



Oral Communications

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Oral Communication

- OC1**
RISK FACTORS FOR STRESS FRACTURES IN MILITARY TRAINEES
Harri Pihlajamäki MD, PhD; Ville M. Mattila MD, PhD;
Maria Niva MD, PhD; Martti Kiuru MD, PhD
Centre for Military Medicine, Finnish Defence Forces, Helsinki, Finland
- OC 02**
LES ATTEINTES TRAUMATIQUES CHEZ LES PARACHUTISTES D'UNE UNITÉ DE FORCES SPÉCIALES (À PROPOS DE 66 CAS)
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* Groupement des Forces Spéciales, **Hôpital Militaire de Bizerte, ***Direction Générale de la Santé Militaire, ****61 Régiment Génie.
- OC3**
LOOKING PLATES SURGICAL AND LOGISTICAL IMPROVEMENT FOR INTERNAL FIXATION OF FRACTURES
Direccion Nacional de Sanidad de las Fuerzas Armadas
Major Juan LASA, MD - Traumatologia - Hospital Militar Montevideo - URUGUAY -
- OC4**
SECONDARY TREATMENT PHASE OF DIAPHYSEAL GUNSHOT FRACTURES
Col. Prof. Zoran Popović, MD, PhD
Military Medical Academy Belgrade, Serbia
- OC5**
ASSESSMENT OF GUN SHOT WOUNDS IN IRANIAN POLICE PERSONNEL
Monazeri F2, Jahani M R1, ShirzadH2, Ekhtiari H3, Mokri A3, Razaghi M03
1 associate professor, Department of medicine, Baghiyat-Allah University
2 Health Headquarters of IRI Police Force, Tehran, Iran
3 Iranian national center for addiction study
- OC6**
CLOSED HEAD INJURY-FREQUENCY AND CHARACTER LESION OF BRAIN
Ranko Raicevic, Slobodan Culafic, Miodrag Jevtic, Toplica Lepic. Department of Neurology, Department of Radiology. Military Medical Academy. Belgrade, Serbia.
- OC7**
THE RETROSPECTIVE ANALYSIS OF BURNS IN PEDIATRIC POPULATION
Maj Uygur Fatih, Md1, Ltjg Sahin Cihan, Md1, Maj Ulkur Ersin, Md1, Col Celikoz Bahattin, Md1,
1 Gulhane Military Medical Academy, Haydarpaşa Training Hospital, Dept. of Plastic Surgery, Istanbul, TURKEY.
- OC8**
EFFICACY AND SAFETY OF LARGE VOLUME SOLVENT/ DETERGENT PLASMA TREATMENT IN PATIENTS WITH BURN TRAUMA
Z.F. Xia1; B. Ma1; W. Wei1; D.S. Cheng1; Z.J. Liao2; Y.Z. Peng3; Y.G. Jiang4
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- OC9**
ANESTHÉSIE LOCORÉGIONALE EN TRAUMATOLOGIE
Professeur Lyes CHERFI
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Direction Centrale Des Services De Sante Militaire/ Ministere De La Defense Nationale /Algerie
- OC9.1**
PENETRATING TRAUMA: GROOMING OF A RADIOLOGIST IN A CI OPS ENVIRONMENT
Lt Col Vikram Khanna, Reader (Radio diagnosis), AFMC, Pune
- OC10**
MANAGEMENT AND TREATMENT OF ORAL AND MAXILLOFACIAL BLAST INJURY AND SEVERE TRAUMA
Q. Ma, Y. M. Zhao
Stomatological College, the Fourth Military Medical University, Xi'an, P. R. China
- OC11**
THE EFFECT OF IMPROVED HEARING PROTECTION ON THE ACOUSTIC TRAUMAS OF CONSCRIPTS AND ON THE HEARING CLASS OF THE REGULAR ARMY PERSONNEL IN FINISH DEFENSIVE FORCES
Kesseli K, MD, Kiukaanniemi H, MD, Finland
- OC12**
LE BAROTRAUMATISME AURICULAIRE À PROPOS DE 30 CAS.
Chnitr S., Kallel S., Ben Hamida N., Sethom. A, Akkari. Kh, Miled. I, Benzarti. S, Chebbi. M.K.
- OC13**
PROBLEME D'IMPUTABILITE DE LA SURDITE EN MILIEU MILITAIRE
Sethom A .B Hmida N.Kallel S.Akkari K.Brahem H.Miled I.Benrarti S.Chebbi M K.
- OC14**
COMMENT PRÉVENIR UNE OSTÉORADIONECROSE EN ODONTOSTOMATOLOGIE ?
I.Blouza* ;S.Turki* ;I.Louati* ;S.Marouene* ; L.Oualha** ;F.Saidi* ;H.Ellafi* ;J.Selmi** ;Mb.Khattech*.
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- OC15**
TRAUMATISMES OCULAIRES BALISTIQUES : QUEL BILAN POUR QUELLE STRATÉGIE?
BALLISTIC OCULAR TRAUMA : WHICH ASSESSMENT FOR WHICH STRATEGY?
Karaouat F, Garout R (Alger, Algeria)
- OC16**
ETAT DE STRESS POSTTRAUMATIQUE CHEZ L'ENFANT: SEMIOLOGIE ET COMORBIDITE
Asma Bouden, Sami Othman, Ahlem Belhadj, Mohamed Béchir Halayem
Service de Pédiopsychiatrie Hôpital Razi, Rue des Orangers, La Manouba, Tunisie
- OC17**
FAMILIAL MULTIPLE CAVERNOMATOSIS
I.Louati*, N.Mrissa***, B.Regaiieg*, J.Zaouali*, R.Mrissa*.
M.Ben Ammar**, O.Azzouz**, A.Sellami**, M.Yedeas**.
* Neurology department - ** Neurosurgery department -
*** Immunology department - Military hospital of Tunis. Tunisia
- OC18**
MOBILE SHELTER SYSTEMS – THE UNDERESTIMATED LIFE-SAVERS
A.Lutz (GERMANY)
- OC19**
PREVALENCE OF STDs (HEPATITIS B, HEPATITIS C, AIDS AND SYPHILIS) AND RELATED HAZARDOUS BEHAVIORS IN IRANIAN HOMELESS ADDICTS AND ITS ASSOCIATION WITH PRIOR IMPRISONMENT
M R Jahani1, H Shirzad2, Montazeri F2, Salem S2, Elahi B2, Heidarisafo M2, Aslani M2, Mohraz M3, Khairandish P3,
1 associate professor, Department of medicine, Baghiyat-Allah University - 2 Health Headquarters of IRI Police Force, Tehran, Ira - 3 Department of Infectious Diseases, Tehran University of Medical Sciences, Iran
- OC20**
THE PATHOLOGIC PROCESS OF PULMONARY FIBROSIS IN SEVERE ACUTE RESPIRATORY SYNDROME (SARS)
D.W. Wang 1, H.J. Cao1, R.Y. Peng1, Y. Li1, Y.B. Gao1, N. Li2, J.M. Zhao3, B.C. Zhou4
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- OC21**
SUGGESTIVE GUIDELINE FOR RESPIRATORY SUPPORT IN EMERGENCY - STEPWISE BREATH MANAGEMENT
ZJ HE, X Zhang, JX Ma eatl.

