8-10-2017

Hypertensive Urgency

Jed Grant
University of the Pacific, jgrant@pacific.edu

Hypertensive Urgency?

Jed Grant, MPAS, PA-C
University of the Pacific PA Program
Sacramento, CA

Objectives

- Participants in this session will learn:

1. To differentiate hypertensive urgency from hypertensive emergency
2. To describe the appropriate work-up of asymptomatic hypertension
3. To develop an appropriate treatment plan for hypertensive urgency

Definitions

- Hypertension
  - 140/90mm Hg
- Hypertensive Urgency
  - >140/90mm Hg but <180/110mm Hg
- Hypertensive Crisis/Emergency
  - Hypertension with acute end organ damage
  - No absolute values
- Poor correlation between BP numbers and end organ damage

Chronic Hypertension

- 90-95% Essential
- Secondary hypertension
  - Sudden onset
  - Onset < age 30 without family history of HTN
  - Previously controlled and suddenly out of control

Secondary Hypertension

- Medications
  - OCP/Hormones, NSAIDS, sympmathomimetics, antidepressants, steroids
- Foods/Drugs
  - Caffeine, black licorice, illicit drugs
- Systemic causes
  - AKD/CKD, renal artery stenosis, thyroid disfunction, Cushing syndrome, Coarctation of the Aorta, obstructive sleep apnea, and pheochromocytoma

Acute Hypertension

- Usually underlying chronic hypertension with situational and transient elevation due to
  - Setting
  - Procedure
  - Anxiety
  - Illess
  - Injury
  - Drugs
  - NON-COMPLIANCE (75%)
- Time heals all wounds… specifically 90 minutes of time for BP.

The problem

- Chronic hypertension is treated with gradual progression to goal over several months
  - PAs are experts at managing this
- Acute hypertension with ongoing injury to end organs is a true emergency
  - Send to the ER – broad work up based on organ involved
- Acute hypertension without end organ damage
  - Clinical conundrum
  - HOW DO I KNOW IF THERE IS END ORGAN DAMAGE? WHAT DO I DO?

End organ damage?

- History
- Physical Exam
- Hypertensive urgency has a normal history and physical exam related to end organ signs and sypmtoms
  - If abnormal it is hypertensive emergency
- Screening studies?

CASE

- 49 yo male sent to ED by primary care provider for marked elevation of BP. Appointment was for medication refill on his Losartan. No complaints.
- PMHx: HTN, COPD
- Meds: Losartan, Albuterol MDI, Ipratropium Br MDI
- NKDA
- SocHx: TOB: 18 pack year. Occasional ETOH. No drugs.
- BP: 180/110mmg Hg P: 77 R: 14 T: 37 tymp. SaO2 99% RA
- What do you want to do?

CASE: What to do?

- More Hx (ROS)
- Physical Exam
- Observe
- Diagnostic Studies
- Give medication
  - Clonidine
  - Lisinopril
  - Labetalol
  - Losartan

History and Physical Exam

- ROS focused on vulnerable end organs
  - Vision changes
  - Confusion, HA, irritability
  - Hematuria or swelling
  - Chest pain, SOB, abdominal or low back pain, dizziness, syncope
- PE is Focused on end organs
  - Eyes: retinal hemorrhages, papilledema
  - Brain: AMS, focal findings
  - Chest: Friction rubs, edema, rales
  - Abdomen/Retroperineum: Aorta, bruits
- ANY POSITIVE FINDINGS SHOULD PROMPT DIAGNOSTIC EVALUTION OF INVOLVED END ORGAN

Observation

- IF there are not any concerning signs or symptoms the patient should be observed for 90 minutes and then have the BP rechecked.
- IF the BP recheck is <180/110mm Hg, can be discharged home
  - 94% of these patients have underlying chronic HTN.
- IF the patient missed regular medications, may give usual dose of meds at start of observation
- IF the patient is still >180/110mm Hg after observation, what do you do?

Screening for End Organ Damage

- EKG
- CBC
- Chem 7/BMP
- UA
- CXR
- CT brain
- CT chest

Screening for End Organ Damage

- EKG
- CBC
- Chem 7/BMP (maybe)
- UA
- CXR
- CT brain
- CT chest

Treat?

- What is the goal of treatment in the ED?
  - Patients admitted or treated outpatient have same outcomes
  - No acute risk for end organ injury
  - Most patients will have uncontrolled HTN in 6 months.
- PARADOXICAL RISK of brain injury if lowered to goal acutely
- Acute treatment of hypotensive urgency should be approached with great caution
  - One dose of patient's usually HTN medication in ED, Rx for more with close outpatient FU if B/P >180/110mm hg
  - What to do for those not previously on a medication?

Treat?

