Diabetic Nephropathy

RAAS Inhibition in Diabetic Nephropathy: What is New?

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Diabetic nephropathy is the most common cause of end-stage renal disease in the western world. The activation of renin-angiotensin-aldosterone system (RAAS) plays a crucial role in the pathogenesis of diabetic nephropathy, and the inhibition of RAAS with angiotensin converting enzyme inhibitor (ACEI) and/or angiotensin receptor blocker (ARB) is the mainstay of therapeutic strategy. However, the renal protection provided by these therapeutic modalities is incomplete. An increase in aldosterone during long-term treatment with RAAS inhibition, aldoterone escape, has been described. Aldosterone plays a role in the development and progression of diabetic nephropathy, and blockade of aldosterone has emerged as a new therapeutic modality. In addition, major limitation of ACEIs or ARBs is the compensatory renin increase due to the disruption of the feedback inhibition of renin production. Recent studies have demonstrated that vitamin D analogs is a negative regulator of RAAS by suppressing of renin expression and a combination of vitamin D analogs with RAAS inhibitors ameliorated renal injury in diabetic nephropathy by blockade of compensatory renin release. Thus, these data suggest that RAAS inhibition with new agenets may provide new therapeutic strategies for the treatment of diabetic nephropathy.