INFLUENCE OF CIGARETTES ON THE PSYCHOLOGICAL AND PHYSICAL HEALTH OF A HUMAN

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Introduction. The cigarette consists of paper and tobacco. When burning a cigarette, more than 4 thousand hazardous chemicals are released. These substances cause many serious diseases. Together with the smoke from the cigarette we breathe in tar, arsenic, benzene, polonium, formaldehyde.

Accordingly to statistics, more than 5 million people die each year from diseases caused by smoking. Tobacco smoke has a negative impact on surrounding people. Thus, every year 3 thousand passive smokers die.

Aim. The purpose of this work is to study the influence of cigarettes on health and psychological dependence, the side effects of smoking.

Material and methods. For analysis the papers (n = 45) for the last ten years were taken into accout.

Results and discussion. Tobacco smoke has a negative impact on all organs and systems of organs. Accordingly to pharmacologists, nicotine, carbon monoxide, tobacco tar are present in tobacco smoke, which are dangerous to the human body. Smoking causes diseases of the cardiovascular system, pathology of the digestive system, cancer, respiratory system diseases, eye diseases, reproductive system pathology. In addition, the skin becomes grayish, the number of wrinkles increases, subcutaneous fat accumulates around the waist and chest.

Men who started smoking at the age of 10-17 years had poor spermatogram indices: the number of sperm cells was decreased by 42%. Nicotine causes dependence on smoking. In large doses, nicotine causes a disorder of the nervous system. There is a decrease in ability to work, trembling of hands and weakening of memory. After smoking one cigarette increases the heart rate by 30% and increases blood pressure.

Conclusions. Thus, smoking causes mental and physical dependence. Tobacco smoke has a negative effect on the human body. Dependence on smoking occurs on a psychological and physical level. So quitting smoking with medication is very difficult. For this, the willpower and great desire of the smoker are needed.

LASSA FEVER

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Introduction. Lassa fever is an illness caused by Lassa virus, a single-stranded RNA hemorrhagic fever virus from the family Arenaviridae. It is an acute febrile viral illness lasting one to four weeks, and it occurs in West Africa and some areas beyond.

Aim. This study is targeted at Lassa virus infection.

Materials and methods. Analysis of scientific sources was done concerning the problem.

Results and discussion. Lassa fever was first described in the 1950s, and the viral particle was identified in 1969 from three missionary nurses who died in Lassa, Nigeria, after caring for an infected obstetrical patient. Lassa fever is one of the hemorrhagic fever viruses, occurring in West Africa sub-regions in similar areas as Ebola virus. Sierra Leone, Liberia, Ghana, and Nigeria are most often affected. Surrounding regions are also at risk, because the rodents that transmit the virus are very common throughout West through East Africa. There are 100,000 to 300,000 cases of Lassa fever each year in the world. Case fatality is 1% in general (compared to 70% in Ebola virus). Severe cases have a case fatality of 15%.

The reservoir, or host, of Lassa virus is a rodent known as the "multimammate rat" (Mastomys natalensis). Once infected, this rodent is able to excrete virus in urine for an extended time period, maybe for the rest of its life. Mastomys rodents breed frequently, produce large numbers of offspring, and are numerous in the savannas and forests of west, central, and east Africa. In addition, Mastomys readily colonize human homes and areas where food is stored. All of these factors contribute to the relatively efficient spread of Lassa virus from infected rodents to humans.

Transmission of Lassa virus to humans occurs most commonly through ingestion or inhalation. Mastomysrodents shed the virus in urine and droppings and direct contact with these materials, through touching soiled objects, eating contaminated food, or exposure to open cuts or sores, can lead to infection.

Because Mastomys rodents often live in and around homes and scavenge on leftover human food items or poorly stored food, direct contact transmission is common. Mastomys rodents are sometimes consumed as a food source and infection may occur when rodents are caught and prepared. Contact with the virus may also occur when a person inhales tiny particles in the air contaminated with infected rodent excretions. This aerosol or airborne transmission may occur during cleaning activities, such as sweeping.

Direct contact with infected rodents is not the only way in which people are infected; person-to-person transmission may occur after exposure to virus in the blood, tissue, secretions, or excretions of a Lassa virus-infected individual. Casual contact (including skin-to-skin contact without exchange of body fluids) does not spread Lassa virus. Person-to-person transmission is common in health care settings (called nosocomial transmission) where proper personal protective equipment (PPE) is not available or not used. Lassa virus may be spread in contaminated medical equipment, such as reused needles.

Signs and symptoms of Lassa fever typically occur 1-3 weeks after the patient comes into contact with the virus. For the majority of Lassa fever virus infections (approximately 80%), symptoms are mild and are undiagnosed. Mild symptoms include slight fever, general malaise and weakness, and headache. In 20% of infected individuals, however, disease may progress to more serious symptoms including hemorrhaging (in gums, eyes, or nose, as examples), respiratory distress, repeated vomiting, facial swelling, pain in the chest, back, and abdomen, and shock. Neurological problems have also been described, including hearing loss, tremors, and encephalitis. Death may occur within two weeks after symptom onset due to multi-organ failure.

