

PRENATAL EXPOSURE TO DDT AND BIRTH OUTCOMES IN WOMEN RESIDING IN A MALARIA ENDEMIC AND NON MALARIA COASTAL REGIONS OF SOUTH AFRICA

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Background and Aims: DDTs are highly persistent and accumulate in the environment, food chain and humans. Use of DDT for indoor residual spraying (IRS) to control malaria vector is a subject of ongoing debate as DDT and its metabolites are considered to be endocrine disruptive chemicals. Potential risks to the developing foetus and young child are of concern. The objective of this study was to assess the extent of exposure to DDT and its metabolites in pregnant women residing in the malaria control and non malaria coastal regions of South Africa.

Methods: The study included totally 270 women admitted for delivery at the maternity sections of provincial hospitals who donated blood for chemical analyses and signed an informed consent form. They answered a socio-economic questionnaire by interview and allowed access to their post delivery records. Blood plasma samples were analysed for DDT and metabolites using the GCMS techniques. Birth outcomes and confounding factors were also evaluated.

Results: As expected, the highest levels of DDT and metabolites were found in delivering women residing in IRS area, but elevated levels were also observed in some women residing in non malaria region.

Conclusion: It is understood that exposures to contaminants may pose greater health risks to the populations in the southern hemisphere that is highly compromised by poverty and poor health status, compared to the northern hemisphere. This effect may be further potentiated by climate change. Findings of this investigation will inform policy makers both locally and internationally including the work within Stockholm Convention on POPs and Roll Back Malaria initiative. In conclusion, future monitoring and careful follow up of health in the area is needed. The distinct exposure patterns in study sites, makes this area very suitable for the implementation of birth registries.