

# Hypertension Medications at the End of Life

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# Disclosures & Guidance

- No financial disclosures related to this talk
- Always consider the individual patient when adjusting medications
- Collaborate with physicians and cardiologists

# Objectives

- Define impact of hypertension
- Increase confidence and comfort in discussing hypertension medications with patients
- Identify the risks vs. benefits for using hypertension medications in hospice

# General CMS Guidance

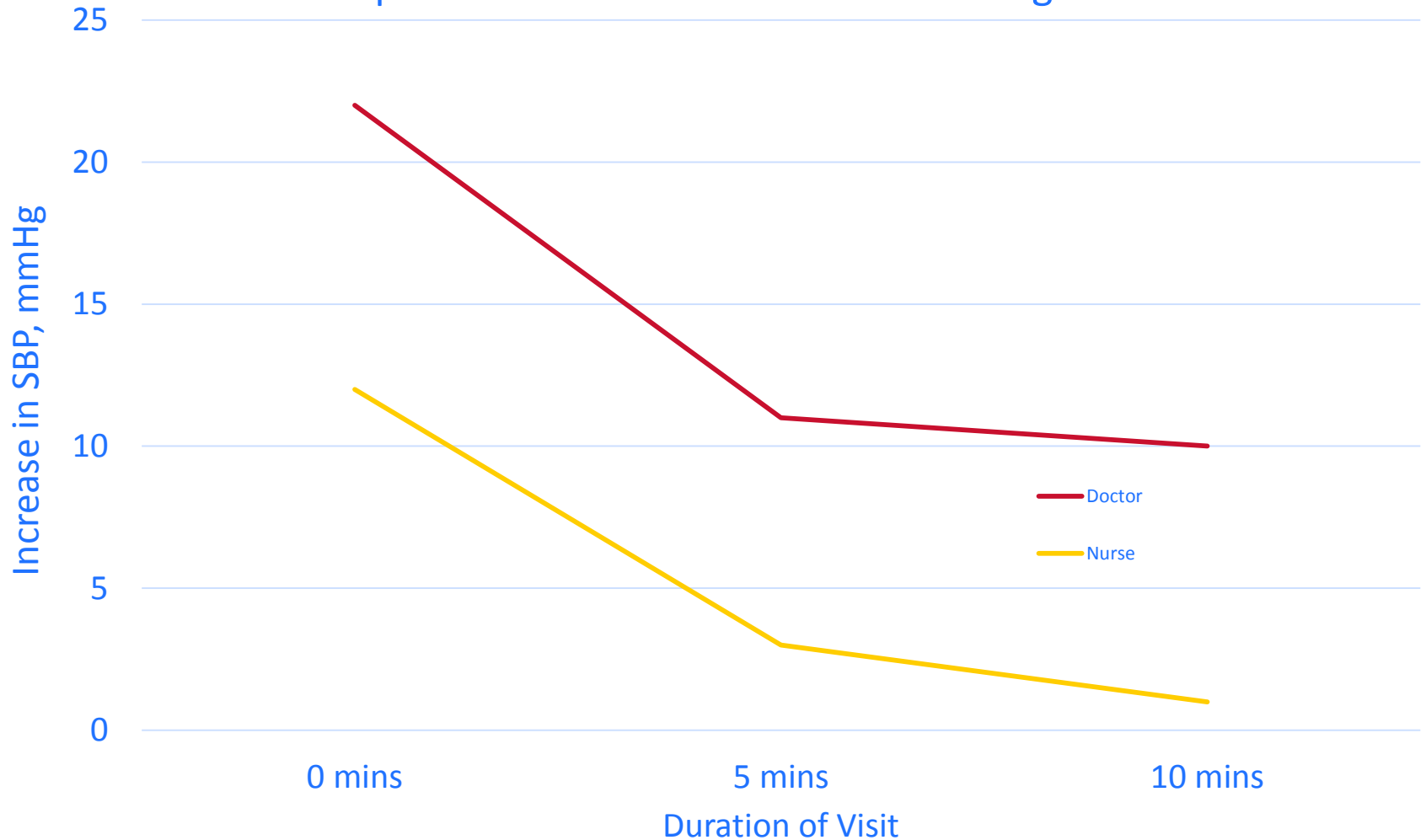
- “hospice programs to provide individuals under hospice care with drugs and biologicals related to the **palliation** and **management of the terminal illness** as defined in the hospice plan of care”
- Palliative medications:
  - Relieve current symptoms of disease
  - Provide comfort to the patient
  - No intention of prolonging life
  - No intention of promoting cure
  - No intention of achieving long-term positive outcomes
- Non-Palliative medications:
  - Curative only
  - Preventative or prophylaxis
  - Associated with long-term therapeutic outcomes

