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"Hypertension Treatment as Cardiovascular Disease Prevention: A Glimpse into the Future"

Hypertension is highly prevalent, affecting approximately 45% of the adult US population. It is a major risk factor for cardiovascular disease (CVD), including heart failure, myocardial infarction, stroke and chronic kidney disease. Despite the availability of highly effective medical treatments for hypertension, blood pressure (BP) control rates have declined in the US population as a whole, as well as in hypertensive patients, over the last decade. Major barriers to controlling BP in hypertensive patients include difficulty in accurately measuring BPs and transmitting the values to healthcare providers. The recently launched Better BP study is addressing this problem by evaluating novel approaches for measuring awake and sleep BP in free-living individuals. Technological advances, including portable wrist monitoring devices such as the BPro device, will likely greatly facilitate the monitoring of out-of-office BP. A key to solving the growing problem of uncontrolled BP in the population is prevention and early treatment of hypertension in younger persons to prevent CVD outcomes. This will require elucidation of novel genetic, epigenetic and proteomic characteristics that are linked with BP increases over time and the incorporation of surrogate outcomes, e.g., improvements in vascular stiffness, LV structure and function to assess the benefits of early treatment. In addition, novel strategies for cost effective long-term follow-up and novel therapies with implementation research to assess the effectiveness (including cost-effectiveness) of these approaches to BP treatment and control are needed to prevent CVD and premature mortality in the future.