

CHANGES OF THE VISUAL FIELD UNDER HYPOXIC AND HYPOBARIC CONDITIONS

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SUMMARY

Introduction: The activity of flying implies an intense solicitation of the body due to the concomitant action of numerous factors. The medical problems of the pilots are unique. They are forced to adapt to unexpected changes, so unexpected that sometimes the start of the action of compensatory mechanisms has almost no chance to take place. Since the beginnings of aviation, the altitude hypoxia represented a risk factor, risk still existent nowadays, hypoxia and depressurizing of airplane cockpit being involved in many aircraft incidents. Training under hypoxia and hypobarism conditions became a compulsory element in training the military pilots (not as the civilian pilots), beginning with the Second World War.

The variations of the air pressure, though it's two important components, the value of the baric pressure and the partial pressure of the oxygen, causes changes in the amount of oxygen, of gases solubility in tumours and cells, disorders of tisular perfusion. The quantity of oxygen necessary for the tissues becomes acute. The retina cells are part of the central nervous system and so they are very sensitive at the diminution of oxygen's partial pressure. Under hypoxia and hypobarism conditions, there are some functional changes, changes that can be emphasized using different methods of investigation. Among there it is visual field examination.

Key words: hypoxia, hypobarism, visual field

WAYS OF MINIMIZING SKIN DAMAGE IN DIABETES MELLITUS

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SUMMARY

The benefits of the proanthocyanidins, polyphenols extracted from the seeds of black grapes, have been shown by using as experimental model the streptozotocin-induced diabetes mellitus on the Wistar white rats. The streptozotocin was administered in a single dose of 60 mg/Kg body mass, intraperitoneal. The vegetal polyphenols were administered as water solution, in a dose of 0.028 mg/Kg body mass, p.o. (through tube feeding), every two days, for a period of 16 weeks. The results obtained pointed out a significant improvement ($p < 0.001$) of enzymatic antioxidant parameters: superoxide dismutase (SOD), glutathione peroxidase, catalase (CAT) and nonenzymatic parameters: glutathione reduced (GSH), in hepatic tissue, under diabetic conditions. In conclusion, proanthocyanidins therapy reduced stress oxidative under diabetic conditions and determinate a significant increase in CAT (97.46%), G-Px (92.14%), SOD (75.26%) and GSH (66.22%) at the diabetic group with polyphenolic protection in comparable to the diabetic group. Microscopic examination shows that the degree of alteration has a direct relationship with the diabetes evolution. In acute diabetes we observed papillary edema, with diffuse limfohistiocitary infiltrate. In older lesions (16 weeks) we have observed medium hyperkeratosis with variable pigmentation of basal stratum, papillary atrophy, telangiectazia, thickening of capillary basal membrane by means of glycoprotein and fibroblastic proliferation. In electron microscopy we also observed alteration of collagen and elastin. In spite of the slight reduction of oxidative stress in DM+P group, the histologic alterations were still present, which shows that the pathogenic mechanisms are partly unknown and very intricate.

Keywords: diabetes mellitus, polyphenols.

HYPERTENSION AND ASSOCIATED RISK FACTORS IN MILITARY AERONAUTICAL PERSONNEL – AN 8-YEAR FOLLOW-UP STUDY
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SUMMARY

After one-year assessment of the prevalence of HT and associated risk factors in military aeronautical personnel, we continued to study the selected subjects on their periodical medical control. We have studied 235 consecutive patients with HT, comparatively with a group of 115 subjects with normotension. Identification of the risk factors for each hypertensive subject is very important because the *aeromedical certification* is evaluated in the context of cardiovascular risk factors, target organ damage and associated clinical conditions. This study revealed that majority of the studied subjects significantly associated *more independent cardiovascular risk factors*. 8 years after the diagnosis of white-coat hypertension, these subjects had an *unfavorable metabolic risk profile* compared to normotensives. *Continuing monitoring of total cardiovascular risk profile* and of complex therapeutic measures in all hypertensive subjects is very important in aeronautical personnel.

OPTIC DISC EVALUATION WITH HEIDELBERG RETINA TOMOGRAPH III IN AERONAUTICAL PERSONNEL - 2 YEARS EXPERIENCE IN THE NATIONAL INSTITUTE OF AEROSPACE MEDICINE BUCHAREST
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SUMMARY

Optic disc analysis with HRT III has become one of the most used computerized image analysis of optic disc, due to its objectivity and reproducibility. In aeronautical ophthalmology we are interested in such analysis especially in cases of intraocular hypertension and glaucoma (either hypertensive or low-pressure). Due to regular ophthalmic examination in aeronautical personnel we have the chance to discover optic disc abnormalities early, in the pre - perimetric stage of the disease. Careful interpretation and correlation between HRT III parameters and other clinical data in such cases allow us to make a correct diagnosis, the most challenging being the cases with optic disc anatomical particularities. In our experience, HRT III analysis proved to be a valuable clinical tool for examination and follow-up of both military and civilian aeronautical personnel, helping us to prevent visual function deterioration by early diagnosis and right therapeutic decision.

