

## GENERAL DOCTOR AVIATOR VICTOR ANASTASIU'S AUTOBIOGRAPHY

### RESISTANCE ASSESSMENT TO HIPOXIC-HIPOBARIC STRESS BY SIMULTANEOUS MONITORING OF ECG AND OXYGEN SATURATION ON AERONAUTICAL PERSONNEL

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#### SUMMARY

Since the earliest day of aviation, hypoxia at altitude has been recognized as a risk factor, and this risk persists today.

Exposure to hypobaric-hypoxia in simulated flight remains a mandatory standard method for aviation personnel because of the possibility to predict resistance, training and adaptive synergies.

**Methods.** This work represents the first part of a study conducted over a period of three years.

At this stage a number of 29 subjects male (12 candidates, 17 pilots under 35 years and 10 pilots over 35 years) were exposed to hypoxic-hypobaric stress in NIASM' hypobaric chamber.

ECG and SO (oxygen saturation) recordings were performed simultaneously.

ESR values were made prior exposure.

**Results.** We demonstrated that there are significant correlations between the two methods (ECG and SO), to assess the resistance to hypoxia and that those subjects with high ESR have poor adaptation.

**Conclusions.** Simultaneous monitoring of parameters during exposure to hypobaric-hypoxia, allows a better understanding of the subjects adaptation profile.

Increased ESR may be used as a predictor for low resistance to hypoxia. It may be necessary the evaluation of flight ability, depending on the existence of normal values of ESR.

**Key words:** hypobaric-hypoxia, oxygen saturation (SO), erythrocyte sedimentation rate (ESR), resistance to hypoxia.

## AVIATION FATIGUE RISK MANAGEMENT – THE ROLE OF SOMNOLOGIST

Cristian Dragoş Ştefănescu M.D., Ph.D.

#### SUMMARY

**Introduction:** Many working and environmental conditions lead to fatigue, affecting people in a multiplicity of ways. Individual responses to fatigue are significantly different but everyone knows that fatigue affects memory, attention to detail, communication ability, decision making. Fatigue has been, and continues to be, a contributing factor in aviation accidents.

**Methods:** The review of civil aeromedical license requirements, in order to determine if the fatigue was treated uniformly and associated with specific measures to preserve the flying aptitude.

**Results:** We could not obtain coherent information about fatigue from current aeromedical guidelines. Yet, when an aviator is diagnosed with a sleep disorder that can result in sleepiness, a discussion of flying aptitude is always in order. We present our diagnostic and treatment (surgical / non-surgical) algorithm in sleep apnea.

**Conclusions:** No one is immune from fatigue. Screening for sleepiness and for sleep apnea among aviators needs to be seriously evaluated. A patient tailored diagnosis and treatment protocol for sleep disorders is the best way to preserve the flying aptitude. The new approach to aviation fatigue comes from somnology and organizational risk management. Somnologist may play an important role in fatigue risk management system implementation (FMRS). FMRS offers a new alternative approach to traditional prescriptive duty and flight time limitations and rest time regulations. Individuals, as well as organizations, often ignore the problem until an accident occurs.

**Key words:** somnologist, aviation fatigue.

## **CLASSIC AND MODERN IN ALLERGEN SPECIFIC IMMUNOTHERAPY**

**Violeta Perlea M.D., Sorin Perlea M.D., Liliana Gabriela Popa M.D., Ph.D.,  
Prof. Dimitrie Dragomir M.D., Ph.D.**

### **SUMMARY**

Allergen specific immunotherapy is the only etiological treatment of the allergic diseases. Early intervention with standardized vaccines in the production mechanism of these diseases leads to a long time control and prevents the occurrence of new sensitizations. The evolution of concepts on acquiring immune tolerance and the technological progress have determined an expansion of therapeutic indications, administration methods, and also, the improvement of the existing products as well as the appearance of new ones. More effective allergenic extracts, with an easy administration and a better safety profile, a correct selection of patients, are fundamental elements in specific immunotherapy, whose development we can expect further.

**Key words:** allergen specific immunotherapy, immune tolerance, efficiency, safety

## **PUPILLOMETRY- CLINICAL ASPECTS OF AERONAUTICAL INTEREST AN USEFUL TOOL IN SOMNOLOGY**

**Cristina Ștefănescu, M.D., Cristian-Dragoș Ștefănescu, M.D., Ph.D.**

### **SUMMARY**

**Introduction.** Various aeromedical issues, such as hypoxia, fatigue - excessive day time sleepiness, motion sickness, cognitive workload, and operational stress, are known to be under autonomic control.

