

Polypharmacy, Adverse drug reactions and drug interactions

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Objectives

- Define Polypharmacy and how it impacts patients.
- Identify contributory factors and barriers to discontinuing medications.
- Review the rationale / evidence of safety of discontinuing some long standing medication at the end of life

Case Study

- Young patient with advanced malignancy
- Complex rectal/abdo pain, psychological distress, depression .
- Multiple admissions to hospice for symptom management and support
- Alfentanil, Levomepromazine, Metoclopramide and Midazolam in syringe Driver

Case Study

- Also taking Mirtazapine, Duloxetine, Etoricoxib, Lorazepam, Omeprazole and laxatives
- Assessed by Psych team . Add Venlafaxine and Stop Duloxetine (Cross Titrate) but not commenced.

Case Study

- Patient increasingly anxious, restless and agitated over a couple of days.
- Some Itching
- Sweating and chest tightness
- Groaning, chattering teeth, “Jittery”
- Increasingly ill and changing rapidly

Group work

- Differential Diagnoses
- Management plans

Case Study

- Serotonin Syndrome
- *Diagnosis of exclusion and entirely clinical*
- *Based on the history and physical examination along with history of use of a serotonergic drugs*
- Cyproheptadine (serotonin receptor antagonist)

Case Study

- 1st Admission : Paracetamol, Pregabalin, Oxycodone ,Zopiclone

Polypharmacy

- Prescribing of multiple items to one individual.
- ❑ ***Appropriate polypharmacy*** (complex or multiple conditions ;medicines are prescribed according to best evidence; overall intent to maintain good quality of life, improve longevity and minimise harm)

Polypharmacy

- ❑ ***Problematic polypharmacy*** (multiple medications are prescribed inappropriately, or where the intended benefit of the medication is not realised)
 - the drug combination is hazardous because of interactions
 - the overall demands of medicine-taking, or ‘pill burden’, are unacceptable to the patient
 - medicines are being prescribed to treat the side effects of other medicines where alternative solutions are available to reduce the number of medicines prescribed.

The scale of Polypharmacy

- Average number of items prescribed for each person per year in England has increased by 53.8 %
- From 11.9 items in 2001 to 18.3 items in 2011

The scale of Polypharmacy

- A large Scottish study (~300000)
- 12 % of patients were dispensed 5 or more drugs in 1995
- This increased to 22 % in 2010
- 1.9 % of patients were dispensed 10 or more drugs in 1995
- This increased to 5.8 % in 2010

In Palliative medicine...

Support Care Cancer (2014) 22:1113–1119
DOI 10.1007/s00520-013-2098-7

REVIEW ARTICLE

Reducing potentially inappropriate medications in palliative cancer patients: evidence to support deprescribing approaches

**Julian Lindsay · Michael Dooley · Jennifer Martin ·
Michael Fay · Alison Kearney · Michael Barras**

20% of palliative cancer patients were taking a potentially inappropriate medication (*PIM*) (*Lindsay et al 2014*)

In Palliative medicine...

Published in final edited form as:

J Pain Symptom Manage. 2016 February ; 51(2): 178–183.e2. doi:10.1016/j.jpainsymman.2015.09.003.

The Burden of Polypharmacy in Patients Near the End of Life

Michael J. McNeil, BS, Arif H. Kamal, MD, MHS, Jean S. Kutner, MD, MSPH, Christine S. Ritchie, MD, MSPH, and Amy P. Abernethy, MD, PhD

Center for Learning Health Care (M.J.M., A.H.K., A.P.A.), Duke Clinical Research Institute, Durham; Duke Cancer Institute (A.H.K., A.P.A.), Duke University School of Medicine, Durham; Duke University School of Medicine (M.J.M.). Durham: Division of Medical Oncology (A.H.K..

