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## Hypertensive Crisis –

**Patho** – A hypertensive crisis can occur when a rapidly increasing blood pressure resulting in shearing of the endothelial surface due to turbulent blood flow in the blood vessels leading to damage to vascular damage and release of vasoconstricting agents.

A hypertensive crisis can be characterized as either a hypertensive emergency or hypertensive urgency.

There are several classifications of hypertension.

Category	SYSTOLIC BLOOD PRESSURE		DIASTOLIC BLOOD PRESSURE
Normal	<120	AND	<80
Elevated	120-129	AND	<80
Hypertension, stage 1	130-139	OR	80-89
Hypertension, stage 2	>/= 140	OR	>/= 90
<b>Hypertensive Crisis</b>	<b>&gt;180</b>	<b>AND/OR</b>	<b>&gt;120</b>

**Hypertensive Emergency** – A hypertensive emergency is when blood pressure is severely elevated (SBP>180/DBP>120), that also **involves evidence of target organ damage** (including neuro, cardiac, or renal injury). This is **a medical emergency** and requires immediate treatment.

Hypertensive emergencies can cause malignant hypertension when there is a sudden significant increase in blood pressure from baseline, and evidence of papilledema, which is optic disc swelling related to increased intracranial pressure.

Hypertensive emergency can also cause renal insufficiency. Involving either minor injury or complete renal failure. Resulting in oliguria and hematuria.

**Hypertensive Encephalopathy** – Hypertensive encephalopathy occurs when there is a sudden significant increase in blood pressure from baseline, that is associated with severe headache, N/V, seizures,

confusion, visual disturbances, and coma. These symptoms are caused by increased cerebral capillary permeability, that can lead to cerebral edema and altered cerebral function.

**Hypertensive Urgency** – A hypertensive urgency is when blood pressure is severely elevated (SBP>180/DBP>120), but there is **no evidence of target organ damage**. Hospitalization is not always required.

**Causes** – acute aortic dissection, exacerbation of chronic hypertension, head injury, MAOIs taken with tyramine foods, preeclampsia, rebound hypertension, recreational drug use: cocaine and amphetamines.

**On-scene treatment** – Supportive care until arrival at hospital for further evaluation. ABCs!!

Assessment of symptoms, monitoring of BP, HR, and heart rhythm. Establish IV access.

**ED treatment** – Hypertensive emergencies require IV antihypertensive medication. The blood pressure and mean arterial pressure(MAP) is used to determine treatment.

\*\*\*Lowering BP too quickly or by too much can decrease cerebral, coronary, or renal perfusion This resulting in stroke, MI, or renal failure.

Medications –

Nitrates: sodium nitroprusside, nitroglycerin.

Vasodilators: fenoldopam, nicardipine.

Adrenergic inhibitors: phentolamine, labetalol, esmolol, metoprolol.

Calcium channel blockers: clevidipine, nicardipine.

**Hypertensive Urgency** - does not always require IV drug therapy. Oral antihypertensive therapy can be used. Most common drugs include: Captopril, labetalol, clonidine, and amlodipine.

**Role of the ED nurse –**

Assessment - Obtain health history – history of HTN? Any other conditions?

Medications - what medications do they currently take, dosage, sticking to regimen?

Frequent Blood pressures(Q5-15 minutes), continuous cardiac monitoring.

Medication administration as ordered.

Labs to monitor organ function: BUN/Cr, Troponin

**Prevention/Education –**

Adherence to medication regimen.

Take BP daily.

Routine doctors' visits.

Lifestyle modifications: exercise, low-sodium diet, limit alcohol intake, decrease stress.

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