Abstract

Chronic kidney disease (CKD) is a life-threatening disease which arises as a frequent consequence of diabetes and hypertension. Since it is going on silently, CKD often progresses to the end-stage renal disease. It is therefore necessary to combat this disease especially due to the fact that the world population is growing old. The aim of this work was to determine the contribution of selected vasoactive systems contributing to the maintenance of high blood pressure in the developmental and established phase of CKD. Two models of CKD were used: 5/6 nephrectomy in Ren-2 transgenic rats (TGR) and stenosis of renal artery (2K1C) in Wistar rats. We demonstrated that renin-angiotensin system does not play so important role in blood pressure maintenance in both CKD models. By contrast, a more important role has sympathetic nervous system. During both the developmental and established phase of CKD, vasoconstrictor systems prevail above vasodilator NO-synthase effects. In fact, the role of NO-dependent vasodilation gradually decreased in nephrectomized TGR rats, while it was unchanged in Wistar rats with 2K1C hypertension.