

THE STATE OF RADIATION LOAD TO PEOPLE OF THE ZAPOROZHYE REGION DUE TO MEDICAL IRRADIATION

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Purpose and objectives of the study: To research the status of providing X-ray care to the people of the Zaporozhye region and the received radiation load on patients.

Methods and their application: analysis of the status of radiation load in the region for the period 2010-2014. due to X-ray diagnostic procedures which were held according to the number of carried out researches, which were obtained from the medical statistical form "Report of the treatment-and-prophylactic institution" (f. 20). Doses of irradiation on patients due to X-ray diagnostics were calculated using the instruction of the Ministry of Health of Ukraine, and were measured with the help of dosimeters with X-ray computer tomographs and angiographs.

The obtained results: the frequency of X-ray diagnostic researches and the radiation dose on people of the Zaporozhye region for the period 2010-2014 was analyzed. The results of the analysis show that the number of radiological procedures has been steadily decreasing in recent years, but counting a decrease in the population, the frequency of research per person has increased from 1.25 in 2010 to 1.29 in 2014.

The highest frequency is radiography (0.60-0.81 per person); Second place - fluorography (0.43-0.63), fluoroscopy takes the third place (0.03-0.04); The frequency of X-ray computed tomography in 2014 reached 0.018.

The average radiation dose on people due to x-ray diagnostic procedures for 5 years was 0.92 mSv per person per year, which is almost twice higher than the world average. More than 50 % of this dose on people is obtained through the radiographic method of investigation. The main part in the total radiation dose is radiography (0.44-0.52 mSv), the second place is made by fluorography (0.21-0.27 mSv), the third - X-ray computed tomography (0.124 mSv per person), which grew up in 2.6 times.

According to the results of the work, the tasks aimed at reducing the dose on patients due to X-ray diagnostic procedures that have been included in the regional "Program of protecting the people of the Zaporozhye region from the influence of ionizing radiation" were defined.

THE AGE SPECIFICITY OF NUTRITION OF MEDICAL STUDENTS

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It is necessary that the question of nutrition covers a prevail part of the human's health. It holds a special place for people, including students, because the average age of student (18-22 years old) refers to period of final period of body growth.

Aim and tasks. It was study and analysis of relation between the factual nutrition of students and their age.

Methods and applications. The objects of the researching were 100 students, 18 students aged of 18 years old (y.o.), 36 – 19 y.o., 36 – 20 y.o. and 10 – 21 y.o. It was used the method of anonymous questionnaire with questions about body parameters, age, regimen and food ration.

Results. It is noticed the difference in body mass index depending on the age of student. The average rate of body mass index among the 18 years old respondents is 22.05, 19 y.o. – 22.25, 20 y.o. – 22.5, 21 y.o. – 21.45. All of these parameters correspond to normal index without definite tendency, but 1 18 y.o. male has obesity and 8 girls (2 of 18 y.o., 2 of 19 y.o., 3 of 20 y.o. and 1 of 21 y.o. have a hypotrophy).

There are 11% of 18 years old students, 27.8% of 19 y.o., 27.8% of 20 y.o., 30% of 21 y.o., who have not a breakfast at all, herewith the 22% of 18 y.o., 30.5% of 19 y.o., 25% of 20 y.o. and 30% of 21 y.o. have a heavy supper.

Each respondent eat dairy everyday, but 33% of 18 y.o. 30.5% of 19 y.o. 14% of 20 y.o. and 20% of 21 y.o. don't eat the fish at all.

It is noticed, that 60% of students have in their ration a fast-food such as snacks, porridges and soups of instant preparation and street food. There are 44.4% of 18 years old, 66.7% - 19 y.o., 52.7% of 20 y.o., 70% of 21 y.o. It is defined, that the females eat more fast-food (33% of 60%), herewith the maximal using is among 19 y.o. girls.

THE PROBLEM OF PROLIFERATION METHICILLIN-RESISTANT *S. AUREUS*

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Staphylococci are natural inhabitant of human and animal skin but sometimes they can cause infections affecting many organs (endocarditis, toxic shock syndrome, sepsis, pneumonia and arthritis). Most staphylococci are responsible for skin infections such as boil, carbuncle, and furuncle and some cause food poisoning resulting in severe vomiting and diarrhea. Staphylococci also cause mastitis in cow and also cause joint infection leading to edema and arthritis. An emerging problem in treating *S. aureus* infections is the increasing resistance against antibiotics.

The aim of this study was to characterize problem of *S. aureus* antimicrobial resistance.

Some staphylococci and in particular *S. aureus* is methicillin-resistant (MRSA): hospital associated (HA-MRSA) or community associated (CA-MRSA), livestock associated (LA-MRSA). Infections caused by these resistant strains may be fatal because of lack of alternative antibiotics. MRSA are also frequently resistant to most of the commonly used antimicrobial agents, including the aminoglycosides, macrolides, chloramphenicol, tetracycline, and fluoroquinolones. MRSA strains should be considered to be resistant to all cephalosporins, cepheems, and other beta-lactams (such as ampicillin-sulbactam, amoxicillin-clavulanic acid, ticarcillin-clavulanic acid, piperacillin-tazobactam, and the carbapenems).

MRSA produces large numbers of extracellular proteins and toxins. The most important toxins are called Staphylococcal enterotoxins (SEs). There are 17 major serologically distinct SEs (SEA through SER with no SEF). In addition, the SEC has three antigenically distinct subtypes: SEC1, SEC2, SEC3, and SEG have a variant form called, SEGv. Many SEs are responsible for food poisoning, acute illness, fever, erythematous lesions, and hypotension. Enterotoxins are called superantigens, because they form a complex with MHC Class II molecules, activating T-cells to produce excess amounts of cytokines that contribute to diarrhea and fatal toxic shock syndrome.

S. aureus and MRSA evolve and adapt the changing environment. Therefore, dissemination of MRSA should be continuously monitored for the antibiotic susceptibility pattern and molecular epidemiology comprising hospital, community, and livestock settings.

PECULIARITIES OF CHITOSAN MODIFICATION IN ORDER TO USE AS ANTIDOTE-THERAPEUTIC AGENT

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Perspective of chitosan' use as antidote-therapeutic agent at acute intoxications by epoxide compounds is high interest, because different xenobiotics containing epoxy groups can interact with functional groups of proteins with their inactivation.