

HYPERTENSIVE EMERGENCIES

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QUESTION 1

- A 3 year old girl presents with increased sleepiness and multiple episodes of vomiting that started this morning. Further history from the mother reveals that there was no observed trauma and no fever. Vitals: T 37.1, HR 90, BP 130/80, RR 26, O2 sat 98%. On exam, the girl is very lethargic. What is the next step in management?

- A. Oral anti-hypertensives
 - B. STAT head CT
 - C. IV anti-hypertensives
 - D. IV fluids
 - E. Lumbar Puncture
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- A. Oral anti-hypertensives
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- Rule out increased intracranial pressure (ICP) or masses prior to initiating anti-hypertensives. In the case of elevated ICP, decreased blood pressure can cause cerebral hypoperfusion.
 - Although patient is vomiting there are no acute signs of shock and IV fluids could worsen hypertension
 - If LP is indicated, it should be deferred until after head CT
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SOURCES

- Megan M. Tschudy and Kristin M. Arcara. The Harriet Lane Handbook: 19th edition.
- Uptodate:
 - Approach to hypertensive emergencies and urgencies in children
 - Management of hypertensive emergencies and urgencies in children
 - Elevated intracranial pressure in children

QUESTION 2

- A 15 year old boy with polycystic kidney disease presents with chest pain x1 day. His BP is 189/120. Physical exam is unremarkable. Labs show Na 139, K 5, Cr 2 (baseline Cr 1.4) and Troponin <0.01. What is the next step in management?

- A. IV Lasix
 - B. IV Hydralazine
 - C. Minoxidil
 - D. Enalapril
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HYPERTENSIVE EMERGENCY

Elevated blood pressure that is $>5\text{mmHg}$ higher than 95th %tile with signs of end organ involvement. Most commonly presents as hypertensive encephalopathy, but can also present as acute kidney injury, heart failure, or myocardial infarction.

HYPERTENSIVE EMERGENCY

Treated with IV anti-hypertensive. BP is decreased by 25% in the first 8 hours; then gradually over the next 48 hours. Or, the MAP (mean arterial pressure) can be employed with lowering the MAP by 1/3 planned reduction over 1st 6h. Additional 1/3 over 24-36h and the final 1/3 over 48h

- As opposed to hypertensive urgency defined as an elevated blood pressure that is $>5\text{mmHg}$ higher than 95th %tile without evidence of end organ damage. This can be treated with oral anti-hypertensives such as minoxidil and enalapril.
 - Lasix can be employed as adjunctive therapy in renal disease and signs of volume overload
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SOURCES

- Megan M. Tschudy and Kristin M. Arcara. The Harriet Lane Handbook: 19th edition.
- Uptodate:
 - Approach to hypertensive emergencies and urgencies in children
 - Management of hypertensive emergencies and urgencies in children
- Peds in Review Articles:
 - Leonard G Feld and Howard Corey. Hypertension in Childhood. Pediatrics in Review 2007; 28:283.
 - Victoria F Norwood. Hypertension. Pediatrics in Review 2002; 23:197