SHORT-TERM ESMOLOL CONFERS CARDIOPROTECTION PERSISTENT AFTER TREATMENT WITHDRAWAL

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Background and Goal of Study:

Esmolol is an ultra-short beta-blocker widely used to treat patients with arterial hypertension. Our group previously demonstrated that short-term treatment (48 h) with esmolol produces early regression on vascular remodeling, although the long-term effect has not been studied yet. We hypothesized that the effect of esmolol on coronary arteries might remain in the long-term.

Materials and Methods:

Fourteen-month-old male spontaneously hypertensive rats (SHR) were randomly into therapy group with esmolol (300 µg/kg/min during 48h) (SHR-E, n=9) and placebo group (SHR, n= 9), and **7 days** after treatment, segments of left **anterior descending coronary arteries** were dissected and mounded on a **wire myography**. **Vasodilator function** was evaluated with increasing concentrations of acetylcholine (ACh 10⁻⁹ to 10⁻⁴ mol/L) in segments precontracted with 5 hydroxytryptamine (5-HT 3x10⁻⁷ mol/L). Then concentration-response curves with serotonin were performed (3x10⁻⁹ to 3x10⁻⁵ mol/L) to assess **vasoconstrictor function**. Comparisons among groups were made by Student's T-test. Relaxing responses are expressed as percentage reduction in the 5-HT precontracted state. The results were expressed as mean ± S.E.M.

Conclusion:

The effect of esmolol on coronary arteries function remain in the long term.

Acknowledgements: This work was supported by a grant from FIS 16/02069 and Fondos FEDER, Spain.