## MICROBIOLOGICAL SAFETY OF WATER IN PERVOMAYSKIY DISTRICT, KHARKIV REGION

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**Introduction.** The urgency of the work lies in the fact that water is the most important component of the life of all living organisms and the health of people depends on the kind of water they use as drinking water.

According to the World Health Organization, about 80% of all illnesses are associated with unsatisfactory quality of drinking water and violations of sanitary and environmental standards of water supply.

**Aim.** The aim of the work: to study microbiological safety of water of some villages in Pervomaiskiy district of Kharkiv region; to determine the total microbial number of water and bacteria of the intestinal group. In total, 13 samples of water have been tested.

**Materials and methods.** The methods used: the determination of the total microbial number of water, the degree of microbial contamination of water by the sectoral inoculations by Gold and the bacteria of the group of intestinal sticks (index BGKP).

**Results and discussion.** The results of the studies show that the quality of centralized water supply in the village of Slobidske, water supply columns in Michurina and Tereshkova streets meet the sanitary requirements for indicators of microbiological safety and they are permissible for use.

Drinking water from the column in Sadovaya street and the village of Kyseli do not meet the requirements of microbiological safety on the general microbial number. Among saprophytic bacteria found in the water aeromonads and pseudomonads dominate.

Molds and coliform bacteria were also found (indicating water pollution with feces). Aeromonads are pathogens of gastroenteritis and wound infection, pseudomonads – of septicemia and folliculitis, coliform bacteria of dysentery and enteritis, mold fungi - of aspergillosis.

**Conclusions.** The work also has a social aspect, because the consideration of such issues attracts the attention of the public and specialists in this sphere for solving the actual problem of improving the quality of drinking water.

## PRINCIPLES OF GMP IN UKRAINE

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**Introduction.** A few last decades characterized by exceptionally brak-throughes in industry of pharmaceutical industry. The use of modern requirements in pharmaceutical companies is not only the factor of increase of the productivity and efficiency of their work but also necessary condition of competitiveness of companies at the modern international market. The medicinal facilities produced by pharmaceutical enterprises are the products of wide consumer, on that life, health and property of society, depends directly. Therefore in accordance with Decree of Cabinet of Ministers of Ukraine "About standardization and certification" they are subject to obligatory standardization and certification. Medical and microbiological industry is a that sphere of activity, that not only accountable for the health of nation but also can provide economic development of Ukraine. By necessary factors for success of home pharmaceutical products there are her quality and certification at the international market, that are base on next necessary components: firstly, on the reliable system of registration and licensing; secondly, on the independent tests of the prepared products; thirdly, on guaranteeing of quality of medicinal facilities by means of observance at their production of vault of obligatory principles, norms and rules, named "Good manufacturing practice"(GMP). The maiden attempts of integration of GMP were produced in 1996 State

committee on medical and microbiological industry of Ukraine (order № 117), prescriptive to the toproducers to provide accordance to the requirements of GMP with 01.01.2002.

**Aim.** An aim of work is a study of principles of GMP. At any pharmaceutical production there is a great number of risk situations on every stage is an insufficient cleanness of raw material, erroneous dosage, damage of the primary packing, mixing of productive parties or foods. These situations can be prevented by application of corresponding equipment, special apartments, stable processes and skilled personnel. The achievement of her is assisted by validation (from an eng is accordance), that is foundation of GMP. Figuratively speaking, "validation is nothing else than the well organized, well documented good sense".

**Materials and methods.** Analysis of the scientific literature and the results of the advanced research in the field of medicine and pharmacology.

**Results and discussion.** The requirements of GMP consist of the system of principles that is expounded in 9 heads : «Management by quality", "Requirements to documentation", "Requirements to the production", "Requirements to control of quality", "Requirements to the production and tests executable by contract", "Reclamations and review of products", "Requirement to self-inspection", and also "Requirement to the apartments and equipment" and "Requirement to the personnel", on these two heads follows will stop more detailed, because medicinal raw material has a direct contact with an equipment, air of apartment and personnel. A necessity of the strict following these requirements is important, because prevents contamination of medicinal raw material, that allows to get maximally clean medicinal preparation that will render the greatest therapeutic activity, that is the main index of quality of preparation. A clean apartment (clean rooms or zones) - it a "apartment-barrier" the family, that serves as an obstacle for penetration of various contaminants (microorganisms, chemical pairs, aerosol particles, particles of dust or dirt), and in mid air, such apartment the determined amount of particles is supported in determined size on one cubic meter. A necessity for clean apartments and clean zones is explained by that a location over of productive area in the conditions of municipal environment or industrial zone inevitably will be brought to contamination of medicinal facilities totality of contaminants from an environment, if not to execute filtration of air with the use of high-efficiency filters (HEPA- filters). A working personnel, technological equipment and building constructions, generate contaminations. In a clean apartment approximately 70-80 micro contaminations are on a man, 15-20 equipment, 5-10 for a environment. A cleanness of air is a critical condition in the production of medicinal facilities, especially sterile medicinal facilities, and facilities producible in aseptic terms, where clean apartments and clean zones are needed, required providing of overfalls of pressure, microbiological cleanness of air, that producible medicinal facilities did not contain pathogenic microorganisms. Classification of clean productive zones is below presented in a table, according to the requirements of GMP (from 2008) :

