4th TNED Congress

The Role Of Adropine and Irisin in Experimental Hypertension Model

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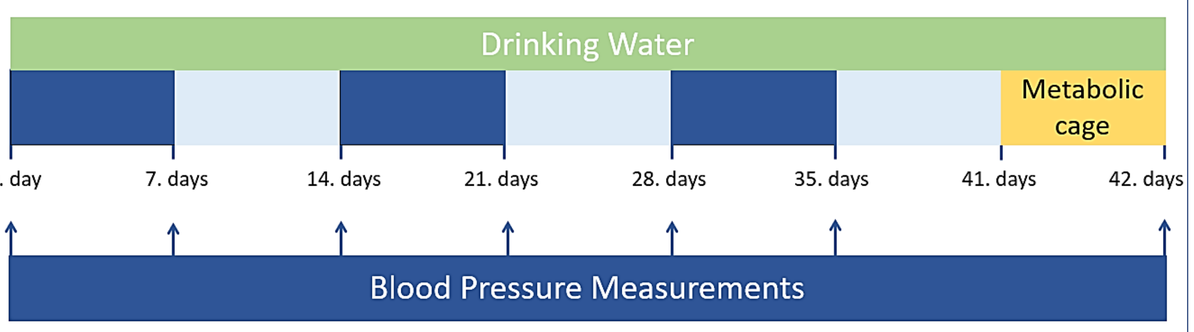
AIM

Hypertension is an important public health problem with a high prevalence leading to cardiovascular deaths (1,2). Irisin, which is a myocin released from the skeletal muscle and it is separated from the FNDC5 protein (3). It is reported that adropine plays a role in energy metabolism by regulating insulin sensitivity and regulates endothelial functions. In our study, we aimed to determine the relationship of blood pressure with irisin and adropin levels in the experimental hypertension model and to investigate the role of these hormones in the pathophysiology of hypertension.

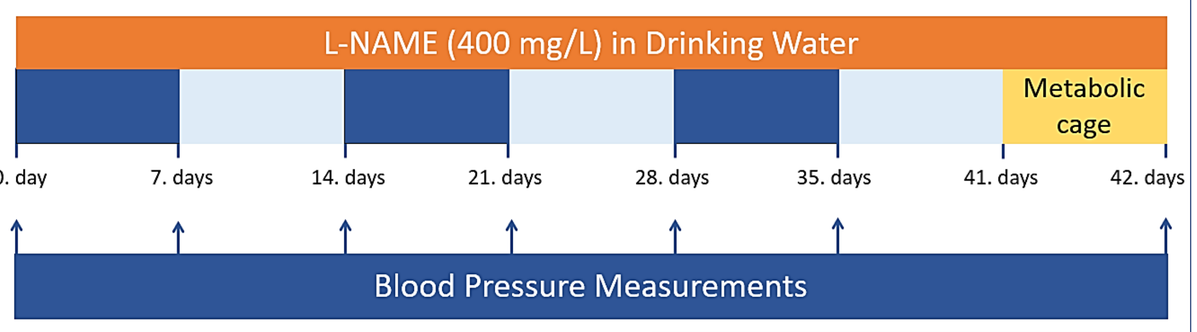
METHODS

In our study, 16 male Spraque-Dawley rats were divided into two groups as Control (C) and Hypertension (H). In the hypertension group, 400 mg/L dose of Nω-Nitro-L-arginine methyl ester hydrochloride (L-NAME) was added to drinking water for 6 weeks. Blood pressure measurements by the tail-cuff plethysmography performed every week. At the end of the 6th week, after blood samples were taken under anesthesia, euthanasia was performed. Adropin and irisin levels in serum samples were measured by ELISA method using a Bioassay Technology Laboratory commercial kit.

Control Group



Hypertension Group



Blood Pressure Measurement:

5 measurements were made at 1 minute intervals from each animal, the highest and lowest 2 measurements were subtracted, and the averages of the remaining 3 measurements were evaluated.,

