Antihypertensive Deprescribing in long-term Care (ADCare): Protocol for a Randomized Controlled Trial

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**Results:** primary outcomes

**Context and Objective**
- Studies suggest deprescribing antihypertensive medication (AH) in frail older adults is beneficial
- RCTs are needed to confirm this finding

**Objective:** Determine if deprescribing AH in frail older adults will lead to a change in time to all cause mortality compared to those whose AH is not deprescribed.

**Design**
- Randomized controlled
- Open label
- Parallel group
- Event driven

Participants: Alberta long-term care residents with hypertension on AH

**Timing:**
- Year 1: deprescribe AH
- Year 2-3: monitor outcomes, trial will end when 247 events (deaths) occur

**Outcomes**
- **Primary:** all cause mortality
- **Secondary:** hospital/emergency visit, non vertebral fracture and cost
- **Process:** AH and blood pressure changes
- **Exploratory:** falls, cognition, depression & activities of daily living
- **Safety:** composite of emergency, hospital & physician callbacks with specific diagnoses

**Innovative**
- RCT on deprescribing AH in the frail older adult population
- Data steward – Alberta Health Services Research Data Services - will select, randomize and assess outcomes using administrative data
- Facility pharmacist will lead the deprescribing
- Creation of an AH deprescribing algorithm

**Deprescribing Algorithm**

**Why is resident taking antihypertensive (AH)?**
- Indication unknown
- Hypertension
- Congestive Heart Failure
- Symptom control

**Recommend Deprescribing**
- Taper to a systolic of 140 ± 5 mm Hg
  - Decrease by 25 – 50% of the previous dosage every second week
- Monitor blood pressure (BP) for the duration of taper and at least two weeks after taper completed
  - Monitor BP with the regular technique used at the long-term care facility
  - Take BP in seated position when possible

<table>
<thead>
<tr>
<th>BP</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;135</td>
<td>Continue taper</td>
</tr>
<tr>
<td>135–145</td>
<td>Deprescribing completed</td>
</tr>
<tr>
<td>146–150</td>
<td>Monitor BP for 2 more weeks</td>
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<tr>
<td>&gt;150 or still 146–150</td>
<td>Resume previous dose</td>
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</tbody>
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**Individual evaluation each AH in the following order:**
- (1) Alpha blockers
- (2) Central alpha agonists
- (3) Calcium channel blockers
- (4) Beta blockers
- (5) Renin angiotensin inhibitors
- (6) Diuretics

* If on combined AH, separate and evaluate each component individually

**Sub study**
- To access barriers and facilitators of this initiative
- Survey to be given to facility pharmacists before & after the intervention
- Survey follows the RE-AIM framework (reach, effectiveness, adoption, implementation & maintenance)

**Trial process**
- **Intervention group:** Facility pharmacist will deprescribe AH per the protocol
- **Control group:** Will receive usual care
- Feasibility study: will be conducted at a pilot site prior to the study starting

**Statistics**
- **Primary outcome:**
  - Time to event survival analysis with cox proportional hazard model
  - Adjusted for covariates
- **Other outcomes:**
  - Secondary & safety: cox proportional hazard model
  - Process: Student’s t-test
  - Exploratory: logistic regression

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*For instance: migraines, essential tremor, tachycardia, angina, and benign prostate hypertrophy.

**Pharmacist to check with care team for contraindications prior to deprescribing furosemide.**