

Hypertension Treatment: Case Studies



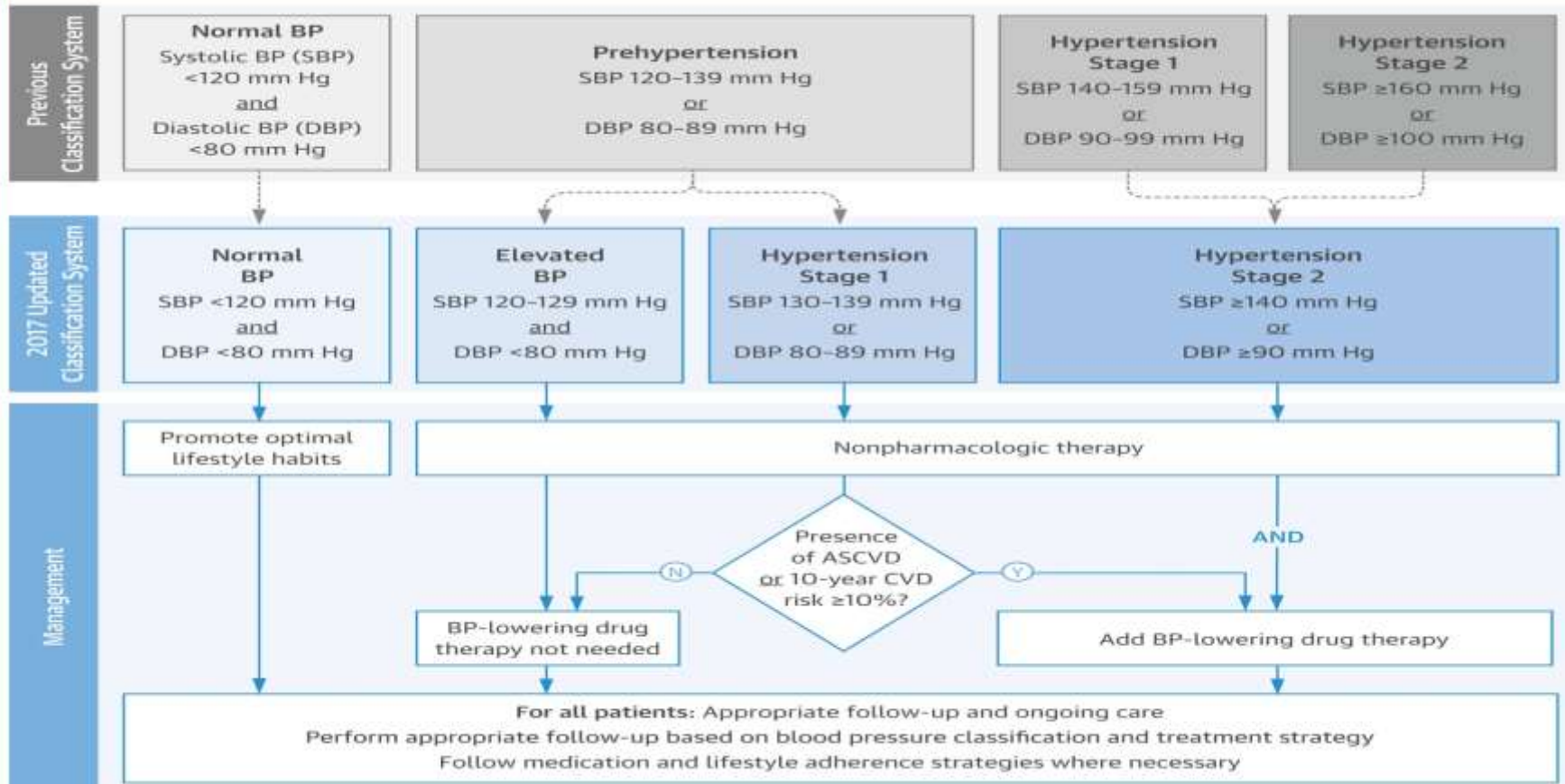
Hypertension: Treatment

- Treatment recommendations are now based on an individual's underlying cardiovascular risk as determined by the presence of ASCVD or 10year CVD risk of greater than 10%

www.cvriskcalculator.com

Treatment Hypertension

CENTRAL ILLUSTRATION: 2017 Updated Classification and Management of High Blood Pressure in Adults



