Fetal growth restriction is related to placental levels of cadmium, lead and arsenic but not with antioxidant activities

Llanos, Miguel N.

Ronco, Ana María

The objectives of this study were: to measure some essential metals and toxicants in placentas of mothers delivering neonates with fetal growth restriction, and to establish potential associations between environmental adverse stimulus and antioxidant protective mechanisms. Placentas of 20 mothers delivering neonates with low birth weight (<2500 g) and normal birth weight (>3000 g) at term were collected. Placental concentration of zinc, mercury, selenium and arsenic were measured by Instrumental Neutron Activation Analysis (INAA), and iron, copper, cadmium and lead by Atomic Absorption Spectrometry (AAS). Total glutathione, lipid peroxidation, total antioxidant activity and antioxidant enzyme activities (superoxide dismutase and glutathione peroxidase) were determined spectrophotometrically. Results showed reduced iron levels and increased concentrations of cadmium, lead and arsenic in placentas of mothers delivering low birth weight neonates, but not differences in oxidative stress p