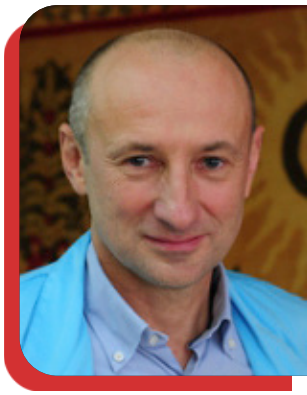
FOCUS ON PAEDIATRIC HYPERTENSION

Adolescents with hypertension – the transition to adult care: how we do it in Poland



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Hypertension in children and adolescents is no longer considered a rare disease. While in young children it is relatively rare and usually presents as secondary hypertension (SH), primary hypertension (PH) is now diagnosed starting already at age 3.[1] PH becomes the dominant cause of hypertension beginning with the pubertal growth spurt. In adolescents, the prevalence of hypertension is similar to that seen in young adults and is estimated at approximately 10% of the population, with a higher incidence in boys.[2,3]

From the point of view of public health, the increase in the prevalence of hypertension in children and adolescents in recent decades by approximately 30% is of significant importance.[3] Analyses of the etiology of hypertension indicate that over the past 40 years, the age at which PH is diagnosed has significantly shifted to younger age groups.[1,4] This has occurred despite the availability of numerous sophisticated diagnostic methods. Adolescents with PH exhibit a fairly typical clinical and laboratory phenotype, with body composition abnormalities and metabolic disturbances typical of metabolic syndrome. This necessitates the diagnosis and treatment of metabolic disorders such as hyperuricemia and insulin resistance.[5]

Another significant and growing problem is the long-term consequences of prematurity and/or low birth weight, which affect approximately 10% of all live births. Long-term consequences include the development of hypertension, cardiovascular disease, body composition abnormalities and metabolic abnormalities typical of metabolic syndrome. These can manifest already during childhood and adolescence.

The predominant causes of SH in children and adolescents are renal disease (CKD) and renovascular hypertension (RVH). Unlike in adults, the causes of RVH are not atherosclerotic renal artery stenosis, but fibromuscular dysplasia (FMD) and various syndromic forms of RVH. Other conditions such as endocrine tumors and monogenic hypertension constitute an important but small percentage of all cases of hypertension in adolescents. In specialist centers, a significant problem is hypertension in patients with coarctation of the aorta and mid-aortic syndrome. It indicates a significant diversity of the group of adolescents with hypertension.

As with other chronic conditions of developmental age, ensuring an appropriate transition to adult care is an organizational challenge. This problem encompasses both psychological aspects, such as adherence, and clinical aspects, related to the distinct pathophysiology of both PH and SH. An additional issue is the treatment method. While adolescents with hypertension are treated with medications from the same drug classes as adults, combination medications are not licensed for pediatric use. Furthermore, they are not reimbursed in many countries.

No single framework for transitioning adolescents with hypertension to adult care has been developed. Published statements represent expert opinions and depend largely on the healthcare system in a given country and applicable recommendations.[6]

In the following part of the position paper, we present a framework and proposal for transitional care for adolescents with hypertension used in our centers and based on the recommendations of Polish Society of Arterial Hypertension (PSAH) and the European Society of Hypertension. (ESH).[7,8]

According to the ESH and PSAH recommendations, the classification of hypertension, including the thresholds for diagnosing hypertension, is common for individuals aged 16 and older. This is justified by an analysis of population-based blood pressure values. Furthermore, the adoption of such classifications facilitates a common approach to diagnosis and treatment for a large population group that will be transferred to adult health care within two years. At the same time, it helps avoid underdiagnosis of hypertension in boys aged 18 if blood pressure percentiles were used. It should be noted that in the USA, common thresholds for diagnosing hypertension (lower than in the EU, i.e. >130/80) and classification for adults already apply to teenagers from 13 years of age.

The main problem in transferring adolescents with hypertension to adult care is patients with SH. As mentioned, SH hypertension in adolescents, accounting for up to 20% of all cases of hypertension at the age of 18, include conditions rarely observed in the practice of family practitioners. These include cases of unifocal, univessel FMD, CKD, as well as complex congenital and acquired vascular pathologies involving multiple vascular beds [9].

Similarly, rare forms of hypertension, including monogenic hypertension, are a special case. Therefore, from a practical perspective, a significant problem is preparing patients with SH for further care in a specialist center. Prior consultations and planning for further corrective procedures for vascular pathologies, as well as establishing treatment for patients with monogenic hypertension, should occur before patients reach adulthood.

In our two centers, over the past two decades we have developed a collaborative consultation protocol for patients with SH. Joint consultations, both virtual and on-site, take place as needed, generally every 3-6 months. This allows for joint planning of the scope and method of vascular interventions for RVH and/or aortic pathology and is in line with 2023 Guidelines of ESH, that *'nevertheless, despite their limited prevalence, detection and management of secondary forms of hypertension is of utmost importance, because these forms often carry a high or very-high risk of morbidity and mortality and can possibly be cured by timely treatment of their cause.'* [8]

Patients thus prepared for vascular interventions are transferred for further care to a specialized adult center in the Department of Hypertension of the National Institute of Cardiology, where physicians have already assessed the patient's problems and participated in developing the treatment plan. Regardless, a significant problem is the meeting of patients who are still under the care of their parents but will soon become adults with the team of doctors who will take over their care.

The main group of adolescents with hypertension are patients with PH. They constitute a significant percentage of the population. These patients should be referred to family physicians for care. For practical reasons, due to the relatively large number of patients, organizing specific procedures and protocols for transferring patients with uncomplicated PH to adult care is difficult. In our practice, we maintain a practice of thoroughly informing family physicians about the course of the disease, the treatment being administered, and its tolerance. Furthermore, we utilize a system of coordinated care, which allows family physicians to directly contact specialists and clarify difficult clinical issues. The exception to this are cases of hypertension in adolescents associated with prematurity and/or low birth weight. These patients present with a complex set of metabolic complications that require specialized, sometimes interdisciplinary, treatment. In our opinion, they should also be provided with care in adult referral centers.

ESH 2023 Guidelines clearly summarize, that *'the asymptomatic nature of the BP elevation and the remoteness of its possible adverse consequences may favor underappreciation of the risks and poor adherence to the prescribed treatment. During transition, close collaboration and sharing of clinical information between pediatricians and adulthood physicians is of crucial importance. Parents' involvement plays an important role.'* [8]

Therefore, in the light of the current 2023 ESH recommendations, we created a model collaboration between pediatric and adult

hypertension centers and highlight, that after transition is completed, patients should be closely followed to detect the BP trajectories in the subsequent years.

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