

The functional role of B-type natriuretic peptide in preeclampsia

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Preeclampsia, complicating 2–8% of pregnancies, is a leading cause of maternal and perinatal mortality and morbidity. This pregnancy-specific disease characterized by development of concurrent hypertension and proteinuria, sometimes progressing into a multiorgan cluster of varying clinical features. Pre-eclampsia is characterized physiologically by plasma volume contraction and intense vasoconstriction. It was originally thought that the renin-angiotensin-aldosterone (RAA) system, -what plays an important role in regulating blood pressure and electrolyte balance- would be overactive but studies have shown a more complex picture. Several study found higher concentration of BNP in preeclamptic patients compared to healthy controls. BNP increase glomerular infiltration and natriuresis, suppressing sodium reabsorption and relax the vessel's smooth musculature causing a decrease in the cardiac preload and afterload and a decrease in blood arterial pressure. BNP also reduce renin-angiotensin-aldosterone activities and inhibit endothelin-1 production. In our measurement BNP showed significantly higher levels in preeclamptic patients. The (TTTC)_n polymorphism in the 5'-flanking region of the NPPB gene repeats showed association with the BNP concentrations. BNP levels were higher in early-onset than in late-onset preeclamptic patients. The distinction criterion for early versus late onset was set as week 34 of gestation. The amount of proteinuria and total protein levels correlate with the elevation of the BNP levels. In early-onset preeclampsia the extent of proteinuria is higher than in the late-onset preeclampsia and a significant positive correlation was observed between plasma levels of BNP and hematocrit. A BNP cut-off <24.5 pg/ml had a negative predictive value of 85.1% in excluding preeclampsia.

Biography

Szabo Gabor is working as Assistant Professor in Semmelweis University. He has successfully completed his administrative responsibilities as obstetrician and gynecologist. He has authored 10 research articles and serving as an Editorial Board Member in the *Journal of Biochemistry & Analytical Biochemistry*. He is a member of the European Society of Human Genetics, International Society for the Study of Hypertension in Pregnancy, Hungarian Society of Obstetrics and Gynecology, Hungarian Society of Ultrasound in Obstetrics and Gynecology, Hungarian Society of Obstetrical and Perinatal Anaesthesiology, Hungarian Society of Hypertontology.

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