Effect of N-(Biphenylyl-Methyl)imidazole, a type 1 angiotensin II receptor inhibitor, on the contractile function of the rat corpus cavernosum.

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摘要

Abstract

The effect of N-(biphenylyl-methyl)imidazole, losartan potassium, a newly developed antihypertensive type 1 angiotensin II receptor antagonist on the rat erectile function, was studied. Sexually active 9-week-old male spontaneously hypertensive rats (SHR) and normotensive Wistar-Kyoto (WKY) rats were given losartan 60 mg/kg intraperitoneal injections. Mean blood pressure (MBP) dropped significantly in both SHR and WKY rats (for SHR: from 140 +/- 8 to 114 +/- 5 mm Hg, $p < 0.05$, $n = 8$; for WKY: from 113 +/- 7 to 79 +/- 9 mm Hg, $p < 0.05$, $n = 8$). On the contrary, the intracavernous pressure (ICP) of SHR and WKY rats did not differ significantly from that of the corresponding controls receiving saline injections ($p > 0.05$, $n = 8$ for each group). For the chronic study, the rats were fed with losartan 30 mg/kg/day for 30 days. MBP decreased significantly in SHR but not in WKY rats (for SHR: from 137 +/- 7 to 113 +/- 5 mm Hg, $p < 0.05$, $n = 8$; for WKY: from 110 +/- 6 to 107 +/- 5 mm Hg, $p > 0.05$, $n = 8$). The ICP of the losartan-treated rats was not significantly different from that of control rats ($p > 0.05$, $n = 8$ for each group). In contrast, WKY rats receiving guanethidine 1 mg/kg/day for 30 days showed significantly decreased ICP. Angiotensin II (10(-9)-10(-5) M) and losartan (10(-9)-10(-5) M) did not induce significant contractile responses of the cavernosal strip when tested in vitro. On the other hand, methoxamine 10(-4) M induced good contractile responses. In conclusion, the present study demonstrated that angiotensin II did not cause significant change in the contractile status of rat corpus cavernosum. Correspondingly, the type 1 angiotensin II inhibitor effectively lowered blood pressure but did not affect cavernosal contractile function, thus is useful clinically in the treatment of hypertensive disorders without significant detrimental effects on male sexual function.