- OC22**
NOSOCOMIAL INFECTIONS IN INTENSIVE CARE UNITS OF A TRAINING HOSPITAL WITH 1000-BED FOR ONE-YEAR PERIOD OF 2006: PROSPECTIVE STUDY
 Haznedaroglu T, Turhan V, Oncul O, Acar A, Cavuslu S, and Infection Study Group (Ozyurt M, Ardic N, Karademir F, Ülkür E, Solmazgul E, Dere K, Filiz A, Türegün Özdemir E, Aydın F.)
 Gülhane Military Medical Academy, Haydarpaşa Training Hospital, Istanbul, Turkey
- OC23**
RÉSISTANCE AUX ANTIBIOTIQUES DES BACTÉRIES RESPONSABLES D'INFECTIONS URINAIRES À L'HÔPITAL MILITAIRE DE BIZERTE DE 2005 À 2006.
 Asli S1, Mrad M2, Chalouf H2, Barguellil F1, 2
 Adresse : 1- Service de Microbiologie. HMPIT- Tunisie. - 2-Service de Biologie Clinique- Hôpital militaire de Bizerte,
- OC24**
EPIDEMIOLOGIC CHARACTERISTICS OF ZOOSES IN MILITARY STAFF
 Radovan äekanaç, Srdan Lazic, Milena Krstic, Miloje äobeljiç
 Institute of Epidemiology, Military Medical Academy, Belgrade
- OC25**
PROFIL CLINIQUE ET ÉVOLUTIF DE L'ENDOCARDITE INFECTIEUSE À PROPOS D'UNE COHORTE DE 220 CAS DU REGISTRE EIMONA
 K Ben Hamda, M Hassine, W Jomaa, MA Majdoub, S Maoui, Z Dridi, F Addad, F Betbout, F Maatouk, H Gamra, M Ben Farhat.
 Service de Cardiologie, CHU de Monastir, Tunisia
- OC26**
CARACTÉRISTIQUES CLINIQUES ET PRONOSTIQUES DE LA FIBRILLATION AURICULAIRE DANS LES CARDIOPATHIES ISCHÉMIQUES (À PROPOS DE 470 CAS)
 N.Barakett, W. Fehri, M.A. Drissa, D.Lahidheb,T. Filali, O.Salah, N.Hajlaoui, Z.Smiri, H.Mhenni, H.Haouala.
 Service de cardiologie, Hôpital Militaire de Tunis, Tunis.
- OC 27**
ON THE ANALYSIS AND POSSIBLE PREVENTION OF SYMPTOMS RELATED TO VIRTUAL REALITY EXPOSURE.
 M. Lucertini^o, M. Casagrande^{*}, E. Tomao^o, E. Velardi^o
^o Italian Air Force – Medical Corp
^{*} Rome University “La Sapienza”
- OC 28**
“A SPATIAL DISORIENTATION SURVEY OF HELLENIC AIR FORCE PILOTS”
 Cpt Ioannis Markou1 MD, Lect. Prof. Evangelia Kararizou2, MD, Col Konstantinos Gkiatas1, MD, Lt Dimitra Manoli1,MD, Lt Dimitrios Naoumis1,MD, Maj. Evangelos Kouremenos1,MD, Maj. Antonios Tsagkaropoulos1, MD, Maj. Spiros Koutraoufinis1, MD, Lt. Colonel Antonios Kodounis1,MD, Brig. Colonel (ret) Elias Chimonas, MD
 1: Neurological Clinic, HAF 251 General Hospital, 2 : Department of Neurology, Athens National University, Eginition Hospital
- OC29**
PERCEIVED PAIN DURING A LOWER-LIMB LOADING TEST PREDICTS DISCHARGE FROM MILITARY SERVICE.
 Larsson H, Harms-Ringdahl K, Sweden
- OC 30**
MILITARY MEDICAL ACADEMY ACTS AS PART OF NATIONAL HEALTH CARE SYSTEM IN CRISIS OTHER THAN WAR
 Brigadier general TONEV Stoyan MD PhD, Col. BELOKONSKI Evgeny, MD PhD, Assoc. prof. KANEV Kamen MD PhD
 BULGARIA, SOFIA, MILITARY MEDICAL ACADEMY
- OC31**
MEDICAL MISSIONS FROM MEDICAL SAUDI SERVICES DEPARTMENT (MSD) TO TREAT PATIENTS WITH CARDIAC DISEASE IN YEMEN AND ETHIOPIA.
 By: Dr. Howaida Al Qethamy, Senior Consultant Pediatric Cardiac Surgeon, Head of Cardiac Surgery, Prince Sultan Cardiac Center, Riyadh, Saudi Arabia
- OC 32**
PLANNING FOR AN HOSPITAL SHIP
 Vice Admiral Vincenzo Martines, MD
 Italian Surgeon General - General Directorate of Military Health
- OC 33**
FREQUENT ATTENDERS TO THE EMERGENCY ROOM AT PRINCE RASHED BIN AL-HASSAN MILITARY HOSPITAL, JORDAN
 Lt.Colonel Dr. Ahmad M. Abdallat, MD
 Senior Specialist in Family Medicine
 Brig.Gen.Dr. Mohammed D. Abbadi, MD
 Consultant in Internal Medicine - Departments of Family Medicine and Internal Medicine - Royal Medical Services - Amman - Jordan
- OC 34**
TABAGISME ET OPÉRATIONS EXTÉRIEURES CHEZ 73 PERSONNES APPARTENANT AU SERVICE DE SANTÉ DES ARMÉES FRANÇAIS : UNE SITUATION ALARMANTE.
 J-M. Dot, R. Moser, T. Matton, C. Thepennier, D. Mounquengui, G. Astrie, J. Margery.
 Hôpital d'Instruction des Armées Legouest, Metz, France.
- OC35**
STUDY ON MECHANISM OF OXIDATIVE STRESS AND APOPTOSIS ON PULMONARY EDEMA INDUCED BY PHOSGENE
 Chun-xu Hai*, Xu-jun Qin, Wen-li Li, Xiao-di Zhao, Hong-li Chen, Rui Liu, Xin Liang, An-ji Feng, Yong Ji, Xu Ge, Changjun Wang, Qian Wang*
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- OC36**
DETERMINATION OF THE PHYSICIANS' RISK PERCEPTIONS WHO WORKED UNDER IONIZING RADIATION RISK IN GMMMA HOSPITAL
 Muharrem UÇAR,MD, Department of Public Health,
 Gülhane Military Medical Academy (GMMMA), Ankara, Turkey
 Onur HAMZAO LU, MD, Professor, Department of Public Health, Kocaeli University
 Süleyman CEYLAN, MD, Associate Professor, Department of Public Health, GMMMA
- OC 37**
CHARACTERISTICS OF MEDICAL RESCUE AND PATHOLOGICAL RESEARCH IN OVERSEAS ACTION
 D.W. Wang, R.Y. Peng, H.Y. Zuo, X.P. Xu
 Experimental pathology laboratory, Institute of radiation medicine, Academy of military medical science, Beijing, China
 27 Tai-ping Road, Hai-dian District, Beijing 100850, China
- OC 38**
SERVICEMEN SOCIAL AND PSYCHOLOGICAL PROBLEMS AT INTERNATIONAL MILITARY OPERATIONS
 Prof Jurate Novagrockiene, Capt.Ramute Vaicaitiene, Capt. Danute Lapenaite
 Military Academy, Vilnius, Lithuania
- OC 39**
PSYCHOLOGICAL PROBLEMS AND ADAPTATION OF SOLDIERS
 1st leut Andrius Jurgaitis,*Capt. Danute Lapenaite,*Capt Ramute Vaicaitiene*, Capt Editta Levulieno**, Capt Natalija Zinkuviene, Vida Griçiene***
 * Department of health care programs of Military medical service of Lithuanian Armed Forces,
 ** Rukla primary health care center,*** Rukla Training Regiment Management group
- OC 40**
MEDICAL SUPPORT IN NATURAL DISASTERS AND INDUSTRIAL ACCIDENTS
 Col. Belokonski Evgeni, Md PhD; Brig.Gen. Tonev Stoyan, Md PhD; Assoc. Prof. Kanev Kamen Md PhD; Col. Petkov Assen Md PhD
 Bulgaria, Sofia, Military Medical Academy
- OC 41**
KEY PERFORMANCE INDICATORS IN BRITISH MILITARY TRAUMA MANAGEMENT
 A.Stannard (UK)
- OC 42**
NEUROPROTECTIVE EFFECT OF A FLAVONOID FROM PORTULACA OLERACEA ON HYPOXIA MICE AND ITS MECHANISM
 M Li1, WY Wang1, XL Wang1, XQ Yue2, CQ Ling2
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OC 43