# What is Hypertension?

- Normal BP: <120 AND <80
- Pre-hypertension: 120-139 OR 80-89
- Hypertension (1) 140-159 OR 90-99
- Hypertension (2) 160+ OR 100+

# White Coat Hypertension

Impact of doctor or nurse on measuring BP



# Emergency vs Urgency

- Hypertensive Emergency
  - Diastolic over 120 with end-organ damage
- Hypertensive Urgency
  - Diastolic over 120 with no symptoms
  - No benefit from rapid reduction in blood pressure
- Caution in lowering diastolic quickly
  - In elderly can cause heart attack, stroke

# Risk Factors

- Age
- Obesity
- Family History
- Race
- High sodium diet
- Excessive alcohol
- Inactivity
- Diabetes
- Dyslipidemia
- Depression
- Medications
  - Contraceptives
  - NSAIDS
  - Antidepressants
  - Steroids
  - Stimulants
- Illicit drugs



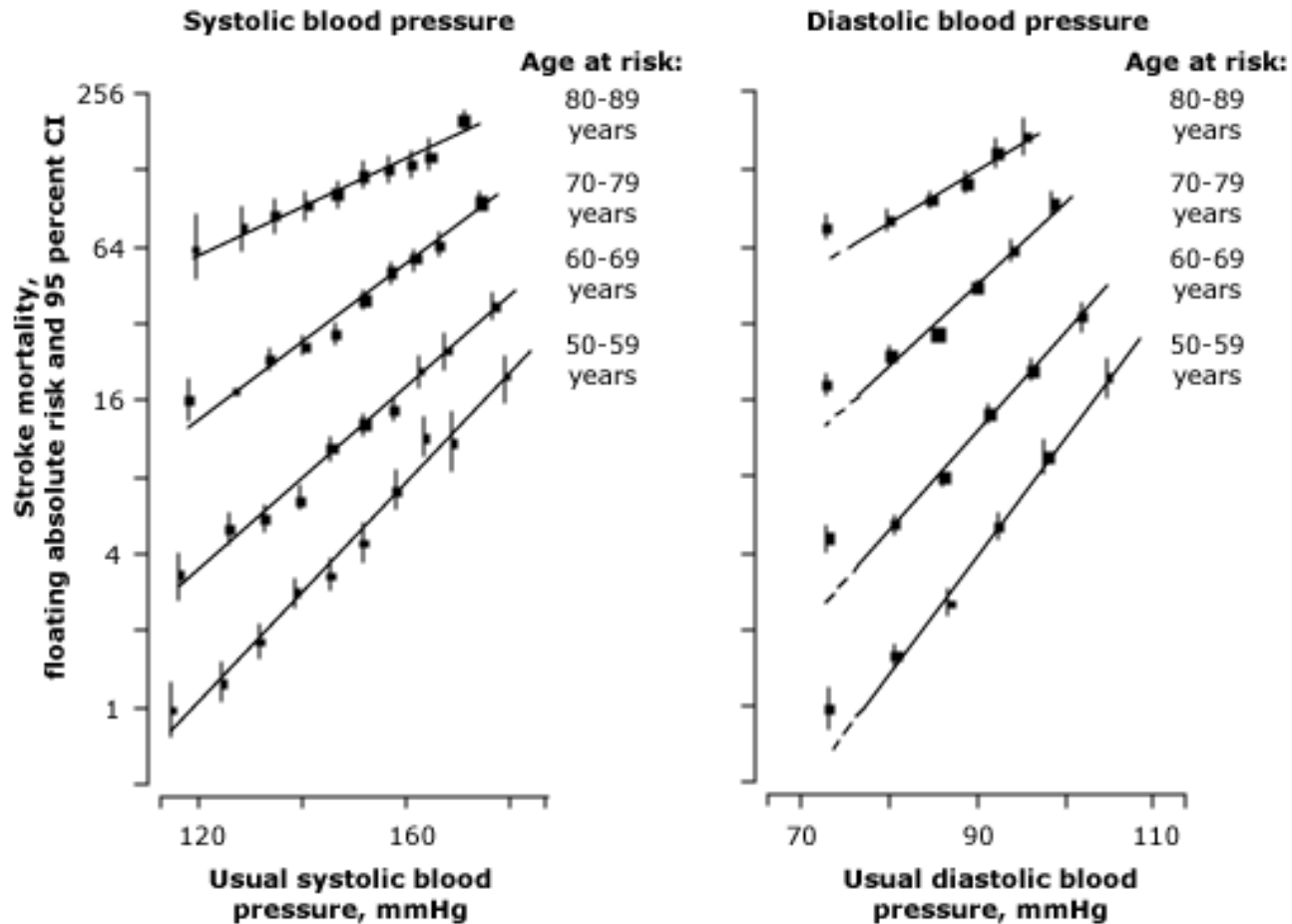
# Complications of Hypertension

- Left ventricular hypertrophy
- Myocardial infarction
- Heart failure (ischemic and non-ischemic)
- Ischemic stroke
- Intracerebral hemorrhage
- Chronic kidney disease