**The aim** of this paper was to establish the relationship between pupil responsivity and sleep disorders.

**Materials and Methods.** This work shortly reviews the existing literature on physiological aspects of the pupillometry.

**Results.** Pupillometry holds promise as an investigative tool to evaluate the function of autonomous nervous system in response to various stimuli.

**Conclusions.** There is a strong relationship between sleep deprivation, pupil size, and pupil stability. Pupillometric alertness level testing and its associated measures could become recognized as a cost-effective, useful measure of physiologic sleepiness and other important aeromedical issues.

**Key words:** Sleepiness, pupillometry.

## DAY SURGERY PROCEDURES FOR SNORING

Cristian Dragoș Ștefănescu M.D., Ph.D.

### SUMMARY

**Introduction** - Every surgeon should customize treatment of snoring and obstructive sleep apnea in accordance with the patient's anatomy and with his own practice parameters. We present our experience with day surgery procedures for snoring.

**Materials and methods** - The study is a retrospective case series of 119 adult patients who underwent day surgery procedures for snoring management. All patients were evaluated at the somnology department of The National Institute of Aerospace Medicine.

**Results** - Outcomes of interest included rate of snoring improvement, final bed partner snoring satisfaction, change in Epworth score, and change in FOSQ score, and procedure-related complications.

**Conclusions** - Day surgery procedures (upper airway radiofrequency ablation combined with nasal surgery) are considered safe and effective treatment for patients with anatomic nasal obstruction with socially disruptive snoring.

**Key words:** day surgery, snoring, sleep apnea

## LABORATORY EVIDENCE SUPPORT USING NEW THIRD GENERATION CEPHALOSPORIN - CEFTIBUTEN

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### SUMMARY

**Objective:** This paper presents the results of a prospective study initiated for establishing the susceptibility of bacterial strains isolated in INMAS, Clinical Laboratory to Cefitibuten.

**Materials and methods:** Between December 2010 and July 2012 we tested 950 bacterial strains for their susceptibility to Cefitibuten discs (30 micrograms). The bacterial strains were the following:

1. *Streptococcus* (*agalactiae*, *pyogenes*, *viridans*, *pneumoniae* etc) and *Enterococcus faecalis* – 208;
2. *Staphylococcus* (*aureus*, *haemolyticus*, *epidermidis*, etc.) – 239;
3. Gram negative (GN) bacilli (*E. coli*, *Proteus mirabilis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, etc.) – 488;
4. Other germs (*Gardnerella*, *Kocuria spp.*, etc.) – 15.

We obtained the bacterial agents from different biological samples: urine, nose and pharynx exudates, ear and conjunctivae secretions, pus, sputum, vaginal and urethral secretions.

**Results:** The following results were obtained:

- a. More than half of the *Streptococcus* strains (55.48%) were resistant to Cefitibuten;
- b. *Staphylococcus* strains presented: 40.58% sensitivity, 49.79% resistance;
- c. *Enterococcus* strains were mostly resistant: 86.79%;
- d. GN bacilli were, as it is well known, sensitive to third generation cephalosporins:

*E. coli* - 78.68% of the strains, *Proteus mirabilis* – 80.59%.

**Conclusion:** we recommend, as does the Clinical and Laboratory Standards Institute, to use Ceftibuten discs for testing the bacterial susceptibility of GN strains, and especially for urine isolates. Anyway, we consider Ceftibuten may be successfully used as first intention therapy in different GN infections of aeronautical personnel.

**Keywords:** Ceftibuten, antibiotic susceptibility testing, Gram negative bacilli

## **INDIVIDUAL COPING STRATEGIES DURING FOREIGN MILITARY MISSIONS**

**Constantin Roangheși, Psychologist**

### **SUMMARY**

Coping mechanisms are strategies used in unconscious and/or aware of a person in order to avoid, reduce or redress as far as possible the negative impact on the situation faced by has on his psychic and physical comfort. Purpose for this is to highlight those coping mechanisms and their resources (comrades, the family, etc.) used by the military during foreign missions. The present article proposes to present personal experiences related to participation in a mission in the theatre of operations in Afghanistan in September 2011 and March 2012. The main analyses and conclusions are highlighted in a double perspective: as a participant in this military mission, have presented their own way of managing stress during this period and, from the perspective of the psychologist, we described how specifically for use in advising counterparts that they had to deal with difficult situations arising from various missions.

**Keywords:** stress, coping mechanisms, external mission.

## **A CELEBRATION FOR DR. SILVIO FINKELSTEIN**