APTITUDE AU SERVICE ARMÉE À PROPOS DE 265 CAS

Farah.S.;Aichaouia.C.;M'hamdi.S.;Fnina.S.;Rachiko.L.;Khadhraoui.M Cheikh.R
Service de Pneumologie Allergologie Hôpital Militaire Principal d'Instruction de Tunis

OC 43.1

AIR SICKNESS MANAGEMENT OF PILOTS IN INDIAN AIR FORCE

Wing Commander Atul Gupta - INDIA

OC 44

**ETUDE DU PROFIL CLINIQUE ET ÉVOLUTIF DES
ENDOCARDITES INFECTIEUSES À STAPHYLOCOQUE AUREUS :
A PROPOS DE 53 CAS DU REGISTRE EIMONA**

M Hassine, W Jomaa, K Ben Hamda, MA Majdoub, S Maoui, Z Dridi, F Addad, F Bethout, F Maatouk,
H Gamra, M Ben Farhat.
Service de Cardiologie, CHU de Monastir, Tunisia

OC 45

CONGENITAL HEART DISEASE.... WHAT THE NURSES NEED TO KNOW

By: Dr. Howaida Al Qethamy, Senior Consultant Pediatric Cardiac Surgeon, Head of Cardiac Surgery,
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OC 46

COR TRIATIATUM

By: Dr. Howaida Al Qethamy, Senior Consultant Pediatric Cardiac Surgeon, Head of Cardiac Surgery,
Prince Sultan Cardiac Center, Riyadh, Saudi Arabia

OC 47

**PRISE EN CHARGE DU PNEUMOTHORAX SPONTANÉ : A PROPOS DE 372
CAS**

Chérif.J, Sifi.I, Zouaoui.A, Adouani.I, Osman.M, Mehiri.N, Louzir.B, Daghfous.J, Beji. M.
Service de pneumologie –Allergologie C.H.U la Rabta Bab Saadoun

OC 48

LES TROUBLES DU RYTHME CARDIAQUE CHEZ LES NAVIGANTS

T.Khelifi; S.Ben Salem; R.Bouattour; I.Ben Dhia; A.Souissi; C.Ben Othman; N.Guermazi
Centre d'Expertise de Médecine Aéronautique

OC49

**PSYCHOPHYSIOLOGICAL ASPECTS OF AIRCREW SPATIAL ORIENTATION
DISTURBANCE IN MILITARY AVIATION.**

Bukhtijarov I.V.
Deputy chief of State Scientific-Research Testing Institute of Military Medicine

OC50

**THE CONCEPT OF PILOT PROFESSIONAL HEALTH
PROTECTION**

I.B.Ushakov
Chief of State Scientific-Research Testing Institute of Military Medicine

OC51

**PHYSIOLOGICAL AND PATHOPHYSIOLOGICAL MECHANISMS OF
DEVELOPMENT OF HUMAN EXTREME STATES IN
CONDITIONS OF A GRAVITATIONAL STRESS**

Bukhtijarov I.V.
Deputy chief of State Scientific-Research Testing Institute of Military Medicine

OC52

L'HEPATOSTAT

PR Michel Rignault

OC1

RISK FACTORS FOR STRESS FRACTURES IN MILITARY TRAINEES

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Purpose: The aim of the present study was to assess the risk factors for MRI-detected bone stress injuries in the pelvis, hip, thigh, and knee in a large cohort of Finnish conscripts during a follow-up of 102,515 person-years.

Methods: An epidemiologic prospective cohort study of 152,095 conscripts, including 2,345 (1,5%) females was conducted. Localized pain in the pelvis, hip, thigh, or knee resulted in an orthopedic surgeon's consultation and subsequent MRI examination at the Central Military Hospital. Risk factors were systematically collected from 1998 to 2004, including data on conscripts' physical fitness and body composition measured at the beginning of their military service.

Results: Altogether 319 MRI-detected bone stress injuries of the pelvis, hip, thigh, or knee were identified in our cohort, thus the incidence was 311 (95% CI: 277-345) per 100,000 person-years. The female-male ratio varied substantially depending on the anatomical location of the injury, being the highest for sacral injuries (female-male ratio 51.1) and the lowest for injuries of the femoral condyle (female-male ratio 0.8). In univariate Cox's regression analysis, poor muscle strength and poor result of 12-min run were significantly associated with bone stress injuries. In multivariable analysis, the strongest risk factors for bone stress injuries were female gender (HR 8.2; 95% CI: 4.8-14.2) and higher age (HR 2.1; 95% CI: 1.4-3.1).

Conclusions: Female military trainees have a highly increased risk of bone stress injuries of the pelvis and hip as compared with male conscripts. Sacral stress fractures are typical bone stress injuries in female military recruits. Physicians should remember the possibility of bone stress injury especially when examining stress-related pain symptoms of the pelvic area in physically active young adult females.

OC 02

LES ATTEINTES TRAUMATIQUES CHEZ LES PARACHUTISTES D'UNE UNITÉ DE FORCES SPÉCIALES (À PROPOS DE 66 CAS)

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Objectif : L'objectif de ce travail est de décrire les différentes atteintes traumatiques chez les parachutistes d'une unité de Forces Spéciales, de les classer en fonction de certains paramètres: âge, ancienneté, localisation et type de lésion ainsi que la durée de convalescence et de proposer certaines recommandations.

Matériel et méthodes : Il s'agit d'une étude rétrospective qui a intéressé 66 cas basée sur l'étude du certificat médical initial et du dossier médical des cas déclarés entre 1999 et 2006.

Résultats : La majorité des accidentés sont des hommes de troupe (40%), suivis par les soldats et les élèves des écoles des armées (38%). La moitié des cas étudiés sont âgés entre 20 et 29 ans (51%) avec une moyenne d'âge de 30 ans alors que 30,5% des accidentés avaient une ancienneté de service inférieure à 5 ans. La répartition selon la localisation de la lésion montre que les traumatismes du membre inférieur sont prédominants (66,2%) notamment ceux de la cheville (40%). Par ailleurs les entorses représentaient 39,5% de l'ensemble des lésions constatées, suivies par les contusions des parties molles à raison de 26,5%. L'étude de la durée de convalescence a permis de retenir que 36,5% des accidentés ont bénéficié d'un arrêt de travail inférieur à 10 jours avec une moyenne soit le nombre de jour par accidenté et par an égal à 25 jours.

Conclusion : Au terme de cette étude nous signalons qu'un conditionnement sportif dirigé et bien étudié qui prend en compte la nature de l'activité paraît indispensable. D'autre part, le médecin militaire traitant est appelé à prendre en considération l'effet cumulatif des micro-traumatismes répétés et négligés ainsi que leurs conséquences fonctionnelles en tenant compte du nombre de sauts effectués par le parachutiste.

OC3

LOCKING PLATES SURGICAL AND LOGISTICAL IMPROVEMENT FOR INTERNAL FIXATION OF FRACTURES

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Uruguay contributes with the 4% of 66.000 total troops deployed by UN in world humanitarian and peacekeeping missions. With a long experience leading with the threats and consequences from those service activities, personnel casualties' best treatment available is always the Medical Units aim.