Hypertension Treatment

- Decide on an approach to lifestyle intervention
- Become familiar with 1-2 medications from each class of medicines
- Memorize or become familiar with common compelling indications
- Start Low and go slow!
- When in doubt- call a friend



Treatment: Case Study 1

- 40yo with no PMH who presents for routine well woman exam.
- Vitals: 138/90 BMI :27 Height: 5'5" LMP 2 weeks ago and normal; cycles are regular
- Total cholesterol 215, LDL 125 HDL-35
- Any additional info?

Treatment: Case Study 1

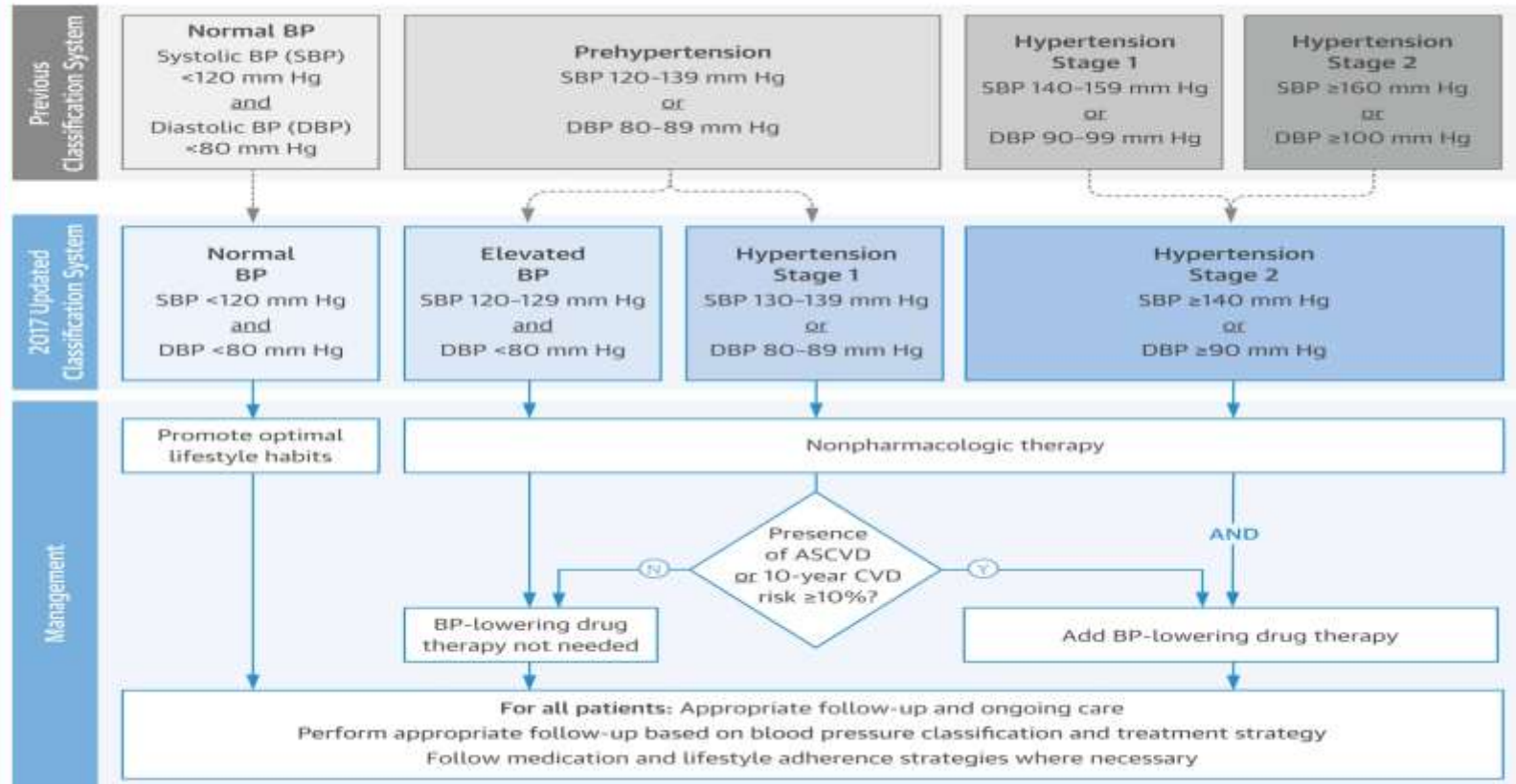
- Patient is Caucasian
- Mom with MI at 49
- Patient has had “some high” readings in the past but did not follow up
- Eats fast food 2-3 times a day at least 4 times a week
- Sedentary lifestyle, non smoker
- PMH: on no contraception

