

ABSTRACT

Background:

A potentially inappropriate medication (PIM) refers to prescription of drugs carrying risks outweighing the expected clinical benefits, certain drugs are classified as (PIM) for the elderly because they carry an increased risk of adverse drug events in this group of patients and they are an important risk factor for adverse drug reactions and hospitalizations in the elderly.

Objectives:

The primary objective of this study is to identify the potentially inappropriate medications (PIMs) in non-governmental nursing homes in Malaysia as defined by Screening Tool of Older Peoples Prescriptions (STOPP) and Beers criteria and the secondary objective is to investigate the relationship between number of medications and the identified PIMs, and to compare between Beers and STOPP criteria in identifying PIM.

Methodology:

This is a cross-sectional multicentered study conducted in three different nursing homes in Sungai Petani, Kedah. All nursing home residents who fulfilled the inclusion criteria and consented were recruited for analysis.

Results:

Clinical data of 33 residents (9 men, 24 women) were included in the analysis with a mean age of 78.36 ± 8.83 years. Out of the 33 residents 7 (21.2%) residents were Malay, 25 (75.8%) were Chinese and one (3.0%) was Indian. The mean number of years residing in nursing home was 2.30 ± 1.85 years and a mean number of prescribed medications per one resident were 4.12 ± 2.04 medications. Most of the residents (30.3%) were receiving four medications. Almost all residents 31 (94%) had their medication available and all 33 (100%) had their medications properly stored. 19 (58%) of the resident's regimen were properly documented while 14 (42%) did not. All resident 33 (100%) properly administered their medications. Only one (3%) resident had an expired medication (Risperidone). STOPP criteria Identified 4 (12%) prescriptions that are potentially inappropriate to be used by elderly and they were thiazide diuretic with the history of gout

1 (3%), long term neuroleptics (> 1 month) in those with parkinsonism 1 (3%), PPI for peptic ulcer disease at full therapeutic dosage for > 8 weeks 1 (3%), and beta blocker in those with diabetes mellitus and frequent hypoglycemic episodes (i.e. 1 episode per month) 1 (3%), while Beers criteria for potentially inappropriate medication use in elderly identified 17 (51.3%) Potentially inappropriate medications used by residents and they were olanzapine in 3 (9.1%) residents and ticlopidine also in 3 (9.1%) residents, alprazolam in 2 (6.1%) residents followed by risperidone 1 (3.0%) and nifedipine 1 (3.0%). No PIMs (0%) were identified by Beers criteria for potentially inappropriate medication use in elderly due to drug-disease or drug-syndrome interactions that may exacerbate the disease or syndrome. 25 (75.8%) PIMs were identified by Beers criteria for potentially inappropriate medications to be used with caution in elderly and they were Vasodilators 10 (30.3%), Antipsychotics 5 (15.2%), Aspirin for primary prevention of cardiac events 3 (9.1%), Diuretics 3 (9.1%), Antipsychotic and vasodilator 2 (6.1%). Only 2 (6.1%) PIMs were identified by Beers criteria for potentially clinically important non-anti-infective drug-drug interactions that should be avoided in elderly and they were both Antipsychotics used with ≥ 2 other CNS-active drugs. A weak positive correlation ($r = 0.204$) was found between number of medications and PIMs identified by STOPP criteria and a weak positive correlation ($r = 0.432$) was found between number of medications and PIMs identified by all Beers criteria's.

Conclusion:

Thiazide diuretic, neuroleptics, PPI and beta blocker episodes were the most identified PIMs by STOPP criteria. Olanzapine, Ticlopidine and Alprazolam were the most PIMs identified by Beers criteria for potentially inappropriate medication use in elderly. There was a positive weak correlation between number of medications and the identified PIMs. Beers criteria was able to capture more PIMs compared to STOPP.