Board Review: Hypertension Cases

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(Remember, I didn’t make these up.)
Nephro Q 13

- 45 yo woman referred for evaluation of BP 150/94. Nurse-husband measures BP at home, always 110-120/76-80. Nonsmoker; mother has hypertension.


- Counseled on lifestyle modification.
Q 13: Which of the following is the most appropriate management of this patient?

A. Begin HCTZ.
B. Begin enalapril.
C. Perform ambulatory blood pressure monitoring.
D. Continue home blood pressure measurement.
45 yo woman evaluated for newly diagnosed hypertension. +FHx essential hypertension, both parents diabetic.

PE: BP 150/95, BMI=32; remainder normal.

Labs: Normal electrolytes, BUN & Creat; fasting glucose 90, TChol 220, TG 250, HDL 35, LDL 140.

BP elevation confirmed on repeat and counseled on lifestyle modification.
Q 66: Which of the following is the most appropriate treatment of this patient's hypertension?

A. Hydrochlorothiazide.
B. Doxazosin.
C. Atenolol.
D. Irbesartan.
46 yo black man evaluated for hypertension. Years previously told of elevated BP at health fair. ?Therapy initiated, discontinued after 3 months because of side effects. His blood pressure at local grocery stores is approximately 160/90 mm Hg.

PE: BP 158/88, pulse 64. Fundi: hypertensive retinopathy. 1+ lower-extremity edema.

Labs: Hgb 11.8, Na 142, K 3.9, Cl 110, TCO$_2$ 22, BUN 34, Creat 1.9; Uric Acid 8.2, Ca 10.1, Ph 4.0; UA 2+ protein, no blood, Pro:Creat = 0.45.

Renal US: R 9.2, L 9.1 cm with 2 simple cysts; echogenic.
Q 61: Which of the following is the most appropriate treatment of this patient's hypertension?

A. Ramipril.
B. Metoprolol.
C. Amlodipine.
D. Terazosin.
65 yo man admitted to ICU after 3-months frequent headache and progressive SOB. Hx hypertension for 25 yrs, multiple TIAs, and DM2; s/p CABG and aorto-bifem bypass. Recent 2-pillow orthopnea and PND, without angina. Current Rx metoprolol, lisinopril, amlodipine, hydrochlorothiazide, and glyburide.

PE: BP 210/130, pulse 60. JVP 12 cm; right carotid artery bruit. Bibasilar crackles, +S4, 2/6 SEM @URSB.

EKG: SB, LVH + strain. Labs: normal.

Improves with IV diuretics, DBP 110-130; still with headache, but nonfocal exam.
Q 84: Which of the following is the most appropriate next step in the evaluation of this patient?

A. Head CT.
B. Cardiac cath.
C. Renal ultrasound with Dopplers.
D. 24 hr urine for VMA and metanephrines.
65 yo woman evaluated for resistant hypertension. Despite 20 years of treatment, blood pressure usually about 160/90. For several years she had been taking amlodipine 10 mg and metoprolol 100 mg/d. Recently changed to lisinopril 20 mg and verapamil SR 180 mg/d.

PE: BP 168/100, pulse 68. PMI prominent and laterally displaced. Lungs clear, remainder normal.

Labs: Na 147, K 3.3, Cl 100, TCO2 28, BUN 18, Creat 0.9.

Echocardiogram: increased LV mass.
Q 30: Which of the following is the most appropriate next step in the management of this patient?

A. MRA.
B. HCTZ 25 mg/d.
C. Aldosterone-renin ratio.
D. CT scanning.
68 yo woman with a longstanding history of poorly controlled hypertension is evaluated for primary aldosteronism.


Labs: PRA=0.06 ngA$_{I}$/ml/hr, 24hr urine Aldosterone=18 µg.

Adrenal CT: L gland solitary 1.5 cm nodule, R gland normal/slightly enlarged.
Q 38: Which of the following is the most appropriate next step in the management of this patient?

A. Laparoscopic L adrenalectomy.

B. Adrenal vein sampling for aldo & cortisol.

C. Renal arteriography.

D. Dexamethasone suppression test.
79 yo man with 30 yrs hypertension that has become more difficult to control last 2 years. Over the last 6 months, his blood pressure measurements have ranged from 150/70 mm Hg to 170/90 mm Hg. Medications are atenolol 50 mg/d, enalapril 20 mg twice daily, and hydrochlorothiazide 25 mg/d.

PE: BP 168/80, pulse 66 - same x3 appointments, faint midline and L femoral bruits.

Creat 1.1 [stable x2 yrs], LDL 160.
Q 55: Which of the following is the most appropriate management at this time?