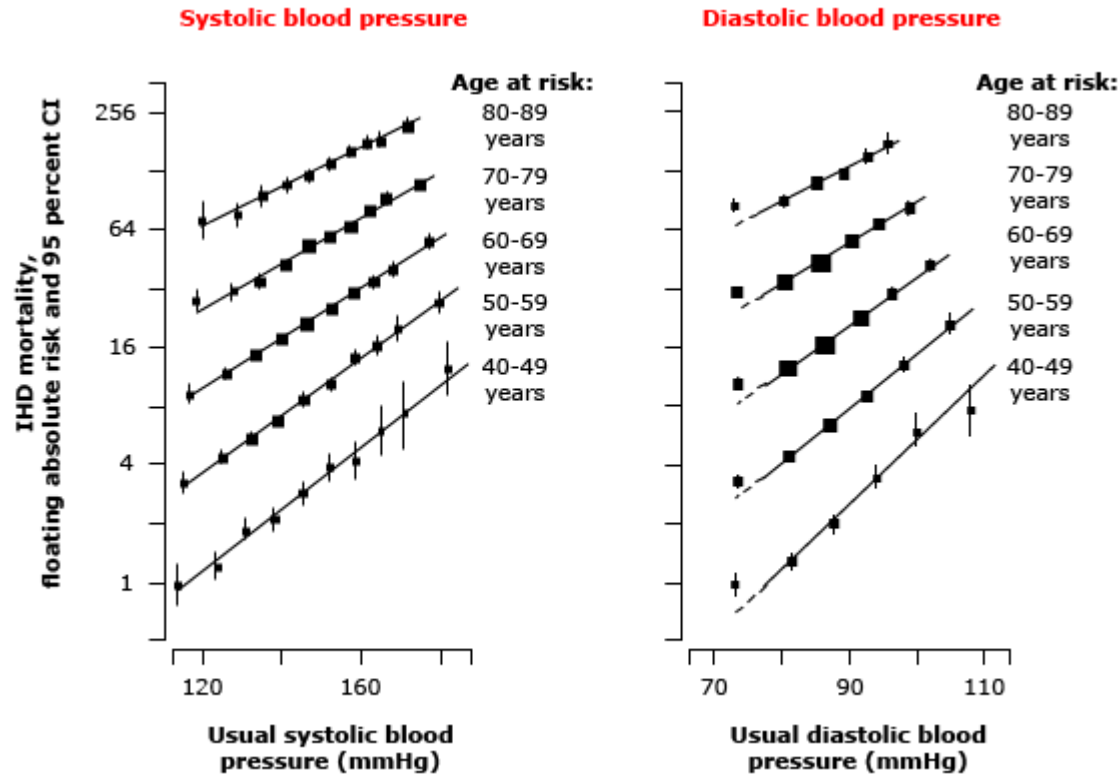
# Risk of Stroke in Hypertension

- Meta-analyses shows reducing BP decreases stroke risk if you already had one but...
  - Follow-up in these studies is 2-4 years
  - 12.1% versus 14.7 % - major cardiovascular events
  - 9.0% versus 9.6% - recurrent stroke

# Stroke Mortality (BP & Age)



# CV Mortality (BP & Age)



# Non-Pharmacologic Approaches

- Dietary salt restriction
- Weight loss
- DASH Diet
- Aerobic exercise
- Limited alcohol
- Education

# Adherence to Hypertension Meds

- Ask patient/family about current/past adherence
- Check medication bottles (last refill?)
- Complete nonadherence as high as 25%
- Avoid the term non-compliant

# Classes of Hypertension Meds

- ACE inhibitors
- Angiotensin II receptor blockers (ARBs)
- Beta-blockers
- Calcium channel blockers
- Central agonists
- Diuretics
- Other

# Combo Medications

- Mainly used to increase adherence
- Can be more expensive overall
- Hard to titrate down or up



# Comparing Meds

Drug Class	NYHA III or IV	Improved Survival	Reduces Hospital Admission	Improves Function
Diuretic	Yes	No	Yes	Yes
ACEI/ARB	Yes	Yes	Yes	Yes
Spirolactone	Yes	Yes	Yes	Yes
Beta Blocker	Yes	Yes	Yes	Yes
Digoxin	Yes	No	Yes	Yes

