Regional Geriatric Program of Eastern Ontario
Programme gériatrique régional de l'Est de l'Ontario

Strategies to manage medication related falls in older people

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DISCLOSURES

- I have no conflict of interest to declare

LEARNING OBJECTIVES

- Understand intrinsic *vs.* extrinsic fall risk factors
- Understand modifiable fall risks
- Understand an approach to medication review

FALLS IN OLDER PEOPLE

- 1/3 community older people fall per year
- Worldwide problem (Ontario 2.1/14M older than 65-yrs)
- Costly: 0.85-1.5% total health care spending ($13B USD in 2013)
- Impacts in multiple domains – physical, psychological, social

CULPRITS

- Intrinsic factors
  - Age, sex, previous falls, balance & gait impairments,functional and ADL impairments, Parkinson’s, cognitive impairment, stroke, incontinence
- Extrinsic factors
  - Visual impairment, depression, low education, orthostatic hypotension, pain, wandering, dizziness, home hazards, **MEDICATIONS**
  - **Protective** – being married

CAN WE DO ANYTHING?

Non-modifiable

- Age
- Sex
- previous falls
- Parkinson's
- cognitive impairment
- stroke
- low education
- wandering

Modifiable

- incontinence
- visual impairment
- depression
- orthostatic hypotension
- pain
- dizziness
- home hazards
- balance & gait impairments
- functional and ADL impairments
- ***MEDICATIONS***

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FALL RISK INCREASING DRUGS (FRIDs)

- Cardiac meds
- BP meds
- Psychotropic meds
  - Anti-depressants
  - Anti-psychotics
- Benzodiazepines
- Glucose control meds

BEWARE OF DRUGS WITH ANTI-CHOLINERGIC EFFECTS

- Dimenhydrinate (Gravol)
- Diphenhydramine (Benadryl)
- Tolterodine (Detrol)
- Pseudoephedrine (Sudaphed)
- Cyclobenzaprine (Flexeril)
- Methocarbamol (Robaxin)
- Procyclidine (Kemadrin)
- Pramipexole (Mirapex)

DETECTION

- *"Houston, we've had a problem"*
- Heed the warning signs (within the last 2 weeks)
- New meds (prescription & others)
- New dose
- New medical condition
- Hospitalization

MEDICATION REVIEW - ARMOR APPROACH

- Structure / process / outcome (reduce falls)
- **A**ssess – for potentially inappropriate meds
- **R**eview – interactions, adverse reactions
- **M**inimize – non-essential meds
- **O**ptimize – 5 rights: drug, dose, formulation, time, administration
- **R**eassess – evaluate changes

MANAGING FRIDs

- Cardiac meds – time to benefit & goals of therapy
  - Beta-blockers post acute coronary syndrome
  - Calcium channel blockers
  - Anti-arrhythmics
  - Digoxin
  - Anti-anginals
  - Heart failure meds

MANAGING FRIDs

- BP meds – adjust target BP, investigate adherence
  - Diuretics
  - Angiotensin converting enzyme inhibitors
  - Angiotensin receptor blockers
  - Beta blockers
  - Calcium channel blockers
  - Others

MANAGING FRIDs

- Psychotropic meds – risk benefit, watch for cascades
  - Anti-depressants – SSRIs not much safer
  - Anti-psychotics – atypicals not much safer
  - **REVIEW THERAPEUTIC INTENT**
  - Short half-life drugs, trial of stopping, frequent monitoring

MANAGING FRIDs

- **Benzodiazepines – just say NO**
  - **Same goes for ‘z’ drugs (zolpidem, zopiclone)**
- Glucose control meds
  - avoid long half-life drugs
  - metformin can decrease Vit B12 absorption

MEDICATION WITHDRAWAL (DEBRIDEMENT)

- Short half-life meds can safely be discontinued in 1-2 days
- Long half-life meds – flurazepam, diazepam, clonazepam, lorazepam, fluoxetine, doxepine
- No advantage to switch from long to equivalent short half life drug, until you reach tapering dose limitations

