SPATIAL DISORIENTATION IN UNMANNED AERIAL VEHICLES

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SUMMARY

Purpose: a review of current problems regarding SD in UAV and the implementation of an experimental model to duplicate the disorienting conditions.

Materials and methods: we attempted to duplicate the spatial disorientation of UAV pilots when the control base is airborne. GAT II device and Microsoft Flight Simulator (MSFS) are used for replicate the motion environment and respectively the UAV. Performances of both pilots and non pilots have been analysed. We found that the control of UAV could be significantly impaired by certain motion patterns of control base. Then we tried to establish the place of our findings in current SD in UAV paradigm.

Conclusion: the removal of the pilot from the cockpit does not completely eliminate the SD issue. New approaches for research and development might be necessary.

PHYSIOPATHOLOGICAL CONSIDERATIONS AND LABORATORY INTERPRETATION REGARDING ESR AND PROTEIN ELECTrophORESIS

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SUMMARY

The purpose of the study is to demonstrate the relationship between the values of ESR and of the electrophoresis of serum proteins, the presumptive diagnosis and the age of the patients sent to the laboratory of the clinic LIL MED between 01.01.2004-31.12.2004.

The paper demonstrates the possibility of the family doctor to prescribe the necessary and mandatory medical analysis to all the patients, at least once a year. Studying the age groups, we noticed an alarming percentage of patients over 40 having hepatic diseases. The study is significant due to the number of patients investigated. From 11310 patients that were investigated, 1855 were new patients who in the last two years didn’t do the ESR and electrophoresis of serum proteins.
THE EFFECT OF SIMULATED AEROSPACE FACTORS OVER IMMUNE SYSTEM AND HUMAN BODY HOMEOSTASY

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SUMMARY

This article present an interim result of an INMAS project realized in collaboration with National Institute of Recuperation, Physical Medicine and Balneoclimateology. Objective: The evaluation of the pressure and temperature variations to immunological system, oxide-reduction process, hydro-electrical system, stress’ hormones action to human body and urinary elimination of unmoral markers, as a response to hypoxic-hypobaric stress.

This study was carried out over the period 10.12.2005-12.04.2006 to 62 human subjects that have been tested in hypobaric bar camera in INMAS. The study lot was selected from navigation personnel trained to hypoxic-hypobaric stress (48 subjects). Witness lot: consisted of 14 candidates all aero-navigate personnel, with no experience in hypoxic-hypobaric conditions.

In INMAS’ Clinical Laboratory, all subjects were biochimical investigated and urinal samples was prevealed from them before and after exposure to hypoxic-hypobaric stress.

It was noticed: modifications of full blood count and leukocytes formula, IgA, IgG, IgM, serum level of chortisol and full urinal exam. All the results were compared after exposure with ones done before tested in baro-camera.

After exposure was noticed that approx 50% of subjects showed an increased number of leucocytes and plackets. Appreciatively 60% of the subjects showed decreased number of erythrocytes, hemoglobin’s, hematocrit and medium cells volume. The variations of leukocytes formula were as follow: 60% of study lot shown increased number of neutrophiles, 34% shown increased number of basophiles, 53% of lymphocytes, while the eozinophylia dropped by 68% and monocytes by 87%. It was noticed of a general decrease of IgA, IgG, IgM and of C3, C4. The level of serum chortisol decreased to a percent of 71% from the subjects exposed to hypoxic-hypobaric stress. The urinary density decreased to 69% of subjects and the pH rose up to 68% from all subjects, showing a tender to alkaline urine.
The natural text is as follows:

CORRELATIONS BETWEEN OVARIAN HYPERANDROGENISM AND INSULIN RESISTANCE IN POLYCYSTIC OVARY SYNDROME

Dr. Pinelopi TOPALIDIS

SUMMARY

Hyperinsulinemia, consequence of insulin resistance, is considered to be a major element of the endocrine disturbances of PCOS. It may represent a main component of the pathogenesis of this syndrome. In the same time, it induces several effects that we included in its specifically vicious physiopathologic circle: stimulates ovarian and androgen secretion, reduces hepatic production of SHBG with an increase of serum free androgens and augments pituitary secretion of LH.

Starting from these data, we studied 54 women diagnosed with PCOS, divided in 2 groups: one group of 26 women with normal weight (BMI<25) and a second group of 28 obese women (BMI>25).