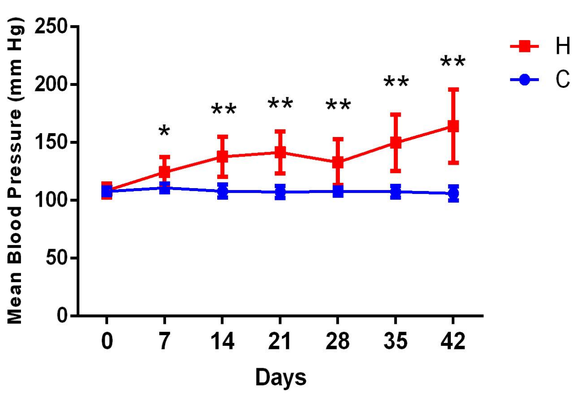
tail-cuff plethysmography method

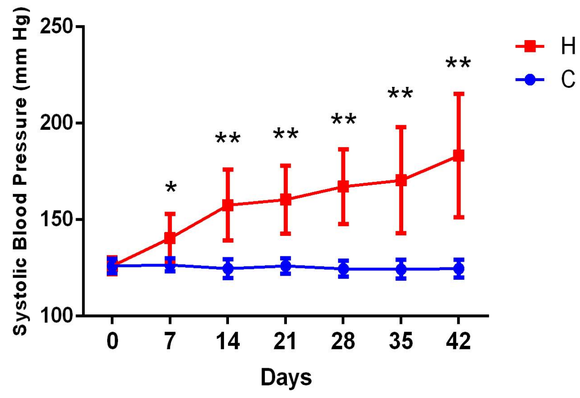
Calculation of average blood pressure:
MBP: Mean blood Pressure
SBP: Systolic blood Pressure
DBP: Diastolic blood pressure

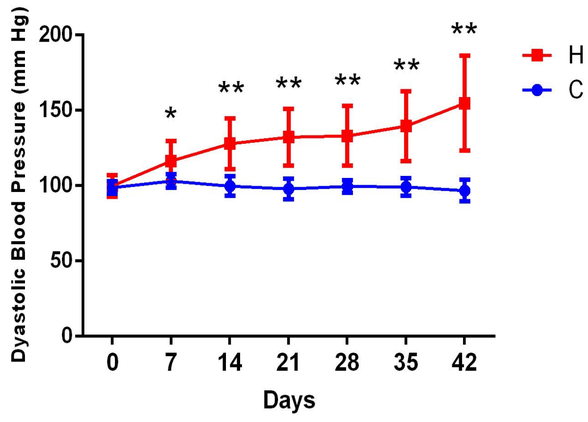
$$MBP = \frac{SBP - DBP}{3} + DBP$$

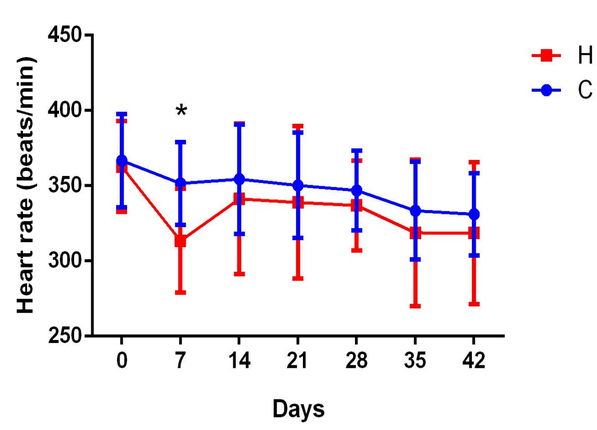
RESULTS

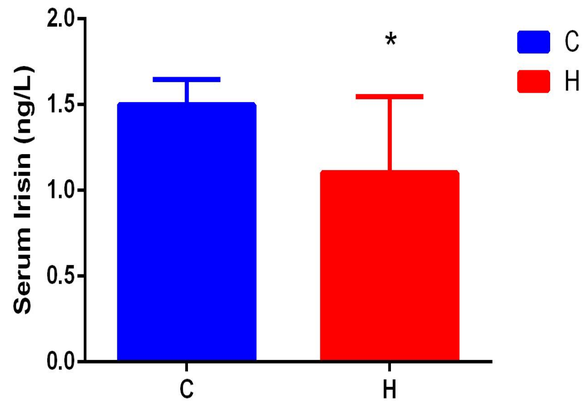
Compared with the control group, it was observed that the administration of L-NAME in the hypertension group increased the systolic and diastolic blood pressure significantly from the 2nd week ($p < 0.05$). It was observed that serum irisin levels decreased significantly in hypertension group compared to control, and the decrease in serum adropin levels was not statistically significant ($p < 0.05$).

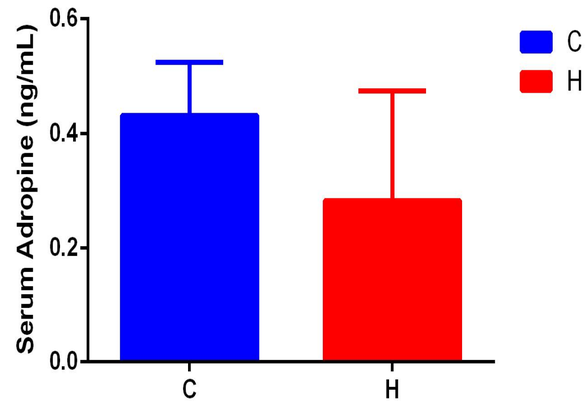












* : $p < 0.05$,
** : $p < 0.01$.

CONCLUSION

Our findings showed that irisin and adropine may play a role in the physiopathology of hypertension. We believe that further studies are needed to understand the mechanisms underlying this relationship.

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