

## A Pilot Assessment of Inosine Effects on Blood Pressure in Vervet Monkeys

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**Objectives:** Inosine, a purine metabolite, has been shown to have anti-inflammatory and cardioprotective effects. Studies in rodent models have shown conflicting effects of inosine on blood pressure, a key risk factor for cardiovascular disease (CVD). Vervet monkeys (*Chlorocebus aethiops sabaues*) are genetically and physiologically similar to humans. Thus, they are excellent models to study CVD or related risk factors. Our aim in this pilot study was to determine the effects of inosine on blood pressure in a cohort of 16 Vervet monkeys.

**Methods:** Eight monkeys (50% female) were randomly assigned to be orally gavaged 250 mg/kg of inosine (mixed in Ensure<sup>®</sup> nutrition shake) for 7 days while the other eight (50% female) were given just the nutrition shake (control). Anthropometric and biochemical measures were obtained at baseline, post-treatment (7 days) and post-wash out

period (14 days). Blood pressure was measured using high definition Oscillometry at both time points. Statistical analysis was conducted using STATA (Stata/BE 17.0).

**Results:** At baseline, males had higher body weight than females ( $7.86 \pm 1.1$  vs.  $5.95 \pm 1.2$  kg,  $p = 0.005$ ) whereas blood pressure and waist circumference were not significantly different between them. There was a significant decrease in body weight in females ( $-0.26 \pm 0.05$  kg,  $p < 0.02$ ) in the treatment group as compared to males ( $0.14 \pm 0.06$  kg) or females in the control group ( $0.16 \pm 0.06$  kg). Sex-specific changes in systolic blood pressure were also observed. Systolic blood pressure increased in control group as compared to the treatment group ( $20 \pm 6.6$  mmHg vs.  $6.8 \pm 2.8$  mmHg,  $p < 0.06$ , respectively) in males and ( $10.1 \pm 5.5$  mmHg vs.  $1.3 \pm 1.7$  mmHg,  $p = .16$ , respectively) in females. Similar results were found for mean arterial pressure. Changes in waist circumference or diastolic blood pressure were not significantly different either between sexes or treatment groups.

**Conclusions:** Results of this pilot study are promising as inosine seems to have a stronger effect on body weight and systolic blood pressure as compared to the control group. However, more in-depth investigations are required to confirm and validate these initial findings.

**Funding Sources:** A pilot grant from Nutrition Research Institute, University of North Carolina at Chapel Hill to VSV.