**HAEMATOTOXIC EFFECTS AND IRON LEVELS IN OFFSPRING**

**AFTER MATERNAL EXPOSURE TO CADMIUM IN RATS**

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Cadmium (Cd) is a pervasive toxic metal in the human environment that interacts with iron (Fe) during its gastrointestinal absorption and accumulation in internal organs. The aim of this study was to evaluate Fe levels in organs and haematotoxic effects in Wistar rat offspring following maternal oral exposure to 50 mg Cd L-1 (as CdCl2 in drinking water) that began before and continued during gestation and lactation until weaning (on postnatal day 21). At delivery, one part of the litters was cross-fostered between control and exposed dams to discern gestational, lactational and gestational plus lactational Cd exposure and effects. Cd and Fe in organs were analysed by atomic absorption spectrometry. Haematological parameters in peripheral blood were analysed manually and organ samples prepared for standard histopathological examination by light microscopy. Cd increased and Fe decreased in the exposed mother rats and their offspring. In 21-day offspring, Fe levels were decreased in the liver and brain after gestational plus lactational and after only lactational exposure. Red blood cell (RBC) count, haemoglobin (Hb) and haematocrit decreased, reticulocyte (immature RBC) count increased, and islands of extramedullary haematopoiesis were detected in their liver. After 4-week exposure cessation, at puberty, levels of Fe in the kidney and brain, and RBC and Hb in blood remained decreased. Cd-induced decreases of organ Fe levels and haematotoxic effects in the offspring were most pronounced by continuous exposure during gestation and lactation, the critical windows for growth and development. These changes may have postnatal health consequences during adult life.

**KEY WORDS:** *cross-fostering, gestation, haematological parameters, lactation, postnatal health consequences*