OP1
TELE-DERMATOLOGY FROM A COMBAT ZONE

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Background: Dermatology is a significant contributor to wartime medical care. Historically, dermatologic conditions contribute significantly (15-75% of reported visits and admissions) to disease and non-battle injury in the combat environment (DNBI). Since 2004, in an effort to enhance medical care in a deployed environment, the US Army has operated a worldwide store and forward tele-dermatology consult service.

Methods: Retrospective chart review was performed on all consults between January 2005 and January 2009. Results were categorized by diagnostic category. Diagnostic agreement and confidence intervals were calculated and compared with the consulting provider’s provisional diagnosis as well as previous published reports.

Results: During the time period reviewed, a total of 2197 consults were performed. The most common diagnoses were eczema (13%), fungal infection (7%), bacterial infection (7%) and environmental causes (7%). The skin cancer rate was 3.6% of consults which included basal cell carcinoma (34), squamous cell carcinoma (10) and melanoma (21). Additionally, rule out leishmaniasis and small pox reactions were 59 and 17 respectively. There was an overall decrease in the number of these consults over the time period reviewed. There was a diagnostic agreement of 34.3% between the primary care provisional diagnosis and the consultant’s diagnosis. 104 patients required evaluation by a dermatologist located in Iraq and 40 patients required evacuation to the US.

Conclusions: Store and forward tele-dermatology is a diagnostically effective method for diagnosing and offering treatment recommendations to the combat theater medical providers. Additionally, it is a cost effective method for diagnosing and screening dermatologic consultations which would otherwise result in redeployment. Specific diagnoses, lessons learned and cost analysis are discussed.

OP2
OXYGEN PRODUCTION IN THE FIELD

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On the one hand oxygen is one of the most important drugs for military medicine. On the other hand it is a dangerous good! That's why the supply of oxygen for medical facilities is always a challenging job to be done. The abstract will give an overview about the supply of medical facilities in Afghanistan as well as about the supply of warships taking part on the mission of Enduring Freedom. Finally actual armament project, such as the mobile oxygen production and filling facility will be presented.
Selvalingam Sothilingam

Brig Jen Dato' Dr Selvalingam Sothilingam is a Consultant Urologist at Tuanku Mirzan Military Hospital, Kuala Lumpur and at the Department of Urology, Hospital Kuala Lumpur, Malaysia. He completed his undergraduate medical degree at the University Malaya in Malaysia, and was awarded Fellowship in Surgery from the Royal College of Surgeons, Edinburgh and Master of Surgery from both the National University of Malaysia and National University of Singapore. He also completed a Fellowship in Uro-Oncology in Melbourne, Australia in 2007.

Dato' Dr Selvalingam previously worked as a general surgeon at Kinrara Army Hospital in Kuala Lumpur, and later as a Urology Clinical Specialist at Selangor Hospital in Selangor and General Hospital in Kuala Lumpur, Malaysia. He was also a Urology Fellow at The Alfred Hospital, and Cabrini Medical Center in Melbourne.

Dato' Dr Selvalingam has presented at several international and regional conferences, and has published papers in the British Journal of Urology. Other than endourology, he has special interests in pelvic oncology, prostate brachytherapy and robotic assisted surgery.

OP3
EXPERIENCE AND THE FUTURE WITH DA VINCI ROBOTIC SURGERY

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The Da Vinci Robotic System is an innovation that is gradually changing the landscape of minimally invasive surgery around the world. Its advantage has been clearly demonstrated in centers that have been utilizing it, especially in retropubic surgeries. General Hospital Kuala Lumpur Urology department has been utilizing the Da Vinci Robotic System for Radical Retropubic Prostatectomy (RRP), Radical Cystoprostatectomy (RCP), Pyeloplasty (PLP), Vesico-Vaginal Fistula (VVF) Repair, and recently Robotic Burch Colposuspensions. This retrospective audit will look into the robotic cases performed from the period of January 2008 to May 2009 in the Department of Urology, Hospital Kuala Lumpur. During this period, there were a variety of cases done including radical prostatectomies, radical cystectomies, nephrectomies, pyeloplasties, VVF repair, bladder diverticulectomies and ureteric reimplants. The first experience in robotic surgery started in the military and although widely used now in public hospitals will in future find its place again in the military.

Jean-Francois Catajar

Colonel Dr Jean-Francois Catajar was born in 1962. He obtained his medical degree from the University of Lyon in 1989. Subsequently he undertook postgraduate studies in aeronautical medicine, legal reparation of physical injury and medical expertise. Currently he is based with the French military medical service / Surgeon General Office, Scientific and Medical Technology Division, Paris. His military experience includes deployment as the Chief of the Air force base medical center at Dijon; Flight surgeon of the Air force base medical center at Dijon; Medical officer on the Air force base at Istres and Medical officer on the Air force base at Cognac. He has also served as the Expert for the Ministry of Defence, medical expertise and legal reparation; Expert for the Bureau of Accident and Investigation and International missions in Central African Republic, Bosnia, Croatia, Qatar. Dr Catajar has several research papers published in local and international publications.

