Meeting: Scientific Sessions 2005

Session Number: AOP.32.1

Session Title: Autonomic, Reflex, and Neurohormonal Control of Circulation

Presentation Number: 824

Presentation Title: Cytokine Modulates Neuronal Nitric Oxide Synthase in the Paraventricular Nucleus of Heart Failure Rats: A Role Sympathoexcitation

Author Block: Julie N Hartfield, Anuradha Guggilam, Masudul Haque, Sherry Ring, Louisiana State University, Baton Rouge, L McIlwain, Kenneth Kerut, LSUHSC, New Orleans, LA; Joseph Francis, Louisiana State University & LSUHSC, Ba

Disclosure Block: **J.N. Hartfield**, None; **A. Guggilam**, None; **M. Haque**, None; **S. Ring**, None; **E. McIlwain**, None; **K. Kerut**, **Francis**, None.

Abstract Body: Nitric oxide plays an important role in maintaining cardiovascular homeostasis. Recent evidence suggests that neuronal nitric oxide synthase (nNos) in the paraventricular nucleus (PVN) contributes to the exaggerated rena nerve activity (RSNA) in heart failure (HF) rats. In this study, we demonstrate that blockade of cytokines with (PTX) increases nNos expression in the PVN and decreases RSNA in HF rats. **Methods**: Male rats underwent m infarction (MI) or sham MI which was confirmed by echocardiography. Rats were pretreated PTX 30 mg/kg BW MI and then daily for 4 weeks. At the end of 4 weeks, a conscious RSNA was measured. The PVN was removed capture microscopy and nNos and TNF-alpha mRNA were measured using real-time PCR and protein was meas NADPH diaphorase and immunohistochemistry. **Results:** are tabulated. The real-time PCR values are shown as (GAPDH - the gene of interest) and the fold increase compared to control is also shown in parenthesis. **Conclu** treatment increases 24h survival after MI in rats. 2) PTX decreases PVN and cardiac cytokines in HF rats. 3) PT nNOS mRNA and protein in the PVN and decreases RSNA in HF rats. 4) Cytokines modulate nNOS expression i HF rats.

Parameters	**SHAM+VEH (n=5)**	**SHAM+PTX (n=5)**	**MI+VEH (n=6)**	**MI+PTX (**
24h survival	100%	100%	75%*	87.5% *,#
4 week survival	100%	100%	62.5%*	75%*
Infarct size	0	0	58.3±1.5*	57.1±2.1*
NADPH diaphorase +ve cells (PVN)	158±10.4	152 ± 7.9	95±12.4*	163±9.6*,#
nNos mRNA (PVN)	-5.7±0.2	-5.4±0.3	-7.2±0.3*(2.6 fold decrease)	-5.6±0.3#(decrease)
TNF-α mRNA (PVN)	-9.4±0.2	-9.3±0.1	-7.4±0.1*(4 fold)	-9.1±0.3#(
eNos mRNA (Cardiac)	-3.3±0.1	-3.1±0.2	-2.2±0.1*(2.2 fold)	-3.2±0.1#(
iNos mRNA (cardiac)	-6.3±0.1	-6.4±0.2	-6.9±0.1 (0.65 fold)	-6.8±0.1(0
TNF mRNA (cardiac)	-9.5±0.1	-9.2±0.2	-7.9±0.2*(3.2 fold)	-8.9±0.1*,