Treatment: Case Study 1

- Does this patient have Hypertension?
- If she has HTN, does she warrant medication?
- If BP medication is warranted based on her presentation, does she have any compelling indications or key factors to consider when choosing a medication?

Treatment: Case Study #1

CENTRAL ILLUSTRATION: 2017 Updated Classification and Management of High Blood Pressure in Adults



Treatment: Case Study 1

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Treatment : Case Study 1

- Stage 1 hypertension
- ASCVD RISK is less than 10%
- Female of child bearing age
- No medication indicated at this point
- When would this patient return for follow up?

Treatment: Case Study 1

- Refer to draft algorithm now

Treatment: Case 1

- Patient returns for f/u visit
- Home BP log shows readings to be 148-150/ 90's
- BP in clinic today is 155/95
- She has attempted lifestyle changes but has not been successful. She has gained about 20 pounds and complains of **frequent urination, fatigue** and **thirst**.
- She is now on depo
- What is the next step? Any labs?

Treatment: Case Study 1

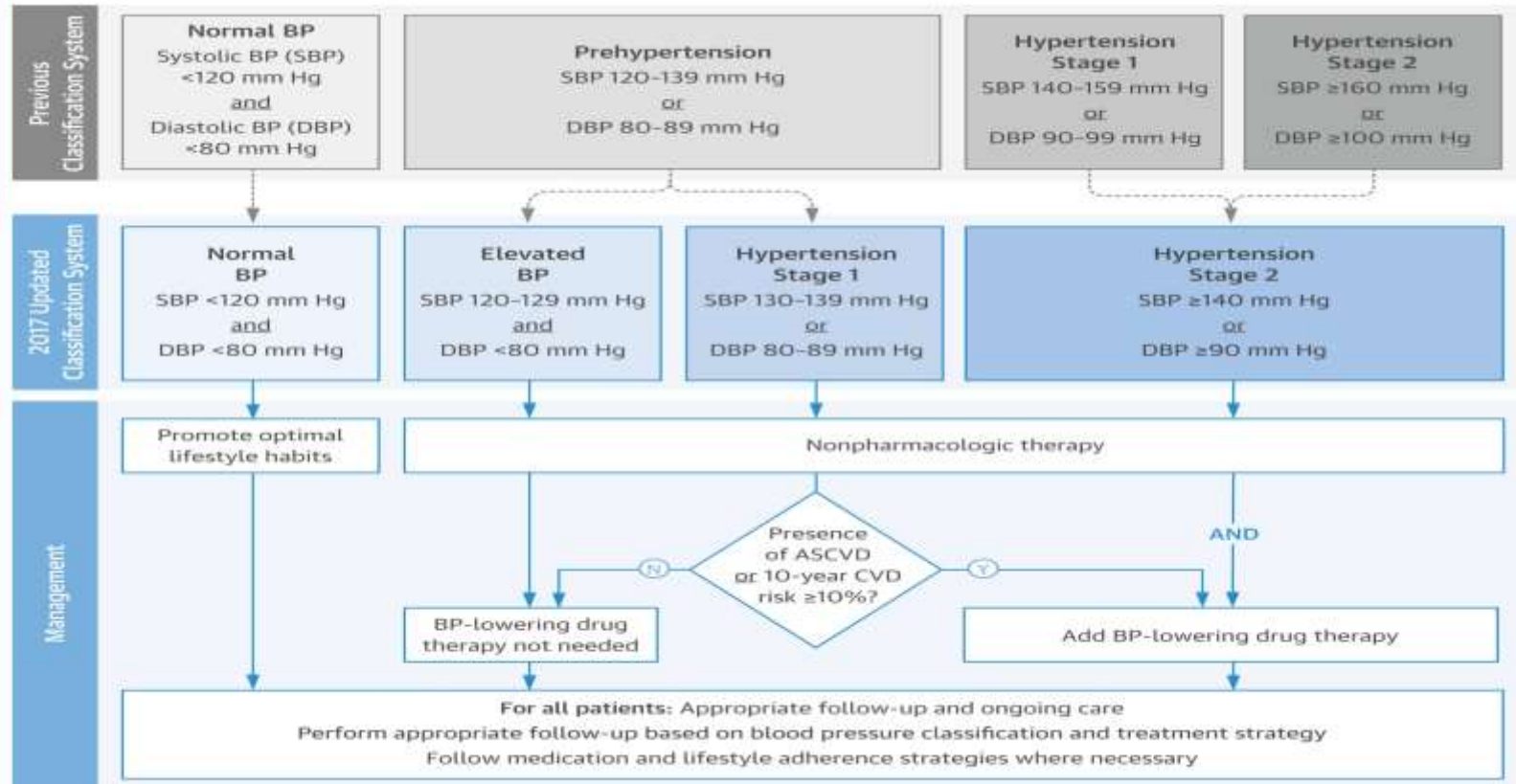
- Blood sugar returns at 250
- Subsequent A1C of 6.9
- 40 yo with BP 140s-150'S/90'S
- Cholesterol now 300 with an HDL of 28

