

CHANGES IN RESPIRATORY HOMEOSTASIS IN HIPOBARIC HYPOXIA

Dragoş Vlad M.D., Adrian Macovei M.D., Dragoş Popescu M.D., Ph.D.

SUMMARY

Introduction

The issue addressed in this paper, is to monitor respiratory function in a group of 50 subjects, in a simulated hypobaric hypoxia exposure conditions. We focused particular attention on the effects of smoking, which may affect the ability of adaptation to hypobaric hypoxia.

Method

To measure changes in respiratory rate, we selected a group of 65 subjects, clinical and paraclinical healthy declared, following investigations on flight ability, mandatory tests performed before hypobaric hypoxia exposure.

Results

Ground RR is an average of 14.2 c / min wait for batch parameters selected. RR at 5500 meters has an average of 15.56 c / min. Before exercise, mean RR is 15.4 c / min. The effort has a value of 19.6 c / min. After exercise, RR is an average of 20.72 c / min. At descent, RR was 15.32 c / min. RR remains constant out effort, with a slight adaptive increase in hypoxia, course with a corresponding peak in effort.

Conclusions

This study followed the influence of factors such as age, experience in flying hours and smoking, on hypoxia adaptation for aeronautical personnel. Although these factors were statistically insignificant, is necessary a specification for smoking which affects the effort capacity in hypoxia and less resistance to such conditions.

Key-words: Respiratory rate (RR), hypobaric hypoxia.

EXPERIMENTAL EVIDENCE OF VESTIBULO-AUTONOMIC INTEGRATION IN MOTION SICKNESS

Adrian Macovei M.D., Dragoş Vlad M.D., Dragoş Popescu M.D., Ph.D.

SUMMARY

Introduction: Motion sickness traditional has two pathways: stomach emptying cascade and the stress response.

Methods: A lot of 50 pilots, candidates and students have been exposed to a rotational profile, monitored for RR variability.

Results: Rotation exposure induced lower variability similar with those displayed on organic diseases. Pilots had significant higher variability of RR, so there is an experiential component of autonomic stimulation. Regarding motion sickness triggering, globally the results were insignificant, but we have found them highly significant for overtreshold profile.

Conclusion: We think that our findings support an autonomic response to motion sickness, along with symptoms debut

Key words: yaw rotation, RR variability, motion sickness, treshold

CARBOHYDRATE DEFICIENT TRANSFERRIN (CDT) – BIOCHEMICAL MARKER FOR DIFFERENTIAL DIAGNOSIS OF TOXIC LIVER DISEASE FOR AERONAUTICAL PERSONNEL - PRELIMINARY STUDY -

Daniela Paiu, chemist, Daniela Apăfăian, biochemist, Mihaela Neagu, chemist, Anca Grigorescu, chemist, Niculina Petre, chemist

SUMMARY

The latest studies have shown new relationships between alcohol consumption, biomarkers and other factors influencing validation of diagnosis, including gender, age, moderate alcohol consumption and obesity. Laboratory reassessment is required to determine liver disease caused by alcohol and those who influence these tests, regardless of the amount of alcohol ingested. CDT has the highest specificity in determining alcohol abuse. This marker, in conjunction with GGT, shows sustained consumption of alcohol for 1-2 weeks. This study was conducted on a lot consist of 95 subjects, all males and aeronautical personnel, selected based on increased activity of GGT. We analyzed correlations between parameters investigated in the medical expertise and alcohol intake biomarker CDT. Increased transaminases correlate better with elevated GGT activities than with CDT values over 1.6%. Disturbed lipid metabolism may increase GGT, giving false-positive results on its relationship with alcohol. A BMI > 25 may influence GGT activity much more than alcohol abuse. Analysis of data obtained shows that elevated GGT is not only chronic alcohol consumption, these may have other causes, such as liver disease and obesity. GGT-CDT combination increases alcohol detection sensitivity compared with classical markers used for this purpose.

Key-words: CDT, GGT, liver diseases, BMI, excessive alcohol consumption.