A. Renal angiography.
B. Amlodipine.
C. Measure PRA.
D. Renal vein renin sampling.
E. MRA of renal arteries.
64 yo male smoker with CAD, PAD, CKD [eGFR=45] and uncontrolled hypertension, recently hospitalized for acute pulmonary edema. Medications are ASA 81 mg, simvastatin 40 mg, carvedilol 25 mg b.i.d., furosemide 40 mg b.i.d., losartan 100 mg, amlodipine 5 mg, clonidine 0.2 mg b.i.d., and digoxin 0.125 mg. daily.

PE: BP 186/72, pulse 62, +S4, abdominal bruit, 1+ edema bilaterally.

Renal US: left kidney 8.5 cm, right kidney 11 cm with increased echogenicity.
Q 70: Which of the following is the most appropriate next step in management?

A. Increase amlodipine to 10 mg.
B. MRA of abdomen.
C. Discontinue carvedilol.
D. Add lisinopril.
E. CT of abdomen with IV contrast.
80 yo woman with resistant hypertension and fatigue, home BP typically 180/70. Medications are metoprolol 50 mg, lisinopril 20 mg, and HCTZ 12.5 mg daily.

PE: BP 180/70, pulse 72.

Labs: Na 132, K 3.3, Cl 99, TCO2 26, BUN 12, Creat 0.9, PRA 0.36 ngAI/ml/hr.
Q 72: Which of the following is the most appropriate next step in management?

A. Double the HCTZ.
B. Double the metoprolol.
C. Double the lisinopril.
D. Discontinue HCTZ, add spironolactone 25 mg/d.
62 yo man with DM2 presents with chest pain, abnormal stress test and hypertension. Medications are metformin, alpha-beta blocker, ACE-inhibitor, aspirin and statin.

PE: BP 160/90; early diabetic retinopathy.

Labs: BUN 15, Creat 1.1, K 5.2, spot urinary albumin:creatinine ratio = 175 mg/g.

Cardiac cath: mild-moderate diffuse triple vessel disease not amenable to revascularization.
Q 90: Which of the following is indicated to treat his hypertension?

A. Angiotensin Receptor Blocker.
B. Thiazide.
C. Alpha-blocker.
D. K-sparing diuretic.
50 yo black man with inadequately controlled hypertension on HCTZ 25 mg/d.

PE: BP 150/90, BMI=28; remainder normal.

Labs: glucose 90, Creat 1.3, K 3.6, spot urinary albumin:creatinine ratio = 10 mg/g.
Q 80: Which of the following is the most appropriate treatment for this patient?

A. Increase the thiazide dose.

B. Add atenolol.

C. Add an ACE-inhibitor.

D. Add a dihydropyridine calcium-channel blocker.
57 yo man with hypertension and diabetic nephropathy, diabetes x 10 yrs; no shortness of breath or edema. Medications are glipizide 5 mg b.i.d., pioglitazone 30 mg, metoprolol 100 mg, fosinopril 80 mg, HCTZ 25 mg, atorvastatin 40 mg and aspirin 81 mg daily.

PE: BP 145/85, pulse 55, obese; retinal microaneurysms, CV unremarkable, trace edema.

Labs: Creat 1.0, Na 140, K 4.0, Cl 106, TCO2 24; 24hr urine protein 6 g; U/A 4+ protein, 1-2 RBCs, 8 WBCs.

U/S: R kidney 12 cm, L 12.2; normal echogenicity without hydronephrosis, masses or stones.
Q 11: Which of the following is the most appropriate next step in management?

A. Double the HCTZ.

B. Add amlodipine.

C. Add prazosin.

D. Increase metoprolol to 150 mg/d.

E. Add losartan.
80 yo man with chronic hypertension, diagnosed with osteoarthritis 20 yrs ago. Medications are atenolol 50 mg and HCTZ 25 mg daily. Last year added ibuprofen 200 mg q.i.d.

PE: BP 180/90, pulse 60, not orthostatic; trace peripheral edema.

Labs: BUN 40, Creat 1.5, Na 134, K 4.9.
Q 9: Which of the following treatment strategies is indicated?

A. Increase the atenolol dose.
B. Increase the thiazide dose.
C. Add lisinopril.
D. Discontinue ibuprofen.
85 yo woman with longstanding hypertension well controlled with β-blocker therapy. Prior PCP recently passed away, and BP high at new MD’s office. Records show BP always normal with prior MD. Unable to tolerate ACE-inhibitors, ARB, dihydropyridine CCB. Now has fatigue, weakness, and dizziness, particularly after standing up, on metoprolol 50 mg and hydrochlorothiazide 25 mg/d.

PE: BP 170/70, pulse 60, supine and standing. Remainder unremarkable.

Na 136, K 3.6, TCO₂ 26, BUN 18, Creat 0.8, Glu 78.
Q 20: Which of the following is the most appropriate next step in the management of this patient?

A. MRA of the renal arteries.
B. Increase HCTZ to 50.
C. Discontinue metoprolol.
D. Perform ambulatory blood pressure monitoring.