

In patients with asymptomatic hypertension in the ED, does acute intervention compared to referral for evaluation improve complications and/or outcomes

By: Heather Justice MD
April 2005

Question:

P: In patients with asymptomatic hypertension in the ED

I: Does acute intervention

C: Compared to referral for evaluation

O: Improve complications / outcome

Clinical Scenario:

45 year old African American male presents in the emergency room with lower back pain x's 5 days. No past medical history no medications or allergies and Vitals BP172/96 HR 87 RR 18 Temp 98.7

Search Strategy:

Pub Med : Hypertension, ER, asymptomatic, elevated blood pressure

Search outcome: 16 papers found

Relevant Papers:

Title	Author Date and Country	Patient Group	Study Type	Outcomes	Key results	Study weaknesses
Severely Increased Blood pressure in the ED	Shayne et al April 2003 USA Emory Atlanta	Review of studies and national guidelines	Not a Study	No benefit of treating asymptomatic hypertension acutely	Options for starting initial antihypertensives based on risk stratification vs. referral	Many small studies no true consensus
Initial Treatment of HTN	Berend Sept 2003 Netherlands	Review of Pharmacological options	Review	Diuretics and beta blockers for HTN without comorbidities ACE and ARB's for patients with DM CHF or CRI ACE and BB for History of MI and CCB for pts at risk of CVA	Start with HCTZ	
Asymptomatic Hypertension	Chiang et al Nov 1998 USA	269 asymptomatic patients with SBP>180 or DBP>110	Retrospective study	20.8% received treatment. NIF/Dilt .More likely if BP higher and if history of HTN	BP decreased by average of 20mmHg in treatment group and 11 in nontreatment	Not big enough to see any complications from treatment
Nonemergent HTN	Thach Nov 1995	Review of guidelines	None	Treatment options and management guidelines for Hypertension in the ED GOOD HTN F/U sheet	Basic guidelines and options both oral and parenteral for treatment of HTN in the ED	Older information

Rapid reduction of Severe asymptomatic HTN	Zeller KR et al Oct 1989 U of TEXAS	64 patients randomized to clonidine hourly then maint., or clonidine x1 then placebo + maint or just maint	Randomized control trial	No difference in time to reach adequate be or at 24 hours or 1 week.	No difference in outcome equal numbers had rebound HTN and 7 had to have dose lowered due to relative HypoTN	Small Short follow up
ER Dept HTN Regression to the mean	Pitts SR et al Feb 1998 USA	195 consecutive hypertensive patients	Cohort	Decrease in DBP from 104.5 to 92.9	Blood pressures decline	Small no explanation of relevant factors
Reproducibility of increased BP	Backer et al April 2003 USA	407 patients age 21-80 noted to have elevated BP in ED or UC	cohort	65 % followed up 76.9 % had abnormal readings on follow up	Despite complaint pts with inc. BP in the ED have Inc BP on follow up	Small study low % of follow up despite reminders
Validity Of ER BP's	Cienke JJ et al March 2004	171 pts	Cohort	Dif in SBP 3.8 and DBP 6.6 in controlled setting SBP Dif by 11.6 and DBP by 9.9	Automated BP rating of "D" Factors operator technique environment	Technique not separated from environment or equipment as reasons for error
BP decreases prior to Pharmacologic al therapy	Lebby T et al Jan 1990 USA	56 patients had DBP >90 and no end organ pathology	Retrospective study	SBP Dec by 11 and DBP by 8 both significant	BP decreased significantly from triage to later readings without treatment	Very small not a representative study

Comments:

Asymptomatic Hypertension.

There is no evidence to favor treating asymptomatic hypertension in the Emergency Department. It is important to make sure the patient isn't showing signs of end organ failure both through the physical exam including fundoscopic exam, CV exam, assessing for mental status changes and through laboratory information including EKG, BMP and UA and repeat BP. If patient is truly asymptomatic PMD should be contacted if possible to decide if treatment should be started in the ED or at the PMD's office, and which agent should be started. If no PMD patient should be RED FLAGGED TO ACC CLINIC to be seen within one week. Starting agents include Diuretics HCTZ most commonly or beta blockers There are however cases that present adverse outcomes to this treatment including MI and CVA Death particularly with the use of Nifedipine.³

Hypertensive Urgency

Patients with Severely elevated blood pressure 180/110 and known target organ diseases without active compromise, for example, history of CRI CHF Angina or CAD TIA or CVA, should have therapy started in the ED and follow up within one week. Patients should have same PE and labs including UA EKG BMP and BP recheck. Choice of agent depends on PMH. DM – ACE, CHF – ACE or Diuretics, MI/CAD – B-blocker or ACE. Again no evidence to suggest initial reduction of BP is indicated in the ED.

1. Shayne PH, Pitts SR. Severely Increased Blood Pressure in the Emergency Department. *Annals of Emergency Medicine*. 2003; 41:513-529
2. Berend, Kenrick. Initial Treatment of Hypertension. *The New England Journal of Medicine*, Feb 13, 2003; 348(7):610-617.

3. Chiang WK, Jamshahi B. Asymptomatic Hypertension in the ED. *American Journal of Emergency Medicine*, 1998 Nov;16 (7):701-704.
4. Thach AM, Schultz PJ. Nonemergent Hypertension. *New Perspectives for the Emergency Medicine Physician*. 1995 Nov;13(4):1009-1035.
5. Zeller KR, Bon Kuhnert L, Matthews C. Rapid Reduction of Severe Asymptomatic Hypertension. A Prospective, Controlled Trial. *Archives of Internal Medicine*, 1989 Oct;149(10):2186-2189.
6. Pitts SR, Adams RP. Emergency Department Hypertension and Regression to the Mean. *Annals of Emergency Medicine*, 1998 Feb;31(2):214-218.
7. Backer HD, Decker L, Ackerson L. Reproducibility of Increased Blood Pressure During and Emergency Department or Urgent Care Visit. *Annals of Emergency Medicine*, 2003 April;41(4):507-512.
8. Cienke JJ, DeLuca LA, Daniel N. The Validity of Emergency Department Triage Blood Pressure Measurements. *Academic Emergency Medicine*, 2004 Mar;11(3):237-243
9. Leiby T, Paloucek F, Dela Cruz F, Leikin JB. Blood Pressure Decrease Prior to Initiating Pharmacological Therapy in Nonemergent Hypertension. *American Journal of Emergency Medicine*, 1990 Jan;8(1):27-29.