

## CLINICAL-NEUROLOGICAL FEATURES OF CHRONIC CIRCULATORY FAILURE OF THE CRANIAL BRAIN IN PATIENTS WITH ARTERIAL HYPOTENSION

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**Annotation:** *this article highlights the clinical-neurological basis for chronic circulatory failure of the cranial brain in patients with arterial hypotension.*

**Keywords:** *primary hypertension, locus, GWAS, caffeine, vitamin D, cranial, blood pressure.*

### Primary hypertension

Hypertension arises from the complex interaction of genes and environmental factors. Many common genetic variants with small effects on blood pressure have been identified, as well as some rare genetic variants with large effects on blood pressure. Also, genome-wide association studies (GWAS) have identified 35 genetic loci (loci) associated with blood pressure. Of these genetic loci that affect blood pressure, 12 were found new. This sentinel SNP is located within genes associated with vascular smooth muscle and kidney function. DNA methylation can in some way affect the Binding of general hereditary variability to multiple phenotypes. A single option test for 35 sentinel SNPs (known and novel) in this study shows that genetic variants contribute to the risk of clinical phenotypes associated with isolated or total high blood pressure. With regard to Western nutrition and lifestyle, blood pressure rises with aging, and in later life there is a greater risk of hypertension. A number of environmental factors affect blood pressure. High salt intake increases blood pressure in salt-sensitive people; lack of exercise, central obesity may play a role in isolated cases. Caffeine consumption, and vitamin D deficiency, the possible roles of other factors, such as are not very clear. Insulin resistance, which is common in obesity and is a component of Syndrome X, also contributes to hypertension. Early life events such as low birth weight, maternal smoking, and lack of breastfeeding can be risk factors for adult-critical hypertension. High blood uric acid levels have been found to increase compared to people with normal blood pressure in patients with hypertension, but whether the former plays a causal role or contributes to a worsening of kidney function, these questions remain unclear. In winter, the average blood pressure can be higher than in summer. Periodontal disease is also associated with high blood pressure.

### Secondary hypertension

Secondary hypertension is caused by identified causes. Kidney disease is the most common secondary cause of hypertension. Hypertension, as well as Cushing's syndrome, hyperthyroidism, hypothyroidism, acromegaly, Conn syndrome or hyperaldosteronism, renal artery stenosis (atherosclerosis or fibromuscular dysplasia), hyperocrine. Other causes of secondary hypertension include obesity, sleep apnea, pregnancy, aortic coarctation, excessive consumption of licorice herb, high alcohol consumption, certain prescription drugs, herbal preparations, and stimulants such as coffee, cocaine, and methamphetamine[42]. Arsenic exposure through drinking water has been shown to be associated with increased blood pressure. Depression was also associated with hypertension. Often, loneliness was also a risk factor that caused hypertension. A 2018 study found that any alcohol increases blood pressure in men, while more than one or two drinks increase the risk in women.

#### Pathophysiology

In most people with underlying hypertension, increased resistance to blood flow (total peripheral resistance) leads to high pressure. In some young people with pre-hypertension or "borderline hypertension", there is evidence of high cardiac output, increased heart rate and normal peripheral resistance, so-called hyperkinetic border hypertension. These people develop the typical characteristics of basic hypertension established in later life, since their cardiac activity decreases and peripheral resistance increases with age. In built-in hypertension, increased peripheral resistance is mainly due to the structural narrowing of the small arteries and arterioles, but a decrease in the number or density of capillaries can also contribute. Hypertension is also associated with a decrease in peripheral venous adaptation. This can increase venous return, increase the previous load on the heart, and consequently cause diastolic dysfunction. In older people with hypertension, pulse pressure (the difference between systolic and diastolic blood pressure) often increases. This may mean that systolic pressure is abnormally high, but diastolic pressure can also be normal or low. This condition is called isolated systolic hypertension. In older people with hypertension or isolated systolic hypertension, high pulse pressure is explained by increased arterial stiffness. This is usually accompanied by aging and can be exacerbated by high blood pressure. Many mechanisms have been proposed to account for the growth of peripheral resistance in hypertension. Most evidence suggests disorders of salt and water function in the kidneys (especially abnormalities in the intrarenal renin-angiotensin system) or abnormalities of the sympathetic nervous system. In addition, it has been suggested that endothelial dysfunction and vascular inflammation can also contribute to increased peripheral resistance and vascular damage in hypertension. Interleukin 17 was

of interest for its role in increasing the production of other immune system chemical signals believed to be associated with hypertension, such as tumor necrosis factor alpha, interleukin 1, interleukin 6, and interleukin 8. The lack of excess sodium or potassium in the diet leads to excess intracellular sodium. This shortens the smooth muscles of the blood vessels and limits blood flow resulting in increased blood pressure.

#### Diagnostics

The American Heart Association (AHA) recommends at least three recreational measures in at least two separate medical visits. The UK National Institute for health and Care recommends outpatient blood pressure monitoring to confirm the diagnosis of hypertension if the clinic has a blood pressure of 140/90 mmHg or higher.

#### Measurement techniques

To make an accurate diagnosis of hypertension, it is necessary to use the technique of measuring blood pressure correctly. Incorrect blood pressure measurements are common and can change the blood pressure indicator to 10 mmHg, leading to misdiagnosis and misclassification of hypertension. The technique of measuring blood pressure correctly involves several stages. To properly measure blood pressure, a person whose blood pressure is being measured requires at least five minutes of quiet sitting, and then a properly installed blood pressure cuff should be placed on their bare upper arm[65]. The person whose blood pressure is being measured should not talk or act in the process. The hand being measured should be supported on a flat surface at heart level. Blood pressure measurement should be carried out in a quiet room, so a blood pressure examiner can hear Korotkoff sounds while listening to the brachial artery with a stethoscope to accurately measure blood pressure. When listening to Korotkoff sounds, the blood pressure cuff should be lowered slowly (2-3 mmHg per second). Before measuring a person's blood pressure, it is necessary to empty the bladder, as this can increase blood pressure by 15/10 mmHg. To ensure correctness, it is necessary to take several blood pressure indicators (at least two) at intervals of 1-2 minutes from each other. Outpatient blood pressure monitoring for 12-24 hours is the most accurate way to confirm the diagnosis. With the exception of those who have very high blood pressure, this can become dangerous, especially when the activity of the members worsens.. The importance of not misdiagnosing those suffering from white gown hypertension due to the presence of 24-hour outpatient blood pressure meters and home blood pressure apparatus has led to a change in protocols. The United States Preventive Services Task Force also recommends taking measurements outside the health environment. Pseudogipertension or incompressible artery

syndrome in old age can also require attention. This condition is associated with calcification of the arteries, resulting in abnormal high blood pressure readings using a blood pressure cuff, with normal intra-arterial measurements of blood pressure. Orthostatic hypertension is an increase in blood pressure when standing.

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