"To secure the health and well-being of members of United Nations peacekeeping operations" (UN Mission Statement)

"The current challenges require enhance mission's capacities to deal with medical contingencies" (Dr Benjamin Seek UN - PKO in XXXVI ICMM Congress / Russia 2005)

Geographical localizations are not the best for treatment and medical evacuations, with usually limited human and material resources.

The Troop-Contributed Clinics, sometimes working in pre-fabricated containers for hospitals, indicates Damage Control Surgical Procedures protocols for the First Medical Echelons.

The Military Hospital in our capital city Montevideo is the Level 4 Medical Center for Rehabilitation and Recovery, where Mission Area Clinics treatment is evaluated and suggestions for proper improvements when necessary are made.

"The data clearly demonstrate that humanitarian and peacekeeping missions require preparation for a wide variety of mechanisms of injury beyond the typical penetrating trauma of combat situations" (George Appenzeller - AMSUS)

In this situation and in case of Mass Casualties, extremities and multiply injured patients accounted for almost 50% of total wounds.

The quality of final morphologic and functional bone and joint surgical results depends on proper protocol and implant selection.

External Fixators are widely used for severe open and closed fractures treatment. On some anatomical segments, osteosynthesis indications are changing actually for Internal Fixators using Locking Plates.

This presentation analysed theoretically, logistical aspects and with documented clinical cases, pros and cons between these surgical procedures.

OC4

SECONDARY TREATMENT PHASE OF DIAPHYSEAL GUNSHOT FRACTURES

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The gunshot fractures are characterised by primary bacteriological contamination and severe damage of soft tissues and bones. While the phase of the primary surgery is solved by the general approved war surgical doctrine, the choice of the method for the definitive treatment in secondary phase of fractures is still undefined. The aim of this paper is to show criteria what we applied choosing the definitive treatment method of diaphyseal gunshot fractures in the secondary surgical phase. In prospective study, in 160 injured with diaphyseal gunshot fractures in secondary treatment phase, there were applied rigid osteosynthesis by AO plate and spongioplasty assuming that this method would provide good functional results. The fracture healing was achieved in 93,7 % injured, while pseudoarthrosis developed in 6,25%. Osteomyelitis, as the second significant complication, appeared in 8,12 % cases. The applied method in proved to be very successful, it led to faster fracture healing, shortening of hospitalization time of the injured with better functional results and less complications compared to the other treatment methods in the secondary phase.

OC5

ASSESSMENT OF GUN SHOT WOUNDS IN IRANIAN POLICE PERSONNEL

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AIM: To assess and analyze characteristics of gun shot wounds in Iranian police personnel who have been referred to 3 of Police hospitals ("IMAM SAJAD", "VALIASR" AND "SAMEN OL AEMME") in Tehran during year 2000.

MATERIALS AND METHODS: 172 gun shot wounded police personnel were enrolled in a cross-sectional study. Data gathered using specifically designed questionnaires was analyzed using chi square and ANOVA tests.

RESULTS: sergeants were the most affected rank (62%). Most subjects were wounded during missions(52%).engagement with armed criminals was the reason most reported(41%).upper extremities(46%), lower extremities(33%),head and neck(12%)and abdomen(9%) were the sites most involved. The range of duration of admission was equal to 29.8 +/- 15.8 days which was variable between 1 to 245 days. The longest duration belonged to casualties who were shot by rifles with about 42.7 +/- 21.5 days and the least belonged to patients who were injured by explosions.

The recovery days for casualties were 35.5 +/- 35.1 days, the least 3 and the most 210.

The lost on duty days were 53.4 +/- 49.7 for all casualties; the longest belonged to commander officers with 119.6 +/- 103 days and the shortest for soldiers with 4 days, noncommissioned officers with 7 days, and officers with 18 days. Also the results show that the mean days for admission were 14, for recovery days were 35, and for lost on duty days were 51.

CONCLUSION: gun-shot wounds are important health topics causing great morbidity and mortality in police personnel. Preventing and diminishing damages caused by them either through wearing protective suits or by any other means would be helpful.

Keywords: gun shot wounds, Iranian police

OC6

CLOSED HEAD INJURY-FREQUENCY AND CHARACTER LESION OF BRAIN

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Introduction.: Neurotrauma syndrome by its complexity but also by its frequency represent one of the leading problems of modern medicine. In closed head injuries syndrome usually is lacking connection between clinical phenomenology and objectiv conferment of brain tissue lesions.

Objective and methods.: According to that, the major outcome or goal of those studies was to determinate frequency and characteristics of brain tissue lesions using MRI and CT. As well as conferring connections between those damages with clinical parameters such as neurologic deficit and consciousness deficit disorders evaluating sensitivity and specificity of neoradiologic procedures. 40 patiens with closed head injuries were investigated by the same neurologist. Grade of neurological deficit (Canadian neurological scale) and consciousness deficit disorders (Glasgow coma scale) were determined to all patients. All patients were investigated by MRI and CT.

Results.:In this study the MRI presented significant higer specifity and sensitivity especially deterring smaller ischemic and contusion lesions with significant correlation related to CT. A technique called MRI has helped improve diagnosis and treatment of closed head injuries patients.

Conclusion : This is method that might be useful to plan further evaluation and possible treatment in significant number of cases.

OC7

THE RETROSPECTIVE ANALYSIS OF BURNS IN PEDIATRIC POPULATION

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Objective : The aim of this study was to determine the epidemiological pattern of pediatric burns and assess the awareness of burn risk and preventive measures among patients admitted to GATA Haydarpasa Training Hospital Burn Center with burns. **MATERIAL AND METHOD** Fifty consecutive burn patients admitted at GATA Haydarpasa Training Hospital between the january 2000 and december 2005. The mean age was 3,2 years (range 0-13 years).

Results.: Scalding injury was first reason of burns with %76 rate, and flame injury follows them with %12. Total body surface area burned (TBSA) was maximum %20 in %78 of patients and %74 of them

epithelized without any operation. Children under five years were more scalds compared to adults. Open flames burns, involvement of accelerants and assault were prominent among adults. Education level above primary school was associated with higher risk awareness compared with primary level education or below.

Conclusion : Public education campaigns aimed at burns reduction could be tailored to the educational level of target population.

OC8

EFFICACY AND SAFETY OF LARGE VOLUME SOLVENT/DETERGENT PLASMA TREATMENT IN PATIENTS WITH BURN TRAUMA

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Goal of the study (Objective): To investigate the safety and efficacy of large volume solvent/detergent plasma treatment in patients with burn trauma.

Materials and Methods: This study was designed as a prospective, multi-center, randomised, double-blinded and positively-controlled clinical trial. Four medical units were involved. 408 patients were recruited. After their eligibility was confirmed, the patients were randomly assigned to three treatment groups: S/D-VIP-Single group, treated with solvent /detergent virus-inactivated plasma (S/D-VIP) from a pool of single blood group; S/D-VIP-General group, treated with S/D-VIP from pools of random plasma; and FFP group, treated with fresh frozen plasma. The efficacy was judged by the efficacy rate of good resuscitation from burn shock, good blood pressure maintenance and actual infusion amount. To examine the safety of S/D plasma, PT, APTT, fibrinogen, liver function and renal function were tested before and after the treatment, serology for the hepatitis B, hepatitis C, HIV and syphilis was performed before and three months after the treatment. Blood examinations were also performed.

Results and Discussion: The efficacy rates for three groups were all 100%. The actual infusion amounts in three groups were about equal, and the maximum doses were beyond 9000 ml in all groups. The incidence comparison of the adverse drug events ($p=0.5474$) among three groups were of no significant difference. Comparisons of the vital sign parameters and clinical laboratory test values among three groups were of no significant difference too.

