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Original Article

Effects of hydroalcoholic extract of *Cynodon dactylon* (L.) pers. on ischemia/reperfusion-induced arrhythmias

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Abstract:

Abstract

Background and purpose of the study: Probable antiarrhythmic effects of *Cynodon dactylon* (L.) pers. (family Poaceae) against ischemia/reperfusion (I/R)-induced arrhythmias were investigated in isolated rat heart.

Methods: The hearts were subjected to 30min regional ischemia followed by 30min reperfusion and perfused with hydroalcoholic extract of rhizome of *C. dactylon* (25, 50, 100 and 200µg/ml).

Results: During ischemia, the extract produced marked reduction in the number, duration and incidences of ventricular tachycardia (VT) at 25 and 50µg/ml ($p < 0.001$ and $p < 0.01$, respectively). Total number of ischemic ventricular ectopic beats (VEBs) were lowered by 25-100µg/ml ($p < 0.001$, $p < 0.001$ and $p < 0.05$, respectively). At the reperfusion phase, *C. dactylon* (25 and 50µg/ml) decreased incidence of VT from 100% (control) to 13 and 33% ($p < 0.001$ and $p < 0.05$) respectively. Duration and number of VT and total VF incidence were also reduced at the same concentration ($p < 0.05$ for all). Perfusion of the extract (25-100µg/ml) was markedly lowered reversible VF duration from 218 ± 99 sec to 0 sec, 0 sec and 10 ± 5 sec ($p < 0.01$, $p < 0.01$ and $p < 0.05$) respectively. Moreover, *C. dactylon* (25 and 50µg/ml) decreased number of total VEBs from 349 ± 73 to 35 ± 17 ($p < 0.001$) and 66 ± 26 ($p < 0.01$). In this study, it was also shown that perfusion of the extract produced a marked and concentration-dependent positive inotropic effect.

Conclusion: The findings of this study indicate that *C. dactylon* produce protective effects against I/R-induced arrhythmias in isolated rat hearts probably by increase in the myocardial contractility and as a result by improvement of hemodynamic factors.

Keywords:

Keywords: *Cynodon dactylon* (L.) pers., ischemia/reperfusion, arrhythmias, isolated heart; rat

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