OP4
MILITARY MEDICAL RECORD EXPLOITATION IN VICTIM IDENTIFICATION MISSIONS. PROPOSAL FOR IMPROVEMENT

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1 Medical French Forces Services, FRANCE

Scientific evidence is the keyword in human identification. An effective comparison of Ante-Mortem (AM) and Post-Mortem (PM) features directly depends on the data quality in the fields of Anthropology, Dactilloscopy, Odontology and Genetics. The PM data collect shouldn’t be a problem whereas AM file has to be the most accurate as possible. While existence of AM data is in certain for civilian victims, the French military medical records can provide a lot of information for military victims. Through the report of four identification missions, Tsunami in Thailand (2004), OTS (1995), MFO Twin Otter crash (2007), 21st RIMA drowned person, we’ll show you the importance of AM orthopantomography. Actually, even without any other dental data, orthopantomography allows us to complete identifications using Pluss data DVI software, as shown in the experimental study at the French air force base of Dijon. The medical department of the French navy Special Forces unit of Lorient has also developed a specific identification sheet based on biometric data and orthopantomography data treated as Interpol’s AM form. Due to high risk in combat action, in air or land accidents, the military medical record has to be considered as an AM file also. Therefore, it should be treated as the Interpol’s AM form including biometric data, pictures of any eventual evidence as tattoos or scars, dental chart and fingerprints.
Dr. Lu-Lu Zhang is the Director of the Institute of Health Service Management in the Second Military Medical University. She joined the army in 1982 and got admitted into the Second Military Medical University in the same year. Got her medical degree in 1987 from the same university, and obtained her master’s degree in Health Service there in 1992. She has a doctorate degree in Social Medicine and Health Service Management from Shanghai Medical University in 1999. Dr. Lu-Lu has been awarded the Technology Rising Star Award by the General Logistics Department and the National “Women Contributions” prize. She is one of the outstanding academic leaders in Shanghai with many other awards awarded to her. She has participated and reported several times in military medicine, disaster medicine and in International Academic Conferences of Health Services Management.

OP5
DEVELOPMENT OF SOFTWARE SYSTEM OF THE BOX FOR MILITARY MEDICAL COMMANDING AND OPERATION

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Zhang Lu-Lu
Zheng Xin-Fing
Ren Li-Sheng
& Liu Yuan

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Firstly, the article analyzed the demand of the software for military medical support of field healthcare units on the service and information procedure, as well as the structure and function of the software. Secondly, the five functional modules of the software system were established, which included information management, classification of medical support, commanding operation, health rescue and system management. The software system provided software support for the box of military medical commanding and operation, which achieved the integration, collection and management of the military medical commanding information of field healthcare units.

OP6
LASIK FLAPS AT 120MPH AND OTHER LESSONS LEARNED IN THE US ARMY’S REFRACTIVE SURGERY PROGRAM

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The Army’s laser refractive surgery program began in 2000 and has completed over 100,000 procedures. It has been the most successful medical intervention in the military, expanding to 11 centers. The unique lifestyle of soldiers presents numerous challenges to instituting a refractive surgery program, many of which have led to the current procedure breakdown of 95% surface ablation (PRK and LASEK) and only 5% LASIK. Initially restricted to ground troops, laser refractive surgery has been evaluated in rotary-wing pilots and free fall parachutists. Recently, implantable contact lenses (ICL) have been placed in ground troops and parachute jumpers, including free fall parachutists. While any refractive procedure (PRK, LASIK, ICL) has a degree of risk, the experience of complications with eyeglass use and contact lens wear, especially while deployed, has justified further expansion of the refractive surgery program. Recent advances in laser creation of the LASIK flap have renewed interest in the possibility of IntraLASIK as an acceptable procedure for Army personnel.
David Trudil

David Trudil has almost 40 years experience in the diagnostic field, including chemical/biological/nuclear officer with the U.S. Army, positions with Pfizer, Becton Dickinson, New Horizons Diagnostics and most recently with Battelle Memorial Institute. He has managed programs in the Far East, former Soviet Union, Europe, and Middle East. He has authored and assisted in numerous publications and patents on the subject of rapid bacteria detection and sampling. Most recently on the use of Phage Associated Enzyme in detection.

During Desert Storm I he assisted in the development of rapid collection and detection systems for BW agents, as well as a generic bacteria detection for the initial Biological Detection System. Dave is a member of the US Department of Homeland Security working group on rapid biological detection.

