423
A comprehensive survey on drug dispensing in pharmacy for Japanese elderly patients dwelling in the community

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Conflict of Interest

Authors have no relationships to disclose.

Background and Objectives

The Japanese regulatory authority has been making efforts to provide a guidance to facilitate safe use of drugs among the elderly and to reduce harms due to polypharmacy. The information is scarce regarding how often drugs to be prescribed with special caution in Japanese older people are prescribed. This study aimed to provide a basis on the use of drugs in pharmacies among the elderly dwelling in the community at the national level.

Methods

To describe the changes over time of drug use, a nationwide cross-sectional survey of drug utilization in October 2011 and October 2015, using the National Database of Health Insurance Claims and Specific Health Checkups of Japan,[1,2] was conducted. The data was provided through the process of "Tailored cross-sectional tables." The drug dispensing data of patients over 65 years were summarised and a subset over 75 years was chosen; predefined drug classes such as anticancer drugs were excluded. The survey described diseases and drugs listed in the STOPP-J[3] published by the Japan Geriatrics Society.

1) Ministry of Health, Labour and Welfare. 2016. (in Japanese)
2) Asian Pacific Journal of Disease Management 2012; 6(3-4), 55-59
3) BMC Geriatrics. 2018; 18:154

Results

The target elderly patients dwelling in the community increased from 14 million to 17 million approximately (Fig1). Patients dispensed ≥5 drugs formed 32.6 % of the elderly population in 2015 October (Fig2). The mode number of drugs dispensed each month was two per each patient at each pharmacy (Fig2). Medication problems were observed for patients dispensed ≥5 drugs in the same class such as for anxiety, diabetes, and diuresis (Table).

Conclusion

Over 30% of the elderly population were those over 75 years dispensed more than five drugs at one or more pharmacies, regardless of a known risk in the elderly and an unknown risk of concomitant drug use. The survey found some very elderly patients dispensed ≥5 drugs in a certain class and/or receiving drugs from multiple pharmacies. Appropriate medication management is to be encouraged especially to balance the risks of adverse reactions, drug interactions and changes in pharmacokinetics/ pharmacodynamics with age.
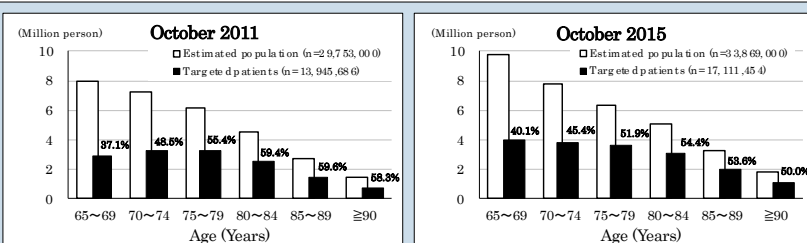

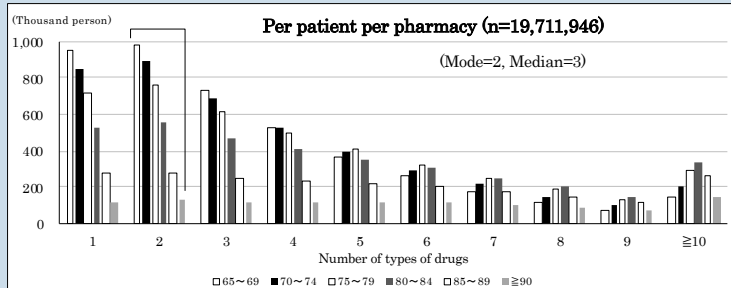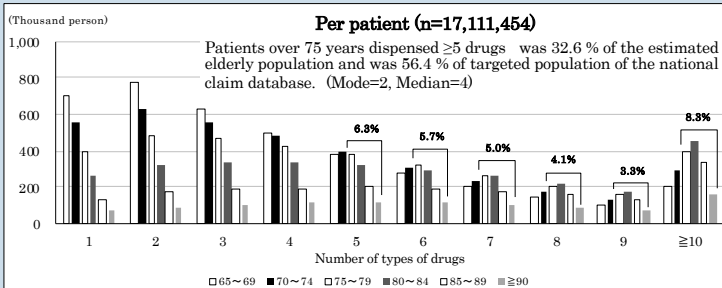Fig. 1 Estimated population and targeted patients in each age group

