

Hypertensive Crisis in Children and Treatment

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EDITORIAL

In youngsters, a hypertensive crisis is a rather uncommon occurrence. However, if left untreated, it can be life-threatening and result in irreparable organ damage. Despite having comparable high blood pressure, the clinical presentation of people with hypertensive crisis can range from extremely minor (hypertensive urgency) to severe symptoms (hypertensive emergency) (BP). Individualized assessment of patients with high blood pressure, with a focus on assessing end-organ damage rather than the exact BP number, is critical in directing physicians' first care of a hypertensive crisis. The primary goal of hypertensive crisis treatment is to avoid or treat life-threatening complications of hypertension-induced organ dysfunction, such as kidney failure. While the treatment strategy should be geared at lowering blood pressure as soon as possible to prevent hypertensive damage to these organs, it should not be done too quickly to risk hypoperfusion of essential organs. Intravenous continuous infusions of antihypertensive medicines, rather than intravenous boluses, should be the preferred route of beginning treatment. The existence or absence of target organ damage (TOD) and the sort of treatment the patient will get are the variations between hypertensive crisis and hypertensive emergency. TOD, which is only observed in hypertensive emergencies and can affect the heart, kidneys, or brain, is not present in patients with hypertensive urgency. It is critical to recognise hypertensive crises at the initial exam. Obtaining a complete medical and pharmaceutical history to use as a treatment guide is a crucial first step. Appropriate use of specific medications based on knowledge of any concomitant illness state is required for proper and effective treatment of hypertensive urgency or emergency.

In the presence of end-organ damage, hypertensive crises can present with non-specific symptoms as well as identifiable and severe symptoms. Hypertensive emergency, also known as hypertensive crisis with end-organ damage, is characterised by more severe symptoms and can result in irreversible organ damage. As a result, it's critical to conduct a comprehensive workup on any paediatric

kid suspected of having a hypertensive emergency while treating the raised blood pressure in a progressive manner. Hypertensive crisis treatment is determined by the existence of end-organ damage and can range from fast-acting intravenous therapy to oral medication in less severe situations. Treatment for such conditions necessitates a delicate balancing act between gradually lowering blood pressure while avoiding end-organ damage. Protocols for the treatment of hypertensive crises have been created in specific situations, such as in the presence of endocrinologic neoplasms, monogenic sources of hypertension, renal illnesses, and cardiac disease. Clinicians can now expand their reach of care to emergency situations and assist emergency medical service (EMS) providers in real time thanks to the introduction of telehealth. Furthermore, new drug development and updates on the expanding topic of hypertension in the paediatric population continue to enhance outcomes and efficiency in hypertension diagnosis and management. When there is evidence of end-organ toxicity, children with hypertension should be evaluated for emergency therapy. Extreme hypertension complications can be exceedingly serious, even life-threatening, with long-term consequences. Damage to the central nervous system is the most serious.

Treatment for hypertensive emergencies should focus on reducing blood pressure to the level required to decrease toxicity while avoiding hypoperfusion of important organs. In general, blood pressure decrease in an intensive care unit should be closely monitored, with special emphasis paid to central nervous system, cardiac, and renal function. Intravenous agents are recommended in these situations since they are easier to control blood pressure with. A continuous infusion of nicardipine or sodium nitroprusside is recommended in the absence of certain contraindications. A bolus injection of intravenous labetalol followed by a continuous infusion can also be employed. Oral medications should only be used in cases where end-of-life symptoms are present. Because general paediatricians have limited experience managing hypertension emergencies, it is recommended that patients consult with hypertensive emergency specialists as possible.

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