**WSM Hypertension Worksheet**

**What do we classify as hypertension?**

|  |  |  |
| --- | --- | --- |
| Category | Systolic | Diastolic |
| Normal |  |  |
| Prehypertension |  |  |
| Hypertension |   |   |
| Stage 1 |  |  |
| Stage 2 |  |  |

*\* Current ACC/AHA guidelines. Other guidelines differ (e.g. UM clinical guidelines still use \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cut-off)*

**Secondary causes of hypertension to keep in mind:**

**When should we screen people and start treatment?**

|  |  |
| --- | --- |
| BP Category | Treatment recommendations |
| Normal |  |
| Prehypertension |  |
| Stage 1 hypertension |   |
|  |  |
|  |  |
| Stage 2 hypertension |  |

**Doc, I don’t want to take medications. What are the non-medication options?**

|  |  |  |
| --- | --- | --- |
| Treatment | Recommended plan | Approximate systolic BP reduction |
|  |  |  |
|  |  | ~6 |
|  |  | ~4 to 6 |
|  |  | ~5 |
|  |  | 2 to 4 |
|  |  | 2 to 5 |

**Doc, whatever you think is best. Give me a med:**

| Class | Common meds (generic/ trade) | Typical starting dose | Typical max dose | Clinical pearls |
| --- | --- | --- | --- | --- |
|  | H \* | 12.5mg daily | 50mg daily |  |
| c | 25mg daily | 25mg daily |
|  | li \* | 5mg daily | 40mg daily |  |
| be | 5mg daily | 40mg daily |
| ca  | 12.5mg BID | 50mg BID |
|  | lo  | 100mg daily | 50mg BID |  |
| ol \* | 20mg daily | 40mg daily |
| va | 80mg daily | 320mg daily |
|  |   |   |   |   |
|  | di \* | 120mg daily | 300mg daily |  |
| ve | 80mg TID | 120mg TID |
|  | am \* | 5mg daily | 10mg daily |  |
| ni | 20mg daily | 90mg daily |
|  | met \* | 100mg daily | 200mg daily |  |
| met  | 50mg BID | 100mg BID |
| car \* | 10mg daily | 80mg daily |

*\* Meds we typically carry in the red bags.*

**Other clinical practice pearls:**

**WSM Hypertension Worksheet Key**

**What do we classify as hypertension?**

|  |  |  |
| --- | --- | --- |
| Category | Systolic | Diastolic |
| Normal | <120 | and <80 |
| Prehypertension | 120-129 | and <80 |
| Hypertension |   |   |
| Stage 1 | 130-139 | or 80-98 |
| Stage 2 | ≥140 | or ≥90 |

*\* Current ACC/AHA guidelines. Other guidelines differ (e.g. UM clinical guidelines still use 140/90)*

* Ideal practice is to diagnose based on 3 or more separate readings, preferably averaged home readings.
	+ That’s not practical for many WSM patients, so clinical judgment/ shared decision making comes into play.

**Secondary causes of hypertension to keep in mind:**

1. Sleep apnea
2. Substance use (cocaine, amphetamines)
3. Excessive alcohol use
4. High-sodium diet
5. Kidney disease
6. Endocrine d/o

**When do we screen and start treatment?**

|  |  |
| --- | --- |
| BP Category | Treatment recommendations |
| Normal | Promote healthy lifestyle; reassess BP annually. |
| Prehypertension | Start with nonpharmacologic therapy, reassess BP in 3-6 months. |
| Stage 1 hypertension |   |
| * No ASCVD and 10-year CVD risk <10%
 | Start with nonpharmacologic therapy, reassess BP in 3-6 months. If not at goal, consider initiation of pharmacologic therapy. |
| * ASCVD or 10-year CVD risk ≥10%
 | Start with both nonpharmacologic and pharmacologic therapy. Reassess BP in 1 month. If at goal, reassess every 3-6 months. If not at goal, assess for adherence and consider intensification of therapy. |
| Stage 2 hypertension | Start with both nonpharmacologic and pharmacologic therapy. Reassess BP in 1 month. If at goal, reassess every 3-6 months. If not at goal, assess for adherence and consider intensification of therapy. |

