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Adrenal causes of hypertension in children

Iwona Ben-Skowronek
Medical University of Lublin, Poland

Arterial hypertension in children is defined as average systolic and/or diastolic BP that is over the 95th percentile for the gender, age and height on over three occasions. The cause of arterial hypertension in 1 to 2% of children is overproduction of catecholamines as the effect of pheochromocytoma development. Mutations of the genes *VHL, RET, NF1* (Gene 17 Neurofibromatosis type 1), *SDHB* and *SDHD* are all known to cause up to 25% familial pheochromocytoma. Pheochromocytoma may be a tumor of the multiple endocrine neoplasia syndrome, type IIA and type IIB (also known as MEN IIA and MEN IIB). The monogenic defects of mineralocorticoid production in the cortex of adrenals lead to hypertension with a decreased serum renin concentration. Most common is the congenital adrenal hyperplasia (CAH), especially 11-beta hydroxylase deficiency (5-8% of CAH) connected with fetal virilisation in girls and steroid 17- hydroxylase deficiency associated with the abnormal sex phenotype. Hyperaldosteronism as the cause of hypertension may be diagnosed as familial hyperaldosteronism type I with a chimeric gene between CYP11B1 and CYP11B2- glucocorticoid remediable aldosteronism sensitive to dexamethasone treatment or familial hyperaldosteronism type II without hybrid mutation. A rare form is the apparent mineralocorticoid excess (AME) – an inherited form of hypertension caused by 11-beta hydroxisteroid dehydrogenase type 2 deficiency. Primary aldosteronism is the common cause of hypertension in adults (to 37%) and rare in children that suggests development of aldosterone-producing adenomas in children prior to development of hypertension and vascular damage. The differential diagnosis of hypertension in children is necessary for choice of adequate treatment.

Biography

Iwona Ben-Skowronek has completed her PhD from the Medical University of Lublin and she has conducted her Post-doctoral studies in this University. She is the Head of the Dept. Pediatric Endocrinology and Diabetology, Medical University in Lublin. She has published more than 55 papers in reputed journals and has been serving as an Editorial Board Member.

skowroneki@interia.pl

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