Dr. Trudil is the Principal Investigator for Battelle's defense and homeland security programs for rapid biological detection. He is also the author of numerous technical papers and book chapters on the subject of rapid biological detection.

Drug-resistant pathogens are a growing menace to all people, regardless of age, or socioeconomic background. They endanger people industrial societies like the United States, as well as in less developed nations and are even causing problems in military field hospitals. From Streptococcus pneumoniae to Staphylococcus, C. difficile, and multidrug-resistant TB, the list is growing. The threat of engineered microorganisms further complicate the interaction between man and mother nature. What can be done? One approach is to use bacteriophages. Phages are very small viruses that destroy by lysing select bacteria. The idea of using phage as a therapy for infectious bacterial diseases was first proposed by d'Herelle around World War I and over 80 years bacteriophage has been a key tool of healthcare professionals within Eastern Europe. More recently professionals in the USA and Western Europe have isolated and developed specific lytic components which have further broadened the potential of phage derived technologies. These include applications for treatments, preventative and decontaminants as well as diagnostics. The use of these enzymes has been further expanded to include replacement of antibiotics for various infectious diseases as well as anthrax and other BW agents. The current state of the phage related technologies will be discussed with specific application examples provided. These will include therapies as well as detection applications for anthrax and other bacteria. Also, a novel decontamination method for military and hospital use developed under various USG programs will be presented. Next step projects and technologies will be mentioned with a goal of enhancing collaborations and applications between the West and other countries.
**ABSTRACT**

**Concurrent Session 5B: General Military Medicine**

**OP1**

**The Role of Military Surgery in Military Acts Out of War**

Wang Zhengguo
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Objective: This presentation discusses the author’s own experiences, combined with literature, the role of military surgery in military acts out of war (for instances, disaster relief work after earthquake, antiterrorist acts, etc).

Methods: Data obtained from emergency treatment of casualties in the aftermath of various disasters such as earthquakes and antiterrorist acts will be analyzed. We will then put forward our own points of view on the role of military surgery in military acts out of war.

Results: In wartime, the wounded have to be treated by several steps, separated in time and space. This is called "echelon" or "ladder cure". On May 12, 2008, a Chinese west city Wenchuan was struck by a strong earthquake measuring 8.0 magnitudes on the Richter scale. The civilian surgeons who attended the disaster relief work adopted "echelon" method for the treatment of the wounded and it proved to be useful. In wartime, and in the event of an earthquake, the surgical team should go forward and do life-saving operations close to the battlefield or the earthquake area. Civilian surgeons do damage control surgery in the tent close to the disaster area. In war time, the wounded were treated while being sent to the rear hospital. In earthquake, the wounded are also sent to the rear medical organizations after the condition is stable. During terrorist attack there often appear explosive injuries on the scene. Medical workers should carry out first aid and emergency treatment, such as ensuring respiratory ventilation, hemostasis, rescuing while sending to neighboring medical stations or hospitals. If there is progressive bleeding, damage control surgery should be done as soon as possible. After vital signs are near normal, definite treatment of the wounded will be carried out in the larger general hospital or special hospital.

Conclusion: The military surgeon should master not only principles and related technique of emergency treatment for war wounds, but also civilian disaster relief work and be able to treat the wounded caused by terrorist explosion. Civilian surgeons also need to master emergency technique for trauma in disaster and terrorist attack. It is recommended that the content on treatment of explosive and earthquake-caused injuries should be included in the textbook of military surgery.

**OP2**

**Transcutaneous Vertebroplasty**

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¹ RUSSIA

Transcutaneous transpedicular vertebroplasty is a neuroradiological procedure during which rapid-hardening cement is administered into a body of a partially collapsed vertebra. The main purpose of vertebroplasty is stabilization of a damaged locomotive segment of the spine and achievement of an analgesic and antineoplastic effect. The results of the latest studies have confirmed high efficacy of vertebroplasty in treatment of patients with traumatic compression fractures of vertebrae, pathologic fractures due to osteoporosis, spinal tumors and hemangiomias of vertebral bodies. The goals of vertebroplasty are as follows: achieving an analgesic effect, ensuring stabilization and preventing augmentation of deformity of a vertebral body, a halt of tumor evolution. According to our opinion, the main indications for vertebroplasty include impaired mobility and marked pain syndrome, conditioned by:

1. An uncomplicated non-penetrating compression fracture of vertebral bodies, caused by primary or secondary osteoporosis and characterized by absence of splinters dislocation into a vertebral canal lumen.
2. Osteolytic metastases of vertebral bodies.
3. Hemangiomias of vertebral bodies.
4. Traumatic uncomplicated compression fractures of vertebral bodies without dislocation of splinters in a vertebral canal direction.

