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REPORT ON THE PARTICIPATION IN THE 64TH INTERNATIONAL CONGRESS OF AVIATION AND SPACE MEDICINE IN NEW DELHI, INDIA, NOVEMBER 6-10, 2016

The 64th International Congress of Aviation and Space Medicine took place in New Delhi, India since 6th to 10th of November 2016. There were approximately 250 participants from more than twenty countries, including India, Israel, Australia, United Kingdom, France, Germany, China, Singapore, Iran, United States of America, Poland and others. The inaugural ceremony of the Scientific Congress was held by Deepak Gaur - the President of the Organizing Committee ICASM 2016. During the congress, oral presentations were divided into three sessions before midday and two or more in the afternoon, and additionally there were three poster sessions, where posters could be presented. As a result, more than one - hundred interesting papers concerning aviation physiology, psychology, medicine, aviation, pathophysiology, exercise physiology were delivered during the conference in seventeen scientific sessions including three poster sessions. It should be emphasized, that in the course of the congress, the majority of the presented papers were from India.

Moreover, among the participants, there were delegates from the Polish Air Force Academy as the only representing Poland in person of the scientists: Zbigniew Wochyński, Lt Col. Associate Professor, Ph.D. and Robert Jędrys, Ph.D. and the Chair of Scientific Student’s Club "Psychophysical preparation for flight," Justyna Skrzyńska, Sgt. Officer Cadet, a student who prepared the papers on psychology, physiology and aviation medicine.

Among many papers presented, great attention should be paid to a scientific work by Bhatt R., Rastogi P. on Change in relaxed +Gz tolerance following exposure to multiaxial acceleration. The authors performed the study on the centrifuge examining heart rate (HR) on the twenty - five crew members of the aircraft with use of two profiles of acceleration on the centrifuge. Profile 1 was exposure to +6Gz for 30 sec. 2nd profile was interoperability of the acceleration +1Gx with +6Gz for 30s. The results showed that between the two profiles there were no significant physiological changes including HR presented.

It is worth mentioning that there was a paper from China by Zhang CY, Deng MZ, Leah F. Fri. - Prevalence and risk factors of overweight and obesity in civil aviation pilot which also was of great interest of many participants of the congress. The authors put under the analysis 3272 pilots in the area of hypertension indicators, Hypolipidemic and certain civilization diseases comparing them according to BMI.
Physiological indicators and biochemical indices of cholesterol, triglycerides, HDL cholesterol, LDL cholesterol, blood glucose levels were compared for various BMI groups using a Chi-square test. They showed that the BMI is a risk factor for hypertension, hyperlipidemia, and other diseases that pilots have. It is an important measurement for the prevention of cardiovascular disease to control BMI for pilots. Interesting information was also included in scientific work prepared in India by Gupta A., Santhosh S.R., A. Parmar Fri.: Anaemia in aviators. The authors suggest that anemia among pilots may result in a disqualification from flying. The cause of the decline in hematologic and iron indexes of the pilots' blood is microcytic hypochromic anemia as the most common morphological subtype detected anaemia.

The participants of the congress also appreciated a scientific work presented by the representatives of the Polish Air Force Academy on psychophysiological aspect of pilots' work environment. The study by Jedrys R., Kobos Z., Skrzyńska J.P., Wochyński Z. - Aviation Students' attentional processes during the exercises on special aerial gymnastics instruments" was devoted to the observation of progress in the perception of receiving and transmitting feedback information depending on the degree of training advance of cadet pilots. The study involved thirty cadet pilots, who underwent a special psychological test to assess an attentional process which included: speed, precision and divided attention. The test was performed before and after training at the Special Aerial Gymnastic Instruments (SAGI). The analysis has shown that the speed and divided attention differ depending on the stage of training.

The scientific work by Wochyński Z., Kobos Z. K. A. Sobiech - The Changes in cortisol and glucose concentration in pilot-cadets' urine under the influence of exercises on Special Aerial Gymnastics Instruments was also of great interest. The aim of the study was to investigate the effect of exercises on Special Aerial Gymnastic Instruments (SAGI) on the level of cortisol and glucose in the urine compared to control group. The study involved fifty-five cadets at the age of twenty, who were divided into group A (N=41) practicing on SAGI and group B, controls (N=14). In both groups, the test material was urine obtained twice before (BT), and after the training (AT) at the beginning (training I), during (II training) and after implementation of the LGPS exercise (training III). Cortisol and glucose in urine were determined by testing company. The exercises on SAGI resulted in changes in the concentration of cortisol and glucose depending on the intensity and type of physical activity and improved physical fitness.

Other paper of the Polish Air Force Academy was a study by Skrzyńska J., Kobos Z., Wochyński Z. - Analysis of human factor in air accidents in Poland in 2010-2015. The authors analyzed 201 air accidents, stating that the Polish airspace contribution to the origin of a human factor accident is the same as the average worldwide. In many studies, the percentage of psychophysical sources of air accidents has been decreasing in recent years. Unfortunately, many aviation accidents happen due to lack of experience or complacency. This should be examined in particular in order to find the exact causes. It was shown that a different attitude to division of a human factor causes that it is necessary.

Despite the fact that Poland was represented by only three representatives, three scientific works presented aroused great interest. One of the factors which contributed to a great success of the Polish representation was a presentation by Justyna Skrzyńska, Sgt. Officer Cadet - Analysis of human factor in air accidents in Poland in years 2010-2015.
Img. 1. Representatives of the Polish Air Force Academy, from the left: Robert Jędrys Ph.D., Justyna Skrzynska, Sgt. Officer Cadet, Student and Zbigniew Wochyński, Lt Col. Associate Professor, Ph.D. during the poster session

Source: authors’ own material.

Img. 2. Presentation by the Chair of Scientific Student’s Club for Psychophysical Preparation for the Flight, Justyna Skrzyńska, Sgt. Officer Cadet, Student

Source: authors’ own material.
In between the sessions, there was an opportunity to get acquainted with modern medical rescue equipment. Among other things, a resuscitation treatment for people executed with a special device which adjusted the intensity of the heart massage and monitored the process, was presented. The participants were also invited to take part in the Educational Visit in the Hindi Air Base near Delhi where Indian Preparation for the Flight Centre was located. Additionally, there was a special Air Show and Parade Drill Presentations. Then, an official closing ceremony took place.