| Zone | A maximal possible number of particles is in a 1 m³ of air, at the size of particles, equal or greater | | | |
|---|---|---|---|---|
| | In the equipped state | | In the on-the-road state | |
| | 0.5 mkm | 5.0 mkm | 0.5 mkm | 5.0 mkm |
| A | 3 520 | 20 | 3 520 | 20 |
| B | 3 520 | 29 | 352 000 | 2 900 |
| C | 352 000 | 2 900 | 3 520 000 | 29 000 |
| D | 3 520 000 | 29 000 | - | - |

Data and many other requirements of GMP are successfully entered and supported in pharmaceutical industry of Ukraine already during 20-ти years, that allowed to show out a home product to the international market, that testifies that in area of GMP our state attained necessary level and degree of harmoniousness, including in part of inspection procedures.

GMP governed hard enough. They provide for that company that produces one or another medicinal facilities must have proofs, that the produced products do not contain an impermissible level potentially dangerous microorganisms, toxins, heavy metals, some extraneous admixtures and other substances that can be dangerous for a man. But they also allow to get quality products, that lifts quality of life and health of nation on a higher level.

**Conclusions.** The standards of GMP are called to take to the minimum the risk of receipt of off-grade product on any stage of pharmaceutical production. For the production of safe and effective goods in

accordance with the requirements of GMP we have all: shopfloors and engineering systems for creation of the special terms of production of pharmaceutical equipment, skilled personnel, system of providing of quality, clearly worked out system of documentation, control on all stages of production.

## CHECKING THE QUALITY OF CHILDREN'S NUTRITION

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**Introduction** Children are the future of mankind, thus the quality of baby food should be of primary importance to any country. In our time, the crazy rhythm of life for parents comes to the aid of a wide range of specialized products for children of all ages. It is necessary to be careful, as the development and health of the child will depend on the choice.

**Aim** Determine the microbiological parameters in canned nutrition for children under one year of their discovery.

**Materials and methods**. Materials - samples of children's canned nutrition of five popular brands on the Ukrainian market (after their opening, taking into account the expiration date and storage conditions). For the study, the following environments were used as: Codex and further hang on Endo agar, Thioglycolic medium (TGS), Meat peptone agar (MPA). When performing the experiment, officially permitted research methods were used.

**Results and discussion.** After the checking was completed, the following results were obtained. Immediately after opening of caned nutrition, an analysis was performed that showed that all specimens were sterile. Over time, in the sample number 1, the number of colony-forming units was $2.42 \times 10^3$ CFU/g; №2—$4.3 \times 10^2$ CFU/g; №3—$1.1 \times 10^1$CFU/g; №4—$1.1 \times 10^1$ CFU/g; №5 - growth was not detected (possibly due to preservatives not declared by the manufacturer). The total number of colony-forming units (CSFs) in each of the samples was not exceeded, in accordance with the sanitary-epidemiological rules and norms for special food products (medical, dietary, baby food products, etc.). In all specimens of the bacteria, the E. coli group was not detected. But after a longer period of time than the one indicated on the marking of each sample, the number of CSUs has increased, so it is necessary to closely monitor the time of opening the baby food.

**Conclusions.** Hence, in the Ukrainian market, canned nutrition meet the standards, and are safe for the future generation. At the same time, parents should be careful, and watch out for the terms of opening and conditions for the preservation of canned nutrition. It is desirable, after opening, to feed the baby immediately, or to eat it himself, or to dispose of it, in order to preserve the child's health.

## INFECTIOUS FACTOR AS A TRIGGER MECHANISM OF AUTOIMMUNE PROCESS (MYASTHENIA GRAVIS)

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**Introduction.** Autoimmune disease is one of the most complex problems of modern clinical immunology. More than twenty theories are proposed that explain the causes of the breakdown of tolerance and, as a consequence, the development of autoimmunity.

Recently, the classic postulate that autoimmune reactions develop exclusively on their own antigens, have been subjected to serious revision, since it has been established that the inflammatory foci for some autoimmune diseases are not aseptic, but, on the contrary, contaminated with microorganisms. Special role belongs to intracellular pathogens (microorganisms). From the centers demyelinization in patients with multiple sclerosis isolated human herpesvirus type 6. There is information about the role of some strains Klebsiella and other types of Enterobacteriaceae in the development of peripheral arthritis in