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В сборнике представлены научные работы, выполненные студентами и молодыми учеными на кафедрах медицинских ВУЗов России и зарубежных стран. Результаты исследований, представленные в сборнике, отражают актуальные проблемы современной медицинской науки и практики, а также учитывают интересы смежных областей. Материалы сборника будут интересны студентам, интернам, ординаторам, практикующим врачам, преподавателям медицинских ВУЗов и научным сотрудникам.

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The malondialdehyde (MDA) content, a measure of lipid peroxidation, was assayed in the form of thiobarbituric acid reacting substances (TBARS) by method of Kamyshnikov (2004).

Our results showed that treatment by lead nitrate significantly increased RCR in rats with low resistance to hypoxia, decreased ADP/O ratio in high resistant rats at succinate oxidation. FADH-dependent oxidation was most resistant to lead-induced damages. L-arginine caused reduces in the rate in state 3 and RCR and restored the ADP/O ratio at succinate oxidation only in rats with low resistance to hypoxia. The L-arginine showed a greater effect on mitochondrial oxygen consumption in low resistant rats than those high resistant rats. Exposure to L-arginine and lead elevated the ADP/O ratio at both NADH- and FADH-dependent substrates, as well as via transamination pathway. L-arginine protected liver of low resistant rats from the cytotoxic effects of lead nitrate, as evaluated by mitochondrial oxygen consumption assay. These changes are consistent with an overall improvement in mitochondrial function in liver of low resistant rats: improvement in oxidative phosphorylation, improvement in the coupling of respiratory chain and oxidative phosphorylation (increased RCR), and improvement of mitochondrial efficiency (ADP/O ratio) when α -ketoglutarate was used as a substrate, as well as both glutamate and pyruvate and glutamate and malate were used through transamination pathway. The RCR in high resistant lead-treated rats were significantly decreased by L-NNA at NADH-dependent substrates.

Recent studies indicated that appreciation of nitric oxide and its evolving role in hepatology may be important to understand the pathogenesis of and treatment strategies for different types of liver diseases, especially with the emergence of selective NO synthase inhibitors and cell-specific NO donors [Abrams et al., 1995; Hon et al., 2002]. Numerous studies have suggested that oxidative stress with subsequent lipid peroxidation is one mechanism for lead toxicity [Pande, Flora, 2002; Sivaprasad et al., 2004; Ahamed and Siddiqui, 2007]. The next set of experiments was focused on analyzing redox status in the liver from exposed rats to lead nitrate. Significant increase in both lipid hydroperoxides and TBARS levels in liver from lead-exposed rats were observed. Our results are in agreement with those of the literature showing an increase in lipid hydroperoxides and TBARS levels in lead-exposed animals [Hermes-Lima et al., 1991; Lawton, Donaldson, 1991; Saxena, Flora, 2004; Sivaprasad et al., 2004].

Our study indicates that L-arginine has a protective effect against lead-induced hepatotoxicity in rats with low resistance to hypoxia through attenuating lipid peroxidation and improvement of mitochondrial efficiency. L-NNA reduced lead-induced oxidative stress in high resistant rats and significant alterations of lipid hydroperoxides level, which might be due to the ability of L-NNA to reduce the accumulation of free radicals generated during lead-induced lipid peroxidation.

PECULIARITIES OF SEASONAL ALLERGY IN CHILDREN IN THE SOUTH UKRAINIAN REGION

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Allergy remains one of the principle and relevant problems in modern pediatrics. According to WHO data the prevalence of allergic diseases (in particular – allergic rhinitis) is highest in United Kingdom and Ukraine and is 40 per 1000. Climatic and geographic conditions, development of agriculture and industry in Zaporozhye region are favorable for seasonal allergy and leads to increasing in its prevalence and severity.

Main aeroallergens are pollen grains of anemophilous plants and mold spores, which are encapsulated form and can be synergic. That's why pollen and mold sensitivity frequently coexist in patients with seasonal allergy. Ubiquitous vegetation of micromycetes in environment, sporulation

to the air makes spores contact with respiration system unavoidable. Air spore's quantity can exceed pollen grains in hundred times.

In spite of role of molds in exacerbation of seasonal allergic rhinitis (AR) and bronchial asthma (BA) have been studying for two centuries, doctors used to identify terms "seasonal allergy" and "pollinosis".

Aim of the work was to improve diagnostics of seasonal allergy with pollen-mold hypersensitivity in children on the ground of anamnestic, clinical examination, skin testing and aerobiological monitoring of pollens and spores in atmospheric air.

Materials and methods: 154 children (middle age $12,3 \pm 0,27$ years) with seasonal AR and/or BA were examined by skin prick test. According to the results 2 groups were formed: 1st – 100 patients with the presence of combined pollen-mold sensitivity, 2nd – 54 patients with isolated pollen allergy. During anamnesis collection we pay attention to the question that helps to confirm molds as etiologic factor of seasonal symptoms. For the purpose of detection of late and delayed skin reaction to mold allergens we supervised patients during 24 hours. Intradermal and patch testing with *Alternaria* and *Cladosporium* was also provided. Aerobiological sampling was made by volumetric method with patented Burkard's 7-day Recording Volumetric Spore Trap analog during 4 years.

