

## **CROSS-RELATION OF 35 RAT HEMODYNAMIC PARAMETERS INFLUENCED BY S-NITROSOGLUTATHIONE WITHOUT AND WITH H<sub>2</sub>S AND L-NAME**

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The arterial pulse waveform carries valuable information about the cardiovascular system. The shape of the waveform reflects the functions of all components of the cardiovascular system, including heart function, vessel elasticity, intracellular signaling through different pathways, conductivity system, function of membrane channels, etc.

Our goal was to compare 35 rat hemodynamic parameters (HPs) affected by NO donor S-nitrosoglutathione (GSNO) without or with the inhibitor of NO-synthesis, L-NAME. We have studied whether GSNO or GSNO/H<sub>2</sub>S mixture can substitute for the deficiency of NO, induced by L-NAME.

The right jugular vein of anesthetized (Zoletil-100 80 mg kg<sup>-1</sup> and Rometar 5 mg kg<sup>-1</sup>, i.p.) Wistar rats was cannulated for administration of studied substances. The left carotid artery was cannulated to detect arterial pulse waveform at high resolution.

The time dependences of the 35 left carotid HPs revealed that: (i) the changes of the most parameters were qualitatively similar regardless of the administration of GSNO before or after L-NAME, but the qualitatively opposite values were observed for the parameters: dP/dt<sub>max</sub>-relative level and dP/dt<sub>d</sub>-relative level. This indicates that GSNO did not totally substitute the deficiency of NO, induced by L-NAME. (ii) The effects of GSNO/H<sub>2</sub>S mixture, without and with L-NAME, at the concentrations 16/160 and 32/320 nM/nM, were minor in comparison with pronounced effects of GSNO, whereas H<sub>2</sub>S alone did not have an effect.

A cross-relationship of 35 HPs with systolic blood pressure revealed unique pattern for each relationship indicating that it can be used to characterize conditions of cardiovascular system.

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