

Abstract

After 30 min of renal ischemia in rats, glomerular filtration rate (GFR) was reduced to 28% of control after blood reflow. Administration of phenoxybenzamine prior to ischemia resulted in an elevation of GFR to 40% of control. Both intravenous infusion of yohimbine and propranolol prior to ischemia had no effects on renal function after reflow unless prazosin was also administered. In contrast when dopamine was given prior to renal ischemia, GFR was drastically reduced to 11 % after blood reflow. The increase in severity of renal ischemia by dopamine can not be prevented by administration of sulpiride or prazosin. These results suggest that activation of α_1 -adrenergic receptor plays a minor role in suppressing GFR after 30 min of renal ischemia. Both α_2 - and β -receptors did not seem to contribute. However the severity of renal ischemia may increase by dopamine, which could not be prevented by prior administration of both sulpiride and or prazosin. Possibly in the rat kidney activation of dopaminergic receptor, apart from α_1 - and DA_2 - receptors may increase the severity of renal ischemia.