Conclusion(s): Solvent/detergent plasma from pools of random plasma can be of clinical efficacy and physiological safety for surgical purpose when comparing to the plasma from a pool of single blood group, even in the situation of large volume replacement.[1] It should be a preferred alternative choice at least for burn trauma patients as a colloid supply treatment.[2]

OC9

ANESTHÉSIE LOCORÉGIONALE EN TRAUMATOLOGIE

Professeur Lyes CHERFI

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La traumatologie représente un contexte opératoire particulier, par le degré d'urgence, la multiplicité des lésions, le retentissement sur les grandes fonctions, la méconnaissance du patient et la difficulté, voire l'impossibilité de la préparation de celui-ci.

L'anesthésiste réanimateur est constamment confronté au problème du choix de la stratégie anesthésique, voire analgésique. Le service des urgences n'est sûrement pas le lieu de l'improvisation. Des protocoles précis doivent être rigoureusement suivis. Les critères de choix d'une technique anesthésique sont essentiellement représentés par : Le type de lésions, l'état du patient (retentissement), le degré de l'urgence, le type de chirurgie, les techniques anesthésiques possibles et l'expérience de l'équipe. Dans ce contexte, les différentes techniques d'anesthésie locorégionale représentent parfois une alternative, sinon une indication de choix. Cependant, l'ALR regroupe

un ensemble de techniques très large, au retentissement très différents. L'objectif de ce travail est de déterminer la place de l'ALR comme technique anesthésique et analgésique en traumatologie et d'en préciser les moyens de son application (neurostimulation ?, monostimulation ou multistimulation ? Blocs tronculaires ou plexiques, médullaires ou périphériques).
L'auteur se propose d'illustrer son travail par des vidéo films.

OC9.1

PENETRATING TRAUMA: GROOMING OF A RADIOLOGIST IN A CI OPS ENVIRONMENT

Lt Col Vikram Khanna, Reader (Radio diagnosis), AFMC, Pune

This presentation is about imaging from a series of 25 selected cases of penetrating bullet and splinter injury sustained in area of counterinsurgency/ant militancy operations. The imaging was performed after initial assessment by treating specialists (including Surgeon, Oral and Maxillofacial surgeon, ENT surgeon, Ophthalmic surgeon and / or the Neurosurgeon) in the trauma center of a premier military hospital. The imaging modalities include plain radiography, sonography and CT scan. After imaging the cases were successfully managed with a favorable outcome. The role of a hands-on imageologist who can share the anxiety and concerns of the surgeons is highlighted and is vital in critical decision making. The cases were optimally managed with significant imaging contribution. The difficulties encountered in conventional radiography and sonographies are discussed along with the advantages of helical CT in a scenario of counterinsurgency operations.

OC10

MANAGEMENT AND TREATMENT OF ORAL AND MAXILLOFACIAL BLAST INJURY AND SEVERE TRAUMA

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Goal of the study: This study includes two parts. The first part is the research on early stage of blast wound in the maxillofacial tissue, providing more information for the injury management at the early stage. The second part of this study is reconstruction of blast injury caused maxillofacial defect at middle and late stage.

Materials and Methods: We established the maxillofacial firearm injury animal models, and used ballistics, biomechanics, pathology, biohistochemistry, molecular biology technique to study the tissue change after shock wave and pressure injury in the facial region. Fifty-eight patients with maxillofacial blast injury were treated in our department within 48 hours after the injury. Most of them were treated following the principle we get from the experiments and the wound healed. The functional reconstruction of maxillofacial defect at intermediate and late stage was performed in more than 100 patients. The flap, bone graft, rigid fixation, rapid prototype, dental implant and magnetic-attached implant were used in these treatments.

Results and Discussion: The range of debridement in facial area is smaller and time limit of debridement is longer than that of trunk-limb area. The repair of the tissue defect may be carried out immediately after the debridement in the maxillofacial region. Following the specialized principle for the debridement in the maxillofacial, more tissue will be saved and the healing procedure will be shorter. This may make it easier for the late repair and reconstruction. In the reconstruction of blast injury defects at intermediate and late stage, fifty-two patients received vascularized bone grafts to reconstruct the mandible and maxilla defect, and the dental implants were put into the graft at the same time. Ninety-three patients were treated with non-vascularized bone grafts to repair the defects. The dental implants were put into the grafts at the same time. All the grafts survived. Twenty-nine patients with severe midface defects were reconstructed with magnetic implant device and prosthesis. Our experimental data demonstrated that the non-vascularized bone grafts do have osteogenesis ability within certain time when they left the donor site.

Conclusion: The smaller range and longer time limit of debridement in maxillofacial firearm wound than in trunk-limb area could lead to satisfactory result. Immediate repair could be done in maxillofacial projectile and blast injuries. Functional reconstruction of oral and maxillofacial large defect could be achieved using different technique.

OC11

THE EFFECT OF IMPROVED HEARING PROTECTION ON THE ACOUSTIC TRAUMAS OF CONSCRIPTS AND ON THE HEARING CLASS OF THE REGULAR ARMY PERSONNEL IN FINISH DEFENSIVE FORCES

Kesseli K, MD, Kiukaanniemi H, MD, Finland

All the acoustic traumas of conscripts have been reported since the year 1989. On March 8th, 1989 the Defense Staff training section prepared new hearing protection regulations, which were further refined in 1991. Instructions on responsibilities regarding education, use of protectors, and supervision of protector usage were included. These regulations together with forced information about acoustic traumas have made a positive effect on the reported acoustic traumas of the conscripts and the hearing level of the regular personnel which is exposed to tens of thousands shots annually.

OC12

LE BAROTRAUMATISME AURICULAIRE À PROPOS DE 30 CAS.

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Introduction : Les barotraumatismes auriculaires se définissent par l'ensemble des manifestations cliniques qui intéressent l'appareil statoacoustique périphérique et résultant d'une exposition aux variations lentes de la pression ambiante, atmosphérique ou liquidienne.

Patients et méthodes : Il s'agit d'une étude rétrospective qui a porté sur 30 cas de barotraumatisme de l'oreille colligés dans le service ORL et CMF de l'hôpital militaire principal d'instruction de Tunis.

Résultat : L'âge moyen de nos patients est de 26 ans, le maximum de fréquence se situant entre 20 et 30 ans. La prédominance masculine est nette (30 hommes, aucune femme). Les signes fonctionnels les plus fréquents sont l'otorragie (63,3 %) et l'hypoacousie (51%).

Une perforation tympanique a été observée dans 66,6% des cas, elle siègeait au niveau de la moitié inférieure du tympan dans 55% des cas. La surdité était de type transmission dans 63,3% des cas.

Le taux de fermeture spontanée des perforations tympaniques était de 80 %. Quatre oreilles ont été opérées par tympanoplastie type I.

Discussion : Les lésions provoquées par le barotraumatisme auriculaires sont de plus en plus fréquente surtout en milieu militaire ce qui nécessite une connaissance approfondie de ces lésions qui mettent en jeu le pronostic fonctionnel. Ce pronostic dépend essentiellement de l'étiologie du barotraumatisme, du type des lésions, de la taille de la perforation et de la précocité du traitement.

OC13

PROBLEME D'IMPUTABILITE DE LA SURDITE EN MILIEU MILITAIRE

Sethom A .B Hmida N.Kallel S.Akkari K.Brahem H.Miled I.Benrarti S.Chebbi M K.

Introduction : Les affections otologiques sont fréquentes en milieu militaire et posent un problème d'imputabilité.

But : Relever les problèmes d'imputabilité de la surdité dans ses différentes formes et étiologies en milieu militaire

Matériels et méthodes : Nous avons colligés 40 cas expertisés de surdité chez des militaires actifs, entre 2000 et 2005 au service d'ORL de l'hôpital militaire de Tunis.

