Abstract

Objective: Food (meals, drinks and food supplements) can affect the metabolism and transport of drugs in the body or the pharmacodynamic effects of drugs. As a result of these interactions, there are changes in the bioavailability of drugs, such as a decrease in the effect or failure of the treatment or an increase in the effect, often with an increase in the risk of side effects. In exceptional cases, drug toxicity may occur. The work describes in detail the mechanisms of drug interaction with food and discusses selected foods and herbal products with significant interaction potential. Due to the clinical impact of interactions, warfarin and the interaction of food supplements and chemotherapy in oncology patients are discussed separately. There are presented compendia that can be used in the detection of possible interactions.

Methodology: In the practical part, 2 methods of data collection were used. To find out the current situation, respondents were approached in an anonymous questionnaire conducted outside the hospital. Furthermore, interesting case studies were selected from the VFN Clinical Pharmacology Ambulance database.

Findings: In the questionnaire survey, answers were obtained from 129 respondents, 82 women and 47 men. Long-term use of at least 1 medicinal product 48.9 %. Respondents most often obtained information about the correct use of medicinal products from a doctor, pharmacist or pharmaceutical assistant and from the package leaflet. Almost 90 % of the respondents believe that they have sufficient information about the correct use of medicinal products. 61 % of respondents drink medicinal products with water alone, 32 % with water or other drinks. Unfortunately, almost 40 % of people said that they only drink the medicine with the minimum necessary amount of liquid (1-2 sips). Almost 81 % of respondents think that some foods can influence the effect of medicinal products, almost 95 % of respondents think some drinks and almost 72 % of respondents think some food supplements. I asked the respondents for their opinion on the possible interactions of some medicinal product with water, carbonated drinks, grapefruit, orange and apple juice, milk, fruit, green and black tea, St. John's wort tea, chamomile tea, coffee, alcoholic drinks, green/leaf vegetables, fatty foods, foods with a high fiber content, foods containing a large amount of tyramine, garlic, ginseng, milk thistle and *Ginkgo biloba*. No general pattern of correct responses was found depending on gender and educational attainment. Almost 82 % of respondents said that it is important to follow the recommended diet when taking warfarin. The topic is supplemented by 6 case studies.

Conclusion: A significant difference was found in the type of drink used to drink medicines in and out of hospital settings. Fortunately, water is used significantly more outside hospitals. An advertising campaign (posters, short videos) and education by nurses could help to reduce the occurrence of interactions resulting from the choice of drink for drinking medicinal products, especially in hospitals. And above all, the availability of drinking water in a form other than tap water in hospitals and offering it to patients to drink their medicines. There are significant drug interactions between some medicinal products and some foods, including dietary supplements. Warning about important interactions should be stated on the box of the medicinal product and food supplement. Doctors and pharmacists should be aware of what food supplements the patients are taking so that drug interactions can be avoided. There is an overwhelming number of drug interactions, and a healthcare professional cannot remember them, it is advisable to use various compendiums.

Keywords: food, food supplements, drug ingestion, drug interactions, drug metabolism, transporters