Contraindications for an operation include:

1. Unstable compression fractures with dislocation of splinters into a vertebral canal lumen.
2. Different forms of coagulopathies.
3. Complicated fractures of the spine, accompanied by posttraumatic hemias of intervertebral disks.
4. Complete destruction of a vertebral body, caused by compression, i.e. a flat vertebra.

Complications are most frequent in cases with malignant vertebral tumors (up to 10%). They are less frequent in vertebroplasty of hemangiomias (2-5%) and extremely rare in osteoporosis of deformities, caused by osteoporosis (1-3%). Summarizing the above-stated, it is necessary to note, that vertebroplasty is a technically simple and highly effective method of treatment of pain syndromes, conditioned by polyetologic lesions of the spine. In spite of a relative simplicity of this procedure it can result in severe complications, aggravating a patient’s state. When vertebroplasty is planned, one should take into consideration possible worsening of a situation, which can demand emergency neuroorthopedic operation on the spine, aimed at elimination of developed complications.
Danielle Ippolito

OP3
IDENTIFICATION OF GESTATIONALLY DEPENDENT PROTEOMIC CHANGES IN MATERNAL PLASMA COLLECTED LONGITUDINALLY DURING PREGNANCY USING SELDI-TOF MASS SPECTROMETRY

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Although human plasma is a clinically facile tissue for proteomics-based biomarker discovery, analysis is complicated by large variations in post-translational modifications and protein abundances. We applied surface enhanced laser desorption/ionization-time of flight (SELDI-TOF) MS in a longitudinal, prospective study of the maternal plasma proteome, with the objectives of: 1) conducting a proteomic characterization of longitudinal changes in uncomplicated pregnancies; and 2) evaluating the procedural feasibility of longitudinal plasma profiling studies in the context of military medicine. Longitudinal design was crucial for efficient discrimination between normal fluctuations in protein abundance and markers of physiological changes during gestation. Military healthcare facilities have unique advantages which enable the longitudinal aspect of this type of research, including centralized medical records; prolonged patient tracking and broad patient demographics. Gestation involves significant physiological changes, and many of the signals transmitted between the maternal and fetal compartments are detectable by proteomic analysis. Plasma was collected from 150 nulliparous women with both normal and adverse outcomes at five timepoints between 4 and 38 weeks. Longitudinal samples from 21 patients with uncomplicated pregnancies were characterized by SELDI-TOF MS. We identified a signature pattern of 29 spectral features whose variation correlated strongly with gestational age. Data mining, western blot analysis and on-chip antibody capture MS experiments enabled presumptive identification of many of these age-modulated peaks. We are currently designing multi-dimensional fractionation strategies to identify lesser abundant peaks which also undergo gestational modulation. These results emphasize the experimental power implicit in longitudinal analyses of dynamic physiological processes, such that relatively small changes in protein abundance are detectable within an individual. They provide a proof-of-concept that this type of technology could be successfully applied to diagnose and possibly mitigate adverse outcomes during pregnancy, as well as in a wide variety of injuries, including those incurred by brain trauma, altitude, dehydration and cold/heat.

Slavica Vucuinic

Prof. Slavica Vučinić MD PhD graduated from the Faculty of Medicine, University of Belgrade in 1982. Following this, she worked in several health institutions in Belgrade. In 1988 she began her specialization in Internal Medicine at the Military Medical Academy of SERBIA and started work in the Clinic of Emergency and Clinical Toxicology. In 1997, Professor Vucinic was appointed an assistant in clinical toxicology and obtained her masters degree in 1998. In 2000, she completed her sub specialization training in clinical toxicology and subsequently obtained her PhD in 2002. In May 2003, she was appointed as an Associate Professor in Internal Medicine and Clinical Toxicology and promoted as Professor of Clinical Toxicology in May 2008. Professor Vucinic has participated in many congresses in locally and abroad. Her papers were accepted for presentations in the Forensic Sciences Congress in Japan, 1996 and World Congress of Military Medicine in Tunisia, 2007. She is a member of the European Association of Poison Control Centres and Clinical Toxicologists. She has presented at two congresses on protection against toxic chemicals (SISPAT) in Singapore. She is involved in providing the CLINICAL PLACEMENT PROGRAMME in Serbia and she is also a lecturer for the OPCW participants of this program. She has published more than 160 papers in local and international journals. In the Military Medical Academy she is currently the Head of two scientific projects concerning the management of acute organophosphate poisoning. She has received many awards in the course of her work including a medal by the President of FRY in 2001. She is also a Professor of Emergency Medicine in Faculty of Medicine, University of Belgrade and in Military Medical Academy. Professor Vucinic is currently the Head of the Clinic of Emergency and Clinical Toxicology NPCC

OP 4
MASS CHEMICAL ACCIDENTS: THE ROLE OF THE NATIONAL POISON CONTROL CENTRE IN ORGANIZATIONAL SCHEME OF MEDICAL SERVICE IN SERBIA

