

Prescribing indicators to assess potentially inappropriate prescribing (PIP): Overview of current criteria and development of the PROMPT criteria

Dr. Janine A. Cooper

School of Pharmacy, Queen's University Belfast and HRB Centre for Primary Care Research



Overview

- Background
 - Potentially inappropriate prescribing (PIP)
- The development of the PROMPT criteria
“PRescribing Optimally in Middle-aged People’s Treatments”

Division of Population Health Sciences

Background

- Prescribing is a challenging and complex process
- Appropriate prescribing
- Potentially inappropriate prescribing (PIP)
 - Overprescribing, underprescribing and misprescribing
 - Factors that contribute to PIP

Division of Population Health Sciences

What contributes to PIP?

- Multimorbidity
 - “Presence of two or more long-term conditions”
 - 64.9% of people aged 65-84years ^[1]
 - 30.4% of people aged 45-64 years ^[1]
- Polypharmacy
 - “the ingestion of four or more medications”

Division of Population Health Sciences

Prevalence of PIP

- PIP is prevalent in the older population (> 70 years)
 - Republic of Ireland 36% [2]
 - Northern Ireland 34% [3]
 - United Kingdom 29% [4]

BJCP British Journal of Clinical Pharmacology

Potentially inappropriate prescribing and cost outcomes for older people: a national population study

Caitriona Cahir,¹ Tom Fahey,¹ Mary Teeling,² Conor Teljeur,³ John Feely² & Kathleen Bennett²

¹HRB Centre for Primary Care Research, RCSI Medical School, Division of Population Health Science, 123 St Stephens Green, Dublin 2, ²Department of Pharmacology & Therapeutics, Trinity Centre for Health Sciences, St James Hospital, Dublin 8 and ³Department of Public Health & Primary Care, Trinity College Dublin, Dublin 24, Ireland