Key words: Heidelberg Retina Tomograph, optic disc, aeronautical personnel

CONSIDERATIONS ON THE EFFECTS OF THE ELECTROMAGNETIC FIELD ON THE VESTIBULOCOCHLEAR SYSTEM OF AERONAUTICAL PERSONNEL
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SUMMARY

This paper analyzes mainly the possible effects of the electromagnetic radiations on the cochleo-vestibular functions (the cochlear neurological chemistry), on the active mechanism of contraction of the outer hair cells and on the inner ear fluids that generate the endolymphatic potential (80mV). All of these effects can be produce because electromagnetic radiations cause an ischemia in the territory of labyrinthine artery, which is branch of inferior anterior cerebellar artery.

Finally, we present some examples of clinical cases with cochleo-vestibular phenomena, cases that can be attributed to occupational exposure to electromagnetic radiations based on clinical and paraclinical investigations.

Keywords: electromagnetic radiations, vestibulo-cochlear effects

FEAR OF FLYING AFTER SUBARACHNOID HEMORRHAGE AND TEMPORAL INTRACEREBRAL HAEMATOMA DUE TO RUPTURE OF MIDDLE CEREBRAL ARTERY ANEURYSM – CASE REPORT

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SUMMARY

Fear of flying can be a symptom that may be a product of an acute or posttraumatic stress disorder, a generalized or phobic anxiety disorder or part of some other major or minor psychiatric condition.

We describe a patient who reported fear of flying as part of an Anxiety Disorder due to Subarachnoid Hemorrhage and Temporal Intracerebral Haematoma after a rupture of middle cerebral artery aneurysm (Hunt and Hess Scale: 1; Fisher Scale: 4)

Key words: Fear of flying, Subarachnoid hemorrhage

DISCUSSIONS ABOUT A PARTICULAR CASE OF INFECTIOUS MONONUCLEOSIS

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SUMMARY

Acute infectious mononucleosis is a disease caused by infection with the Epstein-Barr virus. The primary infection is usually not clinically apparent in childhood and confers immunity. Clinical form is approx. 50% of teenagers and young adults and is spread by direct contact with infected saliva. It rarely occurs in the elderly.

The purpose of the paper is to highlight both the need for collaboration between clinical and laboratory specialties and the clinical importance of laboratory diagnosis.

This paper is about a clinical case of infectious mononucleosis with atypical onset and evolution. Diagnosis was made after laboratory tests for determining the specific infectious markers. Appropriate treatment instituted quickly led to the full recovery of the patient.

Interdisciplinary consultation and full laboratory investigations was the key to solving this difficult case.

Keywords: infectious mononucleosis, oral candidiasis, mononucleosis hepatitis

METHODOLOGICAL VALENCES OF INCOMPLETE SENTENCE BLANK PROJECTIVE TEST. RESEARCH DESIGN FOR PSYCHOLOGICAL EVALUATION IN AERONAUTICAL FIELD (2)

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SUMMARY

In Laboratory of Psychology of NIASM., personality is evaluated using Q&A type questionnaires and projective tests, which allow a higher degree of freedom related to subject's answers. The Incomplete Sentence Test is a projective task where there are given a series of incomplete sentences for finishing. By evaluating the responses, an evaluator makes some judgments about the subject's personality.

The aim of this study is to state the degree of correspondence between the results from personality questionnaire and those obtained using incomplete sentence test application.

Material. The test we used is composed by 23 phrase beginnings which are administrate in a paper-pencil way with no time limitations. The test is applied during first psychological examination (in selection phase).

Method. A number of 3680 phrases were qualitatively analyzed. The similar responses were grouped in response-categories. A number of 179 were established (between 4 and 16 categories per phrase). These categories were clustered in three dimensions for analyze: self-reference, school environment reference and motivation and professional values. Each dimension has some correspondents named levels of analyze. In this stage of the research we focused on the first dimension named *self maturation*, which is composed by three levels of analyze (self perception, interpersonal functioning and emotionality).

Results. The component scales of *self maturation* dimension were correlated with the main data from personality questionnaire applied in usual psychological evaluations. Some significant associations between data were observed.