Hyperinsulinemia - defined as a high serum level of fasting insulin and a high insulinemia response to OGTT - was present in 33 patients (61,1% of all patients), its prevalence being significantly higher in the obese group compared to the normoponderal one (78,5% and 42,3%, respectively).

The hyperinsulinemia patients were significantly differentiated from the normoinsulinemic women in clinic, endocrine and echographic aspects.

The incidence and severity of the clinical signs of hyperandrogenism (hirsutism, acne, seborrhea, male-pattern alopecia) showed positive correlation with the degree of hyperinsulinemia and BMI.

We also found a positive correlation between circulating concentration of insulin and serum free testosterone, as well as the ovarian volume, ultrasonographically evaluated. Serum insulin correlated negatively with serum LH and SHBG.

PSEUDOACHALASIA IN A YOUNG PATIENT – CASE REPORT

Dr. Florica Năftănăilă, Dr. Florin Năftănăilă, Dr. Maria Dumitru, Dr. Graţiela Dinu

SUMMARY

Pseudoachalasia is a clinical, radiological and manometrial syndrome similar to achalasia. From the frequently malignant causes of the pseudoachalasia adenocarcinomas located to the esogastric junction are known in a proportion of 70%. The main differentiation criteria are: clinical (age >40 years, short evolution of the symptoms, impregnation signs, sex male, risk factors – tobacco, alcohol), paraclinical (the endoscope passes with difficulty cardia, endoscopic biopsy, histologycal criteria, ECHO-EDS – criteria, CT/scan, echografie).

We present the case of a 21 year old man which has a one year of history a dysphagia, weight loss, asthenia, fever.
FLIGHT SAFETY ATTITUDE EVALUATION SCALE

Psih. drd. Violeta Ionescu

SUMMARY

Introduction. The study is concerned on aeronautical safety culture from an individual point of view.

Objective. A scale was designed for attitude aviation safety assessment

Material and method. 784 military and civil pilots were assessed. The scale are 25 items and responses to each item are measured on 5-point Lickert scale (1 = strongly agree, 5 = strongly disagree). It calculate an attitude aviation safety index and obtained high scores means positive safety attitude.

Results: Cronbach alpha is 0.75. Statistical analyse show a relativ normal distribution of the results. Internal validity was assessed with personality inventories: ALAPS, C16PF, STRES, LOCUS and resulting a high number of significant correlations with those scales and global scor.

MYERS-BRIGGS TYPE INDICATOR

Evaluation of test usefulness in aeronautical environment – MBTI scale analysis – part I


SUMMARY

Myers-Briggs Type Indicator is a personality questionnaire released by Katharine Briggs and Isabel Myers. This test is based on Jung’s theory about the structure of personality and it’s used to investigate normal subjects (it’s not a clinical instrument). The questionnaire was first published in 1962.

Adjust the Jung’s theory, there are 4 basic mental functions: (T-thinking, F-feeling, S-sensing, N-intuiting). These are named „functions for orientation”. Individuals have 4 ways to consider their relation with medium: E-extroversion and I-introversion, described by Jung and J- judging and P-perceptual, described by Myers and briggs. These are named „attitude”. All these are opposite and complementary functions.

By combining these factors we obtain 16 personality types and 4 temperaments: SJ (sensing and judging), SP (sensing and perceptual), NT (intuiting and thinking), NF (intuiting and feeling).

We consider in detail 1500 results of MBTI application for aeronautical profession, civil and military field. Internal consistency is acceptable. We found that Sensing scale obtained highest percent of all scales and SJ temperament is best represented for all category of subjects. The differences between professions and aeronautical functions were significant.

In conclusion, MBTI has a good consistency, a normal data distribution and shows the domination of some types and temperaments and significant differences between professional categories and military/civil occupations. The data revealed the
utility of this instrument for the psychological professional selection.

ANTIMICROBIAL AGENTS RESISTANCE FENOTYPES IDENTIFIED BY VITEK 2 COMPACT AUTOMATED ANNALISER

Dr. Med. Simona Berbecar, Dr. Simona Berar, Conf. Univ. Dr. Marian Macri, as. pr. Daniela Neagu, as. pr. Herminia Păsăilă

SUMMARY

Objectives: One can perform the antibiotic susceptibility testing both with qualitative methods (the diffusimetric one) and mainly with quantitative methods (the minimal inhibitory concentration calculus: MIC), which are preferred because of their therapeutic precision, their possibility of standardisation and their use on a much greater scale of germs.

