Proceeding
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Levels of ochratoxin in urine and possible correlation with food consumption

Keywords: anthropometric, ochratoxin, consumption, ingestion, biomarkers

Introduction

Previous national urine surveys confirmed a continuous and widespread exposure of the Portuguese population to ochratoxin A (OTA). Nevertheless, despite OTA in urine provide the ultimate evidence that exposure has taken place, it does not point out the food source of contamination involved. In any case, the observed absence of persistent significant differences between most of the anthropometric parameters, seasonal or regional factors strongly suggested that the source of OTA was transversal to the population, which means that, considering that the major source of exposure is the ingestion of contaminated food, some common dietary foodstuff is probably implicated.

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Objective

This work aimed to identify a possible correlation between OTA urine levels and food consumption.

Experimental: (Figure 1)

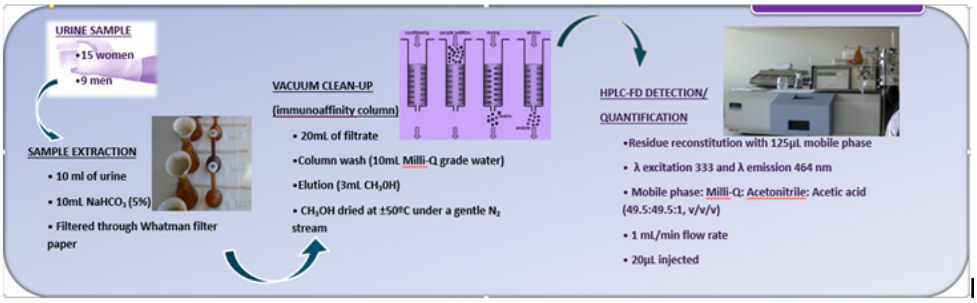

Figure 1 Experiment

Results: (Figure 2)

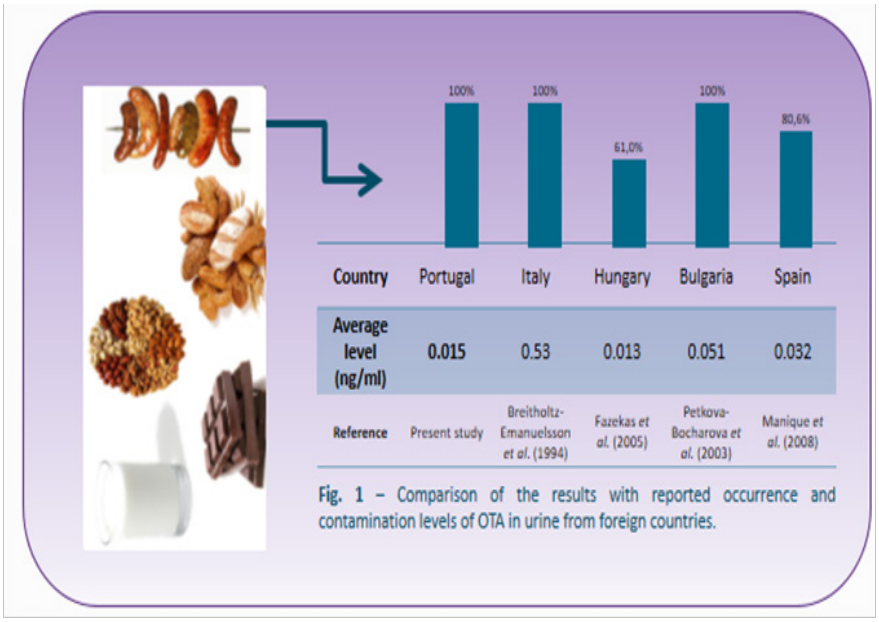

Figure 2 Comparison of the results with reported occurrence and contamination levels of OTA in urine from foreign countries

Discussion

Previous similar studies were only conducted in foreign populations and only related human milk or plasma biomarkers with food consumption. But contrarily to blood-based biomarkers compromised by the steady-state concentration OTA levels in urine proved to correlate more closely with the level of consumption among the general population,[1] allowing a rapid and easy non invasive procedure of collection. Furthermore, human milk can only be used as an indicator of exposure of lactating women.[2] All the tested urine samples were OTA positive although with a low average level (0.015±0.017µg/L). Even if not always statistically significant a higher consumption of walnuts, sausages, bread, chocolate and milk was related to higher OTA levels in the urine of the enrolled participants. Previous studies pointed out an evident association between high consumption of pork, liver paste/pate, milk and cheese, chicken, beef, turkey and cold meat and high OTA levels in human milk and plasma.[3]

Acknowledgements

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Conflict of interest

Author declares that there is no conflict of interest.

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