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1 National Poison Control Centre, SERBIA AND MONTENEGRO
2 Military Medical Academy, Belgrade, SERBIA AND MONTENEGRO

Following a hazardous chemical accident, effective providing care for victims depends on the nature of the accident, duration of exposure and toxicity of the chemical, the number of victims affected, the availability of medical care, the co-ordination of rescue teams and medical treatment. After the Haz-Mat accident it is crucial to acquire informations about the toxicity of the compound, the possible risk for the surroundings almost immediately and Poison Control Centres (PCC) all over the world are constantly engaged in supplying those informations. First responders after chemical accident are units of first aid, fire brigarde and police who need informations about toxic agents on scene of the accident. The local authorities responsible for the disaster management must be informed immediately in order to make appropriate steps for preventing further dissemination of the compound. At the same time inhabitants and the environment should be protected. The major role of PCC besides risk assesment and providing reliable informations about the toxic chemicals, its effects on human health and environment, modality of treatment, is co-ordination of activities and warning the responsible authorities such as Ministry of Health. Local authorities, local medical professionals and institutions responsible for treatment of casualties and information providers. The local residents should be warned and be advised on the protective measures that need to be taken. There are several problems to be expected after the accident, such as large number of victims, anxious families, panic, decontamination, inadequate resources available. It is necessary to provide medicines, fluids, specific antidotes, supplies and re-supplies, but also to perform decontamination in order to prevent subsequent closure of the hospital. Decontamination could be performed by personnel, not especially medical, trained to perform it. The advantage of PCC being within large medical institutions is easy access to experts of different disciplines. If it is possible to organize multispecialized medical teams in short period, the efficacy of medical management of casualties is significantly increased. Regional medical management of Haz-Mat incidents with close cooperation with PCC is recommended. However, there are few more elements that need to be considered: Improved Coordination of All Assets; Hospital Development of Internal Plans for Decontamination; Local, Regional, State, Federal Planning; Pre-Planning and Advanced Training Programs and Poison Control Centre should actively participate in each of these activities.
George Cowan

OP5
FALSE-POSITIVE URINE SCREENING FOR BENZODIAZEPINES: AN ASSOCIATION WITH SERTRALINE? A TWO YEAR RETROSPECTIVE CHART ANALYSIS

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1 Naval Medical Center Portsmouth, USA

Background: A series of false positives benzodiazepine screens at our institution prompted a two-year retrospective chart review to determine the percentage of false positives associated with sertraline.

Methods: Urine drug screen results spanning a two-year period were data mined to identify those positive for benzodiazepines, which upon confirmatory GC-MS were determined to be false positive, which were subsequently cross-referenced against pharmacy records in order to identify patients with active prescriptions for sertraline at the time of the initial UDS.

Results: Of the 522 records we reviewed, 160 were later determined false positive by confirmatory GC-MS, a further 62 of which were associated with a concomitant benzodiazepine prescription. Of the 98 remaining, 26 were associated with a concomitant sertraline prescription.

Conclusion: Our findings suggest that sertraline may be an unreported cause of false-positive benzodiazepine results in a widely used screening assay.

Satoshi Maruyama

Dr. Satoshi Maruyama is currently attached with the Dept. of Physiology, National Defense Medical College, JAPAN. He also holds appointments at the Graduate School of National Defense Medical College and Aeromedical Laboratory, Japan Air-Self Defense Force. Dr. Maruyama has published a book on Defense Medicine and published several scientific research papers in international journals. His current specialty is Aviation Medicine.

OP6
CHANGES IN BRAIN-BLOOD FLOW AND TISSUE-OXYGEN UNDER ACCELERATION STRESS IN ANESTHETIZED RATS

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1 National Defense Medical College, JAPAN

Introduction: Exposure to positive G acceleration in the z-axis (+Gz) decreases venous return, resulting in loss of consciousness. It might induce a disturbance in the brain circulation. The purpose of this study is to evaluate effects of +Gz stress on brain blood flow and tissue-PO2 level. Methods: Male SD rats were divided into two experimental groups, one was a blood flow (BF)-measurement group and the other was a tissue-oxygen level (PO2)-measurement group. Arterial pressure at the level of the brain (APLB), central venous pressure (CVP), and heart rate were measured under urethan anesthesia. Cortical and hippocampal blood flow or these tissue-PO2 were measured by a laser blood flow meter or a PO2 monitor with the polarographic oxygen electrodes, respectively. Both groups of rats were exposed to +3Gz by a centrifuge. Results: +3Gz exposure decreased APLB and CVP in the both experimental groups. Blood flow or tissue-oxygen level in the cortex and hippocampus were also decreased. Averaged changes in APLB, cortical BF, and hippocampal BF were 43.6±8.1 %, 58.2±11.7 %, and 79.3±8.7 % (mean ± SE), respectively, of the baseline levels. Averaged changes in APLB, cortical tissue-PO2, and hippocampal tissue-PO2 were 43.3±5.6 %, 57.1±7.4 %, and 78.5±2.2% (mean ± SE), respectively, of the baseline levels. Both changes of BF and PO2 in the hippocampus were significantly lower than those in the cortex.

