

Management of hypertension in children and adolescents

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Abstract

Blood pressure in pediatric age bracket varies with age, sex and height. It's categorized into primary and high blood pressure (an underlying cause is identified). High blood pressure is being increasingly recognized in children especially in adolescents and form 12% to 18% of the etiology of hypertension during this cohort. Treatment for high blood pressure is principally non-pharmacological within the sort of weight reduction, reduction of salt intake and exercise. Mild pharmacological treatment is required in some patients as supplementary to the opposite. Hypertension in children and adolescents is principally secondary in origin. Renal parenchymal disease is that the most frequent (70-80%) causes of hypertension while renovascular, cardiovascular and endocrinal disorders constitute only 20-30%. In high blood pressure, treatment of the underlying etiology is in most of the cases, the key of success within the management of hypertension. Although the approach to the treatment of hypertensive children differs somewhat from that of the adult and therefore the general principals are similar. Pharmacological treatment is mandatory in these patients and will be done under the subsequent rules; should be utilized in stepwise fashion, the smallest amount toxic drug should be prescribed first, use maximum recommended dose of 1 pharmacological drug before adding another and when combined drug therapy is employed, the drug being prescribed should have different sites or modes of action so as to achieve a further effect. A number of the antihypertensive drugs used are diuretics which are used as first line of treatment moreover as together with other medications (e.g. Thiazine, Furosemide, etc.).

Beta blockers will be used safely alone or together with others if there's no contraindication to their use as in asthma attack and congestive heart condition (e.g. Propranolol, Atenolol, Metoprolol, Pindol, etc.) Their mode of action is especially by reduction within the vital sign and flow rate and blockage of the discharge of renin from the kidneys in response to adrenergic stimulation. Alpha and beta-blocking agents (e.g. Labetalol) have added

useful and safe lines within the treatment of chronic yet as acute hypertensive emergencies in pediatrics. Calcium channel blocking agents act on the sleek muscle cells of the blood vessels and inhibit the influx of calcium causing inhibition of the tone of the graceful muscles resulting in peripheral vasodilatation and thus reducing the peripheral resistance (e.g. Verapamil, Nefidipine, Amlodipine et al.). Angiotensin converting enzyme inhibitors block the biotransformation of Hypertensin to angiotensin II and subsequently prevent the vasoconstriction and therefore the release of renin and aldosterone. They're of great benefit within the treatment of high-renin hypertension. Other categories of antihypertensive drugs which are employed in emergencies and in non-responder children and adolescents are alpha-adrenergic blocking agents, peripheral vasodilators and centrally acting alpha stimulators. Close monitoring, follow ups, parents and patients understanding and compliance are essential to assure proper and successful management of hypertension in children and adolescents. A history and physical examination and targeted screening tests should be done to judge for underlying medical disorders, and kids and adolescents with hypertension should be screened for comorbid cardiovascular diseases, including diabetes and hyperlipidemia.

Hypertension in children is initially treated with lifestyle changes like weight loss if overweight or obese, a healthy diet, and regular exercise. Children with symptomatic hypertension (e.g., headaches, cognitive changes), stage 2 hypertension without a modifiable factor like obesity, evidence of left ventricular hypertrophy on echocardiography, any stage of hypertension related to chronic uropathy or diabetes, or persistent hypertension despite an effort of lifestyle modifications require antihypertensive medications and may be evaluated for cardiovascular damage with echocardiography. The treatment of hypertension in children and adolescents has been markedly changed in recent years by several factors, including the publication of latest consensus recommendations, the obesity epidemic, and therefore the increased availability of data on efficacy and safety of antihypertensive medications within the young. During this

Short Article

review we present an updated approach to the outpatient management of hypertension within the child or adolescent, utilizing representative cases let's say important principles likewise as possible controversies. After the diagnosis of hypertension has been confirmed and also the underlying etiology (if any) identified, an individualized treatment regimen should be initiated. Most authorities recommend that this include non-pharmacologic measures for all patients, with addition of antihypertensive medications during a selected group of youngsters. Medications don't seem to be recommended for all patients, since there are not any long-term pediatric data on their benefits or adverse effects on growth and development. Although recent legislative initiatives within the USA and Europe have produced, and can still produce, substantial data on the short-term efficacy and tolerability of antihypertensive agents in children and adolescents it's

unlikely that studies of sufficient duration to answer the long-term questions will ever be conducted within the young. Hypertension in children and adolescents has gained ground in cardiovascular medicine, because of the progress made in several areas of pathophysiological and clinical research. These guidelines represent a consensus among specialists involved within the detection and control of high force per unit area in children and adolescents. the rules synthesize a substantial amount of scientific data and clinical experience and represent best clinical wisdom upon which physicians, nurses and families should base their decisions. They point to the burden of hypertension in children and adolescents, and its contribution to this epidemic of disorder, these guidelines should encourage public policy makers, to develop a world effort to enhance identification and treatment of high pressure level among children and adolescents.