

Rates of inappropriate medicine use prior to admission to geriatric inpatient units

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Background

Polypharmacy and inappropriate medicine use in older people are associated with adverse drug reactions, hospitalisation and death.¹ Proton pump inhibitors (PPIs), antipsychotics (APs) when prescribed to treat behavioural and psychological symptoms of dementia (BPSD) and benzodiazepines (BZDs) when prescribed for insomnia have been identified as potentially inappropriate medicines for older people.^{2,3}

Aim

Establish the prevalence of potentially inappropriate use of PPIs, APs and BZDs prior to admission to geriatric inpatient units.

Methods

Medicines being taken prior to admission to geriatric inpatient units in South Australia between December 2017 and June 2018 were reviewed for appropriateness using the Canadian Bruyere Institute deprescribing algorithms.⁴⁻⁶ For patients taking PPIs, antipsychotics or benzodiazepines, indication, duration of treatment and previous attempts to dose reduce or cease were recorded. The presence of comorbidities associated with PPI use was also recorded.

Results

Patient demographics

	n = 280
Average age (range)	82.4 years (61-99)
Female sex	182 (65%)
Living at home	254 (90.7%)
Managing own medications	153 (54.6%)
Dementia diagnosis	63 (22.5%)

TABLE 1: Patient demographics

Number of medicines taken at admission

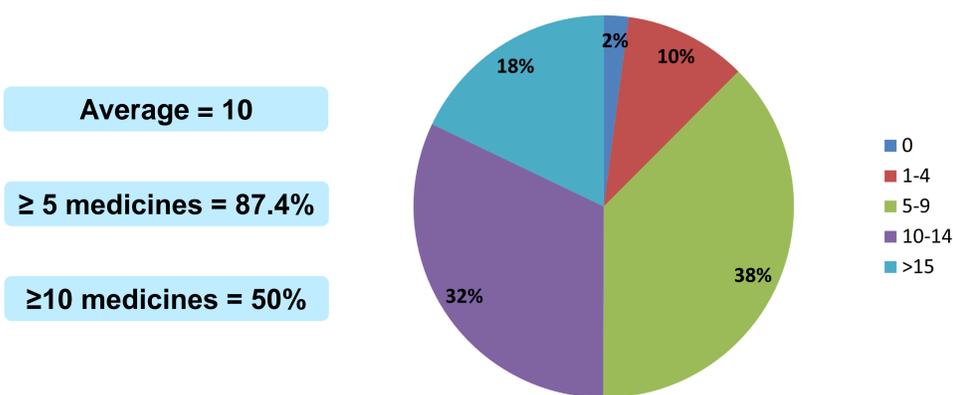


FIGURE 1: Number of medicines being taken by patients on admission

Combinations of inappropriate medicines taken at admission

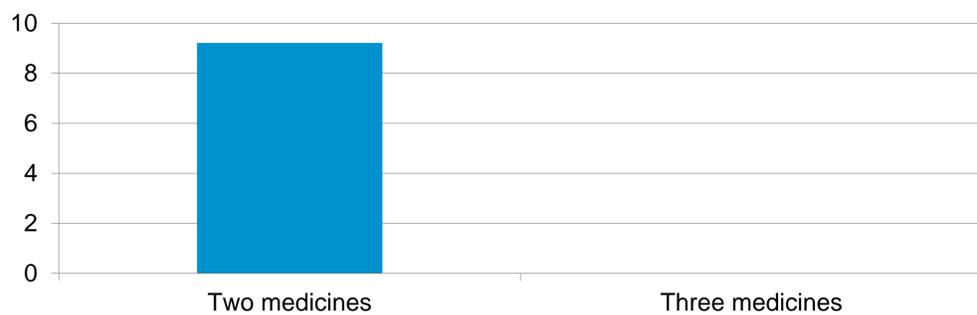


FIGURE 2: Percent of patients using multiple medicines inappropriately

