NICOTINE AND IT'S EFFECT ON THE HUMAN BODY

Ponomareva A.M., Dyomina Ye.V., Tkachev A.V., Filiptsova O.V.
Scientific supervisor: as. Dyomina Ye.V.
The National University of Pharmacy, Kharkiv, Ukraine
philiptsova@yahoo.com

Smoking has long been included in the international classification of diseases as "tobacco dependence". The need for such an action was associated with the severe social consequences of smoking. But the most interesting is that most smokers (according to statistics, about 70%) consider the nicotine as the main component that harms. While the most terrible harm of smoking causes not the nicotine, but the products of combustion of the tobacco leaf, in other words - cigarette smoke, as well as the carcinogenic substances that are contained in the cigarette.

Nicotine is a pyridine alkaloid contained in plants of the family of nightshade, mainly in leaves and stems of tobacco. Once nicotine enters the body, it quickly spreads through the bloodstream and can cross the blood-brain barrier. On average, 7 seconds after the inhalation of tobacco smoke, so that nicotine reaches the brain.

The half-life of nicotine from the body is about two hours. It acts on nicotinic acetylcholine receptors: at low concentrations, it increases the activity of these receptors, which leads to an increase in the amount of stimulating hormone adrenaline (epinephrine). The release of adrenaline leads to an acceleration of the heartbeat, an increase in blood pressure and increased respiration, as well as a higher level of glucose in the blood. Nicotine increases the level of dopamine in the pleasure centers in the brain. When used in small doses, nicotine acts as a psychostimulation.

According to statistics (Australian Statistical Bureau for 1989/90) it turned out that, in general, the health of smokers is better than those who quit smoking and non-smokers. Myocardial infarction had 11.4% quit smoking, 6.7% non-smoking, and 6% regular smokers. From the increased pressure caused by stress, former smokers are most affected - 16%, non-smokers - 13.4% and only 7.4% of smokers.

But Tobacco and tobacco smoke are sources of carcinogens and increase the risk of cancer in all anatomical structures in contact with smoke. Similarly, nicotine in large doses and regular use causes a strong psychological dependence.

Nicotine has a stimulating effect on the brain, improving memory and processing quality. In addition, smokers have a 70% less risk of developing Parkinson's disease than non-smokers. Similar data were obtained for Alzheimer's disease. Also, the harm of smoking mainly depends on the chemical compounds, the carcinogenic substances that are contained in the cigarette. But the cigarette component - nicotine has nothing to do with it. Therefore, the main task for scientists of different fields is to create the safest way of using nicotine.