MMSL 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

PHYTIC ACID- PROTECTIVE OR HAZARDOUS COMPOUND?

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Phytic acid (IP6) is the most abundant inositol phosphate in nature present in plants as well as in mammalian cells, thus, IP6 is common part of human diet. IP6 has been considered for a long time as an antinutritional component due to its ability to bound minerals and affect their bioavailability in gastrointestinal tract (1). On the other hand, the protective effects of IP6 have been reported in pathological conditions including neurodegenerative diseases, cardiovascular diseases and cancer, likewise, a hepatoprotective effect has been observed (2). **Cytochromes P450 (CYPs)** are key enzymes involved in the metabolism of 70-80% of all clinically used drugs and they are responsible for variability in drug response. Expression of CYPs is affected by many factors and can be regulated by specific nuclear receptors such as aryl hydrocarbon receptor (AhR) and pregnane X receptor (PXR). To date, variety of diet-derived metabolites, have been identified as ligands of these receptors showing that different diet habits may contribute to interindividual differences in CYP activity.

In our study, the effect of IP6 on CYPs expression and enzymatic activity was assessed using different hepatic cell models. We have found that mRNA expression of CYP2B6, CYP2E1 and CYP3A4 was significantly downregulated by 10μM IP6 in primary human hepatocytes.

Therefore, further studies are needed to evaluate the complex functions of IP6 and its possible interaction with drug metabolism in order to translate its promising therapeutic potential to clinical practice.

Acknowledgment: This study was financially supported by the grants IGA_LF_2022_025 and the Institutional Support of Palacky University, Olomouc - RVO 61989592

Keywords: Phytic acid; drug metabolism; cytochromes P450

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