Treatment: Case Study 1

- Does this patient have HTN?
- Does she require treatment with medication?
- If the patient requires treatment, are there compelling factors to consider in choosing a medication?

Treatment: Case Study #1

CENTRAL ILLUSTRATION: 2017 Updated Classification and Management of High Blood Pressure in Adults



Treatment: Pharmacologic Therapies in special cases

Table 4

Compelling Indications for Drug Category Utilization

Chronic kidney disease

ACEI, ARB

Diabetes

Diuretic, BB, ACEI, ARB, CCB

Heart Failure

Diuretic, BB, ACEI, ARB, aldosterone antagonist

High Coronary Disease Risk

Diuretic, BB, ACEI, CCB

Postmyocardial Infarction

BB, ACEI, aldosterone antagonist

Recurrent Stroke Prevention

Diuretic, ACEI

ACEI: angiotensin-converting enzyme inhibitor; ARB: angiotensin II receptor blocker; BB: beta-blocker; CCB: calcium channel blocker.

Source: Reference 13.

Treatment: Case 1

- Patient returns for f/u visit
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- BP in clinic today is 155/95
- She has attempted lifestyle changes but has not been successful. She has gained about 20 pounds and complains of **frequent urination, fatigue** and **thirst**.
- She is now on depo
- What is the next step? Any labs?

