Abstracts

**CHRONIC CADMIUM INTOXICATION WITH RENAL INJURY AMONG WORKERS IN A SMALL-SCALED SILVER SOLDERING COMPANY**

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Introduction Cadmium exposure may induce chronic intoxication with renal damage. Silver soldering may be a source of cadmium exposure.

Methods We analysed working environment measurement data and periodic health screening data from a small silver soldering company with ten workers. Concentrations of cadmium in air from working environment measurement data were obtained. Concentrations of blood and urinary cadmium, urine protein and urine beta2microglobulin (B2M) were obtained. We used generalised linear model to identify the association between blood and urine cadmium and urine B2M. Clinical features of chronic cadmium intoxication focused with toxicological renal effects were described.

Results Mean duration of work was 9.7 years (range 3–20 years). Cadmium concentrations in air were ranged from 0.006 to 0.015 mg/m3. Blood cadmium was elevated in all ten workers with highest level of 34.5 μg/dL. Urinary cadmium was elevated in nine workers with highest level of 63.0 μg/g Cr. Urine B2M was elevated in three workers. Urinary cadmium was positively associated with urine protein (beta coefficient 10.27, 95% confidence interval [CI] 4.36, 16.18), while blood cadmium was not significantly associated with urine protein (beta coefficient 10.27, 95% CI: 4.36, 16.18). Electron microscopic findings and other clinical parameters were compatible with renal tubular damage.

Conclusion Cadmium intoxication may occur at quite low air concentrations. Exposure limit may be needed to be lowered reported cases. A second when use of benzene increases significantly and exposure is more important: this is a moment in which several cases of bone marrow aplasia were reported; in Brazil, in spite of high levels of exposure, diagnosis are practically absent. A third with prohibition of benzene in solvents and a reduction in environmental concentrations, but at levels relatively high and a change in the morbidity-mortality pattern with leukaemia being very valued. In the fourth period occupational exposure are even more reduced and environmental exposure to volatile organic components, group in which benzene is included, turns to be a marked discussion, approaching definitively these two questions. Haematological cancer becomes the most important discussion then.

Peripherical countries have impact with technology transfers but are not able to perform adequate health surveillance as should be required especially with regard to the diagnosis and follow-up of sick workers.

**CHEMICAL CONTAMINATION: BENZENE IN BRAZIL**

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Introduction Pathogenicity of benzene was identified in the late nineteenth century. The number and kinds of morbidities related to this substance has been growing ever since due to their continuous and intensive use and the clinical and epidemiological investigations carried along during this period. The trajectory of the use of this substance and related findings of diseases caused by benzene occupational exposition combined with the progressive displacement of typical activities on steel, petrochemical, chemical and oil industry from core countries to peripherals was recovered.

Methods A historic review was conducted to build a narrative capable of revealing connections between globalisation and disease prevention in peripheral countries. Scientific literature was used for international experience. Brazilian experience was reviewed by official documents and local investigations.

Results Several situations repeated themselves in countries of later industrialization. Benzene exposure can be divided in four periods. First one with little use and almost without