

Healthcare Expenditure for Treatment of Hypertension and Hypertensive Complications in Japan: A Claims Data Analysis

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OBJECTIVES

- There are an estimated 43 million people in Japan with hypertension, of which 24.5 million are under treatment [1]; hypertension accounts for more than 3% of medical care expenditure in Japan [2].
- A more accurate understanding of the financial impact of hypertension and hypertensive complications is important for appropriate allocation of healthcare resources.
- In this study, we analyzed the medical care expenditures of hypertension and hypertensive complications in Japan using claims data.

METHODS

- Hospital-based claims data from the Medical Data Vision (MDV) database and out-of-hospital pharmacy prescription data from the IQVIA database from April 2019 to March 2022 were analyzed to estimate treatment costs for hypertensive complications such as stroke, myocardial Infarction (MI), angina pectoris (AP), heart failure (HF), end-stage renal disease (ESRD) and antihypertensive drugs [3, 4].
- Episodes of care were identified using relevant ICD-10 diagnosis codes, procedure, medical device, and drug codes (Supplemental Materials Table S1).

RESULTS

Healthcare Expenditure for Treatment of Hypertensive Complications

- A total of 813,112 hypertensive patients were identified in the MDV data, with a mean age of 71.6 years and a male ratio of 52.5%.
- Among 25,877 acute stroke patients in the sample, the mean treatment costs during the first month of treatment were 2,408,761 JPY (16,612 USD). Among the 22,408 acute MI patients, mean treatment costs during the first month of treatment were 2,271,878 JPY (15,668 USD). Among the 59,928 HF patients, mean treatment costs (from admission to 365 days) were 2,293,542 JPY (15,818 USD) (Table 1).
- There was no significant difference in expenditure by year and between patients with and without hypertension (Supplemental Materials Table S2 and Figure S1).

Healthcare Expenditure for Treatment of Hypertension

- A total 6,786,885 patients prescribed antihypertensive drugs were identified in the IQVIA data, with a mean prescription class of 1.8 drugs and 14,621 JPY/month (100.8 USD/month).
- Of these, 93.6% of patients were prescribed a single drug or a combination of two to three different classes of drugs, with total cost per patient ranging from 5,521 to 21,801 JPY /month (37.4 to 134.6 USD/month) (Figure 1, 2, see Supplemental Materials Table S3 for annual results).