The most common complication of Lassa fever is deafness. Various degrees of deafness occur in approximately one-third of infections, and in many cases hearing loss is permanent. As far as is known, severity of the disease does not affect this complication: deafness may develop in mild as well as in severe cases.

Approximately 15%-20% of patients hospitalized for Lassa fever die from the illness. However, only 1% of all Lassa virus infections result in death. The death rates for women in the third trimester of pregnancy are particularly high. Spontaneous abortion is a serious complication of infection with an estimated 95% mortality in fetuses of infected pregnant mothers.

Because the symptoms of Lassa fever are so varied and nonspecific, clinical diagnosis is often difficult. Lassa fever is also associated with occasional epidemics, during which the case-fatality rate can reach 50% in hospitalized patients.

Ribavirin, an antiviral drug, has been used with success in Lassa fever patients. It has been shown to be most effective when given early in the course of the illness. Patients should also receive supportive care consisting of maintenance of appropriate fluid and electrolyte balance, oxygenation and blood pressure, as well as treatment of any other complicating infections.

Lassa virus, an Old World arenavirus (family Arenaviridae), is the etiological agent of Lassa fever, a severe human disease that is reported in more than 100,000 patients annually in the endemic regions of West Africa with mortality rates for hospitalized patients varying between 5-10%. Currently, there are no approved vaccines against Lassa fever for use in humans. Here, we review the published literature on the life cycle of Lassa virus with the specific focus put on Lassa fever pathogenesis in humans and relevant animal models. Advancing knowledge significantly improves our understanding of Lassa virus biology, as well as of the mechanisms that allow the virus to evade the host's immune system. However, further investigations are required in order to design improved diagnostic tools, an effective vaccine, and therapeutic agents.

Primary transmission of the Lassa virus from its host to humans can be prevented by avoiding contact with Mastomys rodents, especially in the geographic regions where outbreaks occur. Putting food away in rodent-proof containers and keeping the home clean help to discourage rodents from entering homes. Using these rodents as a food source is not recommended. Trapping in and around homes can help reduce rodent populations; however, the wide distribution of Mastomys in Africa makes complete control of this rodent reservoir impractical.

When caring for patients with Lassa fever, further transmission of the disease through person-to-person contact or nosocomial routes can be avoided by taking preventive precautions against contact with patient secretions (called VHF isolation precautions or barrier nursing methods). Such precautions include wearing protective clothing, such as masks, gloves, gowns, and goggles; using infection control measures, such as complete equipment sterilization; and isolating infected patients from contact with unprotected persons until the disease has run its course.

Further, educating people in high-risk areas about ways to decrease rodent populations in their homes will aid in the control and prevention of Lassa fever. Other challenges include developing more rapid diagnostic tests and increasing the availability of the only known drug treatment, ribavirin. Research is presently under way to develop a vaccine for Lassa fever.

Countries reporting endemic disease and substantial outbreaks of Lassa Fever are Guinea, Liberia, Nigeria and Sierra Leone. Countries reporting few cases, periodic isolation of virus, or serological evidence of Lassa virus infection: Benin, Burkina Faso, Cote d'Ivoire, Ghana, Mali and Togo.

Conclusion. Primary transmission of the Lassa virus from its host to humans can be prevented by avoiding contact with Mastomys rodents, especially in the geographic regions where outbreaks occur.

BIODIVERSITY AND BIOLOGY OF THE AXOLOTLS

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Introduction. The axolotl also known as a Mexican salamander (Ambystoma mexicanum) or a Mexican walking fish, is a neotenic salamander, closely related to the tiger salamander. Although the axolotl is colloquially known as a "walking fish", it is not a fish, but an amphibian. Their heads are wide, and their eyes are lidless. Their limbs are underdeveloped and possess long, thin digits.

Aim. The study was devoted to understanding the biology and physiology of axolotls and their potential use for scientific study as a model object.

Material and methods. Literature study was conducted including research on video sources on YouTube.

Results and discussion. The feature of the salamander that attracts most attention is its healing ability: In captivity, axolotls eat a variety of readily available foods, including trout and salmon pellets, frozen or live bloodworms, earthworms, and waxworms.

Axolotls are 1000 times more resistant to cancer. They can regenerate pretty much anything in their body. They regenerate without showing any signs of scarring at the site of amputation. They can also receive transplant organs from each other.

An Axolotl remains in its larval form its entire life. A single injection of iodine can turn young axolotls into adult salamanders. Female axolotl lay eggs depending on their size. She can lay anywhere between 100-1000 eggs. They have rudimentary teeth, designed for gripping than biting or tearing. As a result, their food is generally swallowed whole.

They can reach the ages of 15-20 years old. An adult axolotl can reach the length of 30cm. Their sex is determined by their cloaca. Axolotls are also known to be the master of regeneration. Axolotls are an important research animal and have been used in studies of the regulation of gene expression, embryology, neurobiology, and regeneration.

The colour of axolotl is dependent upon pigment cells called chromatophores. They come and four main colours and four subcolours. In the wild, the species lives underwater and is not commonly seen. Outside of the wild, it is a popular aquarium species around the world and is used widely in laboratory experiments

Conclusions. There are no negative effect of axolotls on human. Positive impacts are for example, pet trade, food, source of medicine of drug and resource and education.