

Target Blood Pressures in Recent Hypertension Guidelines, Updated Reasons and Clinical Implications

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Abstract

In recent hypertension guidelines published after SPRINT (Systolic Blood Pressure Intervention Trial), target blood pressure was lowered around or below 130/80 mmHg. Because there are many controversies related to the target blood pressure level in SPRINT, clinical implications of new target blood pressure needs to be clarified in terms of patient safety and potential clinical benefit.

There are two clinical pathways for patients taking antihypertensive medication. In addition to non-complicated patient who start antihypertensive medication when BP is 140/90 mmHg or higher, all other hypertensive patients combined or complicated clinical CVD or renal disease should be started with ACE inhibitor, beta blocker, calcium channel blocker, and/or diuretics. Some patients need maximal tolerable dose of specific drug if BP, heart rate and side effects are acceptable. In this case, the target BP indicates the maximal BP allowed during the titration of those drugs.

Most guidelines are based on or influenced by the randomized clinical trials or meta-analyses. In some meta-analyses, the study including patients with complications already taking antihypertensive medication was included for analyses, and the others are not. Another issue regarding the meta analyses of hypertension treatment is how to interpret the influence of SPRINT. Because the corresponding clinic BP level to 120 mmHg by automated out-of-office BP (AOBP) is speculated to be, at least, above 130 mmHg, it seems to be safe not to include SPRINT as it is.

When further lowering target BP, as shown in SPRINT and Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial, harmful side effects should be considered. In the recent meta-analyses excluding the study for complicated patient but including SPRINT and ACCORD trial, relative risk reduction by BP lowering below therapy below 130 mmHg could be statistically significant only when SPRINT was included. At the same time, absolute risk reduction per standardized BP reduction of 10/5 mmHg in systolic/diastolic BPs, decreased down to a half according to the level of initial BP levels when it was 150 mmHg versus 130 mmHg.

In conclusion, in achieving target blood pressure below < 130/80 mmHg, clinician should be more careful not to do harm patient than the target blood pressures in the previous guidelines.

Keywords

Guidelines, Target blood pressure, Hypertension, Stroke, Myocardial infarction, Metaanalysis