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Changes in lipid profile and paraoxonase activities in the blood of non-smokers and smokers aged ≥35 years in first trimester of pregnant women

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The aim of the study was to examine the effects of tobacco smoke on the lipid peroxidation, lipid profile and paraoxonase activities (arylesterase, lactonase and phosphotriesterase) in the blood of pregnant women aged ≥35 years. A total of 138 pregnant women were recruited and qualified for prenatal examination due to the mother's age and were divided into 4 groups: Non-smoking, passively and actively smoking before pregnancy and during first trimester. Our data showed an increased lipid peroxidation in plasma of passive smokers ($6.6\pm2.2 \mu mol/ml$) as well as active tobacco smokers before ($6.9\pm2.0 \mu mol/ml$) and during first trimester ($7.4\pm1.8 \mu mol/ml$) of pregnancy when compared to non-smokers ($5.4\pm1.2 \mu mol/ml$). In the group of smokers before pregnancy, only higher LDL concentration was detected. In the plasma of passive smokers a combination of elevated LDL and decreased HDL concentrations were found. Higher value of LDL/HDL ratio was found in all studied groups when compared to non-smokers. Statistically significant decrease in all paraoxonase activities were observed in the group of smokers before pregnancy only arylesterase activity was decreased. Changes in analyzed parameters enhance the atherosclerotic risk. Lipid profile should be monitored during pregnancy, with respect of risks for mother and her fetus, especially in women, who are above 35 years old and are exposed to tobacco smoke. A normal reference standard for lipid profile for pregnant women should be estimated for the clinician.

Biography

Halina Milnerowicz has completed her PhD in 1980 years from Ludwik Hirszfeld Institute of Immunology and Experimental Therapy - Polish Academy of Sciences and Post-doctoral studies from Wroclaw Medical University, Faculty of Pharmacy. Since 2004, she is the Head of Department of Biomedical and Environmental Analysis. In 2008, she became the Professor of Pharmacy Sciences. She was also the Vice-rector for University Development and Deputy Dean of the Division of Laboratory Diagnostics on Faculty of Pharmacy. She has published more than 140 papers in reputed journals and has been awarded at numerous Polish and international conferences.

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