At the end of 2005 INMAS bought the microbiology automatic analyser VITEK 2 COMPACT, the first of this type existing in Romania. At the beginning of 2006 we began to use it at the microbiology department of INMAS Clinical Laboratory. The analyser can perform 60 samples simultaneously, and it can perform both the precise identification of the microbial species and subspecies (gram positive and negative germs, and also fungi) and the antibiotic susceptibility testing using the MIC method.

Material and method: Biological samples from 77 patients (32 urine samples and 45 different other samples such as pharynx and nasal exudates, sputa, ear and eye secretions, vaginal secretions, cultures of faeces, wound secretions, water samples) were processed between January-September 2006 with the help of VITEK 2 COMPACT. There were performed identifications of the germs, which were isolated as a pure culture from the samples, and for some of them there were done antibiotic susceptibility tests with the specific cards for every germ category (AST NO17, AST NO41, AST NO22, AST P535, AST P533).

Results: With the cards for antibiotic susceptibility testing AST P535 there were performed 15 tests of the antibiotic resistance for staphylococci, group B streptococci and enterococci, in the same time there was confirmed the presence or the absence of the beta lactamases. We obtained results for the 22 antibiotics contained by this type of card.

Streptococcus pneumoniae (one case from a nasal exudate, in pure culture) was tested with the AST P533 card, which contains 19 antibiotics.

The gram negative germs (24) were tested on the other three types of cards, with the observation that the AST NO22 card contains antibiotics which are active on the Pseudomonas genera and the AST NO41 card can also detect and confirm the presence of the extended spectrum beta lactamases (ESBL). All the three types of cards contain 18-20 antibiotics.

Conclusions: VITEK 2 COMPACT is an automatic system of high performance that identifies and assays the antibiotic susceptibility of different kinds of germs, from various biological samples, by the MIC method, in accordance with the CLSI standards. It allows the user to know the unusual patterns of antibiotic resistance of the tested bacterial species with the help of a visual and acoustic alarm. It also reports the specific resistance mechanisms of the tested bacterial strains (such as ESBL, penicillinases). The expert
advanced program (AES) that is integrated in the system allows the validation of the results, the therapeutic interpretation and comments regarding the therapeutic options.

ANTIMICROBIAL AGENTS IDENTIFIED IN THE CLINICAL LABORATORY OF NATIONAL INSTITUTE OF AEROSPACE MEDICINE USING VITEK 2 COMPACT ANNALISER

Dr. Simona Berar, Dr. Med. Simona Berbecar, Conf. Univ. Dr. Marian Macri, as. pr. Daniela Neagu, as. pr. Herminia Păsăilă

SUMMARY

Objectives: At the end of 2005 INMAS bought the microbiology automatic analyser VITEK 2 COMPACT, the first of this type existing in Romania. At the beginning of 2006 we began to use it at the microbiology department of INMAS Clinical Laboratory. The analyzer can process 60 samples simultaneously, performing both the precise identification of the microbial species and subspecies (gram positive and negative germs and fungi) and the antibiotic susceptibility testing, by establishing the minimal inhibitory concentration (MIC).

Material and method: between January-September 2006, there were processed samples from 77 patients (32 urine samples and 45 different other samples such as pharynx and nasal exudates, sputa, ear and eye secretions, vaginal secretions, cultures of faeces, wound secretions, water samples). There were performed identifications of the germs, which were isolated as a pure culture from the samples, and for some of them there were done antibiotic susceptibility tests with the specific cards for every germ category.

Results: there were identified 29 gram negative germs which belong to the genera: Escherichia, Enterobacter, Klebsiella, Proteus, Morganella, Bordetella, Oligella, Pseudomonas, Stenotrophomonas, Aeromonas, Sphingomonas and Chromobacterium.

The isolated gram positive germs were 38 in number and were represented by staphylococci, streptococci, enterococci, Kocuria, Gemella.

The VITEK 2 COMPACT analyser also identifies fungi: 6 fungi from the genera Candida and Stephanoascus were identified in the same period of time.

Conclusions: the automatic microbiology analyser VITEK 2 COMPACT allows the rapid (starting from 4 hours for some usual germs such as E. coli) and precise (until the species and subspecies level) identification of the microbial agents, which were isolated from different biological samples.

THE 5TH NATIONAL CONGRESS OF LABORATORY MEDICINE. FIRST NATIONAL CONGRESS OF LABORATORY ASSISTANTS.

CHIMIST ANCA GRIGORESCU