

UNAUTHORISED SUBSTANCES IN FOOD SUPPLEMENTS - PHARMACEUTICALS

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With the increase in popularity and number of food supplements on the market, the variety and number of related health risks also increases. A crucial element of a food safety system is rapid flow of information, in Europe operating through Rapid Alert System for Food and Feed (RASFF).

Accordingly, RASFF database was automatically searched using the following criteria: category "dietetic food, food supplements, fortified foods", hazard category "composition" and period of assessment 2011-2022. Data related to selected classes of pharmaceuticals in food supplements were manually extracted, and evaluated.

Records showed hundreds of notifications related to pharmaceuticals and as the most "popular" for adulteration of food supplements have turned out to be in order: PDE-5 inhibitors with 235 notifications including sildenafil, tadalafil, vardenafil, avanafil and their synthetic analogues; anorexics and laxatives with 77 notifications including sibutramine along with its active metabolite N-didesmethyl sibutramine, phenolphthalein and 2,4-DNP (2,4-dinitrophenol); stimulants including natural phenethylamine (the most common in this group was synephrine with 50 notifications) and synthetic stimulants (the most common was 1,3 dimethylamylamine (DMAA) with 95 notifications); nootropic drugs including vinpocetine, vincamine and vinburnine with 24 notifications; anabolics with 16 notifications including pharmaceuticals as testosterone and stanozolol as well as its synthetic derivatives; cannabinoid cannabidiol (CBD) nowadays used as prescription drug for specific indications, but also pending authorization as novel food ingredient, with 14 notifications.

It is noteworthy that for a substantial number of supplements multiple non-compliance were recorded, meaning simultaneous presence of several unauthorized pharmaceuticals. The use of adulterated food supplements has led and will most likely lead to serious consequences for supplements' consumers, especially supplements adulterated with prescription drugs, where a number of cases of serious adverse events and even death were recorded.

What the health community can do in order to better protect public health is to put in an effort to improve analytical methodologies for the detection and structural identification of numerous derivatives of substances from different pharmacological classes as well as to create stricter legal regulations that will refer to the minimum safety requirements that producers must meet before commercializing the product.