Conclusion: These results may suggest that the +Gz decreases oxygen delivery to the brain but differently dependent upon the brain areas.
Hulya Turkan

Colonel Turkan Hulya is the Chief Of the Anesthesiology and Critical Care Medicine at Kasimpasa Military Medical Center in Turkey. She obtained her medical degree in 1986 from Gazi University Medical Faculty. Then she went on to do her residency in Anesthesiology and Critical Care from Gulhane Military Medical Academy, Department of Anesthesiology And Reanimation from 1987 to 1991. Col. Turkan got a fellowship in the same field from 1991 to 1993. She then became the Associate Professor in Anesthesiology and Critical Care. She was a research fellow in George Washington University Hospital in Department of Critical Care in 2002.

Col. Turkan has attended many advance courses over the years related to her field of interest. She is in the National Board of Anesthesiology and Reanimation. She has received TUBITAK Encouragement Awards which was given to her important numerous published papers. She is actively involved in many Professional societies and teaching activities.

OP7
THE IMPORTANCE OF METHOD IN TEACHING CARDIOPULMONARY RESUSCITATION

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Life-threatening emergencies can happen at any time. Cardiopulmonary resuscitation (CPR) training is important for several reasons. First, rapid bystander CPR, particularly provision of rescue breathing, may prevent breathing problems and other emergencies from progressing to cardiac arrest. Second, CPR has been shown to improve the chance of survival in adults and children with cardiac arrest. After the resuscitation training, retain resuscitation skills may influence the outcomes of patients who suffer cardiopulmonary arrest. Therefore, the teaching method is particularly important for resuscitation skill acquisition and retention. The study was undertaken to evaluates the efficiency of the teaching method in resuscitation training. 180 doctors, 200 paramedic, 250 nurses taking CPR provider course at Kasimpasa Military Hospital between 2006-2009. Firstly, after conventional CPR instruction, subjects were presented with a “patient” (CPR manikin) and defibrillator, and were evaluated to do what was necessary to revive the “patient” without respiration or heart beat. Secondly, they are trained using special teaching methods including four-stage approach, role-play and simulated resuscitation scenarios. Thirdly, they were reevaluated to do what was necessary to revive the “patient” at the same scenario. After taking only theoretical knowledge of CPR, the only 5% were able to perform satisfactory CPR according to the accepted guidelines. Only 17% ventilated and compressed efficiently, 4% defibrilated the patient safely. After effective resuscitation training, overall success rate was about 95 %. It is concluded that; since CPR should be known as %100. It is not only regular interval training but also effective resuscitation teaching is important to improve functioning during actual emergency resuscitation. Conventional training fail for necessary skill acquisition and retention. Four-stage approach, role-play and simulated resuscitation scenarios techniques provide realistic condition for the candidate to develop and apply their skills and knowledge.
Onno Boonstra

Captain Surgeon Onno Boonstra MD, was born in 1963 in Landsmeer, Netherlands. His career in medicine commenced after graduating with a medical degree from University of Utrecht, Netherlands in 1988. In 1994 he qualified as a Diving Medical Officer and then started his residency program training in General Surgery soon after. In 2002, he qualified as a General Surgeon and then underwent subspecialty training as a Traumatologist. Dr Boonstra has been deployed in various positions throughout his naval career including international deployments to Iraq, Afghanistan, Bosnia, Kosovo and Congo. He has attended numerous courses both in the Netherlands and abroad. Currently he is serving as the Medical Director, Foundation Institute for Hyperbaric Medicine, Netherlands.

Keisha O’Garo

Dr. Keisha-Gaye N. O’Garo is a Clinical Psychologist as well as the Director of the Chronic Pain Biofeedback Clinic at Womack Army Medical Center at Ft. Bragg, NC. Her clinical and research interests include cultural diversity, military-related issues, chronic pain, and body image disturbance. She also serves as a reviewer for the Journal of National Medical Association and Society of Behavioral Medicine and she actively participates in international research endeavors. She has published several research papers in peer reviewed journals.