- What is the goal of treatment?
- Antihypertensive naïve patients may be placed on medication with close outpatient follow-up within 1 week to one month if >180/110mm Hg.
  - Clonidine
  - Furosemide
  - Lisinopril
  - Labetalol
  - Losartan
  - Nifedipine

CASE

- 49 yo male sent to ED by primary care provider for marked elevation of BP. Appointment was for medication refill on his Losartan. No complaints.
- PMHx: HTN, COPD
- Meds: Losartan, Albuterol MDI, Ipratropium Br MDI
- NKDA
- SocHx: TOB: 18 pack year. Occasional ETOH. No drugs.
- BP: 180/110mmg Hg P: 77 R: 14 T: 37 tymp. SaO2 99% RA
- ROS and PE are normal. What do you want to do?

CASE: What to do?

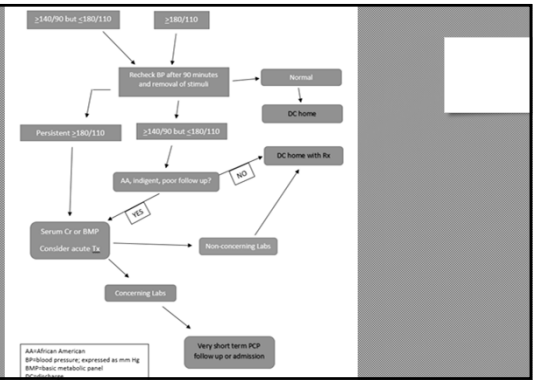
- Observe
- Diagnostic Studies
- Give medication?
  - Clonidine
  - Lisinopril
  - Labetalol
  - Losartan

Summary

- Hypertensive urgency (180/110mm Hg) has a very low risk of acute end organ damage
  - It most likely represents a short term acute on chronic HTN
- Acute treatment is not usually necessary and may be harmful
  - Several studies showed no HTN related adverse events occurred when delaying treatment out to six months [3,5,10-12]
- Most patients will return to baseline with observation for 90 min.
- Routine screening of UA, chest radiograph, and ECG were shown to be of no benefit and should not be routinely performed

Summary

- Black and indigent patients, or those with poor access to care are at increased risk of end organ damage.
  - Screening BMP/Chem7 may be of some use in these patients and those with BP >180/110mm Hg after 90 minutes of observation
- Most of patients are safe to discharge with outpatient Rx and follow up with primary care provider within one week to one month.
- In the primary care setting it is safe to discharge a patient home with BP as high as 180/100mm Hg as long as they do not have any symptoms of signs of end organ damage
  - Should have short term follow up and gradually be brought to goal



Sources

1. Grant J, Borghei K. **Asymptomatic Hypertension in the Emergency Department.** Physician Assistant Clinics, Volume 2, Issue 3, P 465 - 472
2. Karnas DJ, Kruus LK, Cienki JJ, et al. **Utility of routine testing for patients with asymptomatic severe blood pressure elevation in the emergency department.** Ann Emerg Med 2008;51:231-9.
3. Brody A, Rahman T, Reed B, et al. **Safety and efficacy of antihypertensive prescription at emergency department discharge**. Acad Emerg Med 2015;22:632-5.
4. Nishijima DK, Paladino L, Sinert R. **Routine testing in patients with asymptomatic elevated blood pressure in the emergency department**. Am J Emerg Med 2010;28:235-42.
5. Wolf SJ, Lo B, Shih SD, et al. **Clinical policy: critical issues in the evaluation and management of adult patients in the emergency department with asymptomatic elevated blood pressure.** Ann Emerg Med 2012;59:59-68.
6. Tilman K, DeLashaw M, Lowe S, et al. **Recognizing asymptomatic elevated blood pressure in emergency department patients: how good (bad) are we?** Am J Emerg Med 2007;25:313-7.
7. James PA, Oparil S, Carter BL, et al. **2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8).** JAMA. 2014;311:507-20. doi: 10.1001/jama.2013.284427
8. Suttiers M. **Systemic hypertension**. In: Papadakis MA, McPhee SJ, Rabow MW, editors. Current medical diagnosis and treatment 2016, vol. 11, 55th edition.New York: McGraw Hill; 2016. p. 435-67.
9. Lawson L, Robelli S. **Best evidence on management of asymptomatic hypertension in emergency department patients**. J Emerg Nurs 2011;37:174-8.
10. Baumann BM. **Systemic hypertension**. In: Tintinalli JE, editor. Emergency medicine: a comprehensive study guide, vol. 57, 8th edition. New York: McGraw Hill; 2016. p. 398-408.
11. Patel KK, Young L, Howell EH, et al. **Characteristics and outcomes of patients presenting with hypertensive urgency in the office setting**. JAMA Intern Med 2016;176(7): 981-8.
12. Karnas DJ, Kruus LK, Cienki JJ, et al. **Evaluation and treatment of patients with severely elevated blood pressure in academic emergency departments: a multi-center study**. Ann Emerg Med 2008;43:230-6.