

Hypertensive Emergency Diagnosis and Management

Hypertensive emergency is a life threatening medical emergency. Diagnostic workup starts with several laboratory tests and chest radiograph to look for acute findings. Management principles include a careful decrease in the patient's blood pressure, intravenous antihypertensive agents, and continuous monitoring of vital signs.



PLAY PICMONIC

Diagnosis

Laboratory Tests

Lab-coat and Test-tubes

The diagnostic workup of a patient with suspected hypertensive emergency begins with laboratory testing. Complete blood count (CBC), blood smears, renal panels, brain natriuretic peptide (BNP), and troponin are some commonly used tests to evaluate for end-organ dysfunction.

Chest X-ray

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A chest radiograph is usually performed because of its speed and value for evincing acute findings. This test can help identify indications for immediate surgery (e.g. aortic dissection) or planning for inpatient admission.

Management

Decrease Blood Pressure Carefully

Down-arrow Blood Pressure-cuff Care-bear

After initial measures to stabilize the patient, vital signs, arterial blood pressure, urine output, and ABCs should be monitored. During the first hour of admission, intravenous antihypertensive agents can be used to lower blood pressure. However, blood pressure should be lowered no more than 25% in the first hour to avoid hypoperfusion of organs such as the brain, heart, and kidneys. In the next 2 to 6 hours the goal of management is to reduce the blood pressure to 160/100. Baseline blood pressure should be reached over the first 48 hours of admission.

Antihypertensives

Ant-tie-hiker-BP Pill-bottle

Intravenous medications for the treatment of hypertensive emergency are varied and must be chosen carefully. Sodium nitroprusside is commonly used, but carries a risk of cyanide toxicity. Levels should be monitored, and the initial bolus must not be too large. The underlying cause of the patient's hypertension can be used to guide treatment. For example, aortic dissection can be managed with esmolol or labetalol. These drugs can also be used for acute coronary syndrome. In cases of acute renal failure, clevidipine or nicardipine is first line.

Monitor Vital Signs

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Patients with hypertensive emergency require continuous vital sign monitoring. Remember to check for signs of volume depletion and administer IV fluids if needed.