Target for Systolic Blood Pressure during Treatment of Hypertension: How Low to Go

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As early as the 1920s, insurance reports documented blood pressure (BP) as an important risk factor for cardiovascular disease (CVD) complications. In subsequent years, observational studies have repeatedly demonstrated a strong, continuous relationship between BP and CVD, with no evidence of a threshold for risk throughout the usual range of BP in clinical practice. The 1967 and 1970 Veterans Administration Cooperative Study Group reports ushered in the era of effective antihypertensive drug therapy. There is abundant clinical trial evidence that antihypertensive drug therapy can reduce the risk of CVD but the optimal target for systolic BP (SBP) during treatment has been controversial. A number of recent clinical trials, including the Systolic Blood Pressure Intervention Trial (SPRINT), Action to Control Cardiovascular Disease in Diabetes (ACCORD) and Secondary Prevention of Small Subcortical Strokes (SPS3), have lead to a better understanding of "how low to go" during treatment of hypertension. SPRINT had sufficient statistical power to document the value of a much lower SBP target than was being recommended when the trial was conducted. None of the other trials had sufficient power to answer the question of optimal SBP during antihypertensive drug therapy but direct and network (indirect) meta-analyses of findings in these trials provide results that are consistent with SPRINT. Several national BP guidelines have recently recommended targeting an SBP of 120-130 mm Hg in selected patients who at high risk for CVD and tolerate more intensive antihypertensive antihypertensive drug therapy. I will review the evidence for benefit and risk during intensive antihypertensive drug therapy. I will also discuss the rationale for choice of a SBP treatment target in the 2017 American College of Cardiology/American Heart Association BP Guideline (to be released on Monday, November 13th, 2017).