HOMOCYSTEINEMIA IN TOXAEMIA
AN INDICATOR OF PREGNANCY OUTCOME

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Pre-eclampsia / eclampsia is the most common serious medical disorder of human pregnancy complicating about 5-10% of all pregnancy¹,²,³. If pre-ecclampsia is not diagnosed or treated, it can progress to maternal multiorgan failure, coagulopathy with maternal and fetal death in its severe form⁴,⁵. Homocysteine is a sulphur containing essential amino acid primarily derived from demethylation of dietary methionine which is abundant in animal protein, required for growth of cells and tissues in the human body⁶. Elevated circulating homocysteine is a risk factor for endothelial dysfunction and vascular disease such as atherosclerosis and occlusive vascular disease. The vascular effects of homocysteinemia have been proposed to include endothelial cell injury and thrombus formation⁷. The pathophysiology is explained as auto-oxidation of homocysteine to produce reactive oxygen species (ROS) which inactivate nitric oxide and thrombomodulin⁸. Patho-physiologic process of pre-eclampsia is poorly understood, but currently endothelial dysfunction is most popularly hypothesized to be a central pathophysiological feature of pre-eclampsia, leading to altered vascular reactivity, loss of vascular integrity and activation of coagulation cascade⁹. It has been also proposed that hyperhomocysteinemia may be associated with pre-eclampsia as the homocysteine mediated vascular changes are similar to those associated with pre-eclampsia¹⁰,¹¹. It is observed that levels of maternal serum homocysteine normally decrease with gestation, either due to a physiological response to the pregnancy, increase in estrogen, haemodilution from increased plasma volume, or increased demand for methionine by both the mother and foetus¹². Relationship of homocysteinemia with pre-eclampsia/eclampsia was studied well and large bodies of evidences suggest homocysteinemia to be a probable causal factor. "Association of serum homocysteine and serum lipid with eclampsia" by Mahal M et al in this issue of JAFMC is a valuable work in the field especially in our country. In this study they found that elevated homocysteine & reduced HDL cholesterol level were associated with eclampsia. Many other studies have shown similar relationship with elevated homocysteine and toxemia of pregnancy¹⁰-¹³. In a densely populated country like Bangladesh where maternal mortality rate is 3.15 per 1000 women and about 16% of such death is associated with pre-eclampsia/eclampsia¹⁴, intervention for safe pregnancy outcome is time demanding. For this reason study about homocysteine should get more attention in our research.

References