Secondary analysis of data from a prospective trial of adults with an estimated prognosis of less than 1 year

- Medications were recorded at least monthly from study enrolment through to death
- 244 patients (47.5% had cancer) took an average of 11.5 medications at the time of enrolment and 10.7 at death or study termination

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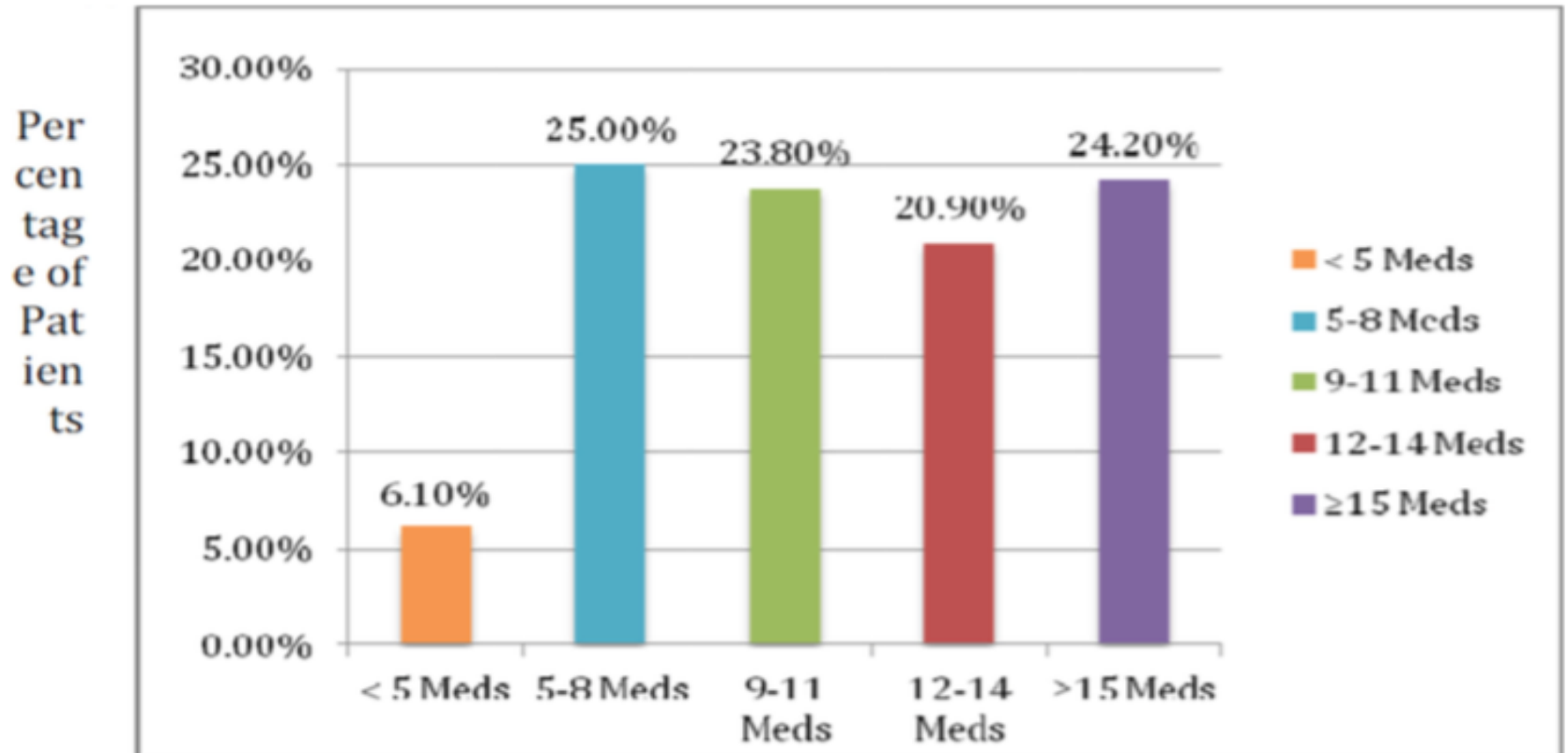


Fig. 1.
Medications per patient at baseline.