Which medication should we prescribe for this patient

Treatment: Case Study 1

- Learn 1-2 medications from each class
- Start low and go slow
- If initiating treatment with an ACE, ARB or diuretic a baseline BMP is warranted with a f/u done in 4-6 weeks
- Be mindful of cost and dosing frequency

Treatment: Case Study 1 Summary

- 40 yo initially with stage 1 HTN and no increased CV risk
- Pt progressed to stage 2 with subsequent development of diabetes and high cholesterol
- Based on her increased ASCVD risk she is now a candidate for medication
- Lisinopril or a CCB are recommended for the added benefit of renal protection
- Special considerations for women of child bearing age

Treatment: Case Study 2

- 52 yo AA female with a past hx of “kidney problems” who presents for annual exam. BP is 170/90. She denies any symptoms. Has had high BP in the past. She was on medication but has been out of it for months. She does not recall the name of the medication. She feels fine today
- BMI is normal
- PMH: s/p TAH; “kidney problems”, arthritis

Treatment: Case Study 2

- NKDA
- Medications: Aleve, Ibuprofen
- FH: mom on dialysis prior to her death, sibling had stents at age 49
- SH: unemployed

Treatment: Case Study 2

- Does this patient warrant medical intervention?
- What factors might you consider in starting this patient on medication
- Any additional information needed?

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ACEI: angiotensin-converting enzyme inhibitor; ARB: angiotensin II receptor blocker; BB: beta-blocker; CCB: calcium channel blocker.

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Treatment: Case Study 2

- Labs return with creatinine of 1.5
- What is your initial medication recommendation for this patient?
- When will she need to follow up?
- Will she need labs prior to follow up?

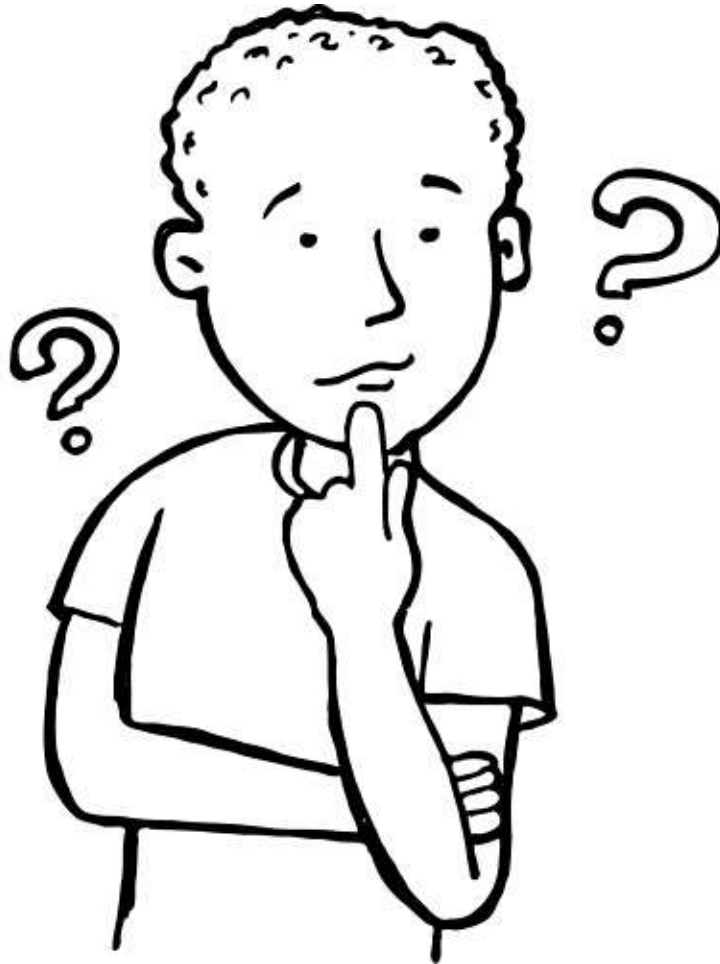
Treatment Case Study 2

- Use Draft algorithm here

Treatment: Case Study 2

- Patient returns at 6 weeks
- Has no home BP log, but has been taking her medication
- BP in clinic today is 155/90
- Labs return with a **creatinine of 1.65** and a **potassium of 4.5** which is upper limits of normal

Treatment: Case Study 2



What's the next best course of action for this patient?

