SharedCare
Partners for Patients

YOU DECIDE

EVIDENCE SUMMARY

Antihypertensive use in the elderly in Residential Care

Focus – is on decisions whether to continue, escalate, or reduce medications that reduce blood pressure as initiating such mediations occurs much less commonly. However, it is useful to know the evidence for benefit and harms to help determine a target BP for each resident.

EVIDENCE FOR USE

PREDOMINANTLY PRIMARY PREVENTION IN PATIENTS OVER THE AGE OF 80, BP<150: HYVET* (Benefits annualized) (Ref 1)

Benefits

- **~98% saw no benefit**
- **0.5% avoided fatal stroke**
- **1% avoided heart failure**
- **1.2% avoided death**

Harms

The study reported fewer (but not statistically significant) adverse events in the intensive (<150mmHg) group but did not break this down into specific types/severity

In more detail…

		BP target >150mmHg	BP target <150mmHg		
Population	**Outcome**	**ANNUALISED EVENT RATES (%)**		**Risk Diff (%)**	**NNT (1 yr)**
No prev stroke, CCF, dementia or NH; treatment: Indapamide ~50% reached target BP.	Fatal or non-fatal stroke	1.24	1.77	0.53	189
	Heart Failure	0.53	1.48	0.95	105
	All-cause mortality	4.72	5.96	1.24	81

* HYVET is the only placebo controlled RCT of blood pressure treatment in patients aged 80 and older and therefore is the evidence source profiled, even though nursing home residents were excluded. Systematic reviews provide further evidence. (references 2 and 3)

SECONDARY PREVENTION IN PATIENTS WHO HAVE HAD A PRIOR STROKE <65 YEARS (no specific studies in the elderly) (PROGRESS study[4])

Benefits

- **96% saw no benefit, 3.8% avoided stroke, 1.9% avoided cognitive decline**

In more detail…

		Placebo	ACE +/- Diuretic		
Population	**Outcome**	**ANNUALISED EVENT RATES (%)**		**Risk Diff (%)**	**NNT/NNH**
Prior Stroke, <65 years, 68% male, 40% prev ↑BP, mean BP↓ 4.9mmHg, effect with ACE and diuretic combo, not ACE alone	Stroke	3.53	2.58	0.95	105
	Cognitive Decline[5] (3 Point Redn in MMSE)	2.80	2.32	0.48	209
	Major Coronary Events*	1.29	0.97	0.33	303
	Overall Mortality	2.68 NOT	2.57 STATISTCIALLY	0.11 SIGNIFICANT	909 DIFFERENCE

*A 2009 meta-analysis on hypertension treatment after stroke with subsequent studies did not find a significant reduction in the rate of myocardial infarction but did confirm the benefit after stroke. (6)

Harm - Serious harms from antihypertensive drugs are not reported in a way that can be analyzed (7). This is a very frail population who often have sarcopenia and joint pain with reduced mobility and are at higher risk of harms of over-controlled blood pressure including orthostatic hypotension as a contributor to increased fall risk, as well as the potential progression of cognitive and renal impairment. (8-10).

Practice Points

- Is the benefit greater than the potential harm? Review the medications that affect blood pressure, (some are not being used as anti-hypertensives, per se), in the residential care environment in the context of life expectancy and goals of care, as well as from the perspective of the potential aggregation of adverse effects from multiple meds that may affect mobility/function and quality of life. Consider BP medication changes carefully in residents who have had proven significant cardiovascular events, particularly stroke and acute coronary syndrome or where such medications may be used for indications other than hypertension (e.g. atrial fibrillation).
- BP reduction/discontinuation-what BP target? There are no studies guiding BP med discontinuation and target BP so one needs to look at BP targets for initiation and treatment. The 2017 Hypertension Canada guideline no longer makes an age distinction based upon the HYVET and SPRINT studies which included elderly with mild frailty but excluded nursing home residents. This group recommends treatment initiation for SBP >160 (no macrovascular disease or CV risk factors) and for SBP 140-160 when those factors are present. (11, 12) However, a recent meta-analysis indicates that there are few data in the elderly with multi-morbidity to directly help distinguish benefits of SBP of 140 versus 150 mm Hg. (3) Therefore, a dosage reduction or discontinuation to SBP of 150 could be a target in the elderly, with potentially an even higher target BP in the more frail elderly, as the adverse event risk increases. (13)
- Steps in reducing/discontinuing medications that affect blood pressure (14):
    - Determine an accurate BP - sitting rather than supine and then, if possible, sitting to standing for postural BP
    - Set a BP target for an individual patient/resident - this includes assessing for presence of and/or risk for adverse effects
    - Identify all the meds that affect BP
    - Decide on whether/which meds can be adjusted, often starting with dosage reduction, and then leading to discontinuation of specific meds
    - Monitor and review per target set (the same that you would do in office practice)…
        - Halve drug dose at weekly intervals until the lowest available dose is reached and then stop
        - Monitor BP for the development of withdrawal side effects: palpitations/heart rate-rhythm, recurrent hypertension, angina, and heart failure symptoms.

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