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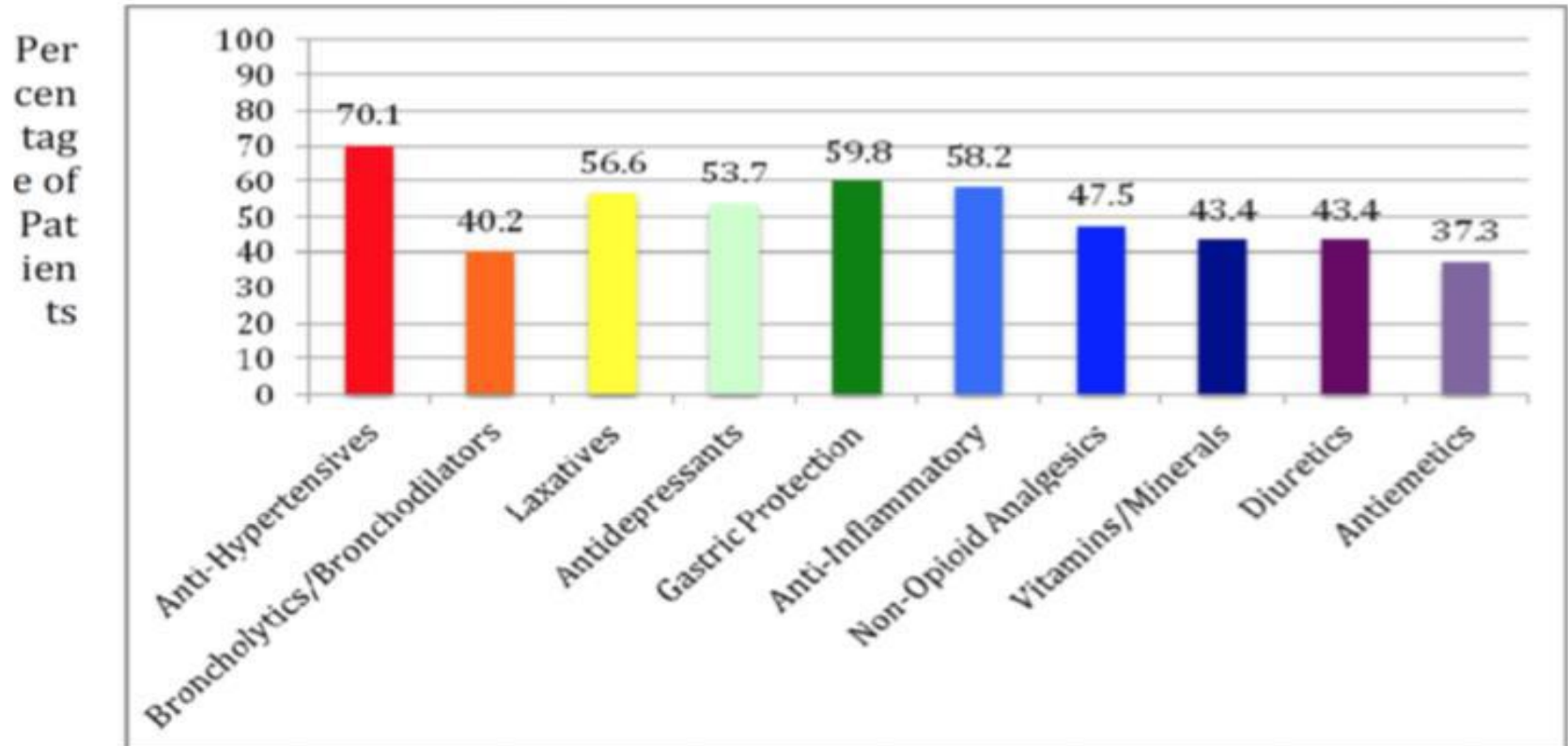


Fig. 2.
Percentage of patients taking the most common medication classes.

Why is it an issue?

- Evidence to suggest negative outcomes for patients, even those taking as few as four drugs
(LeBlanc et al 2015)
- Increased risk of ADEs
 - 13% with 2 medications
 - 58% with 5 medications
 - 82% with 7 or more medications *(Patterson et al 2014)*
- Increased pill burden
- Poor concordance

The issue is

∴ WELL... THE GLAXO PILL PROTECTS MY HEART FROM THE SIDE EFFECTS OF THE PFIZER PILL THAT PREVENTS POTENTIAL LIVER FAILURE DUE TO THE MERCK PILL THAT MINIMIZES THE RISK OF STROKE POSED BY THE NOVARTIS PILL THAT REDUCES BLOOD CLOTS CAUSED BY THE GLAXO PILL.

∴ THE DEVIL OF IT IS I CAN'T REMEMBER THE ILLNESS THAT STARTED ALL THIS...



