HYPERTENSIVE ENCEPHALOPATHY IN CHILDREN
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Hypertensive encephalopathy is an uncommon but recognized complication of malignant hypertension in children but has characteristic clinical and pathological features which are clearly different from those of chronic hypertension. Hypertensive encephalopathy is the second most common cause of death after diabetes in the developed countries. Hypertensive Encephalopathy is called silent killer, although it is not.

According to World Health Organization (WHO), more than 60% of adults over 65 years of age, 15% of young adults and adolescence and less than 10% of children have hypertension. The prevalence of hypertension in childhood is less than in adulthood, but the evidence of adulthood hypertension has root in the childhood. Increase in the prevalence of pediatric hypertension is paralleled with the increase in obesity among children in the recent years. Obesity is a major cause contributor for hypertensive disease in children. It is 30% evident in children having body mass index (BMI) above 95 percentile.

The symptoms are headache, seizures, dizziness, nausea, vomiting, blurred vision, altered consciousness and mental status, cortical blindness, facial palsy and hemiplegia. Increased depression of mental state can lead to stupor, coma, stroke and even death.

According to JNC7 of hypertension, Hypertensive crisis have been classified into hypertensive urgency and hypertensive emergency based on the target organ abnormalities.

1) In hypertensive emergency, along with the major symptoms, target organ abnormalities like seizures, intracranial hemorrhage, Posterior reversible encephalopathy syndrome (PRES), focal neurological deficit, congestive cardiac failure, papilledema, retinal hemorrhages, and acute vision loss are also present and the blood pressure is from 140-230 mm/Hg of systolic and 120 to 170 mm/Hg of diastolic. The target organ abnormalities have adverse effect in older children and in adolescence. However it is also present in neonates and young children which could result in a long term consequences.

2) In hypertensive urgency the target organ abnormalities are not present but it can develop into hypertensive emergency.

The underlying pathogenesis is the loss of cerebral auto regulation leads to disruption of blood brain barrier and endothelial dysfunction which leads to imbalance in oxygen supply, formation of edema and micro hemorrhages.

The diagnosis is based on present and past medical history of the patient.
which usually shows low birth weight, intrauterine growth retardation, prematurity and familial history of hypertension, obesity, diabetes, early stroke, hereditary abnormalities of heart, kidney and brain. In young adults and adolescence medical history which includes use of steroids, and life style history regarding sleep apnea and dietary should be assessed. BMI curve must be made. Instrumental and laboratory diagnosis includes measurement of blood pressure with sphygmomanometer, complete blood analysis, Doppler sonography of kidney, ophthalmoscopy, electrocardiography, echocardiography, MRI, and CT scan imaging.

Prompt recognition and treatment is the utmost importance to prevent further organ damage. Pediatric Hypertensive Encephalopathy is always an indication for Immediate Intensive care admission and administration of IV antihypertensive drugs and the goal is to reduce the blood pressure by maximum of 20 percent. Early diagnosis, aggressive but careful management and long term follow up will reduce the complications.

Pediatric hypertensive encephalopathy can be reasonably prevented and the prevention is much easier than treating and restoring the lost functions of the patient in a complete recovery. Simple easy measures like Dietary changes, life style modifications like leading a stress free life, weight loss reduction to reduce the body mass index and regular monitoring of BMI and blood pressure, increasing physical activity can be seen as an effective implement in preventing the disease.

Literature:
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