Résultat : L'âge moyen dans notre série d'étude était de 34ans. La surdité était dans la majorité des cas de type perceptionnelle (91%), mixte dans 7% des cas et de type transmissionnelle dans 2% des cas.

Un examen clinique minutieux aidé par des examens complémentaires a été réalisé en vue de classer les différents cas en surdité imputable au service militaire, non imputable mais aggravée par le service ou sans rapport avec le service militaire (non imputable et non aggravé par le service).

Conclusion : Si dans certains cas rattacher une surdité au service militaire est simple et évident (traumatisme sonore, blast auriculaire...), dans d'autres cas, et en particulier en présence d'antécédents otologiques, l'imputabilité ou l'aggravation par le service militaire pose un réel problème qui, malgré une démarche diagnostique rationnelle, demeure parfois difficile à résoudre.

OC14

COMMENT PRÉVENIR UNE OSTÉORADIONECROSE EN ODONTOSTOMATOLOGIE ?

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Introduction : 95% des tumeurs malignes de la cavité buccale sont des carcinomes épidermoïdes, les 5% restant sont des adénocarcinomes, des sarcomes, des mélanomes. Le traitement de ces tumeurs cervico-faciales englobe la radiothérapie, la chimiothérapie et la chirurgie séparément ou associés. Les conséquences de l'irradiation de la cavité buccale sont multiples la plus redoutable étant l'ostéoradionecrose.

Introduction : Plusieurs patients irradiés ont consulté en cours et après radiothérapie ; les répercussions au niveau des muqueuses, de la langue, des dents et de la salive seront identifiées.

Résultats et discussion: L'ischémie, l'infection, l'hypoxie, l'hypocellularité et l'hypovascularisation sont des suites quasi obligatoires d'une radiothérapie. Les conséquences étant, une radiodermite, une radiomucite, une radio myosite, une xérostomie, une odontoradionecrose et même une osteoradinecrose. Une préparation des patients candidats à une radiothérapie de la sphère bucco cervico-faciale

Est obligatoire.

Trois niveaux de précautions sont à définir pour ces patients :

- une prévention pré-radique
- une prévention per-radique
- une prévention post-radique.

Conclusion : Un assainissement de la cavité buccale avant l'irradiation avec élimination de tous les foyers infectieux et le port d'une gouttière fluorée étant le seul rempart contre une éventuelle complication. La connaissance de toutes ces données est fondamentale afin de surseoir à cette complication invalidante pour ces patients irradiés de la région bucco cervico-faciale.

OC15

TRAUMATISMES OCULAIRES BALISTIQUES : QUEL BILAN POUR QUELLE STRATÉGIE? BALLISTIC OCULAR TRAUMA : WHICH ASSESSMENT FOR WHICH STRATEGY?

Karaouat F, Garout R (Alger, Algeria)

Introduction : Les traumatismes oculaires balistiques demeurent souvent graves caractérisés par des lésions oculaires précoces sévères et des séquelles venant compromettre le pronostic visuel voire anatomique du globe oculaire.

Matériel et méthode : Une étude descriptive et analytique rétrospective menée sur 10 ans par tranche de cinq (05) années allant de 1993 à 1996 puis de 1997 à 2002 a été réalisée au service d'ophtalmologie de l'hôpital central de l'armée à Alger ayant concerné 946 dossiers sélectionnés après avoir éliminé de l'étude les dossiers incomplets.

Résultats : Un certain nombre, de paramètres ont été étudiés et analysés concernant, l'acuité visuelle finale, la présence d'un décollement de la rétine (DR) ainsi que d'une atrophie du globe oculaire parmi les séquelles.

On relève une évolution favorable des différents paramètres d'évaluation en fin de prise en charge par comparaison entre les deux périodes de l'étude. Ainsi, le pourcentage de l'acuité visuelle inférieure à 1/10 a observé une diminution de plus de 50 %, celui du DR de plus de six fois, et de l'atrophie du globe oculaire de près de dix fois.

Commentaires Conclusion : La prise en charge des traumatismes oculaires balistiques est difficile. Elle doit obéir à une bonne organisation de la stratégie thérapeutique dans le cadre de l'urgence et à froid. Un certain nombre d'éléments de mauvais pronostic ont pu être dégagés: le délai de prise en charge, la plaie cornéo sclérale, la présence d'un corps étranger intra oculaire, et l'hémorragie intra vitréenne. L'indentation épisclérale systématique ainsi que la vitrectomie précoce dès la deuxième semaine semblent améliorer le pronostic.

Conclusion : Les traumatismes oculaires balistiques représentent une urgence ophtalmologique qui s'avère le plus souvent grave, nécessitant une prise en charge thérapeutique précoce, réglée et bien codifiée

Mots clés : traumatismes oculaires balistiques- prise en charge éléments pronostiques - stratégie thérapeutique.

OC16

ETAT DE STRESS POSTTRAUMATIQUE CHEZ L'ENFANT: SEMIOLOGIE ET COMORBIDITE

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Les enfants et les adolescents comme les adultes sont de plus en plus confrontés à des événements menaçants et traumatisants. La pratique clinique montre que des troubles psychiques graves surviennent au décours de ces événements entraînant une perturbation de l'adaptation de ces jeunes. Dans ce cadre nous avons fait une étude clinique chez des jeunes âgés de 4 à 17 ans victimes d'un accident de la voie publique au mois de Mai 2004. Le groupe est composé de 15 enfants et adolescents qui sont répartis en 10 garçons et 5 filles. Les troubles de ces jeunes ont été évalués grâce à un entretien clinique complété par un questionnaire semi structuré K-SADS-PL à 2 mois puis à 6 mois du traumatisme. Le diagnostic d'un état de stress post traumatique a été retrouvé chez 14 des 15 patients lors de la première évaluation et chez la totalité de ces jeunes après 6 mois. Une forte comorbidité notamment de troubles dépressifs et de troubles anxieux surtout une anxiété de séparation a été relevée et elle est constante lors des deux évaluations. L'association de plusieurs diagnostics à un état de stress post traumatique aggrave le pronostic de ces jeunes. Elle représente un handicap supplémentaire et un risque de séquelles psychiques importantes même quelques années après le traumatisme. Dans ce travail, on discutera aussi la place de la dépression post traumatique et sa relation avec l'état de stress post traumatique.

OC17

FAMILIAL MULTIPLE CAVERNOMATOSIS

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Introduction : Cavernous angiomas are vascular malformations mostly located in the central nervous system which prevalence is close to 0,5% in the general population. They may be inherited as an autosomal dominant condition in as much as 50% of cases.

Clinical symptoms include seizures, headaches and focal neurological deficits; but the clinical course may be symptom free.

Material & methods: We report a study of 3 large Tunisian families affected with multiple cavernomatosis.

A genealogic analysis was realised from 2 case indexes. Magnetic resonance imaging (MRI) was practiced in 16 patients.

The authors emphasise the importance of MRI both in diagnosis and finding affected asymptomatic family members.

Conclusion: In our case series, cerebral cavernomatosis was confirmed in 16 patients. The main clinical manifestations were headaches and seizures.

Autosomal dominant genetic inheritance showed evidence.

Within a 4 year follow up, the outcome was good in 14/16 patients; it was less favourable in 2 patients after radiotherapy.

OC18

MOBILE SHELTER SYSTEMS – THE UNDERESTIMATED LIFE-SAVERS A.Lutz (GERMANY)

ZEPPELIN MOBILE SYSTEME GmbH of Germany is one of the leading manufacturers of Shelter systems in the world. The company is a direct successor of the famous ZEPPELIN airship construction and still today, the company's philosophy is expressed by the slogan "rooms in motion". ZMS was one of the first manufacturers of lightweight containers in an aluminium-sandwich-structure ("Shelters") and meanwhile their systems are in use in more than 40 countries all over the world.