Figure 1: Antihypertensive drug costs by number of prescribed classes

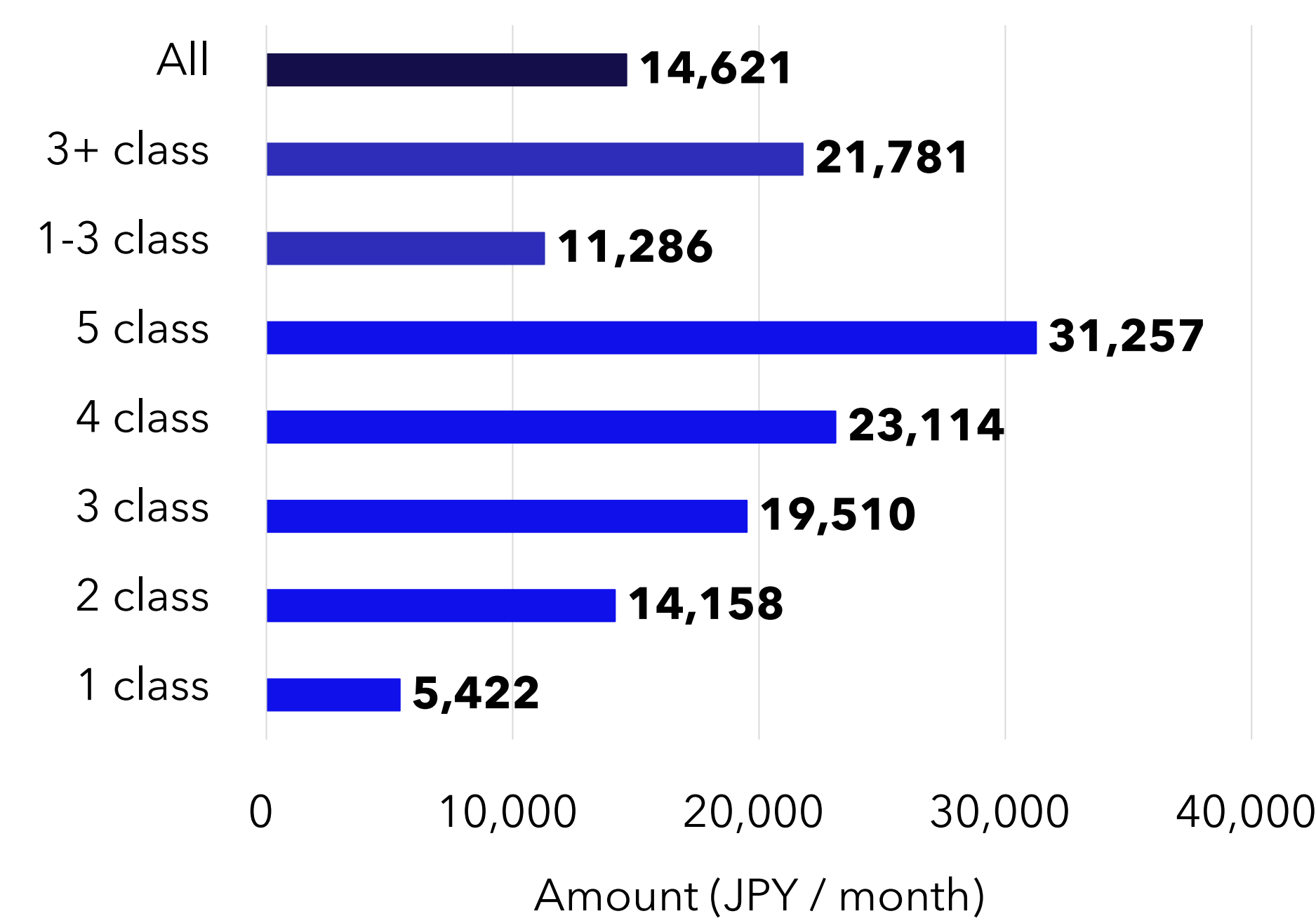
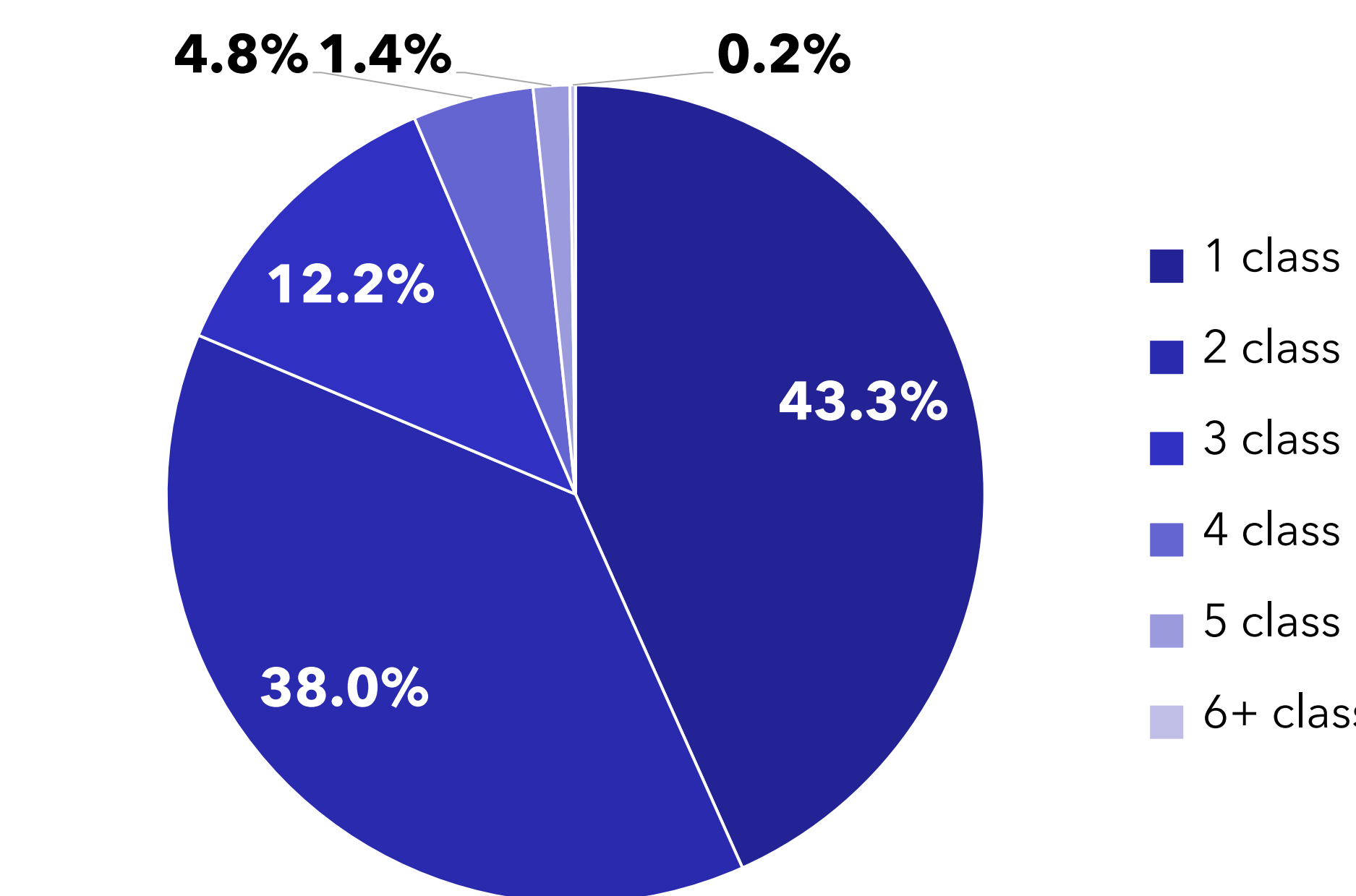