CONTRAST-ENHANCED ULTRASOUND STUDY OF FOCAL LIVER LESIONS

M. L. Ciobîcă M.D., Mihaela Iordache M.D., D.G. Stoicesu M.D., S.M. Stanciu M.D., A. Anghel M.D., Daniela Anghel M.D.

Summary

Primary liver diseases or liver damage in other diseases, have always been a frequent pathology in departments specialized in internal medicine. Meanwhile, abdominal ultrasound has become more accessible, as a routine investigation; it is performed routinely in all patients admitted or explore at a polling internal medicine, regardless of primary pathology that determined the patient presentation to the doctor. In this context, increased significantly, nearly exponentially, the number of focal or global changes identified in liver ultrasound. Identifying such lesions often leads to a complex series of explorations, biological and imaging investigations, for establishing an accurate diagnosis. Based on this clinical reality and on the cost of complementary investigations performed for the diagnosis in this important subset of patients, we have decided to analyze in this study the clinical point of view, not least economic and scientific value and the location of contrast ultrasound in the investigation protocol of patients with focal liver lesions identified in the department of Internal Medicine I, Central Clinical Emergency Military Hospital "Dr. Carol Davila ", Bucharest, Romania.

Real-time ultrasonography with low mechanical index (MI) in combination with SonoVue® enables continuous investigation of vascular tumors and of the modality of the contrast capture in the different vascular phases (arterial phase, portal and late phase), presenting a better temporal resolution than CT or MRI. It has to be point out the availability, repeatability, speed, accuracy of

the diagnostic method and not least the absence of ionizing radiation and the low cost compared to CT / MRI with contrast.

Keywords: contrast-enhanced ultrasonography, focal liver lesions;

COMPUTER VISION SYNDROME – AERONAUTICAL CONSIDERATION

Iulian Manoliu M.D., Irina Manoliu M.D.

SUMMARY

As we enter the 21st century, the growing use of computers in the home and office brings with it an increase in health risks, especially for the eyes. One eye problem, called Computer Vision Syndrome (CVS), is afflicting more and more people who find themselves constantly in front of computer. Vision is our most precious sense. Our eyes are in constant use every waking minute of every day. The way we use our eyes can determine how well we work throughout our lifetime. Over eighty percent of our learning is mediated through our eyes, indicating the important role our vision plays in our daily activities. Vision disturbance is a silent enemy that only appears after a long period of continued visual stress. With a few preventative measures, however, the symptoms associated with CVS can be easily erased.

The paper approaches the problem of activity in front of the computer, their effects on visual acuity of the worker and the condition that are needed for visual comfort.

Key words: CVS, asthenopia

INFECTIVE ENDOCARDITIS – CHALLENGES AND PERSPECTIVES

Corina Grosu M.D.

SUMMARY

Infective endocarditis (IE) has long been one of the favorite research subjects of clinical practice, split between infectious diseases, cardiology and, more recently, cardiac surgeons. The still high incidence imposes a complex medical and surgical solution with continuous improvement of diagnosis and therapy. The surgical act, as a rational treatment, must be perfectly timed, and its trigger parameters must be precise in timing and indication. A series of statistical studies undergone advanced statistical methods to limit user and case bias by using propensity scores. Last but not least, the cost effectiveness marks the IE with a new dimension of contemporary medicine, to be considered upon results evaluation.

Key words – infective endocarditis, scores, surgery timing

CRITERIA FOR ASSESSING THE PROFESSIONAL PERFORMANCE OF FLIGHT INSTRUCTOR.

RESEARCH PROJECT

Doina Trandafir, psych., Mihaela Oancea, psych.

Summary

During pilot training, flight instructor has an essential role, whose mission is, in the most general way of speaking, to ensure good training and sufficient practice for students so that they can fly efficiently and safely. And the answers to questions such as: What should an instructor know? What should he do in his work? How it should be, is partly psychological. The aim of this paper is to establish performance criteria for successful professional instructor, other than those related to the characteristics of the work itself. This approach is justified both in the idea of refining

selection process for pilots (prognostic role - selected pilots will become flight instructors) and to serve the continuous improvement of training programs.

Keywords: flight instructor, performance criteria, pedagogy.