Combination	n
PPI + BZD	21
PPI + AP	4
BZD + AP	1

TABLE 2: Combinations of medicines being used inappropriately on admission

Results

Proton pump inhibitors

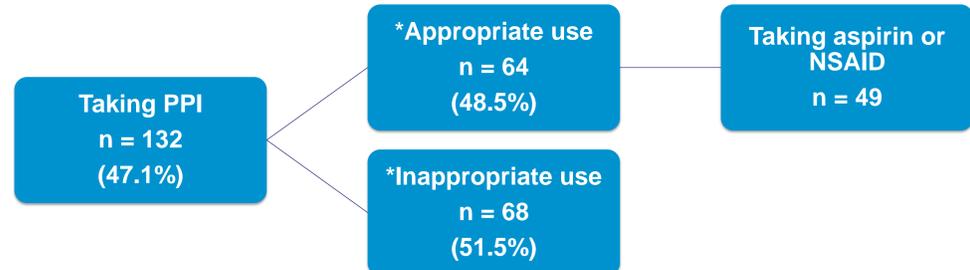


FIGURE 3: Patients taking PPIs on admission

- 84.8% had used the PPI for >1 year
- 15.5% had tried dose reduction

Comorbidity	Prevalence (%)
Osteoporosis	43.9
Magnesium deficiency	18.9
Vitamin B12 deficiency	19.7
Iron deficiency	28.8
Pneumonia	37.9

TABLE 3: Prevalence of comorbidities previously associated with long term PPI use

Benzodiazepines

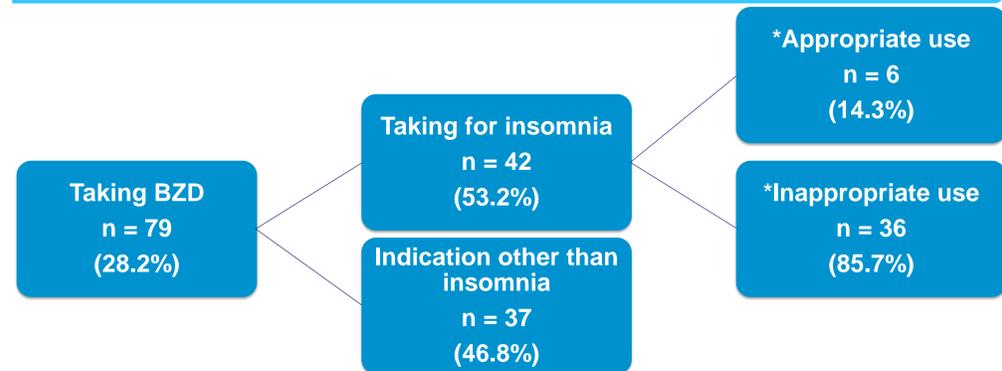


FIGURE 4: Patients taking Benzodiazepines on admission

- 16.7% had tried non-pharmacological strategies
- 83.3% had used the benzodiazepines for >1 year
- 16.7% had tried dose reduction

Antipsychotics

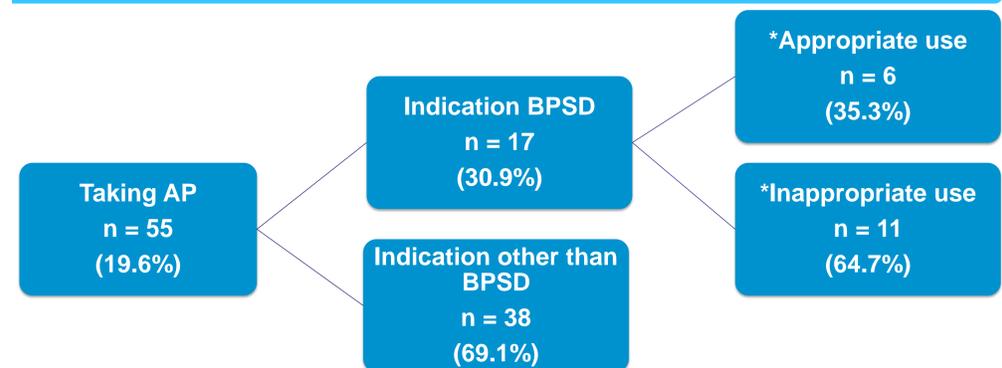


FIGURE 5: Patients taking antipsychotics on admission

- 80% had tried non-pharmacological strategies
- 41.2% had used the antipsychotic for >1 year
- 17.6% had tried dose reduction

Discussion and Conclusion

- High rates of inappropriate medicine use suggest potential for deprescribing
- High rates of comorbidities which have previously been associated with long term PPI use
- Lack of trial of deprescribing as recommended by guidelines in all 3 classes currently
- Highlights the need for ongoing efforts in both the community and hospital settings to raise awareness of the need for and the evidence supporting deprescribing
- Difficulty gathering information required to make a decision regarding deprescribing is a significant barrier in this population

* Based on Canadian Bruyere Institute Deprescribing Guidelines

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