Eur J Clin Pharmacol (2012) 68:1425–1433
DOI 10.1007/s00228-012-1249-y

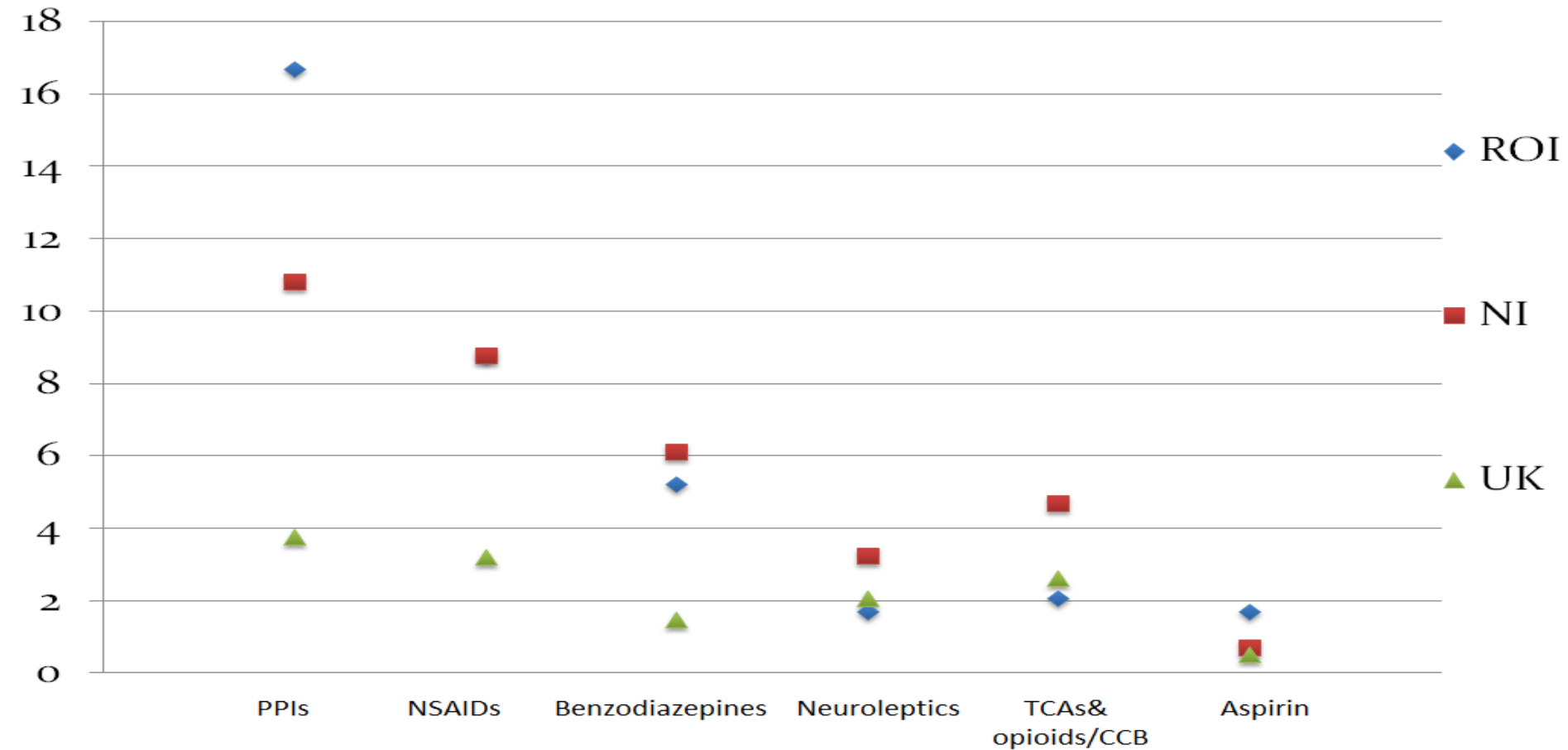
PHARMACOEPIDEMIOLOGY AND PRESCRIPTION

Potentially inappropriate prescribing and cost outcomes for older people: a cross-sectional study using the Northern Ireland Enhanced Prescribing Database

Marie C. Bradley • Tom Fahey • Caitriona Cahir • Kathleen Bennett • Dermot O'Reilly • Carole Parsons • Carmel M. Hughes

Division of Population Health Sciences

The prevalence of the most common STOPP/START PIP indicators across three regions



Division of Population Health Sciences

Moving beyond older people

The PROMPT criteria: Development of prescribing criteria for middle-aged adults

“PRescribing Optimally in Middle-aged People’s Treatments”

Division of Population Health Sciences

Aims

- To develop a set of explicit prescribing criteria
 - For use in middle-aged adults
 - Without clinical information
- To develop these explicit criteria using a Delphi consensus
- To determine the prevalence of PIP amongst middle-aged adults in the North and South of Ireland

Division of Population Health Sciences

Methods

1. Formation of the project Steering Group

- Ten members with a range of specialities
- Academic pharmacists, academic GPs, geriatricians, pharmacoepidemiologists,
- QUB, RCSI and TCD

2. Review of prescribing criteria

- Explicit prescribing criteria for older people *e.g. Beers' criteria*
- Literature search of prescribing criteria
- Prescribing criteria informed by relevance to clinical practice

Division of Population Health Sciences

Methods *cont'd*

3. Screening of prescribing criteria

- Age group (45 - 64 years)
- Application to prescribing datasets in the absence of clinical information
- Drugs commonly prescribed in the UK and Ireland
 - Prevalence figures

4. Two-round Delphi consensus exercise

- GPs, pharmacists, clinical pharmacologists from across the UK and Ireland (n=17)

5. Data collection

- Survey presented in SurveyGizmo and distributed via a web-link

Division of Population Health Sciences

Screen shot of survey

Statement and Rationale

Additional comments

Level of agreement

3. Proton pump inhibitors (PPIs) (e.g. esomeprazole, omeprazole) should not be prescribed at doses above the recommended maintenance dosage for greater than eight weeks

Rationale: A dose reduction or discontinuation is indicated since there is no therapeutic benefit observed with the use of higher doses of PPIs long-term (unless treatment is indicated for rare conditions e.g. Zollinger-Ellison syndrome)

Strongly Disagree Disagree Uncertain Agree Strongly Agree

Comments

4. Esomeprazole or omeprazole should not be used in combination with clopidogrel

Rationale: Esomeprazole and omeprazole reduce the anti-platelet effect of clopidogrel, therefore concomitant use should be avoided

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
Esomeprazole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Omeprazole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments

