Smoking and the risk of developing hypertensive diseases in pregnancy: what is the effect on HELLP syndrome?

BACKGROUND: The aim of our study was to investigate the role of smoking in the development of HELLP syndrome, pre-eclampsia and gestational hypertension. METHODS: A self-administered questionnaire was sent to 2,600 women who had contacted the German Pre-eclampsia Self-help Group previously for information on hypertensive disorders in pregnancy and to 1,233 controls. Diagnoses were verified by reviewing medical records and classified according to ISSHP criteria. Student's t-test, Wilcoxon test, Chi-square test, and multiple logistic regressions were used for statistical analysis. RESULTS: After matching age, parity, nationality, and education a total of 905 women with a hypertensive disease in pregnancy and 945 controls were evaluated for the present study. In comparison to the patients, controls smoked significantly more often during their pregnancies (8.5%/18%, p<0.0001). Smoking during pregnancy was associated with a decreased risk of developing hypertensive disorders in pregnancy by 56%. The most prominent effect of smoking was on the risk of developing HELLP syndrome (OR 0.19, 95% CI 0.08-0.43) followed by HELLP syndrome + pre-eclampsia (OR 0.33, 95% CI 0.17-0.63), pre-eclampsia only (OR 0.46, 95% CI 0.26-0.8), and gestational hypertension (OR 0.66, 95% CI 0.41-1.08). CONCLUSIONS: Smoking is associated with an 80% reduction of the risk developing...
HELLP syndrome. However, pregnant women should be advised to quit smoking. Understanding the different effects of smoking in the etiology of each subtype of hypertensive diseases in pregnancy will improve the knowledge of underlying pathophysiological mechanisms and may help in designing more effective prevention and treatment strategies.