EMPOWER STUDY (TANNENBAUM ET AL)

Eliminating Medications Through Patient Ownership of End Results (JAMA Intern Med 2014, 174(6):890)

You May Be at Risk

You are taking one of the following sedative-hypnotic medications:

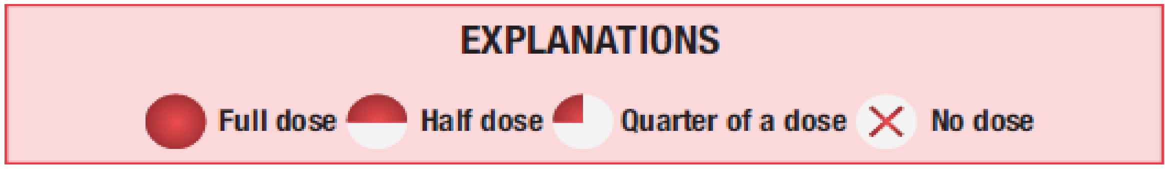
- Alprazolam (Xanax®)
- Chlorazepate
- Chlordiazepoxide-amitriptyline
- Clidinium-Chlordiazepoxide
- Clobazam
- Clonazepam (Rivotril®, Klonopin®)
- Diazepam (Valium®)
- Estazolam
- Flurazepam
- Loprazolam
- Lorazepam (Ativan®)
- Lormetazepam
- Nitrazepam
- Oxazepam (Serax®)
- Quazepam
- Temazepam (Restoril®)
- Triazolam (Halcion®)
- Eszopiclone (Lunesta®)
- Zaleplon (Sonata®)
- Zolpidem (Ambien®, Intermezzo®, Edluar®, Sublinox®, Zolpimist®)
- Zopiclone (Imovane®, Rhovane®)

EMPOWER STUDY

TAPERING-OFF PROGRAM

We recommend that you follow this schedule under the supervision of your doctor or your pharmacist.

WEEKS	TAPERING SCHEDULE							✓
	MO	TU	WE	TH	FR	SA	SU	
1 and 2	Half dose	Full dose	Full dose	Full dose	Half dose	Full dose	Full dose	
3 and 4	Half dose	Full dose	Half dose	Half dose	Full dose	Half dose	Half dose	
5 and 6	Half dose	Half dose	Half dose	Half dose	Half dose	Half dose	Half dose	
7 and 8	Half dose	Quarter of a dose	Half dose	Half dose	Quarter of a dose	Half dose	Half dose	
9 and 10	Half dose	Quarter of a dose	Half dose	Quarter of a dose	Half dose	Quarter of a dose	Half dose	
11 and 12	Quarter of a dose	Quarter of a dose	Half dose	Quarter of a dose	Quarter of a dose	Half dose	Quarter of a dose	
13 and 14	Quarter of a dose	Quarter of a dose	Quarter of a dose	Quarter of a dose	Quarter of a dose	Quarter of a dose	Quarter of a dose	
15 and 16	No dose	Quarter of a dose	No dose	No dose	Quarter of a dose	No dose	Quarter of a dose	
17 and 18	No dose	No dose	No dose	No dose	No dose	No dose	No dose	



ENGAGE YOUR HEALTH CARE TEAM

- Pharmacist – meds review
- Nurse – BP, weight
- Physiotherapist – gait & balance
- Occupational therapist – cognition, ADLs
- Social worker – socioeconomic factors
- Dietician – dry mouth, swallowing complaints, appetite disturbance

CONCLUSIONS

- Aim for **LESS**, rather than **NO** falls
- Meds are a *modifiable extrinsic* fall risk factor
- Actively listen to your team members
- Patients are smarter than we think
- **ARMOR** yourself with a meds review
- Review medications frequently, especially after a hospital stay or Emergency Room visit

THANK YOU !

Questions & Comments

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