Strategies to manage medication related falls in older people
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**
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)
- Assess – for potentially inappropriate meds
- Review – interactions, adverse reactions
- Minimize – non-essential meds
- Optimize – 5 rights: drug, dose, formulation, time, administration
- Reassess – 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)


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®)
- Lorazepam (Sonata®)
- 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.

<table>
<thead>
<tr>
<th>WEEKS</th>
<th>MO</th>
<th>TU</th>
<th>WE</th>
<th>TH</th>
<th>FR</th>
<th>SA</th>
<th>SU</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 and 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 and 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 and 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 and 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 and 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 and 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 and 14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 and 16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 and 18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EXPLANATIONS

- Full dose
- Half dose
- Quarter of a 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

allenhuang@toh.ca