Effect of diabetes on Na+, K+-atpasa isoforms activity and the Na+, K+, 2Cl-cotransporter in vascular tissue of rats

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Diabetes is t'requentiy associated with hypertension. The present study was undertaken to determine it' diabetes specifically alters the catalytic isoforms ot the Na-K. pump. Also the K mediated uptake by Na+ K+-2CL was measured in aortic rings ot control and streptozotoein treated rats. Diabetic rats 'plasma glucose: 418.3 ± 16 mg/dl) had a significant increment in Na+,K+ VI Öltransport in intact aortic rings (16Ü.5 ±19.9 nmoles K/g/min 19 vs92.8 ±10.5 in controls) as measured hy ihe humetaniide-sensitive Rb8 uptake; when the ondothelium was removed, the uptake was [educed to 70% of the intact diabetic tissue, whereas in the control aortic muscle a dramatic reduction to one ih:ui w.is observed. The Na+ K+ -ATPase activity was diminished in the ini.ui aortic rings ol diabetic rats (161 ± 15.7 vs 269 ±32 nmoles K/g/min ni ,.>ntri'lvi. The eîtect ot endotheuuin removal was more evident in diabetic LU-, in which the pump ,ictiity wa reduced to 57.5% of the intact aorta. The cauKtic isolii