JOHN DE
THEY SAY I'M A
SCOTTISH MAN

The Drivers

1. Using multiple disease specific guidelines in patients with multiple comorbidities
2. Treating acute problems in patients with multiple comorbidities (adding meds to meds)
3. Multiple specialities involved in treating multiple comorbidities
4. Misinterpreting and mistreating adverse medication reactions (adding meds to meds)
5. Patient and family perception of medication necessity

The Barriers

- Fear that patients may feel HCPs are “giving up hope” and “abandoning” them.
- Physiological dependence to a medication
- Psychological attachment to a medication
- Multiple prescribers and patients being seen by different specialties
- Whose responsibility is it to discontinue certain drugs?
- Fear of adverse drug withdrawal effects, despite the fact these occur much less frequently than ADEs

The Barriers

- And Uncertainty.....



Tools

- Majority of the tools are those used in elderly care:
 - Beers criteria
 - MAI (medications appropriateness index)
 - STOPP (Screening Tool of Older People's potentially inappropriate Prescriptions)
- OncPal
- Cochrane review (Interventions to improve the appropriate use of polypharmacy for older people-Feb 2018)

“It is unclear whether interventions to improve appropriate polypharmacy, such as reviews of patients’ prescriptions, resulted in clinically significant improvement; however, they may be slightly beneficial in terms of reducing potential prescribing omissions (PPOs); but this effect estimate is based on only two studies, which had serious limitations in terms of risk bias.”

What to do?



Or

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**"Is there a pill I can take to feel
better about all the pills I take?"**

What to do?

- Re-Evaluation of Medication Plan when :
 - Goals of care change
 - Risks outweigh benefits
 - ADRs occur
- “What is this medication treating”?
- “What are my patient’s goals of care and does this med support that goal”?
- “What is the time until benefit compared with patient’s life expectancy”?
- “what is the risk versus benefit of the medication”?
- “Can the patient swallow”?

SOME CONSIDERATIONS

Statins

- Evidence from one study that 62% of patients with cancer and a poor prognosis continued to receive statins, often for primary prevention

Research

Original Investigation

Safety and Benefit of Discontinuing Statin Therapy in the Setting of Advanced, Life-Limiting Illness A Randomized Clinical Trial

Jean S. Kutner, MD, MSPH; Patrick J. Blatchford, PhD; Don H. Taylor, PhD; Christine S. Ritchie, MD; Janet H. Bull, MD; Diane L. Fairclough, DrPH; Laura C. Hanson, MD; Thomas W. LeBlanc, MD; Greg P. Samsa, PhD; Steven Wolf, MS; Noreen M. Aziz, MD, PhD; David C. Currow, BMed; Betty Ferrell, PhD; Nina Wagner-Johnston, MD; S. Yousuf Zafar, MD; James F. Cleary, MD; Sandesh Dev, MD; Patricia S. Goode, MD; Arif H. Kamal, MD; Cordt Kassner, PhD; Elizabeth A. Kvale, MD; Janelle G. McCallum, RN, MSN; Adeboye B. Ogunseitan, MD; Steven Z. Pantilat, MD; Russell K. Portenoy, MD; Maryjo Prince-Paul, PhD; Jeff A. Sloan, PhD; Keith M. Swetz, MD; Charles F. Von Gunten, MD, PhD; Amy P. Abernethy, MD, PhD

- Safe to stop. Few patients experienced CV events

Antihypertensives

- Some agents should be continued for symptom management e.g. Heart failure or arrhythmias
- Risk of postural drop, dehydration, falls and other adverse events is often higher in Palliative Care population.
- Reduce dose or stop

Vitamins and Iron

- Vitamin D and calcium for osteoporosis prevention not relevant in most Palliative Care patients.
- Anaemia of chronic disease is often misdiagnosed as iron deficiency leading to unnecessary supplementation and frequent GI side effects.

Antidiabetic medication

- The main role for long-term prevention of micro and macrovascular disease is moot.
- The risk of hypoglycaemia increases with occurrence of anorexia, decreased food intake and weight loss
- Avoiding extremes of blood glucose is usually more sensible than “tight control”.

Osteoporosis medication

- Only if used to treat hypercalcaemia or pain from bone metastases.

To summarise

<https://youtu.be/Lp3pFjKoZl8>

Questions????????