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HEAVY METALS AND OTHER TRACE ELEMENTS IN THE BLOOD AND BREAST MILK FROM TWO DIFFERENT ROMANIAN AREAS

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Abstract

In order to highlight the impact of environmental pollution for Romanian nursing mothers we evaluated the concentration of heavy metals and trace elements in their blood and breast milk. The evaluation was done taking into account the pollution level of mother's residence: Bucharest (an industrial and heavy transited town, identified as the highly polluted area) and a small town (without industrial plants, identified as less polluted area). The determination of heavy metals and trace elements was performed by induced coupled plasma mass spectrometry (ICP-MS). Comparing the mean concentrations for the more toxic elements, in Bucharest and in the small town in colostrum, respectively, we found: Cd (0.6 µg/L vs 0.3 µg/L), Pb (<LoD vs 0.2 µg/L), As (5.5 µg/L vs 3.8 µg/L), Cr (5.4µg/L vs 5.5µg/L). Our results, in good agreement with those reported in literature, evidence the influence of environmental pollution on breast milk and blood trace element levels, suggesting the need of a better environment management for a better public health.

Key words: blood, breast milk, heavy metals, ICP-MS, pollution

Received: September, 2013; *Revised final:* March, 2015; *Accepted:* March, 2015; *Published in final edited form:* December 2018
