Military Medical Science Letters
Since 1925

Mil. Med. Sci. Lett. (Voj. Zdrav. Listy) 2022, 91 (supplementum 1)
ISSN 0372-7025 (Print)
ISSN 2571-113X (Online)

MEETING ABSTRACTS

RISK OF MERCURY FROM FISH AND FISH PRODUCTS

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Mercury exists in the environment as elemental, metallic mercury, inorganic mercury and organic mercury. Elemental and inorganic mercury released into the atmosphere from combustion of fossil fuels, mining, smelting and various industrial activities. In the aquatic environment is mercury deposited to sediments where is transformed into the main organic form methylmercury. Mercury methylation occures in the aquatic environment due to microorganisms metabolism as sulfite reducing bacteria. The toxicity of mercury in humans or animals depends on its chemical form. Elemental mercury is volatile, gastrointestinal absorption of inorganic mercury is between 10 - 30% range. Methylmercury is the most toxic form of mercury. In comparison with the inorganic form, methylmercury is absorbed from more than 80 % in the gastrointestinal tract, than is widely distributed to all tissues, although the largest deposition occurs in the kidney. The enterohepatic cycle results in a long half-life for this compound compared to inorganic mercury. Methylmercury is able to cross the blood-brain and the placental barriers, mainly affects the central nervous system and is harmful to the nervous system development of the fetus.

The greatest risk of human exposure to mercury comes from food chain. Various authorities, such as United States Environmental Protection Agency (USEPA), the Joint Expert Committee on Food additives (JECFA) of the Food Agriculture Organization (FAO), World Health Organization (WHO) and European Food Safety Authority (EFSA), have established a reference dose for human consumption, such as Provisional Tolerable Weekly Intake (PTWI) for methylmercury.

Our study were focused on two year report from Rapid Alert System for Food and Feed (RASFF) and evaluation of various fish species from market chain exceeded established tresholds by the Commission Regulation (EC) No. 1881/2006 of 19th December 2006 setting maximum levels for certain contaminants in foodstuffs. According to this study, in 2017 and 2018 y., 113 cases of exceeding the Hg content limit in fish and seafood products were reported. The most commonly reported fish is swordfish (*Xiphias gladius*), blue shark (*Prionace glauca*) and mako shark (*Isurus oxyrinchus*).

Acknowledgment

This study was supported by the project COOPERATIO/LF1 Charles University in Prague. Thanks to Š. Dobalová, N. Chalabiová, P. Andršová and Z. Hnilicová for their student assistance.

Keywords: fish meat; methylmercury; safety food; RASFF

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