ZMS is a specialist company for all kind of mobile facilities. The company operates in different business units of which Zeppelin Mobile Medicare (ZMM) is the most important. ZMM offers a variety of products and solutions for medical appliances. These are suitable to provide fast and comfortable medical support in case of natural disasters or other medical catastrophes.

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Zeppelin offers a wide range of different medical clinics, either mounted on trucks or trailers. Depending on the required equipment, the clinic is installed in a non-expandable or expandable 20ft. Shelter.



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 - Pharmacy
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- etc.

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The Compact Hospital is a special development dedicated to emergency and disaster management. The system bases on small 10ft. Shelters that are air-transportable for easy and fast deployment in areas that are difficult to access. The medical equipment remains mounted during transport so that deployment is possible within very short time. The rigid and stable structure allows a very comfortable working atmosphere that is protected against heavy weather and offers much better hygienic conditions than pure tents solutions. The Zeppelin Compact Hospital is the ideal rescue system for short-term use.



The 10ft. Rescue Point and Medical Task Force are the major

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On-road and off-road ambulance vehicles on different carrier models.

OC19

PREVALENCE OF STDs (HEPATITIS B, HEPATITIS C, AIDS AND SYPHILIS) AND RELATED HAZARDOUS BEHAVIORS IN IRANIAN HOMELESS ADDICTS AND ITS ASSOCIATION WITH PRIOR IMPRISONMENT

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Background/Aims : Drug Addiction and substance abuse in any of its forms is a criminal act in Iran and results in legal penalty. Choosing correct approaches to deal with this problem in homeless people is a delicate issue and of great social importance. Policies on imprisonment and obligatorily detoxifying homeless addicts and their results were evaluated in this study.

Material & methods: This is a retrospective cross-sectional study, conducted on arrested homeless addicts in SHAFaq Rehabilitation center in Iran. Prevalence of STDs (Hepatitis B, Hepatitis C, AIDS and syphilis) and related hazardous behavior was compared between previously imprisoned subjects and those with no such history. Data was collected from subjects through specifically designed questionnaires and then analyzed using chi square and multivariate statistical techniques in SPSS software environment.

Results: 80% of arrested homeless addicts had served previous terms

in prisons. 8% of this group reported sex with inmates. 24% reported non-injection drug use inside prison and 21% reported injection drug use while inside prison. Among the latter group 94% used shared paraphernalia and just 33% had access to disposable syringes. HBV, HCV and HIV infection rates were 60%, 70% and 26% respectively in those previously jailed, and 2%, 65% and 23% in subjects without such records which is significantly lower. $p=0.002$, 0.02 and 0.01 respectively

Conclusion: Jails provide homeless addicts with a high risk environment for transmission of STDs. Prior imprisonment is a risk factor for HCV, HBV and HIV infection in homeless addicts. Revision of Current strategies on forceful detoxification is recommended based on results obtained from this study.

OC20

THE PATHOLOGIC PROCESS OF PULMONARY FIBROSIS IN SEVERE ACUTE RESPIRATORY SYNDROME (SARS)

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Objective: To research the pathologic process of SARS pulmonary fibrosis by SARS death patient in different times.

Materials and Methods: The lung preparation of 6 SARS death patient (died in 9, 14, 20, 29, 33 and 38d) were objects[1]. Pathological changes, collagen fibers, lattice fibers, elastic fibers, collagen I and III in lungs and fine structure changes were studied by routine H.E dyeing, trigeminy dyeing, trinitrophenol-sirius red staining and polarization microscope and electron microscope[2].

Results and discussion: The lungs of 6 SARS death patient (died in 9-38d) have different degree fibroblast and fibroplasias, develop to typical pulmonary fibrosis in 33,38d. Basic processes of SARS pulmonary fibrosis can be 4 types: fibroblast light degree active stage (in 9-14d), fibroblast proliferation stage (in 20d), fiber proliferation stage (in 29d), fibrosis emerge stage (in 33-38d fig.1). A collagen fiber is major in fiber proliferation. Collagen I is obviously to collagen III(fig.1).

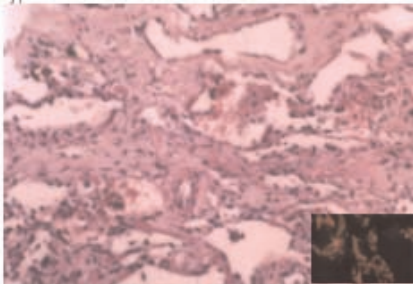


Fig.1 Pulmonary fibrosis emerge for SARS patient died in 38d The low right picture show collagen I is more than collagen III (x200)

Conclusion(s): 1. Authors considered initially that basic processes of SARS pulmonary fibrosis went through possibly fore stages: fibroblast light degree active, fibroblast proliferation, fiber proliferation, fibrosis emerge. 2. The feature of SARS pulmonary fibrosis are ?fibrosis is appeared early (in 33d). ?fibrosis changes is developed in progress. ? pulmonary fibrosis. ?focal distribution is outstanding.

OC21

SUGGESTIVE GUIDELINE FOR RESPIRATORY SUPPORT IN EMERGENCY -STEPWISE BREATH MANAGEMENT

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Goal of the study (Objective) : To propose a guideline of respiratory support for emergency patients.

Materials and Methods: To summarize the experiences gained in giving stepwise respiratory support (SRS) in 2548 patients for

emergency care (including 1823 trauma patients and 725 non-trauma patients) between 1992 to 2002.

Results and discussion: There were 1876 male and 672 female patients with the ratio of male to female 2.79:1. The age of patients ranged between 4 to 86 years, and the mean age of traumatic patients was (32.3±19.8) years, and the dominant ages were between 20 to 39. The mean age of non-traumatic patients was (65.2±17.3) years, and the dominant ages were between 50 to 69. The traumatic and non-traumatic patients accounted for 60.2% and 32.0% of all patients, respectively. The respiratory management included resuscitation positioning in 816 (32.0%), open airway and suctioning in 314 patients (12.3%), oxygenation through nostril or nasal intubation in 2311 patients (90.7%), oxygenation by mask in 124 patients (4.9%), endotracheal intubation in 254 patients (10.0%), thyrocricocentesis or cricothyrotomy in 25 patients (1.0%), tracheotomy in 195 patients (7.7%), percutaneous tracheotomy in 58 patients (2.3%). SRW management included two types, four steps and ten ways. The two types included traumatic and non-traumatic; the four steps and ten ways included first step of manual treatment (including resuscitation positioning, open airway and suction and chest-back press), second step oxygenation (including oxygenation through nostril or nasal intubation, oxygenation by mask, endotracheal intubation), third step invasive airway support (including thyrocricocentesis or cricothyrotomy and tracheotomy or percutaneous tracheostomy), fourth step mechanic ventilation (covering manual ventilation and mechanical ventilator).

Conclusion: The series of SRS management plan and principles can improve the respiratory support in rescuing emergency patients efficiently.

OC22

NOSOCOMIAL INFECTIONS IN INTENSIVE CARE UNITS OF A TRAINING HOSPITAL WITH 1000-BED FOR ONE-YEAR PERIOD OF 2006: PROSPECTIVE STUDY

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Aim: In this study, nosocomial infections (NIs) were evaluated in Intensive Care Units (ICUs) including Burn Care Unit (BCU) of a training hospital with 1000-bed for one-year period.

Material Method: This study was performed in patients, hospitalized in BCU and ICUs of our hospital between January 01 and December 31, 2006, respectively. The incidence of NIs per 1000 bed days, the mean hospitalization day, mortality rates and the category of NIs were evaluated in all cases.