Figure 2: Percentage by class prescribed 1 to 6+ antihypertensive medication classes



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Calculated based on IQVIA Rx from April 2019 to March 2022
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CONCLUSIONS

- Based on this large and contemporary real-world study, hypertension and its complications present a substantial cost burden to the Japanese healthcare system.

REFERENCES

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DISCLOSURES

This study was funded by Medtronic Japan. TY, YD and YH are employees of Medtronic Japan, and FC is an employee of Medtronic. PJ report employment with Wing Tech Inc., which provided health-economic consulting services to Medtronic. KK reports participation in Advisory Board of Medtronic Japan. The authors have no other conflicts of interest to disclose.

Table 1: Demographics and expenditures of complications in hypertensive patients

	Period (Days post index event)	Patient (n)	Age (years)		Sex (% male)	Hospital stay (days)		Number of visits (per year)		Expenditure (JPY (USD)*1)	
			Mean	SD		Mean	SD	Mean	SD	Mean	SD
Stroke											
Acute	0 -30	25,877	70.5	14.1	49.5	38.5	36.6	1.4	1.0	2,408,761 (16,612)	1,449,573 (9,997)
1st year	31 – 365	18,326	70.4	14.1	49.4	39.9	39.0	6.0	7.0	1,290,361 (8,899)	1,986,711 (13,701)
2nd year	366 - 730	9,155	70.4	14.0	49.2	40.7	40.5	5.8	7.0	487,482 (3,362)	1,794,004 (12,372)
MI											
Acute	0 -30	22,408	69.6	12.5	76.6	16.5	15.2	1.5	1.1	2,271,878 (15,668)	1,385,561 (9,556)
1st year	31 – 365	15,304	69.5	12.5	76.8	16.9	16.2	8.7	9.9	875,646 (6,039)	1,448,923 (9,993)
AP											
Stable	0 – 365 *2	2,523	72.7	11.4	67.5	-	-	10.1	15.7	1,782,695 (12,294)	2,195,511 (15,141)
Unstable	0 – 365 *2	25,063	71.5	13.1	66.6	-	-	9.2	14.0	2,239,334 (15,444)	2,326,859 (16,047)
HF											
1st year	0 – 365	59,928	80.1	12.3	52.8	22.8	21.6	11.3	16.4	2,293,542 (15,818)	2,325,311 (16,037)
2nd year	366 - 730	29,282	79.8	12.4	52.8	23.0	21.8	11.5	19.5	1,223,057 (8,435)	2,535,326 (17,485)
ESRD											
With DM	0 – 365	10,523	69.6	12.4	71.9	18.5	28.2	35.5	49.1	3,135,751 (21,626)	2,736,402 (18,872)
Without DM	0 – 365	5,586	71.8	13.6	65.5	19.9	31.8	36.9	51.1	2,971,350 (20,492)	2,576,292 (17,768)

Legend: MI: Myocardial Infarction, AP: Angina Pectoris, HF: Heart Failure, ESRD: End-Stage Renal Disease, DM: Diabetes Mellitus
*1: 1USD = 145JPY, *2: Days from initial diagnosis for AP, Years are from April to March according to Japanese fiscal year.