A161 Effects of *Crinum bulbispermum* on the isolated perfused rat heart

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Crinum bulbispermum (CBS) is used by traditional healers to treat cardiovascular disorders such as heart failure, arterial hypertension and cardiac arrhythmias (1,2,3), but there is no scientific proof for the claimed pharmacological effects of this plant on the heart. The aim of the present study was to determine whether CBS has any effect on the force and rate of contraction of the heart. Hearts from Wistar rats were mounted in a modified Langendorrf heart system, retrogradely perfused with Krebbs Henseleit buffer. The heart rate and diastolic and systolic pressures were measured via a latex balloon inserted in the left ventricle. Solutions of adrenaline and aqueous extracts of CBS were injected into the aortic cannula. Infusion of adrenaline (0.1 mg/min) decreased the diastolic pressure (from 71.17 ± 1.72. mm Hg to 60.17 ± 2.14. mm Hg), and increased the systolic pressure (to 127.67 ±4.18 mm Hg vs 93.13 ± 3.06 mm Hg at baseline), and the heart rate (to 385.00 ± 4.60 bpm vs 281.00 ± 7.92 bpm at baseline). Infusion of CBS (0.1 mg/min) increased the systolic pressure (to 133.17 ± 3.19 mm Hg vs 100.50 ± 1.87 mm Hg at baseline), and decreased diastolic pressure (from 73.33 ± 3.08 mm Hg to 63.17 ± 2.48 mm Hg), but did not change the heart rate (281.33 ± 1.75 bpm at baseline vs 281.50 ± 1.38 bpm at peak). Aqueous extracts of CBS thus appear to contain constituents capable of producing positive inotropic effects without affecting the heart rate. Further experiments are needed to isolate these active principles and confirm their activity.

References: 1. Hutchings, A. (1996) Zulu Medicinal plants. Natal University Press, Pietermaritzburg, South Africa. **2.** Van Wyk, B.E. et al, (2000) Medicinal Plants of South Africa. Briza Publications (SA). **3.** Watt, J.M. & Breyer - Brandwijk, M.G. (1962). The medicinal and poisonous plants of Southern and Eastern Africa, 2nd edition, South Africa.

A162 Cardiovascular effects of *Leonotis leonorus* in the normotensive rat

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Leonotis leonorus (LL) is used in traditional medicine for treatment of various diseases including epilepsy (1,2), cardiac asthma and hypertension (1,3). Using the modified "Langendorff Perfusion Model", it was found that aqueous extracts of LL leaves and stems had a positive inotropic and negative chronotropic effect on isolated perfused rat hearts (4). The aim of this study was to determine the effect of aqueous extracts of LL on the blood pressure (BP) and the heart rate (HR) *in vivo* in rats. Extracts of the plant and various control agents were administered via the external jugular vein to anaesthetized Wistar rats being ventilated via the trachea while the heart rate and blood pressure were measured via a pressure transducer connected to the femoral artery. IV infusion of adrenaline (0.1 mg/min) significantly (p= 0.05) increased the systolic pressure (to 355.17 ± 4.36 mm Hg vs 210 ± 2.83 mm Hg at baseline); the diastolic pressure (to 255.0 ± 3.35 mm Hg vs 151.67 ± 2.16 mm Hg at baseline); and the heart rate (to 321.17 ± 2.14 bpm vs 303.5 ± 2.88 bpm at baseline). Verapamil (0.01 mg/min) decreased the systolic pressure (from 253.83 ± 3.06 mm Hg to 111.17 ± 1.17 mm Hg), the diastolic pressure (from 100.67 ± 0.82 mm Hg to 82.33 ± 2.58 mm Hg) and the heart rate (from 359.50 ± 1.87 bpm to 291.83 ± 1.94 bpm. *L. leonorus*, however had no significant effect on either BP (systolic: 220.67 ± 1.64 mm Hg vs 231.50 ± 1.64 mm Hg at baseline; diastolic: 155.83 ± 1.47 mm Hg vs 172.67 ± 1.86 mm Hg at baseline), or the heart rate (396.17 ± 1.17 bpm vs 394.17 ± 2.32 bpm at baseline). There are thus differences in the cardiovascular effects of LL when measured *in vitro* in isolated heart and *in vivo* in normotensive rats.

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