

Persistent organic pollutants and hematological markers in Greenlandic pregnant women: The ACCEPT sub-study

The Arctic populations have high blood concentrations of persistent organic pollutants (POPs). Exposure to POPs was related to adverse health effects e.g. immune, neurological and reproductive systems. This study investigates associations between serum POP levels and haematological markers in Greenlandic pregnant women. This cross-sectional study included 189 women enrolled in 2010–2011 at the Greenlandic West coast by the inclusion criteria ≥ 18 years of age and had lived for 50% or more of their life in Greenland. The associations between the sum of the POP variables polychlorinated biphenyls (sumPCBs), organochlorine pesticides (sumOCPs), perfluoroalkylated substances (sumPFASs) and 24 haematological markers were analysed using linear regression adjusted for age, pre-pregnancy BMI, parity, gestation week, plasma-cotinine and alcohol intake. It showed a significantly inverse association between several haematological markers (eosinophil, lymphocyte, neutrophil and white blood cells) and sumPCBs, sumOCPs and sumPFASs. In addition, the monocyte, mean corpuscular haemoglobin concentration, plateletcrit and platelet count markers were significantly inversely associated with sumPFASs, but the haematocrit and mean erythrocyte corpuscular volume were positively associated with sumPFASs. In conclusion, exposure to POPs influenced several haematological markers, especially cell count parameters, suggesting immunosuppressive potential of POPs in Greenlandic pregnant women. The data need further investigations.

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