

POSTER 24

Pyrrolizidine Alkaloids: the underestimated natural toxicants

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Resumo

Introduction: Pyrrolizidine alkaloids (PAs) are secondary metabolites produced by different plant species belonging to the families Asteraceae, Fabaceae and Boraginaceae [1,2]. Tea and herbal infusions (THIs) are one of the most widely consumed beverages [3]. Furthermore, THIs are consumed daily by all age groups and, gained popularity triggered by the fact that they have several natural bioactive compounds associated with health and well-being [3]. However, THIs have been identified as a major route of human PAs, especially 1,2-unsaturated PAs [2], which shown to have potential of hepatotoxicity and genotoxicity [2]. Moreover, substantial amounts of PAs have been found in food and THIs [4], being a serious concern regarding food safety. Notwithstanding, there is limited data about dietary exposure to PAs in THIs. **Objectives:** Summarize the progress in monitoring of PAs concentrations in THIs. **Methods:** This search was based on PubMed data base and considering papers published between 2014 and 2020, using the key terms such as pyrrolizidine alkaloids, herbal infusion and 1,2-unsaturated PAs. **Results:** Based

on health risk, the German Federal Institute for Risk Assessment (BfR) and European Food Safety Agency (EFSA) established limits of PA content in THIs and daily intake [2]. Moreover, they recommend to monitor the PAs and its nitrogen oxides in THIs and foods [2]. Following these statements, countries such as Australia, Germany, Belgium and Japan started to control PAs amounts in THIs and established specific legislation [1,3,5]. Several methods were developed to quantify PAs in THIs and food products marketed [3,5]. It was found that 92% of the teas analyzed in Europe contain alkaloids and, from 169 selected THI in the German market, 2 of 5 contained PAs exceed the proposed BfR limit [1,2]. Switzerland identified PAs content in 50 out of 70 THIs analyzed and Poland reported that 78% of the THIs analyzed contained Pas [3]. However, according to EFSA report, there is data gaps on the PAs occurrence in THIs of Portuguese market [2]. **Conclusions:** The growing consumption of tea-related infusions and the notable presence of PAs in THIs, becomes a new food safety challenge and PA poisoning an emerging public health concern.

Keywords: 1,2-unsaturated PAs; tea and infusions; food safety; plant metabolites; public health.

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