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1. CHANGES IN SERUM LEVELS OF REACTIVE OXYGEN SPECIES, ANTIOXIDANTS AND NITRIC OXIDE DURING NORMAL PREGNANCY

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ABSTRACT

Knowledge of maternal gestational adaptation is critical to the proper clinical management of normal and abnormal pregnancy. The changes in maternal physiology support the diverse needs of the developing fetus and prepares the gravida for the parturition. The aim of our study was to determine the plasma levels of the products of reactive oxygen species, antioxidants and nitric oxide in healthy pregnant women at different gestational ages. Our study revealed that there is a change not only in oxidative status but also in the production of nitric oxide during normal pregnancy.

Key words: reactive oxygen species, antioxidants, nitric oxide, normal pregnancy

2. PROTECTION OF LIVER-CELL BY TREATMENT WITH ALPHA-LIPOIC ACID IN EXPERIMENTAL DIABETES MELLITUS

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ABSTRACT

Purpose: To evaluate the antioxidant defense by alpha lipoic-acid in streptozotocin induced diabetes in male Wistar rats and its possible protection of liver- cell against gradual loss under diabetic condition. **Methods:** Male wistar rats were divided into 3 groups. Group I served as control rats; Group II (diabetic control): rats were injected with 40mg /kg body weight of streptozotocin to induce diabetes mellitus; Group 3: diabetic rats, which were given i.m. alpha lipoic acid (40 mg/kg body weight) -for 30 days after inducing diabetes mellitus. After 30 days, the liver oxidative parameters were determined. **Results:** Significantly lower values of the liver oxidative stress parameters were obtained from the group of rats treated with alpha lipoic acid after inducing diabetes mellitus. **Conclusions:** The experimental drug alpha lipoic acid represents an antioxidant defense against reactive oxygen species produced under hyperglycemic conditions and thus protects the liver-cell against loss and exhibits antidiabetic properties.

Key words: diabetes mellitus, alpha lipoic-acid, reactive species of oxygen, liver

3. DYSFUNCTION OF THE NITRIC OXIDE IN PREECLAMPSIA

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ABSTRACT

The studies in the past years have been discussing increasingly more about involving NO in the pathogenesis of preeclampsia. The constituted synthetised NO regulates the arterial pressure by its vasodilating effect and by the prevention of the placketary aggregation. The actual study investigates the NO disfunction within the oxidative stress in patients with preeclampsia, determining the seric nitrites and nitrates, the seric carbonylated proteins as indicators of the oxidative stress, and for evaluating the antioxidant status seric ceruloplasmine was dosed.

The obtained results demonstrate NO disfunction, with significantly low values of seric nitrates and nitrites in preeclamptic pregnant women within an amplified oxidative stress, supported by the increased values of the carbonylated proteins and significantly low values of the seric ceruloplasmine.

Key words: preeclampsia, NO, ceruloplasmine, carbonylated proteins

4. STAPHYLOCOCCUS AUREUS STRAINS ISOLATED FROM ORTHOPEDIC WARDS: PREVALENCE AND RESISTANCE TO ANTIMICROBIAL AGENTS

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ABSTRACT

Background: The present research was undertaken to study the prevalence and the resistance to antimicrobial agents of *Staphylococcus aureus* strains among clinical isolates from patients hospitalized in the Orthopedic wards of Clinical County Hospital Timisoara. **Method:** 201 patients with bone and/or joint infections were selected from Orthopedic wards. Specimens as wound

secretions, joint fluid, urine, blood, sputum were collected. All samples were inoculated on blood agar supplemented with 5% sheep blood, lactose agar (AABTL, MacConkey) and selective Chapman media plates. The plates were incubated aerobically for 24 hours. Smears were made from samples and stained by the Gram's stain. Strains were identified using API galleries (bioMerieux France), Pastorex-Staph Plus (Bio-Rad), Vitek 32 automated system (bioMerieux, France) and susceptibility tests were performed by disk-diffusion tests (CLSI standards) with manual and automated (Osiris Evolution - Bio-Rad Laboratories) reading methods. **Results:** Between January 2002 and December 2005, a number of 141 strains were isolated, and the commonest findings were *S.aureus* strains (41.99%), followed by *Klebsiella pneumoniae* (16.03%), *Pseudomonas aeruginosa* (13.74%) and *Escherichia coli* (10.69%). *S.aureus* strains were frequently associated with Gram-negative germs. 20 of all *S.aureus* strains were MRSA (36.36%), and the most frequent associated resistance phenotypes were MRSA + MLS_Bi + wtAG + Fq and MRSA + MLS_Bi + KTG + Fq. **Conclusions:** MRSA strains have predominated in wounds, mainly because the specific of Orthopedic wards. The number of MRSA strains is growing worldwide, making prevention, surveillance and control programs very necessary.

Key words: *Staphylococcus aureus*, orthopedic wards, prevalence, resistance phenotypes

5. HEMORHEOLOGICAL MODIFICATIONS IN TRAUMATIC SHOCK - STUDY OF ERYTHROCYTE AGGREGABILITY

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ABSTRACT

The dynamics of the mechanisms involved in the traumatic shock is an issue that interests both the pathophysiologists, as well as the clinicians, and the investigations made so far indicate a practical accessibility and have a distinct importance in the diagnosis, therapeutic control and forecasting evolution of the patients.

