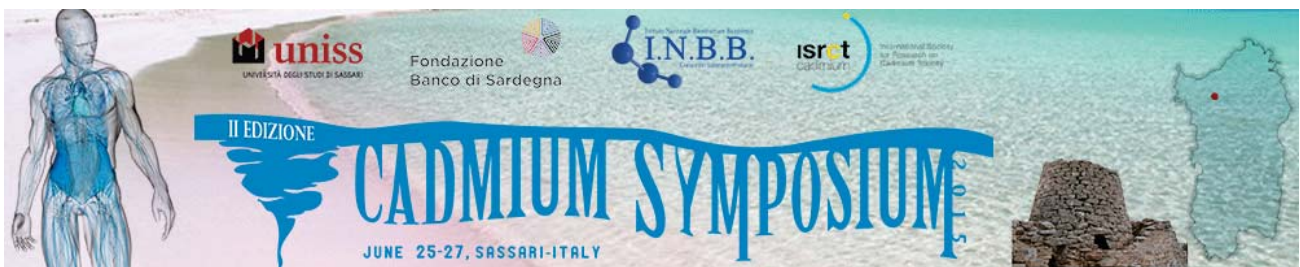


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P-4 _ CORRELATION BETWEEN CADMIUM AND SELENIUM BLOOD LEVELS IN AN ITALIAN POPULATION

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Cadmium (Cd) is established as a human carcinogen while selenium (Se) is a metalloid showing an intriguing relation with human health, particularly with cancer. Se is usually present both in the environment and in living organisms in various inorganic and organic forms, having considerable variations in both their toxicological and physiological properties. The aim of this study was to explore the relation of these two elements in a sample of Modena municipality residents. Linear unadjusted and adjusted regression analyses were performed, including in the models age, body mass index, smoking habits, energy intake (Kcal/die), time from sample collection, and dietary Cd intake. Median (25th-75th) serum levels were 40.85 (30.05-53.50) ng/l and 118.5 (109-136) µg/l for Cd and Se,

respectively. Crude regression β coefficients were -0.320 (95% CI -0.550,-0.089; P=0.008), -0.195 (-0.448,0.058; P= 0.128), 0.240 (-0.124,0.605; P=0.191) and -0.019 (-0.191,0.152, P=0.821) for total, inorganic and organic Se species and for glutathione peroxidase-linked Se. In multivariate analysis, adjusted β values were -0.219 (-0.471,0.032; P=0.086), -0.072 (-0.345,0.201; P= 0.598), -0.129 (-0.478,0.221; P=0.461) and -0.141 (-0.330,0.047; P=0.138), respectively. These results suggest an inverse correlation of Cd with total Se in human blood, mainly due to an inverse relation with inorganic Se species and with glutathione peroxidase-Se, with potential implications for the toxic effects of both Cd and Se, as well as for the nutritional availability of Se.