Summary

The present work aims at studying that umbilical cord blood lead levels correlate with maternal blood lead levels, or not and its impact on neonatal birth weight.

The present study included 50 randomly selected mothers, and their newborns, recruited from the delivery room of kafr shokr central hospital.

Mothers included in the study were free of any apparent pathological condition or risk factor which might impair fetal intrauterine growth such as:

- Preeclampsia.
- Gestational Diabetes mellitus.
- Kidney or cardiac disease.
- Seizure Disorder requiring daily medications.
- Repeated urinary infection.
- Multiple fetuses.
- Tobacco and alcohol consumption.

We restricted our study to full term live singleton births:

Neonatal exclusion criteria:

- Congenital intra uterine infection.
- Chromosomal aberrations.
- Congenital malformations.

Gestational age was calculated from the reported first day of the last menstrual cycle, and was ascertained by ultrasound measurements and clinical assessment at birth using New Ballard Score.

All patients were subjected to the following:

I) History taking:

Structured questionnaire was planned to fulfill the following data:

A- Maternal History taking with particular emphasis on:

- Occupation, residence, education, socioeconomic status.
- Husband job. (Husband job classified into risky* and non-risky).

(Risky jobs as working in car work shop, driver, printer, plumber, and painter).

- History of tobacco and alcohol consumption.
- History of chronic disease.

B- Clinical examination of the neonates at birth with particular emphasis on:

- Birth weight, Crown-heel length, Head circumference and body mass index of the newborn.
- Assessment of gestational age using Ballard score system**.**
- Examination for congenital anomalies.

Statistical analysis was done to evaluate the different studied parameters.

The mean maternal blood lead level was (5.956ug/dl) with a range of (3.3-9.9ug/dl), and the mean cord blood lead level was (4.59ug/dl) with a range of (2.5-7.4ug/dl).

Our results revealed that, lead concentration in the umbilical cord was highly significantly correlated with the concentration of maternal venous blood lead ($r=0.559$, $p=0.001$).

From these results:

1- Cord blood lead levels are directly influenced by maternal blood lead levels.

2- Low maternal blood lead levels (<10 ug/dl) as reported in our field of work, seem to have no influence on neonatal anthropometric measurements.

From our observations,

3- It seems that the problem of maternal lead exposure and its effects on fetal anthropometry is not a significant risk at least in our locality.