Results: Among the examined patients 81,1% were polisensitized. In the structure of mold hypersensitivity *Alternaria* (26%), *Botrytis* (23,3%), and *Aspergillus* (20,1%). Main pollen allergens in South Ukrainian region are weeds. To *Ambrosia* 72% of children revealed to be skin positive, 56,5% - to *Cyclachaena* (Asteraceae). Among the grasses first place in the structure of pollen sensitivity belongs to sunflower (49,4%) and dandelion (25,3%). In the first group of patients authentically more frequent hypersensitivity to food (79,3% vs 62,3%, $p < 0,05$) and domestic (86,9% vs 72,5%, $p < 0,05$) allergens was found.

In 26% of patients different types of late skin reaction was observed (15% to *Alternaria*, 9% to *Cladosporium*). In 5 (19,2%) inflammatory erythema and papule remain after prick-test, in 7 (27%) infiltration and hyperemia appeared on the place of negative or dubious intradermal, others remained local skin reaction for 6-8 to 24 hours. 6% of children parallel to positive skin tests results manifest allergic symptoms from upper respiratory tract, which was estimated as a sort of provocation test.

It was detected that in 1st group authentically more frequently symptoms were present throughout the warm season with exacerbation in wet weather after the rain, and playing in the park in autumn and spring. Odds ratio of mold allergy present in case of products from molds was high - 14,6 ($p < 0,05$). Correlation between mold hypersensitivity and bad effect of allergen-specific immunotherapy was revealed ($r = +0,3$, $p < 0,05$, Sp and PV+ = 100%).

Very important were questions about appearing seasonal symptoms in uninhabited warehouse apartments, in basements. In main group of patient's positive results on these questions were more frequent than in isolated pollen hypersensitivity (2nd group). It caused high specificity and prognostic value of positive results on these questions (Sp=88-96,2%, +PV=86-90%) and low probability of false positive results.

Aerobiological monitoring of pollen and mold spores in the outdoor air showed that annual concentration of spores exceeded pollen counts at 100 times (420000 vs 30000 in m^3). Main molds are represented by species *Alternaria* (8,3% from total spore concentration), *Cladosporium* (69%). They are present in the air from March to November with peak in June, July, and October during falling. Three pollination waves are also typical for Zaporozhye region. Spring tree pollination of birch (mean annual concentration $1258 \pm 324,6$ pollens in m^3), poplar ($1480 \pm 509,4$) and *Ulmus* ($1545 \pm 716,3$). In second pollination wave *Morus* pollen predominates (73% of May-July pollens, $6981 \pm 2008,2$ grains in a year). *Ambrosia* pollen is the most frequent species in the third pollination wave and it's concentration is around 65% from total annual grains. Daily count exceeds 1500 grains on 28 August to middle of September. This picture overlaps with clinical presentation: maxi-

imum of emergency calls and hospitalizations occurs before school year begins (end of August and September).

Results: Mold hypersensitivity is the sign of polisensibilization. Prick-test must be used with combination of intradermal and patch tests to reveal IgE-independent mold hypersensitivity. To improve diagnostic approaches of mold allergy it is advisable to use aerobiological monitoring data.

ТРИХИННЕЛЕЗ И ЕГО ПРОФИЛАКТИКА

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Trichinosis is a parasitic disease of animals and people. It induced by trichinas. Trichinas are presented by different kinds, which have similar morphologic structure. They are *Trichinella spiralis*, *Trichinella nativa*, *Trichinella pseudospiralis*.

Trichinosis is spreaded all over the world espially there, where population eats pig, bear and badger meat.

In Russia trichinosis of pigs is widely spreaded. Trichinas are adapted to many hosts. They parasitize 70 kinds mammals.

Invasion occurs when man or animal eats contaminated meat. If animal or man eats meat, which contains cysts, acid in stomach dissolves defending covering, riding worms. Worms are located in small inestum and become adult. After mating females of worms produce germs. Germs can rich any cell, but they can survive only in skeleton muscles.

Trichinosis has following symptoms: fever, that can last for several months, conjunctivitis, pain of muscles (the most pains are located in muscles of legs and arms), swelling of face and lids.

Prophylaxis includes:

- 1) don't eat a meat of predators (probability of injection-80-90%);
- 2) don't let the pigs to eat raw carcasses of other animals;
- 3) cook the meat of wild animals very carefully, because worms are killed at high temperatures.

Diagnostics involves a blood test and a biopsy of the muscle tissue of the patient.

Treatment of Trichinosis:

Treatment is carried out only in the hospital! Disease may progression and hard adverse reactions are possible.

Specific treatment is carried out with Mebendazole. Also Tiabendazole may kill the adult worms in the intestine.

Symptomatic treatment includes Aspirin and Corticosteroids. Corticoids are used to treat hard forms of the disease.

For prevention of adverse allergic reactions are used anti inflammatory drugs (Brufen and Voltaren).

But so far there is no drugs, which kill larvae.