

## **FUNCTIONAL INTERACTION BETWEEN MEDIAL PARABRACHIAL REGION AND THE HYPOTHALAMIC DEFENCE AREA: ROLE OF ANGIOTENSIN II.**

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We have previously demonstrated the functional interaction between the hypothalamic defence area (HDA) and the medial parabrachial region (mPB) in the cardiorespiratory response evoked to HDA electrical stimulation (Díaz-Casares et al., 2009, 2012). The aim of this work is characterise the role of angiotensin II (AngII) in this interaction.

On spontaneously breathing anaesthetised rats (sodium pentobarbitone, 60mg/kg, n=6), the cardiorespiratory response evoked by electrical stimulation of the HDA (1ms pulses, 20-50  $\mu$ A, at 100Hz, 5s) was analysed before and 10 minutes after the microinjection of AngII into the mPB (50pmol, 50nl, 5s).

An increase of heart rate (from  $398 \pm 13.1$  to  $430 \pm 11.8$  bpm,  $p < 0.05$ ) and a decrease of respiratory rate (from  $124 \pm 10.7$  to  $96 \pm 10.6$  cpm,  $p < 0.05$ ) were observed after the microinjection of AngII into the mPB. No changes were observed in mean arterial pressure (from  $98 \pm 4.5$  to  $104 \pm 4.1$  mmHg). The amplitude of the tachycardia evoked by HDA stimulation decreased after the microinjection of AngII within the mPB (from  $26.8 \pm 4.5$  to  $11.8 \pm 3.0$  bpm  $p < 0.01$ ). No changes were observed in the amplitude of the pressor response and tachypnoea.

These data indicate that AngII receptors from mPB have an important role in mediating the cardiorespiratory activity in resting conditions. The decrease of the heart rate component of the defence reaction suggests also its importance modulating the cardiac component the baroreceptor reflex.

Díaz-Casares A, López-González MV, Peinado-Aragonés CA, Lara JP, González-Barón S and Dawid-Milner MS. *Brain Research* 2009; 1279: 58-70.

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