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Ecological Aspects Of Drugs Use

A.A. Kotvitska, N.M. Kononenko, R.F. Yeromenko

National University of Pharmacy, Kharkiv, Ukraine
kononenkonn76@gmail.com

Abstract

Drugs are an integral component of medical practice. Their application ensures the preservation of the health of the population and, consequently, leads to increase the quality of life and longevity. At the same time, waste from the pharmaceutical industry has an impact on wildlife, as unused medicines are often thrown out or disposed of improperly. In the beginning of XXI century the European environment Agency identified the influence of active pharmaceutical substances on the environment as a new environmental problem. Given the steady increase in use of medicines in the absence of adequate response measures in the coming years we can expect deterioration of the situation. Since the metabolites of medicines are found in small amounts, their presence in the environment has been proven only recently with the development of analytical methods. Basically, all the medicines and their metabolites are water-soluble, and it is impossible to identify such compounds by means of gas chromatography, which is typically used to detect water pollutants. The need to use of drugs is not always a real. The results of studies conducted worldwide, show that about 50% of all medicines are prescribed, dispensed or sold inappropriately. In addition, according to the European Federation of pharmaceutical industries and associations, from 3 to 8% of selling medicines go unused, according to some estimates, this figure is much higher and can reach 50%, such as in France and the UK. From an environmental point of view the key stages of the life cycle of medicines include production and use, and waste management. Environmental pollution is possible in each of these stages, but it occurs mainly in the process of their use. It is found that from 30 to 90% of orally applied drugs and their derivatives get into the form of active metabolites into the environment in urine composition; a portion of the products of drug metabolism are excreted with feces. The cause of the contamination is often, and incorrect disposal of unused medicines. It is shown that unnecessary or expired drugs most often are discarded in general household waste (about 80%) and more than 15% of consumers send them down the drain. However, about half of the population is aware that such methods of disposal can harm the environment and is willing to support the initiative to collect expired and unnecessary medicines in special containers installed in drugstores, to further secure processing. The fight against pharmaceutical waste environmental pollution must be comprehensive and include measures to change the behavior of the end consumer of medicines and improving mechanisms for the collection and disposal of medicines. Only joint efforts can contribute to the successful solution of this problem.

Key words: ecology, pollution, drugs, utilization.