The aim of this work is to demonstrate the erythrocyte aggregability modifications in polytraumatized patients. The determinations were performed on two groups: the control group (which comprises 30 healthy children) and the test group (that includes a number of 30 polytraumatic children), observed in two moments of polytraumatic evolution, namely when hospitalized and after 7 days. The erythrocytes filterability test, described by Teitel, was used as a method in studying erythrocyte aggregability. The decrease of erythrocyte filtered volume, determined in the moment of hospitalization and after 7 days, making a comparison between the children of test group and control group, confirms the increase of acute phase reactants and the forming of intererythrocyte bounds which will establish the rise of erythrocyte aggregability in traumatic shock.

The modifications of erythrocyte aggregability and deformability that appear in the state of shock determine changes at the level of sanguine density, with microcirculatory hemorheological perturbation which drives disorders of the oxygenating capacity of tissues and of the local metabolic processes along with all consequences resulting from this fact.

Key words: erythrocyte, aggregability, hemorheology, shock, trauma

6. EFFECT OF UVB AND ANTHRALIN THERAPY ON ANTIOXIDATING SKIN DEFENSE *Adriana Filip¹, Simona Clichici¹, Adela Joanta¹, Maria Borsa², M. Rusu², Adriana Muresan¹, Diana Olteanu³*

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ABSTRACT

Dithranol is one of the most effective topical treatments for patients with psoriasis. There is growing evidence that the biochemical basis for the mechanism of action of dithranol at the molecular level is related to the redox activity leading to the production of active oxygen species.

In the present study, we assessed the effects of UVB and anthralin therapy on antioxidant skin defence in skin. For this purpose, skin biopsies were collected from 70 Wistar male rats treated with 3 different concentrations of dithranol with or without exposure to UVB and were determined from skin lipid peroxides, sulfhydryl groupings and was analyzed the activity of enzyme Mg^{2+} dependent ATP-ase. The results showed that anthralin is prooxidating in the skin and it determines the lowering of the level antioxidants. The association of anthralin therapy with UVB exposure amplifies these effects.

Keywords: anthralin, skin, lipid peroxides, antioxidants, Mg^{2+} dependent ATP-ase

7. RESEARCHES REGARDING BODY MASS INDEX IN PATIENTS WITH BENIGN BREAST DISEASES

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ABSTRACT

The obesity and overweight are risk factors for many pathologic states. We studied the body mass index (BMI) in 39 women with fibroadenoma, in 56 women with mammary fibrocystic disease and in a control group of 30 healthy women hospitalized in I Clinic of Obstetrics and Gynecology Iasi in 2004- 2005. The diabetic patients and the women receiving anorexic drugs were not included in this study. We noticed the mean number of pregnancies and of childbirth which were in the fibroadenoma group 1.5 respectively 0.7 and in mammary fibrocystic disease group 4.3 respectively 2.2. Our data show that the mean BMI in fibroadenoma patients was 21.93 ± 2.03 , in patients with mammary fibrocystic disease was 27.91 ± 2.44 ($p < 0.05$) versus mean BMI in control group 22.7 ± 1.80 . The mean BMI is significantly higher in patients with mammary fibrocystic disease, but is not significantly different from normal in fibroadenoma patients group.

Key words: benign breast diseases, obesity, overweight

8. HUMAN HEMATOPOIETIC STEM CELLS – SOURCE OF NORMAL AUTOLOGOUS ENDOTHELIAL CELLS

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ABSTRACT

In the last years, arterial obstructive diseases are treated using vascular grafts. Unfortunately, this method is limited by the lack of the autologous tissues necessary for the revascularization procedures. In this particular case, synthetic grafts are recommended, but their performances are

reduced, compared to the natural ones. An artificial graft should resist to thrombosis, inflammation and neointimal proliferation and should present metabolic and biochemical functions similar to those of blood vessels, which contain a luminal monolayer promoting healing. The lack of functional endothelial cells (EC) on the luminal surface of the stent induces a high thrombogenicity and also promotes intimal proliferation. These deficiencies could be removed by using grafts coated with an endothelial monolayer. Even though autologous EC are better tolerated than allogeneic and xenogenic ones, they do not constitute a source of normal EC, because of the endothelial dysfunction which accompanies arterial obstructive diseases.

Our purpose was to identify a source of autologous normal EC in order to seed them on stents' surface. The advantages of such a method include: a stent with properties closer to those of a blood vessel, better compatibility with the patient, and an adequate time interval for isolation, culture and seeding of EC on the graft inner surface. The most available source is hematopoietic stem cells. The objectives of this study are: isolation and culture of human hematopoietic stem cells (hHSC) from bone marrow, peripheral blood and umbilical cord blood in order to obtain mature EC and analysis of EC derived from hHSC.

Keywords: human hematopoietic stem cells, endothelial cells.

9. ZERO MAGNETIC FIELD AND OXIDATIVE STRESS IN PREGNANT RATS

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ABSTRACT

The natural magnetic field participates in the development of the physiological and pathological processes of the body. The authors have followed the modifications of the reactive oxygen species and of the antioxidants in the serum of pregnant rats exposed to zero magnetic field. The results pointed out the following modifications in pregnant rats exposed to zero magnetic field: a significant increase of the ceruloplasmine (extracellular antioxidant), a significant decrease of the malondialdehyde (product of the decomposition of the lipid peroxides) and a significant decrease of the carbonylated proteins (produced as a result of protein oxidation).

Key words: zero magnetic field, pregnant rats, reactive oxygen species, serum antioxidants