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Association between multi-mycotoxin exposure and birth anthropometric growth of mothers and their infants in rural Eastern Cape, South Africa

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Infant intra uterine growth depends on maternal prenatal dietary intake. Research indicate maternal exposure of Aflatoxin negatively influence growth birth outcomes. However, no research has been done on maternal Femonisins (FB) and Deoxynivalenol (DON) exposure and birth growth. In rural South Africa, home-grown maize is the staple food and contains high levels of FB and DON. The aim was to determine the association between maternal FB and DON exposure and birth growth outcomes. Maternal FB and DON exposure levels were calculated based on raw maize intake. Probable daily intake (PDI) ($\mu\text{g}/\text{kg}$ body weight) was calculated by multiplying total raw maize intake (g/dag) with mycotoxin concentration ($\mu\text{g}/\text{kg}$) divided by body weight (kg). Exposure was correlated with infant anthropometric measures (length, weight, head circumference (HC) and gestational age (GA)). 110 mothers participated but 8 were excluded. Mean and SD of FB exposure was 554.37 (392.14) and for DON 0.05 (0.37) $\mu\text{g}/\text{kg}$ body weight respectively. Possitive Spearman correlations were observed for birth weight ($r=0.05$) and length ($r=0.05$) when correlated with FB exposure and negative correlations for HC ($r=-0.150$) and GA ($r=0.78$). Weak negative correlations were observed for birth weight ($r=-0.045$) and length ($r=-0.48$) and possitive correlations for HC ($r=0.15$) and GA ($r=0.078$) when correlated with DON exposure. These correlations were weak and not significant. Thus according to this study there is no significant association between maternal mycotoxin exposure and infant birth outcomes however due to the small sample size more research is needed. Results should be interpreted with caution.

Biography

Martani Lombard has completed her PhD at the age of 35 years from the University of Cape Town (UCT) in South Africa. She is currently a senior lecturer in infant and young child therapeutic nutrition at the Health Sciences Faculty (School for Physiology, Nutrition and Consumer Sciences) at North-West University (NWU), South Africa. She is also conducting infant and young child nutrition research (focussing on mycotoxin exposure) at the Centre of Excellence for Nutrition (CEN) at NWU. She has published more than 20 papers in reputed journals and has been serving as an editorial board member of BMC Nutrition.

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