

## **PLASMA NT-PROBNP IN RELATION TO VASO-ACTIVE HORMONES IN HYPERTENSION**

Enyioma Obineche<sup>a</sup>, Rajeev Gupta<sup>b</sup>, Nico Nagelkerke<sup>a</sup>, Abdullah Shehab<sup>a</sup>, Javed Pathan<sup>a</sup>, Abdishakur Abdulle<sup>a</sup>

<sup>a</sup>Faculty of Medicine, UAE University; <sup>b</sup>Al-Ain Hospital; Al-Ain, UAE.

We aim to explore the role of NT- proBNP and its relationship with hormones synthesized in the endothelial and renin-angiotensin- systems in hypertension. We obtained demographic, anthropometric, and biochemical parameters; fasting NT-proBNP, endothelin 1 (ET-1), nitric oxide (NO), and angiotensin II (Ang II) in 86 hypertensives (age  $\pm$  SE;  $46.9 \pm 7.5$  years) and 76 controls ( $46.6 \pm 7.8$  years). Standard t-tests were used to identify differences between hypertensives and controls; Spearman's rank correlation coefficient was used as a measure of association. We observed significant ( $p < 0.05$ ) increase in the levels of NT-proBNP ( $22.1 \pm 5.6$  vs.  $3.5 \pm 0.75$  pmol/L), ET-1 ( $26.8 \pm 4.0$  vs.  $1.6 \pm 0.35$  ng/ml), and NO ( $20.3 \pm 2.0$  vs.  $15.1 \pm 0.76$ ) in hypertensives than normotensives. Ang II levels ( $508 \pm 26.4$  vs.  $628 \pm 19.8$  pmol/L) were significantly ( $p < 0.001$ ) lower in hypertensives than controls. NT-proBNP significantly and positively correlated with SBP ( $r = 0.414$ ;  $p < 0.001$ ), and age ( $r = 0.256$ ;  $p < 0.05$ ) and negatively correlated with ET-1 ( $r = -0.407$ ;  $p < 0.001$ ) and Ang II ( $r = -0.413$ ;  $p < 0.001$ ) in the hypertensives, but not in controls. Consistent with other studies, elevated plasma NT-proBNP, presumably due to increased SBP, may in part, offset the action of Ang II and ET-1, restricting the extent of vasoconstriction and sodium retention. Reduced levels of Ang II among the hypertensives might indicate a masking effect of treatment in our hypertensive population. More detailed studies are required to elucidate our current findings, and identify causal pathways relating to these parameters.