

# HYPERTENSION IN THE ELDERLY

## A BALANCED APPROACH

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# DISCLOSURE

- I have not accepted any money for myself from any pharmaceutical company in the 21<sup>st</sup> century
- I have accepted money in the form of unrestricted educational grants
- I have had patients in whom I have regretted treating their hypertension



# OBJECTIVES

- be able to select patients who would benefit from antihypertensive treatment
- be able to select appropriate treatments
- be able to detect side effects of treatment



# Question 1:SHEP STUDY

This study proved that:

- A. Sheep do not benefit from blood pressure control
- B. Systolic hypertension (SH) is inevitable in the elderly and should not be treated
- C. SH treatment results in severe side effects
- D. SH treatment reduces stroke incidence



# ‘PREHISTORIC KNOWLEDGE’



# PRE 'SHEP'

What we knew (mostly from Framingham study):

- Hypertension was common in the elderly
- It was mostly systolic
- It was strongly associated with CVS morbidity (only age had a stronger association)
- It was unknown if treatment would result in benefit (already known for systolic/diastolic hypertension of younger adults)



# SHEP STUDY (JAMA, June 1991)

## What we learned:

- Older people can tolerate antihypertensives
  - BP medications (chlorthalidone) are effective in lowering blood pressure
  - Strokes were prevented—30 strokes/1000 patients over 5 years (36% relative risk reduction)
    - Comparable to studies of diastolic hypertension in younger patients
  - Cardiovascular morbidity was decreased (predominantly CHF)
- 



# CAVEATS

- Only 1% of those screened were enrolled (447,921 screened, 4736 randomized, 90% of exclusions for not meeting BP requirements). Question of generalizability.
- 2<sup>nd</sup> line drug (atenolol) since discredited
- Only a trend to decreased total mortality and CVS mortality (EWPHE and STOP did find mortality benefit)
- Most patients relatively young, but no difference in subgroup analyses









## Question 2: Which Antihypertensive?

Which of the following statements is correct?

- A. All antihypertensives are equally effective in the elderly.
- B. The only important side effect is postural hypotension with falls.
- C. Heartburn is a minor side effect of some medications
- D. Falling is a worse disease than hypertension in frail older adults



# WHICH ANTIHYPERTENSIVE?

- British MRC trial (BMJ February 1992)
  - Diuretics decrease stroke and CHF in older adults but beta blockers do not
  - Confirmed by at least two meta-analyses
- ALLHAT (JAMA December 2002)
  - $\alpha$ -blockers not good at preventing CHF
  - Thiazides out-performed ACE-I and CCBs
  - Elderly specific trial in NEJM February 2003, ACE-I beat diuretics
- LIFE (Lancet September 2002)
  - Losartan beats atenolol (marketing study only)



- HYVET (NEJM May 2008)
  - Patients over 80
  - Diuretic +/- ACE-I
  - Improvement in real end points

Was the game on for good with the rules established?





# THE CONTRARY OPINIONS

Community cohort studies:  $\uparrow$ BP= $\uparrow$ survival

- Finland (BMJ 1988)
- Britain (BMJ 1989)
- USA (JAGS 2001)
- USA (JAGS 2007)
- Sweden (JAGS 2008)

The quality of the studies have improved over the years (correcting for confounders), yet relationship persists

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# OTHER OUTCOMES

- Medication use and non CVS outcomes in older men (JGIM 2007)
  - ↑BP meds resulted in ↓physical performance
- Leiden 85-Plus study (JAGS 2012)
  - ↑BP confers ↑resilience to physical and cognitive decline, particularly in those with pre-existing physical disability
- Association with falls
  - Too many articles to list (? Initiation most hazardous)





# WHY THE DISCORDANCE?

- When well designed studies disagree, patient selection is often the reason
- RCTs are the 'gold' standard, but participants are not necessarily typical patients, and patient care provided is not always generally available
- Community Cohort studies include all comers but require sophisticated analysis to correct for confounders

