ELEVATED SOLUBLE VASCULAR CELL ADHESION MOLECULE-1 (sVCAM-1), ELEVATED HOMOCYST(E)INEMIA, AND HYPERTRIGLYCERIDEMIA IN RELATION TO PREECLAMPSIA RISK

Vadachkoria S(a) , Woelk GB(b), Mahomed K(c), Qiu C(a), Muy-Rivera M(a), Malinow MR(e), Williams MA(e)

- **(a) Center for Perinatal Studies, Swedish Medical Center,Seattle, WA, USA**
- **(b) Department of Community Medicine, University of Zimbabwe Medical School, Harare, Zimbabwe**
- **(c) Department of Obstetric and Gynecology, University of Zimbabwe Medical School, Harare, Zimbabwe**
- **(d) Oregon Health Sciences University, Beaverton, Oregon, USA**
- **(e) Department of Epidemiology, University of Washington, Seattle, WA, USA.**

Objective: Diffuse endothelial dysfunction possibly resulting from oxidative stress/dyslipidemia and hyperhomocyst(e)inemia, is considered an important pathophysiological characteristic of preeclampsia. We examined the relationship of maternal plasma concentrations of soluble vascular cell adhesion molecule-1 (sVCAM-1), a specific marker of endothelial dysfunction, and risk of preeclampsia.

We also evaluated the relationship in the presence and absence of maternal hypertriglyceridemia and hyperhomocyst(e)inemia. Methods: 170 women with preeclampsia and 184 controls were included in this case-control study analysis. Maternal post-diagnosis plasma sVCAM-1 concentrations were determined using immunoassays. Total plasma homocysteine (tHcy) was measured using high performance liquid chromatography with electrochemical detection procedures; and triglyceride (TG) concentrations were determined using standard enzymatic procedures. Logistic regression procedures were used to estimate odds ratios (OR) and 95% confidence intervals (CI) adjusted for confounders. Results: The relative risk of preeclampsia (as estimated by the OR) was increased 4-fold for women with sVCAM-1concentrations; 842 ng/ml as compared with women who had lower concentrations (OR = 4.0; 95% CI 1.9-8.2). Of the three biological markers investigated, elevated sVCAM-1 concentrations was most strongly related with preeclampsia risk (OR=6.2, 95% CI 2.0-19.4), followed by hyperhomocystein(e)inemia (OR=3.3, 95% CI 1.0-11.0) and hypertriglyceridemia (OR=2.3 95% CI 0.9-5.6).

Compared with women who did not have any of the three risk factors, those with all three risk factors has an extremely high risk of preeclampsia (OR=27.1; 95% CI 8.7-84.3). Conclusions: These findings suggest that elevated sVCAM-1 concentrations are associated with

email: Surab.Vadachkoria@Swedish.org