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Perspective

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A Brief Overview on Epidemiology of Primary and Secondary Hypertension

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DESCRIPTION

Hypertension, commonly known as High Blood Pressure (HBP), is a long-term medical disorder characterised by chronically excessive blood pressure in the arteries. Symptoms of high blood pressure are ufncommon. Stroke, coronary artery disease, heart failure, atrial fibrillation, peripheral arterial disease, vision loss, chronic renal disease, and dementia are all associated to long-term high blood pressure. Even when blood pressure levels reach excessive levels, most people with high blood pressure show no signs or symptoms. Headaches, shortness of breath, and nosebleeds are common signs and symptoms of high blood pressure, but they aren't specific and typically don't appear until the condition has developed to a severe or life-threatening level. There are two forms of high blood pressure.

Primary hypertension

Hypertension is caused by a complex interaction of genes and environmental factors. Numerous common genetic variations with minor effects on blood pressure, as well as some uncommon genetic variants with substantial impacts on blood pressure, have been found. Furthermore, Genome-Wide Association Studies (GWAS) have revealed 35 genetic loci associated with blood pressure. Twelve of these genetic loci regulating blood pressure were discovered recently. Each additional genomic locus has a sentinel SNP that has been linked to DNA methylation at numerous neighbouring CpG sites. These sentinel SNPs are found in genes that are involved with vascular smooth muscle and renal function.

Although the mechanisms behind these correlations are unknown, DNA methylation may play a role in connecting common genetic variation to different phenotypes. The single variant test used in this investigation for the 35 sentinel SNPs (known and novel) revealed that genetic variations, alone or in combination, add to the risk of clinical symptoms associated with high blood pressure.

When a liberal diet and lifestyle are combined, blood pressure rises with age, and the risk of developing hypertensive later in life is high. Blood pressure is influenced by a variety of environmental variables. High salt consumption elevates blood pressure in salt sensitive people; lack of exercise and central obesity can also play a role in some circumstances. Other variables, such as coffee consumption and vitamin D insufficiency, may also have a role. Insulin resistance, which is widespread in obesity and is part of syndrome X (or the metabolic syndrome), leads to hypertension. Early-life events such as low birth weight, mother smoking, and a lack of breastfeeding may be risk factors for adult essential hypertension, while the mechanisms connecting these exposures to adult hypertension are unknown. Untreated persons with hypertension have a higher risk of high blood uric acid than people with normal blood pressure, while it is unclear whether the former is a cause or a result of impaired kidney function. In the winter, average blood pressure may be greater than in the summer. High blood pressure is also linked to periodontal disease.

Secondary hypertension

Secondary hypertension is caused by a known disease process. The most prevalent secondary cause of hypertension is kidney dysfunction. Endocrine diseases such as Cushing's syndrome, hyperthyroidism, hypothyroidism, acromegaly, Conn's syndrome or hyperaldosteronism, renal artery stenosis (from atherosclerosis or fibromuscular dysplasia), hyperparathyroidism, and pheochromocytoma can also induce hypertension. Other causes of secondary hypertension include obesity, sleep apnea, pregnancy, aortic coarctation, excessive liquorice use, excessive alcohol consumption, some prescription medications, herbal treatments, and stimulants such as coffee, cocaine, and methamphetamine. Arsenic exposure through drinking water has been linked to high blood pressure.