OP1
TRAINING FOR BATTLE: HOW TO PREPARE MILITARY DOCTORS FOR THEIR TASK

Onno Boonstra
Royal Netherlands Navy, NETHERLANDS

In the Netherlands young military doctors are prepared for trauma care by following the Battlefield Advanced Trauma Life Support Course. Based on our experience in more recent conflicts (Iraq, Afghanistan), military doctors lacked sufficient insight and have difficulties providing adequate medical care in the front line. Based upon the BATLS UK we developed a new Battlefield Advanced Trauma Care Course with emphasis upon practical performance in TCCC, i.e. care under fire and tactical field care and joint training (CRM) of doctors and nurses. This 3-day training is developed over a 2 year period and is now the basis for preparation for missions for our doctors. In this presentation an overview is given of this new Netherlands BATLS course, with insight in the practical training scenarios in the field and assessment.

OP2
CHRONIC PAIN BIO-FEEDBACK PROGRAM FOR WOUNDED WARRIORS

Stancey Ketchman 1 & Keisha O’Garo 1
1 Womack Army Medical Center, Ft. Bragg, UNITED STATES OF AMERICA

Due to recent advancements in protective military gear and “on the spot” medical attention, the survival rate of American Soldiers surpasses that of previous wars. However, with this comes an increase in soldiers with serious injuries that can often lead to chronic pain. The likely combination of chronic pain, exposure to traumatic events leading to mental health diagnoses, along with the use of opioids, places the wounded warrior at a significantly greater risk for suicidality. Increased focus on suicide risk has catapulted the need for medication-free alternatives for the treatment of chronic pain. For this reason, The Chronic Pain Biofeedback Program was incepted at Womack Army Medical Center on Fort Bragg, NC. This program is an intensive 5-week out-patient service that is comprised of two individual biofeedback sessions as well as two educational group sessions per week. Biofeedback is a non-invasive, non-pharmaceutical, and painless method of teaching the patient to become aware of and alter body processes typically considered involuntary such as muscle tension (sEMG), heart rate, respiration, peripheral temperature, and electrodermal response. Biological information, collected by sensors placed on the body, is fed into a machine that is attached to a computer that displays real time physiological responses in a visual or auditory modality. Essentially, biofeedback sessions focus on teaching the patient to recognize and control the physiological changes that can exacerbate pain. Group sessions are based on a biopsychosocial model with a focus on physiological, cognitive, and social aspects that negatively impact pain level, psychological distress, and physical disability. It is purported that the biofeedback training, in conjunction with the lessons learned during group sessions, will positively impact not only the soldiers’ pain level, but also their overall quality of life. Outcome data, as it relates to the Chronic Pain Biofeedback Program at Womack Army Medical Center, will be discussed.
Jeremy Tuck
Colonel Jeremy Tuck was born in 1960 and graduated with a medical degree from the University of London in 1983. He obtained his MRCPGP in 1993, MSc in Public Health in 1998 and MFPHM in 2004. He is an accredited consultant in Public Health Medicine on the Specialist register of the General Medical Council of the UK and an accredited General Practitioner on the GP Register. Col Tuck is a member of several professional bodies including a fellow of the Royal Institute of Public Health, the Royal Society of Medicine and the Institute of Healthcare Management; member of the Association of Military Surgeons of the United States and a yeoman of the Worshipful Society of Apothecaries. Presently, he is the commanding officer (Chief Executive Officer) of the UK Defence Medical Rehabilitation Centre at Headley Court. Col Tuck has published extensively in local and international publications and presented in several international congresses and meetings. He has also been awarded several prizes notably Parkes Memorial Prize in 2008 and the Leishman Memorial Prize in 2004.

OP3
ACUTE MEDICAL REHABILITATION MEDICINE – RECENT EXPERIENCES FROM UK TRAUMA COHORT
Jeremy Tuck
Defence Medical Rehabilitation Centre, UNITED KINGDOM

Background: Introduction of new techniques to stabilise and evacuate battlefield casualties have resulted in improved casualty survival. Developments in definitive care in base areas have also improved outcomes. This clinical success has seen acute rehabilitation services managing a growing casualty case mix with numbers and combinations and severity of injuries that have not been seen before. The Defence Medical Rehabilitation Centre (DMRC) at Headley Court manages rehabilitation across the medical rehabilitation spectrum from minor (but disabling) injury through to complex trauma including multiple amputations, spinal and brain injury.

Aim: To describe the changes in CASEMIX at DMRC since 2005 and to discuss prevailing challenges.

Results: DMRC admits 1350 patients annually with more minor rehabilitation needs for group based, ability graded, rehabilitation programs. DMRC also manages a cohort of complex trauma cases that have individual, ward-based, rehabilitation needs. In 2005/6 there were 110 patient admission episodes (22 Battle Injury and 110 Non Battle Injury). In 2007/8 there were 456 patient admission episodes (338, 118). The Battle Injury Rate has risen from 4 per thousand deployed person years exposure in 2005 to 23 in 2008. The Non Battle Injury rate has risen 0.4 per thousand trained strength per year in 2005 to 0.9 in 2008.

