274 | 594,255 |
|  <65 years | 8799 | 23,277 | 37,497 | 46,485 | 73,689 | 99,590 | 103,220 |
|  ≥65, <75 years | 10,935 | 29,163 | 45,334 | 57,211 | 95,259 | 131,092 | 140,840 |
|  ≥75 years | 22,593 | 66,875 | 111,454 | 143,764 | 238,750 | 322,592 | 350,195 |

**E**. Number of patient-months with prescribed diuretics in the JMDC database (for Figure 3, Figure 4)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Hypertensive patients | 56,462 | 83,983 | 104,482 | 166,482 | 180,520 | 171,007 |
|  with heart failure  | 10,921 | 16,038 | 19,458 | 31,664 | 35,972 | 35,941 |
|  hospitals | 5950 | 8460 | 10,199 | 16,754 | 19,163 | 18,716 |
|  clinics | 5116 | 7703 | 9396 | 15,157 | 17,110 | 17,481 |

**F**. Number of patient-months with first-line treatment with prescribed diuretics in the JMDC database (for Figure S5)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Hypertensive patients | 79 | 193 | 397 | 517 | 754 | 672 |
|  with heart failure | 14 | 29 | 85 | 92 | 156 | 139 |

JMDC, Japan Medical Data Center; MDV, Medical Data Vision.

**Figure legends**

**Figure S1.** Prescription rate of antihypertensive drugs for each age group in the MDV database. The five most frequently prescribed classes for all hypertensive patients (dashed line: - -) and those with heart failure (solid line: ―) in each age group of (A) <65 years, (B) 65 years to <75 years, and (C) ≥75 years. ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin II receptor blocker; BETA, ß-blocker; CCB, calcium channel blocker; DIU, diuretic; MDV, Medical Data Vision.



**Figure S2.** Prescription rate of antihypertensive drugs for each medical institution in the JMDC database. The five most frequently prescribed classes for all hypertensive patients (dashed line: - -) and those with heart failure (solid line: ―) in (A) hospitals and (B) clinics. ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin II receptor blocker; BETA, ß-blocker; CCB, calcium channel blocker; DIU, diuretic; JMDC, Japan Medical Data Center.



**Figure S3.** Prescription rate of first-line antihypertensive drug class for each age group and medical institution in the JMDC database. The five most frequently prescribed classes for all hypertensive patients (dashed line: - -) and those with heart failure (solid line: ―) in each age group of (A) <65 years, and (B) 65 years to <75 years, and those in (C) hospitals and (D) clinics. ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin II receptor blocker; BETA, ß-blocker; CCB, calcium channel blocker; DIU, diuretic; JMDC, Japan Medical Data Center.



**Figure S4.** Prescription rate of each diuretic category for each age group in the MDV database. All hypertensive patients (dashed line: - -) and those with heart failure (solid line: ―) in each age group of (A) <65 years, (B) 65 years to <75 years, and (C) ≥75 years. AA, aldosterone antagonist; MDV, Medical Data Vision.



**Figure S5.** Prescription rate of each diuretic category as first-line antihypertensive drugs in the JMDC database. All hypertensive patients (dashed line: - -) and those with heart failure (solid line: ―). AA, aldosterone antagonist; JMDC, Japan Medical Data Center.

