**Teaching Instructions**

Plan to spend at least 20 minutes preparing for this talk by using the interactive board for learning/preparing, clicking through the graphic, and becoming familiar with the order of the content that appears on the graphic. The teaching script below details how to walk through the talk. Every interactive or “clickable” element is denoted with a rounded box and cursor icon.

Anticipated time to deliver the talk with and without cases or other features: without cases 15-20 minutes. The cases may take an additional 10-15 min.

The talk can be presented in two ways:

1. Project the “Interactive Board for Presentation” OR

2. Reproduce your own drawing of the presentation on a whiteboard.

With either method, print out copies of the Learner’s Summary Handout so they may have this for reference after the discussion. Begin with reviewing the objectives for the session.

**Objective 1: Identify patients for whom the initiation of antihypertensive therapy will have a clinically significant reduction in cardiovascular outcomes and death.**

Click through slide 2, asking learners about the prevalence of hypertension (HTN) as well as its consequences (cardiovascular (CV) disease, stroke, CKD).

Click on “benefits of treatment” to estimate NNT (number needed to treat) for primary prevention of CV disease in a sample patient. Of note – this NNT is substantially lower than treatment with statins, aspirin, or anti-diabetic agents.

**Objective 2: Based on underlying comorbidities, determine the target BP and demonstrate an appropriate selection of a first-line antihypertensive agent.**

Explain that the ideal BP (for CV/mortality benefit) is likely <120/80, but the use of medications to achieve that target entails risks. Blood pressure treatment targets vary slightly according to different guidelines. In general, tight control will have greater benefit (e.g. lead to greater absolute risk reduction) for higher-risk patients compared to lower-risk patients. Some guidelines recommend more intensive management for patients over age 65, who in general are at higher risk of CV events.

*BONUS*: In the SPRINT trial, which seemed to suggest lower BP is better in high-risk patients, patients required an average of 2.7 BP meds to achieve tight control, and there were higher rates of adverse events like syncope and electrolyte abnormalities in the intensive treatment group.

*BONUS*: “White coat hypertension” (elevated in-office readings with normal home readings in a patient who is not on treatment for hypertension) indicates a substantially increased risk of going on to develop “true” hypertension, and it may also indicate increased cardiovascular risk. Think of white coat hypertension as a pre-hypertensive state and a CV risk factor. Over 35% of patients with white coat hypertension develop true hypertension within 15 years (compared to 10% in normotensive patients). Still, most guidelines do not recommend treating white coat hypertension at this time.

On slide 4, ask learners to talk through the risks/benefits of the four first-line agents for HTN treatment.

*BONUS*: ACEi’s appear to be less effective at lowering BP in Black patients (but should still be used if there is any secondary indication for an ACE, like diabetic nephropathy)

*BONUS*: Chlorthalidone is more potent than hydrochlorothiazide – it has a longer half-life, and likely has more CV risk reduction as well. (This comes at the expense of more adverse effects, like hypokalemia, however).

*BONUS*: A word on SGLT2 inhibitors: they reduce systolic blood pressure by ~5 mmHg. Not FDA approved for blood pressure reduction in absence of another indication.

**Objective 3: Identify patients whose clinical presentation is concerning for a secondary cause of hypertension.**

Guide learners through indications for evaluation of secondary HTN. Then, click on “common differential” to work through the evaluation of secondary HTN.

Of note, 20-30% of HTN is due to hyperaldosteronism state. There should be a low threshold for testing renin-aldosterone levels when treating HTN with atypical features.

**Proven Lifestyle Modifications to Prevent CV Disease (ACC/AHA 2019)**

1. DASH/USDA type diet: vegetables, fruits, whole grains, low-fat dairy, poultry, fish, legumes, vegetable oils, nuts. Limit sweets, sugar-sweetened beverages, and red meat.

2. Weight loss.

3. Lower sodium intake.

4. High potassium diet (if no CKD or drug contraindication).

5. Moderate to vigorous aerobic physical activity 90-150 minutes per week (resistance exercise also beneficial).

6. If drinking alcohol, moderate intake.