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## Comparison of blood lead levels of mothers and cord blood in intrauterine growth retarded neonates and normal term neonates

Iranpour, R.<sup>ad</sup>, Besharati, A.A.<sup>a</sup>, Nasserli, F.<sup>a</sup>, Hashemipour, M.<sup>a</sup>, Balali-Mood, M.<sup>c</sup>, Kelishadi, R.<sup>b</sup><sup>a</sup> Department of Pediatrics, Isfahan University of Medical Sciences, Isfahan, Iran<sup>b</sup> Department of Preventive Pediatric Cardiology, Isfahan University of Medical Sciences, Isfahan, Iran<sup>c</sup> Department of Toxicology, Mashad University of Medical Sciences, Mashad, Iran<sup>d</sup> Department of Pediatrics, Division of Neonatology, Al-Zahra Hospital, Sofe Bolvar, Isfahan 8174675731, Iran

## Abstract

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**Objectives:** To compare the blood lead levels of mothers and cord blood in intrauterine growth retarded (IUGR) neonates and normal term neonates. **Methods:** From April to December 2005, we carried out a cross-sectional, prospective study in Isfahan University of Medical Sciences, Isfahan, Iran. Blood lead levels were measured in the umbilical cord and maternal venous blood samples in 32 mother-infant pairs with IUGR full term neonates, and 34 mother-infant pairs with normal full term neonates. Blood-lead levels were analyzed by atomic absorption spectrometry. **Results:** The mean lead concentration in neonates of IUGR and normal groups was not significantly different (107.47 +/- 16.75 versus 113.08 +/- 19.08 micrometer/L, p=0.2). The mean lead concentration in mothers of IUGR group was lower than normal groups, but this difference was not significant (124.56 +/- 19.71 versus 135.26 +/- 26.91 micrometer/L, p=0.07). Maternal lead levels were strongly related with cord blood in both IUGR and normal groups (r=0.8, p<0.0001). Maternal and cord blood lead levels was not correlated with birth weight of newborns in either group. Overall, 65.6% of IUGR neonates and 76.4% of normal neonates was above the critical level defined for lead poisoning as >100 micrometer/L by the centers for disease control; however, this was not statistically different between the groups. **Conclusions:** Our results indicate that the mean lead level was not higher in IUGR neonates, and the whole blood lead was not related to the birth weight. In addition, maternal and cord blood lead levels were strongly correlated, and there were remarkable lead burdens on both the mothers and their neonates in this industrial area.

## Reaxys Database Information

## Indexed Keywords

EMTREE drug terms: lead

EMTREE medical terms: article; atomic absorption spectrometry; birth weight; clinical article; controlled study; cross-sectional study; female; human; industrial area; intrauterine growth retardation; Iran; lead blood level; lead poisoning; maternal blood; newborn; prospective study; umbilical cord; university hospital; adult; blood; chemistry; comparative study; fetus blood; pregnancy

MeSH: Adult; Cross-Sectional Studies; Female; Fetal Blood; Fetal Growth Retardation; Humans; Infant, Newborn; Lead; Lead Poisoning; Pregnancy; Prospective Studies

Medline is the source for the MeSH terms of this document.

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