Treatment: Case Study 2

- Would not titrate ACE due to bump in creatinine and potassium
- HCTZ might be a good choice due to fact that there is a combo pill and benefit of potassium wasting
- CCB also indicated, but would require a 2nd pill
- What about additional lifestyle modification?

Treatment: Case Study 2

- Patient returns in 4 weeks
- Labs stable
- BP improved at 150/80
- She has lost 5 pounds (in roughly 2 months)
- Review of med list shows she continues to be on Aleve and Ibuprofen several times a day
- What is your next step?

Treatment: Case Study 2

- NKDA
- Medications: Aleve, Ibuprofen
- FH: mom on dialysis prior to her death, sibling had stents at age 49
- SH: unemployed

Treatment: Case Study 2

Drugs or Supplements Contributing to Elevated Blood Pressure

- Nonsteroidal anti-inflammatory and COX-2 inhibitors
- Sympathomimetics (decongestants, appetite suppressants)
- Oral contraceptives
- Corticosteroids
- Cyclosporine and tacrolimus
- Erythropoietin
- Certain dietary supplements (ephedra, ma huang, caffeine)
- Cocaine, amphetamines or other illicit drugs

Treatment: Case Study 2

- After consulting with the attending MD, you counsel the patient to eliminate one of the offending agents and replace it with acetaminophen
- She returns in 4 weeks and BP is now at goal and OA pain is stable
- When is patient's next follow up?

Treatment: Case Study 2

- Patient returns in 3 months
- BP looks great. Weight is down another 10 pounds
- She reports a cold for nearly 4 months. No other URI sx except cough
- What is your next step?

Treatment: Case Study 2

- You suspect an ACE cough.
- You need to d/c the ACE but what to replace it with?
- Factors to consider: need for continued diuretic, frequency of dosing

Treatment: Case Study 2

- Current studies suggest that these patients can be switched to an ARB
- A calcium channel blocker is another possibility
- Try to use a combination medication if you can

Treatment: Case Study 2

- Patient returns in 4 weeks, BP is great
- Cold has resolved
- She is placed back into usual rotation with f/u in 3 months, then 6 months,

Treatment: Case Study 2

- Stage 2 hypertension in the setting of reported kidney disease
- Pt has 2 risk factors (CVD and family history) this might cause you to be a little more aggressive when initiating therapy
- Pt had an expected bump in creatinine with initiation of ACE inhibitor. Up to a 30% increase is acceptable. Most clinicians are a little more conservative in practice. I would be hesitant to increase ACE if bump in creatinine is 20% or greater

Treatment: Case Study#3

- Your previously well controlled hypertensive patient comes in to see you after the 4th of July holiday. She is concerned because her BP readings have been high the past few days. BP reading in clinic is 180/110. She is a little tired but otherwise feels fine. On exam you note her weight is up 8 pounds from the last visit (1 month ago) and she has 2-3+ pitting edema of the LE.

Treatment: Case Study#3



What is the most likely cause of this patient's acutely elevated BP?

Treatment: Case Study#3

- Alert level Blood pressure: patient must be reassessed in 7 days
- Patient is in no acute distress
- Would you

A) Send patient to ER

B) administer rapid acting agent like clonidine

C) Increase her usual BP meds

D) Consult on call MD

Treatment: Case Study#3

- Call on Call MD*
- Consider Clonidine 0.1mg x 1 with BP re-check in 15-20 minutes
- No need for ER in stable patient with apparent reason for increase in BP
- Would not increase usual meds as she seems to be in volume overload and once this is corrected, usual readings should resume

Treatment of HTN

- Decision to initiate medication is based on the patients ASCVD RISK
- Lifestyle modification is indicated at all stages of HTN
- Medications for HTN exhibit class effects
- Choose 1-2 medications from each class and **learn** them
- Start low and go slow
- Consider addition of a second med prior to maximizing initial medication

Questions???????

