

Pediatric Blood Pressure

Definitions

Ranges are based on tables for sex/ age/ height

For children well below 5th percentile for height, need to estimate

- *Hypotension*- SBP < 70 + 2x age or <90 if age 10 or older
- *Non-emergent elevation*- BP < 99th percentile and no symptoms
 - Oral maintenance therapy
 - Goal is BP < 95th percentile
 - Goal if other issues is BP < 90th percentile
- *Hypertensive Urgency*- BP > 99th percentile with mild symptoms OR SBP > 99th percentile + 5 mm
 - Quick but not necessarily immediate BP decrease. Avoid decrease of SBP > 25%.
 - IV medications such as hydralazine or Enalaprilat
 - Monitor closely with frequent BP check
 - Q 5 minutes x 30 minutes, then Q 10 minutes x 30 minutes (until 1 hour post)
 - Q 2 hours x 6 hours (until 7 hours post), then Q 4-6 hours
- *Hypertensive Emergency*- Elevated BP with severe symptoms or sequelae
 - CCMD consult
 - Rapid, but not excessive decrease of BP. Avoid decrease of SBP > 25% in 8 hours.
 - Close monitoring, often transfer to ICU
- Note: These are guidelines. Precise level of when to treat may be affected by patient's condition (e.g. cause of HTN, risk of head bleed, other organ issues, etc.)

Medications

Can be used for hypertensive urgencies on 1NW (examples)

Medication	Route	Recommended Dose
Hydralazine	IV	Maximum: 0.2-0.6 mg/kg/dose IV every 4 hours May start with lower dose (0.1 mg/kg up to 5 mg) and repeat if no response.
Enalaprilat	IV	0.05-0.1 mg/kg/dose (maximum 1.25 mg/dose)
Clonidine	PO	0.05-0.1 mg/dose po. May be repeated up to 0.8 mg total dose
Minoxidil	PO	0.1-0.2 mg/kg/dose

Note: Several other medications are available to control blood pressure when urgent lowering is either unnecessary or inadvisable. The use of a longer acting agent to avoid is acute elevation and rapid lowering is optimum.

ICU/ Monitored Setting Only

Medication	Recommended Dose
Esmolol	100-500 mcg/kg/minute
Labetolol (IVP policy- not on floor)	IV push: 0.2-1 mg/kg/dose (max 40 mg/dose) Infusion: 0.25-3 mg/kg/hour
Nicardipine	1-3 mcg/kg/min IV infusion
Sodium nitroprusside	0.53-10 mcg/kg/min IV infusion

Fenoldopam	0.2-0.8 mcg/kg/min IV infusion
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Reference

U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, National High Blood Pressure Education Program. The Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents. NIH Publication No. 05-5268. Bethesda, MD: National Heart, Lung, and Blood Institute. Revised May 2005.

Available at www.nhlbi.nih.gov/health/prof/heart/hbp/hbp_ped.pdf