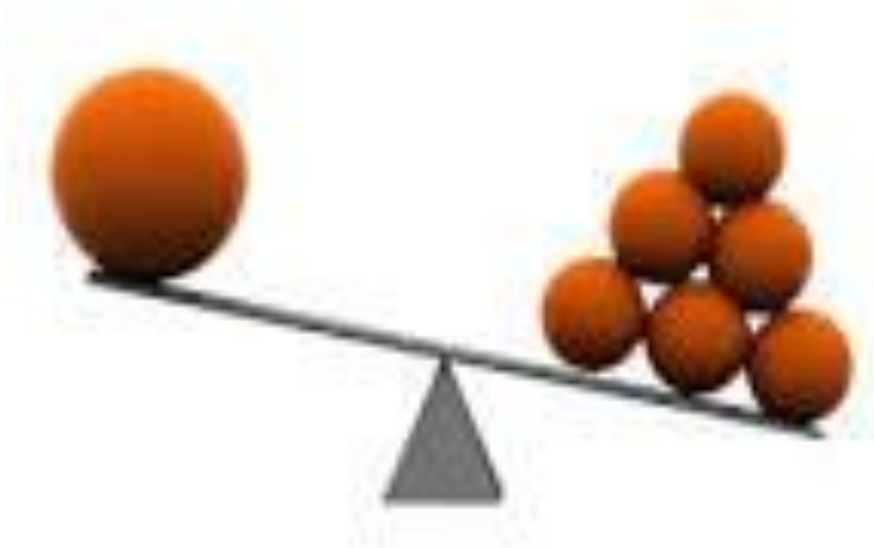


Conclusion is that some older patients are helped by antihypertensive medications while others are harmed. The questions for the clinician are as follows:

1. Which older patients should I treat?
2. How should I treat hypertension in the elderly?
3. What should I monitor?



# A MATTER OF BALANCE



# WHICH OLDER PATIENTS SHOULD I TREAT?

- Ensure proper technique and cuff size
- Ensure that hypertension is sustained—multiple readings separated by time (home or ambulatory monitoring can be helpful)
- Usually only treat if BP>160 systolic



# WHICH OLDER PATIENTS SHOULD I TREAT?

Which measure:

- ‘gestalt’
- Frailty index
- Calculated life expectancy
- Cognitive impairment
  - Depends on degree and type
- Walking speed
  - Related to cognition



# HOW SHOULD I TREAT HYPERTENSION IN THE ELDERLY?

- Evidence suggests that physical activity and weight control are also effective in the elderly
- Pharmacological management:
  - Beta blockers – OUT since British-MRC trial
  - Alpha blockers- OUT since ALLHAT
  - Diuretics, ACE-I's, CCB's – IN
  - ARB's – possibly only if ACE-I not tolerated



# WHAT SHOULD I MONITOR?

## General:

- Falls
- Falls
- Falls
- BP (including at times postural)
- Dizziness (especially postural)
- Lightheadedness (syncope)
- Falls

Falls are a worse disorder than hypertension!



# DRUG MONITORING

- Diuretics
  - Electrolytes, blood sugar, renal function (not efficacious if significantly impaired)
- ACE-I's
  - Electrolytes, renal function
- CCB's
  - Constipation, ankle swelling, heartburn





# GOLDLIST APPROACH

## DIURETIC

- Standard first choice
- Tiny older people start at 6.25/day, usual dose is 12.5/day
- Can increase to 25 mg/day maximum, but if adding another medication, decrease back to 12.5

## ACE INHIBITOR

- First choice if evidence of left ventricular dysfunction or diabetes
- Excellent combination with a diuretic
- If troublesome cough, replace with an ARB



# TARGET

- From SHEP study, goal was under 160 (or at least 10 mm drop from baseline)
- After years of controversy, this target has been re-established
- For 'young' old with other risk factors, some have argued for tighter control
- Dizziness and falls are worse than hypertension in the elderly



# ROLE OF CALCIUM CHANNEL BLOCKERS

- Excellent in controlling blood pressures
- Spectrum of side effects: constipation, heartburn, ankle edema, are particularly troublesome in older patients
- Amlodipine is CCB of choice. Reserve diltiazem for rate control. Nifedipine has most side effects and should not be used



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# QUESTIONS

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"Who was first?"

