

The relationship between bone metabolism and inflammation in pre-eclampsia

Dr D Perumal, Dr N. Anim-Nyame (Consultant Kingston Hospital), Dr H. Ashrafi

Pre-eclampsia (PE) is a multisystem disorder of the second half of pregnancy characterized by hypertension and proteinuria. It is clear that the placenta is pivotal to the disease, since removal of the placenta cures PE. Literature suggests that PE is associated with insulin resistance, widespread endothelial cell dysfunction and inflammation. This systemic inflammatory response may be central to increased maternal bone turnover seen in PE.

The mechanism of increased bone turnover is unclear, although several poorly characterised circulating factors such as proangiogenic factors, cytokines, growth factors and their binding proteins, leptin and oxidative stress markers, may be involved. While considerable data exists on how inflammatory cytokines regulate bone turnover, little is known of these mechanisms with respect to bone turnover in PE. Hence, this study in collaboration with Kingston Hospital, aims to investigate the relationship between bone turnover and inflammation in PE and will utilise a combination of cellular and molecular pathology techniques.

An understanding of the mechanism of altered bone metabolism will contribute to an understanding the complex pathophysiology of PE, help to predict future bone health of women with PE-complicated pregnancies and allude to potential targets of PE treatment.