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The role of trace elements in health: from healthy environments to healthy living organisms

ABSTRACT BOOK

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P-15. Correlation between dietary cadmium exposure with biochemical and metabolic parameters: A cross-sectional study in Northern Italy population

Tommaso Filippini[1], Daniela Lasagni[2], Francesco Bruzziches[1], Claudia Baraldi[1], Marcella Malavolti[1], Sara Grioni[3], Sabina Sieri[3], Annalisa Santachiara[4], Tiziana De Luca[2], Thelma Pertinhez[2,5], Roberto Baricchi[2], Marco Vinceti[1,6]

[1]*Environmental, Genetic and Nutritional Epidemiology Research Center (CREAGEN), Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Modena, Italy*
[2]*Transfusion Medicine Unit, AUSL-IRCCS, Reggio Emilia, Italy*
[3]*Epidemiology and Prevention Unit, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy*
[4]*AVIS – Section of Reggio Emilia, Reggio Emilia, Italy*
[5]*Department of Medicine and Surgery, University of Parma, Parma, Italy*
[6]*Department of Epidemiology, Boston University School of Public Health, Boston, USA*

Background and aim: Cadmium is a heavy metal classified as carcinogen for humans. It accumulates in the organism, especially in kidney and liver. Recent findings suggested that cadmium could influence human metabolism acting as endocrine disruptor and high cadmium exposure has been associated with impairment of cardiovascular and endocrine systems. This study aims at assessing the dietary intake of cadmium in an Italian community of Northern Italy and to evaluate its correlation with endocrine and metabolic factors.
Methods: In a sample adult population of ever smokers from Reggio Emilia Province we estimated dietary cadmium intake through a food frequency questionnaire, validated for the Northern Italy population. From each participant we collected a fasten blood sample for determination of biochemical parameters and hormones levels, including alanine transaminase, blood glucose, total cholesterol, high-density lipoproteins (HDL), and thyroid-stimulating hormone (TSH). All subjects who participated to this study signed a written informed consent.
Results: We eventually recruited 104 participants (men/women: 46/58), with mean (standard deviation) dietary intake of cadmium of 16.0 (8.5) μg/day. Correlation between cadmium intake and biochemical factors demonstrated a positive association with total cholesterol levels, blood glucose and TSH. Adjustment for main confounders, including sex, age, and bass index did not substantially alter the results. No clear correlation emerged with other parameters under investigation.
Discussion: The results show that in our sampled population, dietary intake of cadmium is similar with other Italian and European populations. They also suggest that cadmium intake could influence the levels of metabolic and other biochemical factor which are important risk factors for chronic cardiovascular and endocrine system diseases.

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