

# Assessing the Potentially Inappropriate Medication Use in Elderly Patients in Taiwan

Chu-Yun Huang, Ju-Huei Tseng, Yi-Wen Chen, Yun-Ju Chen, Jui-Chia Chang  
 Department of Pharmacy, Shuang Ho Hospital, Taipei Medical University, New Taipei City, Taiwan

## Introduction

As the population ages, multiple chronic illnesses and hospital shopping leads to high rates of polypharmacy and potentially inappropriate medication (PIM) use in Taiwan. The Screening Tool of Older Persons' potentially inappropriate Prescriptions (STOPP) criteria and Beers criteria are the most commonly used tools to screen for PIM in the elderly and have been updated in recent years. However, little studies have assessed the prevalence and types of PIM use in Taiwan by the updated criteria.

## Objective

To determine the prevalence and types of PIMs prescribed at outpatient setting from a hospital in Taiwan.

## Method

This is a single-center, retrospective observational study conducted in Shuang-Ho hospital, Taipei, Taiwan. We used Beers criteria (2015)<sup>1</sup> and STOPP criteria (Version 2)<sup>2</sup> to screen for the PIM use in outpatients during January 1<sup>st</sup>, 2015- August 31<sup>st</sup>, 2015.

Patients aged>65 years, having more than two refillable prescriptions for chronic illnesses, and taking at least seven medications were recruited. The PIM prevalence was calculated by dividing the total number of PIMs by the total number of prescriptions.

## Results

A total of 11,385 prescriptions from 474 patients had been reviewed. The overall PIM prevalence was 15.3%. The most common PIM categories were cardiovascular systems (6.68%), central nervous systems (4.36%) and antiplatelet/ anticoagulant (2.11%); aspirin, benzodiazepines and dipyridamole were the most common PIM among these category respectively (Table 1).

Table 1. Classification and prevalence of potentially inappropriate medication use

Classification	Drug name	No. of PIMs (%)	PIM prescribing rate
Antimuscarinic/ Anticholinergic	Dexchlorpheniramine	3 (0.026%)	0.41%
	Bucizine	3(0. 026%)	
	Triprolidine	6(0.053%)	
	Cyproheptadine	7(0.061%)	
	Meclizine HCL	11(0.097%)	
	Hydroxyzine	17(0.149%)	
Antiplatelet/ Anticoagulant	Ticlopidine	47(0.413%)	2.11%
	Dipyridamole	193(1.695%)	
Cardiovascular system	Clonidine	0 (0%)	6.68%
	Methyldopa	0 (0%)	
	Verapamil	10 (0.088%)	
	Nifedipine	11 (0.097%)	
	Digoxin	46 (0.404%)	
	Spironolactone	47 (0.413%)	
	Diltiazem	106 (0.931%)	
	Doxazosin	146 (1.282%)	
	Aspirin	395 (3.469%)	
Endocrine system	Methyltestosterone	0 (0%)	0.088%
	Estrogens	0 (0%)	
	Pioglitazone	10 (0.088%)	
Gastrointestinal system	Dicyclomine	2 (0.018%)	0.57%
	Metoclopramide	63 (0.553%)	
Renal system	Colchicine	25 (0.220%)	0.22%

Pain medications	Ketorolac	0 (0%)	0.83%
	Mefenamic acid	4 (0.035%)	
	Sulindac	9 (0.079%)	
	Diclofenac	11 (0.097%)	
	Meloxicam	70 (0.615%)	
Central Nervous System	Aripiprazole	0 (0%)	4.36%
	Olanzapine	0 (0%)	
	Paliperidone	0 (0%)	
	Clozapine	0 (0%)	
	Zolpidem	0 (0%)	
	Oxazolam	2 (0.018%)	
	Prochlorperazine	2 (0.018%)	
	Doxepin	3 (0.026%)	
	Risperidone	3 (0.026%)	
	Diazepam	17 (0.149%)	
	Fludiazepam	33 (0.290%)	
	Lorazepam	48 (0.422%)	
	Zopiclone	57 (0.501%)	
	Bromazepam	62 (0.545%)	
	Estazolam	84 (0.738%)	
	Imipramine	88 (0.773%)	
	Alprazolam	97 (0.852%)	

## Conclusion

This is the first study analyzed the PIM prevalence in Taiwan by the new versions of Beers and STOPP criteria. The prevalence in this study is similar to the results of previous international studies<sup>3,4</sup>. PIM use in the elderly may lead to serious adverse effects. Further studies are needed to develop an intervention and follow-up plans for PIM use in Taiwanese patients to improve patient safety.

## References

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