

Hypertension and the kidney: A Perspective in 2017

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Epidemiologic evidence supports the relationship between SBP and cardiovascular and renal events; the higher the SBP, the greater the risk; the lower the blood pressure, preferably a blood pressure approximately 120/70mmHg, the lesser the risk; but one has to remember this is observational rather than interventional data. More recently the SPRINT study conducted in the United States demonstrated that a SBP of approximately 120mmHg provided substantial benefit for delaying the onset of cardiovascular events compared to a more traditional SBP of 140mmHg; however, this study did not include patients with more advanced kidney disease and thus the relevancy of these observations for patients with chronic kidney disease (CKD) is unknown. What was evident is that more intensive blood pressure control did not appear to slow on the rate of progression of kidney disease in these patients; yet it had a major impact on their risk for cardiovascular events.

As such, the observational association of SBP with mortality in people with CKD may be qualitatively and even quantitatively different than what is seen in people with relatively normal kidney function. Thus, more studies are needed to address the issue of what are optimal blood pressure goals in people with more advanced forms of kidney disease, especially if they have proteinuria or diabetes and of course whether they have a kidney transplant or are on dialysis. There must be a biological plausibility to support the inference that lower blood pressure is indeed better and that there is evidence that the reversal of this risk factor for progression is beneficial, and this can only be demonstrated with interventional trials. Until these trials are completed, we are left with the need to carefully individualize our treatment goals to be sure that there is an appropriate therapeutic index balancing the potential benefits of therapy and more intensive blood pressure control versus the risks of side-effects (example: lowering blood pressure too much, which could conceivably worsen quality of life, and even diminish cognitive function).

There is recent evidence from some clinical trials in patients with CKD suggesting that reductions in GFR of 20% or more within the first three months of more intensive blood pressure treatment may identify people at greater risk for subsequent cardiovascular events and even progression of renal disease. Thus more knowledge is needed in order to understand the individual responses and how best to choose medications and blood pressure targets.