# ACE Inhibitors

- Generic name usually ends in –pril
  - Enalapril, captopril, lisinopril, quinapril
- If for BP alone, consider stopping
- Improves survival, less hospital stays in HF
- Can cause high/low K depends on other meds
- Common side-effect: Cough, loss of taste, rash
- Most studies excluded elderly patients

# ARBs

- Generic name usually ends in –sartan/sarten
  - Candesartan, irbesarten, valsartan, losartan
- Works similarly to ACE inhibitors
- If for BP alone, consider stopping
- Improves survival, less hospital stays in HF
- Common side-effect: dizziness

# Beta-blockers

- Generic name usually ends in –olol
  - Metoprolol, atenolol, propranolol, timolol
- If for BP alone, consider stopping after taper
- If for A.Fib/Flutter rate control – likely continue
- Improves survival, less hospital stays in HF
- Common side-effect: Fatigue, insomnia, depression, cold hands/feet, impotence

# Calcium Channel Blockers

- Generic name usually ends in –ipine
  - Amlodopine, felodipine
- Also verapamil, diltiazem
- If for BP alone, consider stopping after taper
- If for A.Fib/Flutter rate control – likely continue
- Does not improve survival, hospital stays in HF
- Common side-effects: palpitations, edema, constipation, headache, dizziness

# Central Agonists

- Rarely used outside of clonidine
- No help in survival or hospital stays in HF
- Used for refractory hypertension
- Clonidine can also be helpful in pain control
- Comes in patch form – helpful if no longer taking PO medications
- Titrate down before stopping

# Diuretics

- Potassium-sparing – spironolactone, triamterene
  - More helpful for heart failure
- Potassium-wasting – furosemide, bumetanide
  - More helpful for heart failure
- Thiazide – hydrochlorothiazide (keeps Ca)
  - Most helpful for BP
- Ask about nocturia (falls!), urine output

# Other

- Alpha-blockers – doxazosin, terazosin
  - Minimal impact on HTN or HF
  - Can cause dizziness, fast HR
- Alpha-2 Receptor Agonists - methyldopa
  - Minimal impact on HTN or HF
  - Can cause dizziness, fast HR
- Combined alpha/beta blockers – carvedilol, labetalol



# Non-BP indications

- Heart failure – ACE, ARB, beta blocker, diuretic, aldosterone antagonist
- Angina – beta blocker, Ca-channel blocker
- Atrial fib/flutter – Beta blocker, Ca-channel blocker

# 2 for 1 Effects

- BPH – Alpha blocker
- Essential tremor – Beta blocker
- Hyperthyroidism – Beta blocker
- Migraine – Beta blocker, Ca – Channel blocker
- Osteoporosis – Thiazide diuretic
- Raynaud's – Calcium channel blocker

# Contraindications

- Angioedema – ACE
- Asthma– Beta blocker
- Depression – reserpine
- Liver disease – methyldopa
- Pregnancy – ACE, ARB, renin inhibitor
- Heart block – Beta blocker, Ca-channel blocker

# Generally Avoid

- Depression – Beta blocker, central agonists
- Gout – Diuretic
- Hyperkalemia – ACE, ARB, renin inhibitor
- Hyponatremia – Thiazide diuretic
- Renovascular disease – ACE, ARB, renin inhibitor

# Discontinuation Pearls

- Consider discontinuation trials
- After stopping 5-55% of patients remain normotensive for 1-2 years
- Consider tapering down high doses over a few weeks – consult your pharmacist
- Short-acting beta-blockers (propranolol) or clonidine can have a fatal withdrawal syndrome
  - Can cause angina or heart attack
  - Taper down to lowest dose before stopping

# Talking with Patients and Families

- Some patients and families happy to stop medications
  - Be careful they do not stop too quickly!
- Understand why they are reluctant to stop if deprescribing indicated
  - What do they hope the medicine will do?
  - Discuss long-term versus short-term benefits
  - Ask to collaborate with trusted prescribers

# Collaborating with Cardiology

- Many patients have long relationships with their cardiologist
- Good to inquire patient's perspective
- When calling cardiologist office:
  - Have updated med list
  - Multiple recent BP readings
  - Summary of symptoms and function

# Summary

- Understand why patients is taking the med
  - They aren't just all 'heart meds'
- Work with pharmacy if tapering needed
- Assess for side effects to these medications
  - May help reluctant family/patient to adjust med
- Consider trials of lower doses or stopping



# What is Deprescribing?

Medications that were good then, might not be the best choice now. Deprescribing is part of good prescribing – backing off when doses are too high, or stopping medications that are no longer needed.



Use of some medication, especially as people get older or more ill, can cause more harm than good. Optimizing medication through targeted deprescribing is a vital part of managing chronic conditions, avoiding adverse effects and improving outcomes.