Discussion: Resources are not an issue for service delivery. The pressure to make urgent decisions to discharge or retain has been lifted to allow patients the opportunity to reach their plateau when Vocational Occupational Therapy, Occupational Medicine and Service Employment Boards can make informed decisions. To date, few complex trauma patients have left the rehabilitation pathway and their long term needs remain to be identified although the Ministries of Defence and Health will need to be closely aligned in order to ensure seamless delivery. There is ongoing analysis of functional and occupational outcome measures.

Kamen Kanev
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OP6
MEDICAL STAFF IN TORMENTS
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Conflicts accompany every human activities. The Medical practice is no exception. The inclination towards aggressive behavior has a significant social, political and psychological interest. We present a retrospective review of the tortures and tortures accompanying the development of our civilization. We emphasize on the co-participation of the medics in those crimes and human rights violations, but also on the treaties dealing and restricting this phenomena. The globalization of the problems in modern society provokes the need for searching and applying new principles and ethics in the behavior.
ABSTRACT
CONCURRENT SESSION 5C : BEHAVIOURAL SCIENCES, HUMAN PERFORMANCE & REHABILITATION MEDICINE

OP5
BOMBING OF YUGOSLAVIA: STRESS, PERSONALITY AND TRAUMATIC REACTIONS

Radomir Samardzic

Colonel Assistant Professor Dr Radomir Samardzic is currently attached with the Military Medical Academy, Belgrade, SERBIA.

Aim: To investigate the relationship between personality, severity of stress and various types of posttraumatic symptoms.

Method: Number and severity of stressors experienced during bombardment, personality variables and posttraumatic symptoms were examined in a sample of 434 (age 38±10.8) civilians from several municipalities and employees of a big hospital in Belgrade. Self-report of number and severity of stressors were assessed by the Questionnaire designed for that occasion, posttraumatic symptoms by the PTSS-10 scale, anxiety by STAI-S, hopelessness by Beck’s Hopelessness scale, and personality by the EPQ-38. Four multiple regression analysis have been done with number and severity of stressors, Neuroticism, Extraversion and Psychoticism as predictors and PTSS, anxiety, hopelessness and somatic symptoms, respectively, as dependent variables.

Results: In all four regression analysis aforementioned set of predictors accounted between 19.6% and 30.2% of variance in dependent variables. The most important predictor was Neuroticism. The role of number of stressors and severity of stressors was insignificant.

Conclusion: In spite of the fact that bombardment is considered to be one of the heaviest stressor, personality has much stronger impact in prediction of traumatic reactions.

OP6
PRELIMINARY DATA ON THE PHYSIOLOGICAL RESPONSES TO PROLONGED WALKING IN THE HEAT IN HYDRATED AND DEHYDRATED CONDITIONS AMONG RESERVED ARMY PERSONNEL IN MALAYSIA

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Aim: To document accurately the changes in several physiological parameters during such an endurance. This paper reports preliminary data on an investigation of selected physiological responses (heart rate, rectal temperature, body weight changes, and plasma volume) during prolonged walking in the heat among army reserved personnel.

Methodology: Using purposive sampling, 13 male reserved army personnel’s were recruited for this study. Participants were randomly assigned into hydrated and dehydrated groups. On the experimental day, participants were provided with a standardized breakfast consisting of a slice of white bread (Gardenia®, Malaysia) and a glass of water (300 mL) approximately half an hour before the experimental trial. All exercises were performed on a motorized treadmill in a climatic chamber where the temperature and relative humidity were controlled at 31oC and 70%, respectively. Dressed in the military uniform and bearing a backpack weighing 25kg, the participants walked at 4 km/hr on the treadmill for 3 hours with a 10-minute break after every hour. Rectal temperature and heart rate were recorded and the blood samples were collected during the last 10 minutes of each hour. Throughout the experimental trial, hydrated group was provided with 3ml of water per kg body weight to be consumed every 20-min during the walk.

Results: The results of the t-test revealed no difference in body-weight change between the two groups. The results of two-way repeated measure ANOVA indicated that the plasma volume and the rectal temperature did not differ significantly at any testing point between dehydrated and hydrated groups. However, the heart rate of the dehydrated group was significantly higher than the hydrated group (p < 0.05) at 1st, 2nd and 3rd hour of walking in the heat. Although not statistically significant for the other parameters, a pattern exists indicating that the hydrated group exhibited a better physiological response compared to their dehydrated counterparts.

Conclusions: We speculate that the non-significant differences between the two groups may be due to the limited sample size. In practical term, our study highlighted that prolonged walking in the heat with a backpack, imparted a significant load on the heart rate in reserved army personnel. Our findings suggests that the army personnel should maintain hydration status during prolonged walking in the heat to reduce cardiovascular stress at least after every hour of exercise.