

Defined as persistent systolic and/or diastolic BP that exceeds the 95 <sup>th</sup> percentile for CGA.			
CGA (weeks)	SBP (mmHg) – 95 <sup>th</sup> percentile	DBP (mmHg) – 95 <sup>th</sup> percentile	MAP (mmHg) – 95 <sup>th</sup> percentile
26	72	50	57
28	75	50	58
30	80	55	63
32	83	55	64
34	85	55	65
36	87	65	72
38	92	65	74
40	95	65	75
42	98	65	76
44	105	68	80

Common etiologies of hypertension in premature infants:

1. Renal (renal artery thrombosis, renal vein thrombosis, renal artery stenosis, renal parenchymal disease, severely obstructed urinary tract, low renal mass/impaired nephrogenesis, nephrocalcinosis, acute tubular necrosis, cortical necrosis)
2. Cardiovascular (coarctation/interrupted aortic arch, distal aortic thrombosis, fluid overload)
3. Endocrine (congenital adrenal hyperplasia, hyperaldosteronism, hyperthyroidism, adrenal hemorrhage, hypercalcemia)
4. Bronchopulmonary dysplasia
5. Medications (dexamethasone, caffeine, adrenergic agents, bronchodilators)
6. Neurological (pain, seizures, intracranial hypertension, drug withdrawal, HIE)

Measurement:

- Blood pressure should be taken in the right upper arm unless contraindicated (e.g. PICC line, fracture, etc.) when babies are asleep or quietly awake and not feeding
- Cuff bladder should measure 2/3 of the length of the extremity
- After cuff placement, infant should be left undisturbed for 15 minutes and then 3 successive BP readings obtained at 2-minute intervals. The first reading should be disregarded.

Initial Hypertension Evaluation:

1. Ensure proper measurement technique and cuff size – check q6h trend for a couple of days and obtain multiple readings at given measurement session
2. Review of history (h/o umbilical catheters, diuretic use (increases risk of obstructive stones), recent discontinuation of narcotics, etc.)
3. Review medication list
4. Evaluate for pain
5. Obtain 4 extremity blood pressures
6. Echocardiogram (evaluate for coarctation, LVH)
7. Obtain both renal ultrasound (done by radiology) and renal dopplers (done by vascular)
8. Obtain labs: urinalysis, renal function panel, renin/aldosterone

Consult nephrology for further evaluation once these studies are obtained. They may consider further laboratory studies such as cortisol, thyroid function, and evaluate need to start treatment.