Division of Population Health Sciences

Methods *cont'd*

6. Data analysis

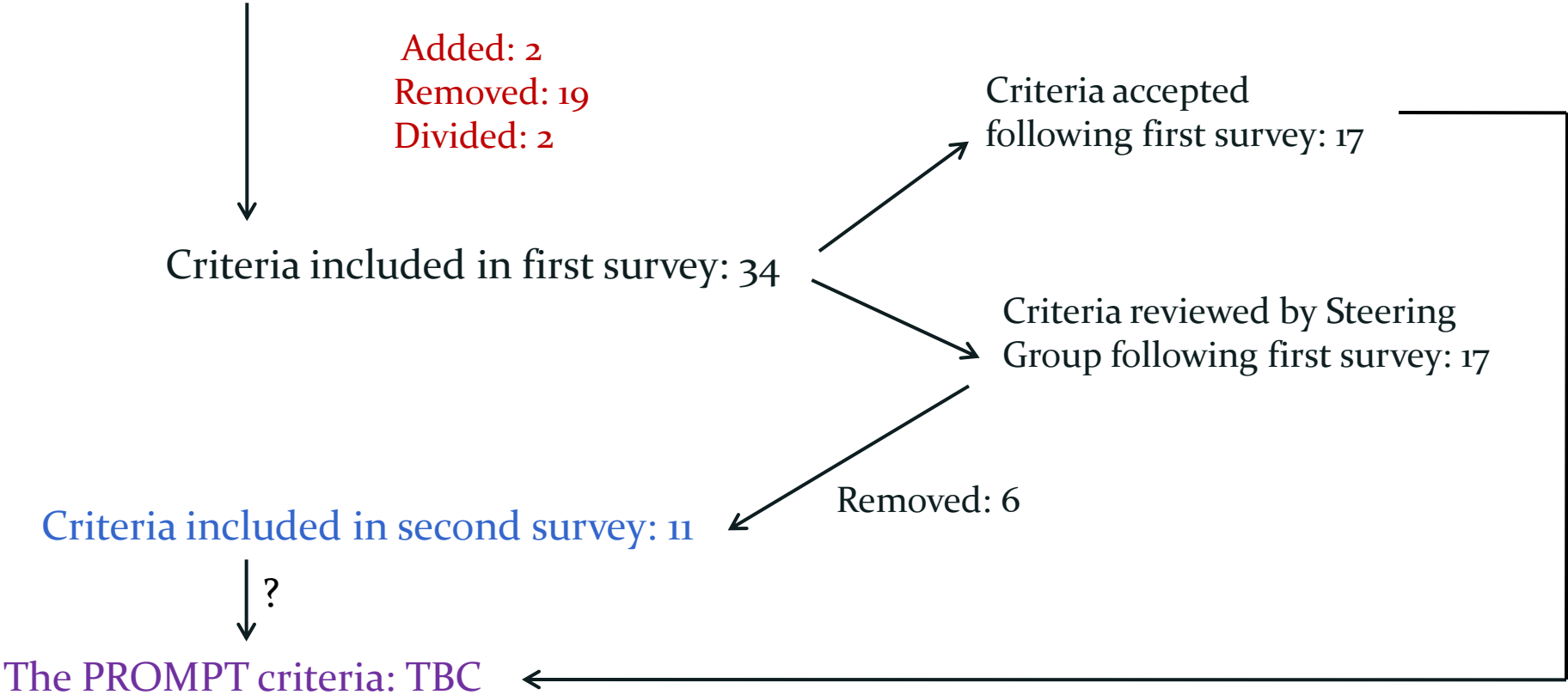
- Level of agreement indicated by panel members using a Likert scale

1	2	3	4	5
Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- Median response and interquartile range (lower and upper quartile) was calculated
 - Lower quartile ≥ 4 – criterion accepted
 - Upper quartile ≤ 2 – criterion rejected
 - Interquartile range included 3 – criterion reviewed by Steering Group

Results

Prescribing criteria screened by Steering Group: 49



Division of Population Health Sciences

Example – Gastro-intestinal system

- Esomeprazole or omeprazole should not be used in combination with clopidogrel
- Rationale: Esomeprazole and omeprazole reduce the anti-platelet effect of clopidogrel, therefore concomitant use should be avoided

	Lower quartile	Median	Upper quartile
Esomeprazole	3	4	4
Omeprazole	3	4	4

Response *'I think that the evidence is equal in both directions - in some circumstances I continue to co-prescribe these agents.'*

Response *'Although I agree I find in practice that prescribers really are not open to suggestions to change the PPI.'*

Division of Population Health Sciences

Example from the PROMPT criteria – Gastro-intestinal system

Esomeprazole or omeprazole should not be used in combination with clopidogrel.

Rationale: Esomeprazole and omeprazole may reduce the anti-platelet effect of clopidogrel and therefore should not be used in combination with clopidogrel. **Other proton pump inhibitors or H₂-receptor antagonists are available which do not have the same potential for interaction.**

Link to evidence:

MHRA Drug Safety Update 2010

Division of Population Health Sciences

On-going work

- Finalise the PROMPT criteria
- Application to prescribing datasets in the North and South of Ireland
 - Enhanced Prescribing Database (Northern Ireland)
 - Primary Care Reimbursement Service (Republic of Ireland)
- Examination and comparison of the prevalence of PIP in both jurisdictions

Division of Population Health Sciences

Acknowledgements



This research is funded by the HRB Centre for Primary Care Research

The PROMPT Steering Group

Dr. Janine Cooper, Professor Carmel Hughes, Dr. Cristín Ryan,
Professor Susan Smith, Dr. Emma Wallace, Dr. Kathleen Bennett,
Dr. Caitriona Cahir, Professor David Williams, Dr Mary Teeling, Professor Tom Fahey

**Thanks to the members of Delphi panel who contributed
to the development of the PROMPT criteria**

Division of Population Health Sciences



References



- [1] Barnett K et al., (2012) Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. *Lancet* 380(9836):37-43
- [2] Cahir C et al., (2010) Potentially inappropriate prescribing and cost outcomes for older people: a national population study. *BJCP* 69(5):543-552
- [3] Bradley M et al., (2012) Potentially inappropriate prescribing and cost outcomes for older people: a cross-sectional study using the Northern Ireland Enhanced Prescribing Database. *Eur J Clin Pharmacol* 68(10):1425-33
- [4] Bradley M et al., (2013) Potentially inappropriate prescribing among older people in three neighboring regions: a comparative study. Under review

Division of Population Health Sciences