Fig. 2 Number of patients and drug substances used in October 2015 (by age group)

Table Number of patients and STOPP-J drug substances used in October 2015 (by drug class and age group)

STOPP-J Drug class	Substance (n=18)	65~69 (n=3,263,898)	70~74 (n=3,709,337)	75~79 (n=4,098,504)	80~84 (n=4,065,801)	85~89 (n=2,889,283)	≥90 (n=1,704,719)
Hypnotic sedative · Anxiolytic	1	413893	516487	568725	553000	371314	192219
	2	83244	89837	93193	86621	52760	22940
	3	17692	15966	14900	12075	6137	2145
	4	3513	2903	2484	1772	786	223
	≥5	1010	727	602	428	138	27
Diuretic	1	82239	109679	156093	210255	209175	181460
	2	23918	31332	45202	62375	65286	59585
	3	1847	2566	3825	5449	5891	5029
	4	193	246	332	457	532	408
	≥5	14	13	33	55	56	33
Diabetes	1	266729	251936	229997	178454	95454	37928
	2	147503	129109	108268	73822	33164	10721
	3	47310	39022	30406	18403	6960	1807
	4	8349	5949	4341	2358	772	161
	≥5	787	519	328	186	57	17
Psychiatry and nerve agent	1	256461	293822	329622	330828	226518	118142
	2	38443	34192	33713	31999	20736	10037
	3	8867	6001	4559	3230	1789	733
	≥4	2977	1547	899	480	217	73
Other drugs for blood and body fluids	1	337802	434438	517340	541601	390992	222689
	2	58597	71020	76426	70187	42496	17073
	3	1087	1345	1461	1326	800	265
	≥4	27	31	28	36	26	10
Antipyretic analgesic anti-inflammatory agent	1	391847	387211	369721	314065	182635	85761
	2	15405	15605	15021	12132	6338	2525
	≥3	613	635	613	424	191	63
Antihypertensive	1	91373	96685	104608	102673	71017	37525
	2	2788	2996	3326	3236	2116	986
	≥3	77	68	75	87	55	26

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Peptic ulcer	1	310055	341323	361148	340687	229655	135163
	2	7153	7758	8563	7663	4884	2352
	≥3	113	121	130	107	46	22
Laxative	1	213520	309314	425167	499973	425136	314627
	2	2049	3137	4862	5847	5225	3909
	≥3	29	46	58	64	61	35
Adrenal hormone	1	111452	107305	101358	86731	53799	27072
	2	9164	8915	8370	6906	3839	1495
	≥3	141	112	127	103	57	24
Other urogenital and anal drugs	1	43612	72513	104593	124857	99720	59458
	2	656	1065	1637	1947	1553	857
	≥3	12	20	39	38	20	13
Anticoagulant	1	110039	148671	176253	175799	120780	56043
	2	28306	35083	42166	43679	30113	13371
	≥3	608	529	484	421	216	69
Antiparkinsonian	1	23315	16384	13199	9493	5095	2344
	≥2	1009	606	397	228	100	45
Other central nervous system drugs	1	3545	6520	12500	21778	24490	21150
	≥2	52	97	198	377	377	341
Cardiotonic	1	26351	37254	48748	57469	50556	37101
	≥2	147	185	199	227	151	97
Arrhythmia agent	1	19069	21925	24758	22878	13977	5919
	≥2	122	154	160	177	71	25
Other digestive drugs	1	16566	18669	20085	18228	11639	5569
	≥2	94	96	107	83	40	31
Antihistamine	1	31692	29243	26701	21721	13114	6895
	≥2	422	405	356	306	161	81