CCT-RN/Paramedic Treatment Guideline 1203/2203

Hypertensive Emergency

An elevated blood pressure reading is not uncommon in emergency patients and usually is not, by itself, an emergency. Only with extremely high BP along with signs of end organ damage (altered mental status, chest pain, CHF, acute aortic dissection, stroke, etc.) does the blood pressure need treated.

The goal of managing hypertensive emergency is to reduce the blood pressure smoothly and gradually without worsening the patient's condition by causing hypotension or hypoperfusion. The MCP may specify a specific end point or target BP; however, reducing the **diastolic BP to 100** is often a reasonable end-point for adults.

Follow **MAMP Protocol 1201/2201**, and the **Severe Hypertension Protocol 4203 Steps A thru E,** as applicable. This includes IV, oxygen, ECG monitoring, and an assessment for the possible cause of the hypertension. If aortic aneurysm dissection* or ischemic stroke,** see special circumstances in Section B below. If emergency blood pressure control is needed:

A. Contact MCP regarding possible treatment options, considering ***one or more*** of the following **based upon direct order of MCP and CCT Class:**

1. Labetalol (*Trandate*): 5 – 10 mg slow IVP. May repeat every 5–20 min, if ordered. *[Note: Labetalol is a potent alpha and beta-blocker that may cause prominent orthostatic hypotension; be prepared to get the patient supine. Use with caution in asthmatics and patients with heart block/bradycardia/CHF].*

2. Lopressor (*Metoprolol*): 5 mg slow IV push. May repeat every 5 minutes up to 3 doses if ordered. ***[Used in Acute MI to decrease heart rate and BP].***

CCT Class 1*:

3. Esmolol (*Brevibloc*): 500 mcg/kg IV over 1 - 3 minutes, then esmolol drip on pump at 50 – 150 mcg/kg/min.

4. Nitroglycerin drip: Typically start at 5 mcg/min on pump, titrate upward by 5 mcg/min every 5 minutes until BP is lowered.
[Note: Drug of choice for chest pain/unstable angina/pulmonary edema].

5. Nitroprusside (*Nipride/Nitropress*) drip: Typically start at 0.5 mcg/kg/min on pump, titrate upward every 5 minutes until end point achieved, typically in dose range of 0.5 – 10 mcg/kg/min. *[Note: Typical mix is 50mg in 500ml of D5W (100mcg/ml)].* BP checks must be done every 2-3 minutes during titration and then every 5 minutes thereafter, once the BP has stabilized.
[Note: this is the drug of choice for intracranial hemorrhage].

6. Nicardipine (*Cardene*) drip: Typically start at 5 mg/hour on pump, titrate upward by 2.5 mg/hour every 5 min to max. dose of 15 mg/hour.
[Note: special use in stroke. See Section B. 2. below].**

B. Special circumstances.

1. ***Aortic dissection: **With appropriate MCP order**, drugs of choice for aortic dissection are to ***first use*** a beta-blocker such as labetalol or esmolol as in Step 1 or 3 above, and ***then start*** the nitroprusside drip as in Step 5 above.

2. **Ischemic stroke: Because TPA will be withheld from eligible acute stroke patients if systolic BP >185 or diastolic BP >110, the goal of treatment is to get the BP below these parameters without causing an acute drop in BP. **With appropriate MCP order,** consider:

a. labetalol (*Trandate*) 10 mg IV over 2 minutes. May repeat once if needed. **Then if BP remains high, consider:**

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b. nitroprusside (*Nipride*) 0.5 mcg/kg/min IV on pump, titrate upward as in Step A.5 above

OR

nicardipine (*Cardene*) 5 mg/hour IV on pump, titrate upward by 2.5 mg/hour every 5 minutes to max. dose of 15 mg/hour.

C. **Contact Medical Command** enroute with patient report and ETA.