**Doc, I don’t want to take medications. What are non-medication options?**

|  |  |  |
| --- | --- | --- |
| Treatment | Recommended plan | Approximate systolic BP reduction |
| Weight loss | Goal BMI < 25. | 0.5 to 2 mmHg / 1 kg of weight lost |
| DASH diet | Eat low-fat, high fruit/ veg diet | ~6 |
| Exercise | Do 30-45 min of moderate activity x 3-4 days/week | ~4 to 6 |
| Reduce sodium intake | Eat < 2.4g Na /day | ~5 |
| Reduce alcohol intake | Men: consume < 2 drinks/dayWomen: consume < 1 drink/day | 2 to 4 |
| Smoking cessation | Offer NRT to anyone who smokes | 2 to 5 |

**Doc, whatever you think is best. Give me a med:**

| Class | Common meds (generic/ trade) | Typical starting dose | Typical max dose | Clinical pearls |
| --- | --- | --- | --- | --- |
| Thiazide diuretics | HCTZ\* | 12.5mg daily | 50mg daily | * Make you pee – tough for our patients
* Risk for hypokalemia at high doses
* Risk to cause gout
 |
| chlorthalidone | 25mg daily | 25mg daily |
| ACE inhibitors(-"prils") | lisinopril (Prinivil)\* | 5mg daily | 40mg daily | * Cough (~10% of patients, can occur any time on med - not associated with initiation)
* Rare risk for life-threatening angioedema
* Never prescribe in pregnancy
* Requires renal function testing on initiation (looking for > 30% Cr bump)
* Preferred first-line for patients with DM
 |
| benazepril (Lotensin) | 5mg daily | 40mg daily |
| captopril (Capoten) | 12.5mg BID | 50mg BID |
| ARBs (-"sartans") | losartan (Cozaar) | 100mg daily | 50mg BID | * Basically the same as ACEi, with less cough side effect
 |
| olmesartan (Benicar)\* | 20mg daily | 40mg daily |
| valsartan (Diovan) | 80mg daily | 320mg daily |
| Calcium-channel blockers |   |   |   |   |
| Non-DHP | diltiazem CD (Cardizem CD)\* | 120mg daily | 300mg daily | * Risk for bradycardia, so used more commonly for a-fib than HTN
 |
| verapamil SR (Calan SR) | 80mg TID | 120mg TID |
| DHP (-"pines") | amlodipine (Norvasc)\* | 5mg daily | 10mg daily | * Risk for edema
* Preferred first-line for black patients (along with thiazides)
* Don't use as single agent if CKD
 |
| nifedipine (Adalat, Procardia) | 20mg daily | 90mg daily |
| Beta-blockers (-"lols") | metoprolol succinate (Toprol XL)\* | 100mg daily | 200mg daily | * Not first line for HTN
* Usually used in patients with CHF/ CAD
* Traditionally avoided in patients with cocaine use
 |
| metoprolol tartrate (Lopressor) | 50mg BID | 100mg BID |
| carvedilol (Coreg CR)\* | 10mg daily | 80mg daily |

*\* Meds we typically carry in the red bags.*

Given that, usually our treatment of choice is amlodipine (once daily, no labs on initiation, low side effects).

**Other clinical practice pearls:**

* Individuals with mean BP > 135/80 should be screened for diabetes.
* If >15mmHg above goal at baseline, patients will usually need two agents. ~70% of patients need 2+ agents.
* Becomes “resistant hypertension” once uncontrolled on 3 agents. Additional w/u needed.
* Treatment goal BP is <150/90 mmHg for people over age 60 wo/ DM, <140/90 mmHg for everyone else

**References:** [UpToDate](https://www.uptodate.com/contents/overview-of-hypertension-in-adults?search=hypertension&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H18), [UM Clinical Guidelines](https://michmed-public.policystat.com/policy/8093105/latest/), [ACC Guidelines](https://www.acc.org/latest-in-cardiology/articles/2021/06/21/13/05/new-guidance-on-bp-management-in-low-risk-adults-with-stage-1-htn)