

Abstracts

Abstract Number	P-3-15-01
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Exposure	food
Health domains	cancer
Type of research	exposure measurement

A pilot study for exposure evaluation to mycotoxins in blood and urine.

Background Human exposure to mycotoxins occurs primarily through the consumption of contaminated food. There are still many uncertainties associated to the risk evaluation from exposure to mycotoxins and still do not know the cumulative real effect of mycotoxins on human health. Aims The assessment of exposure to mycotoxins of a healthy population by monitoring of these in blood and urine will allow to establish the exposure level and related risk, is therefore necessary to have analytical methods able to determine concentrations of mycotoxins in traces. Liquid chromatography electrospray tandem mass spectrometry (LC-ESI-MS-MS), in this regard, is the most appropriate technique. Methods Has been developed a multiresidue method for the quantification of Ochratoxin A, Ochratoxin α , Deoxynivalenol, Nivalenol, Zearalenol, Fumonisin (B1, B2) Aflatoxins (Afla B1, B2, G1, G2, M1) Patulin, HT2 and T2. 10 samples of urine and blood were collected by healthy volunteers. For samples extraction have been used the β -glucuronidase, therefore the analytes were separated chromatographically by Waters XBridge C18 column and precolumn (5 μ m-2,1x150 mm; 5 μ m-2,1x10 mm respectively) with a LC-ESI-MS-MS-TQD Varian 320, finally, the data were processed using the Varian Workstation Version 6 software. Results The data obtained showed concentrations below the minimum of detection for all mycotoxins in blood and urine. 3 samples of blood were positive for Fumonisin B2 (a min. 0.35 to a max of 1.46 ppb), while their urine were positive for AflaB1 and B2 (0.30 and 1.42 ppb respectively). Conclusion The results have mycotoxins values below detection limit and this can be justified by more stringent limits (Reg.2377/90/CE) in food but especially by the imposition of analytical methods able to detect traces of mycotoxins in food (Decision 657/2002/CE). This method allow to estimate the real exposure of people to mycotoxins because it takes into account free and ghost mycotoxins, therefore allows a correct assessment of the risk.

Abstract Number	P-3-15-02
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Exposure	food
Health domains	other
Type of research	cross-sectional study

Adult's exposure to bisphenol A by biomonitoring

Background Bisphenol A (BPA) is a chemical used extensively to manufacture commonly used plastics and epoxy resin liners for food and beverage cans. Because the ester bonds in these BPA-based polymers are subject to hydrolysis, leaching of BPA has led to widespread human exposure. Although no clear association has been established between human exposure to BPA and adverse health effects, studies to investigate the prevalence of exposure are required because of BPA potential harmful effects. Aims Exposure was evaluated by urinary BPA levels in general adult population of the south Italy. Methods The subjects fill out a questionnaire to assess occupation, education, and lifestyle habits, such as tobacco smoking, alcohol consumption, and other common demographic data. Pooled 24 h urine samples were collected in polyethylene containers and stored at -20°C until the analysis. Both free and total BPA were determined by HPLC/MS. Results Participants were adults non occupational exposed to BPA with mean age of 50 \pm 13.6 years, with mean weight of 68.7 \pm 13.9 kg, and mean height of 166.4 \pm 7.7 cm. Total BPA was observed above the LOQ in 61% of samples. The median concentration was 1.1 μ g/L; the 95th percentile concentration was 30.3 μ g/L. Free BPA was observed above the LOQ in 28% samples. The median concentration was 1.2 μ g/L; the 95th percentile concentration was 5.3 μ g/L. Median daily BPA intakes for men are statistically significantly higher than for women; there is a significant decrease in daily BPA intake with increasing age. Conclusions The frequent detection of BPA suggests widespread exposure to this compound in residents of the south Italy. The daily human intake of BPA is <50 μ g/kg bw/day (US EPA reference dose) like others studies. These doses, anyway can have an adverse endocrine disruptive effect on humans, especially fetuses, therefore others more detailed studies needed.
