Letters to the Editor

Plasma Adiponectin Concentrations in Women With Preeclampsia

To the Editor:
In their interesting study, Ramsay et al demonstrated that plasma adiponectin concentrations are elevated in women with preeclampsia.1 Adiponectin suppressed tumor necrosis factor (TNF)-α–induced endothelial adhesion molecule expression, macrophage to foam cell transformation, and TNF-α expression in macrophage and adipose tissue. Decreased plasma adiponectin concentrations were observed in subjects with vascular disorders such as obesity, diabetes mellitus, and cardiovascular disease. Thus, adiponectin may have an antiatherogenic effect by reducing vascular damage. Endothelial cell injury and altered endothelial function are important in the pathogenesis of preeclampsia. Ramsay et al speculated that the elevation of adiponectin in preeclamptic women may be secondary to exaggerated nonspecific adipocyte lipolysis or as a physiological response to enhanced fat use. Because adiponectin is an adipocyte-specific plasma protein, plasma adiponectin concentrations are associated with body mass index (BMI). The authors, however, did not indicate the changes in BMI during pregnancy. If the caloric intake was restricted in women with preeclampsia, reduction of body weight may be accompanied by enhanced adiponectin release. Plasma adiponectin concentrations have been reported to correlate negatively with leptin concentrations.2 Although plasma leptin concentrations increased in women with preeclampsia,3 the authors did not measure this parameter. In contrast to their results, our unpublished data showed high leptin and low adiponectin concentrations in preeclamptic women. In addition, C-reactive protein, a systemic marker of inflammation, is elevated in preeclamptic women.4 A recent study demonstrated that adiponectin may inhibit the production of C-reactive protein.5 Based on these findings, it is likely to speculate that decreased adiponectin concentrations may be associated with endothelial dysfunction in women with preeclampsia. Further studies are needed to investigate whether adiponectin is associated with impaired endothelial function in women with preeclampsia.

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Response: Adiponectin Concentrations in Preeclampsia

We thank Shinohara et al for their interest in our article. We recognize that adiponectin has antiinflammatory effects in addition to its insulin-sensitizing actions and that obesity is a major determinant. Indeed, as reported in our article,1 we noted inverse associations of adiponectin concentration with early pregnancy BMI ($r=-0.47, P=0.01$) and fasting insulin concentrations ($r=-0.58, P=0.001$) in the control group but not in women with preeclampsia. We were careful to match cases and controls for BMI because pre-pregnancy or early pregnancy BMI, but not weight gain or change during pregnancy, is a recognized risk factor for preeclampsia.2 Thus, we do not feel that baseline adiposity or differential weight change during pregnancy were major confounders in our study.

Nevertheless, we were surprised to note “paradoxical” higher adiponectin concentration in women with preeclampsia because we recognize insulin resistance and inflammation are recognized features in such women.3 4 We are therefore in the process of validating our results in other cohorts of women with preeclampsia. In the meantime, we await with interest the full publication by Shinohara et al on this subject.

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