Results: Totally, 940 cases were hospitalized during the study period. Total hospitalization days of all cases were 10844 days, the sum of NI attacks in 123 cases were 181. Of all NI cases, 52 (42.3%) were men and 71 (57.7%) were women, and the mean ages were 55.25 (1-99) years. The incidence of NI was 16.5/1000 bed-day and the mean hospitalization day was 14.525 day. Mortality developed in 32 (26%) cases. The direct effects of NI on mortality were found in 14 (43.75%) cases, and indirect effects of that were in 18 (55.25%) cases. The most common NI in cases was catheter-related blood stream infections (54.5%) and urinary tract infections (24.2%). The highest NI rates were seen in General Surgery-ICU (21.65%) and Neurology-ICU (19.225%). Conclusion: Our results showed that, even though the catheter-related blood stream infections were most common NI and highest NI rates were detected in General Surgery-ICU and Neurology-ICUs of our center. These results also showed that re-location of the ICUs of the hospital reason of the construction activities had increased our NIs rate.

OC23

RÉSISTANCE AUX ANTIBIOTIQUES DES BACTÉRIES RESPONSABLES D'INFECTIONS URINAIRES À L'HÔPITAL MILITAIRE DE BIZERTE DE 2005 À 2006.

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Introduction : Les infections urinaires sont d'une extrême fréquence.

Elles viennent après les infections respiratoires, au second rang des motifs de consultation et de prescription d'antibiotiques. Le diagnostic d'infection urinaire repose l'examen clinique et sur l'examen cytot bactériologique des urines. Nous présentons dans ce travail le profil et la sensibilité aux antibiotiques de 589 bactéries isolées à partir des urines à l'Hôpital Militaire de Bizerte de 2005 à 2006.

Matériels et méthodes : Ce travail a porté sur des E.C.B.U. provenant des différents services et de toutes les consultations externes de l'hôpital Militaire de Bizerte sur une période de 2 ans. L'examen cytot bactériologique, des urines a été réalisé selon les méthodes usuelles : examen cytologique avec numération, numération et isolement de germes sur gélose, identification et antibiogramme de toutes les bactéries répondant aux critères d'infection urinaire (leucocyturie supérieure ou égale à 10 000 par ml et bactériurie supérieure ou égale à 100 000 par ml).

Résultats : Au cours de la période étudiée, 589 infections urinaires ont été observées. Les patients étaient dans leur majorité des femmes (80%). Les bacilles à Gram négatif sont nettement prédominants avec 84,8 % de l'ensemble des bactéries et *Escherichia coli* représente 63,9% suivi des *Staphylocoques* à coagulase négative (9,7%), de *Proteus mirabilis* (9%), de *Klebsiella pneumoniae* (7,65%). La sensibilité des bactéries aux principaux antibiotiques utilisés pour le traitement de l'infection urinaire se distingue par le faible pourcentage de sensibilité à l'amoxicilline des bacilles à Gram négatif (40% pour *Escherichia coli* et 16% pour *Proteus mirabilis*), alors que le cotrimoxazole n'est actif qu'entre 66,5% pour *Escherichia coli* et 96,3% pour *Proteus mirabilis*. Les meilleurs pourcentages de sensibilité sont relatifs aux fluoroquinolones (97,6% des *Escherichia coli* et 100% des *Proteus mirabilis*), la gentamicine (96,3% des *Escherichia coli*, 94,8% des *Staphylocoques* à coagulase négative et 100% des *Proteus mirabilis*) ; la furadoïne est active sur la quasi totalité des *Escherichia coli* et des *Staphylocoques* à coagulase négative

Conclusion : En dehors des résistances naturelles, la colistine est constamment active. *Escherichia coli* et les *Staphylocoques* à coagulase négative sont les agents majeurs de l'infection urinaire. Toutes bactéries confondues, le céfotaxime, la gentamicine et les fluoroquinolones sont les antibiotiques les plus constamment actifs.

OC24

EPIDEMIOLOGIC CHARACTERISTICS OF ZOOSES IN MILITARY STAFF

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The objective of this study was to analyse some epidemiologic characteristics of zoonoses in military staff of Serbia and Montenegro Army (SMA) in the period 1991-2004.

Material and methods: data sources were outbreak reports provided by institutions of preventive medicine of SMA.

Results: During the analyzed period in total was registered 459 human cases of 11 various kinds of zoonosis, wich is 0,37% of infectious diseases in SMA. The most frequent are salmonellosis with 220 (47,9%) and trihinelosis with 125 (27,2%), Lyme borreliosis, Q-febris, Toxoplasmosis and Hemorrhagic Fever with Renal Syndrome (HFRS). In SMA was not registered cases human diseases of Tetanus, Antrax, Tularemia and Leishmaniasis. In the analyzed period was registered 3 (0,65%) lethal case, with high lethal by HFRS (15,4%) and one lethal case of Trichinelosis.

57,7% of cases was registered in 14 zoonotic outbreaks (6 outbreaks of salmonellosis, 6 outbreaks of trichinelosis, one outbreak of Q-fever and one outbreak of HFRS). The most of zoonotic outbreaks (4) werw registred in 1999 during the NATO bombing of our country. Salmonellosis rich seasonal maximum in warmer period of the Year. Outbreaks of trichinelosis take place from october to march.

Conclusion: In the investigated period numerous factors have an influence on epidemiological status of zoonotic deseases and therefore in military we have also an increase of number of zoonotic outbreaks.

Key words: zoonosis, outbreaks, army

OC25

PROFIL CLINIQUE ET ÉVOLUTIF DE L'ENDOCARDITE INFECTIEUSE

À PROPOS D'UNE COHORTE DE 220 CAS DU REGISTRE EIMONA

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Introduction : L'endocardite infectieuse (EI) est une affection de diagnostic difficile et grevée de complications redoutables hémodynamiques, mais aussi emboliques et infectieuses, qui engendrent une mortalité élevée et parfois des séquelles cardiaques ou neurologiques sévères.

Objectifs : Analyser le profil clinique et évolutif de l'EI avec détermination des facteurs prédictifs de mauvais pronostic.

Méthodologie et patients : Nous présentons une étude rétrospective comprenant 220 patients consécutifs présentant une EI selon les critères de DURACK de Duke University colligés dans le service de cardiologie de Monastir durant la période de janvier 1993 à décembre 2006.

Résultats : L'âge moyen de nos patients est de 36,12 + 17,57 ans. On note une prédominance masculine avec un sexe ratio de 1,34. La présence d'une cardiopathie sous jacente était relevé chez 107 (51,4%) de nos patients dont la plupart étaient valvulaires (67%). Treize patients, soient 5,9% avaient un ATCD d'EI et 8,2% avaient un ATCD de cardiopathie congénitale. La prévalence du diabète dans notre population était de 10,5%.

Cliniquement, 181 patient (82,2%) avaient un syndrome fébrile avec une température de 38,1° + 2,5°. Un état de choc cardiogénique initial a été relevé dans 8,2%. Une AEG isolée ou associée à d'autres symptômes a été notée dans 64,1%. La présence de splénomégalie était noté dans 21,8%. La porte d'entrée était identifiée dans 65,9% avec une prédominance du site buccodentaire (28,6%). Un souffle cardiaque a été noté dans 55% des cas.

Les hémocultures étaient positives chez 105 patients avant toute antibiothérapie (47,7%).

Le germe le plus fréquemment isolé était le staphylocoque dans 24,2%. L'échocardiographie note la présence d'au moins une végétation chez 191 patients (86,8%). Le siège de l'EI : Mitrale 83 (37,7%), Aortique 64(29,1%), Mitro-aortique 12(5,5%), Tricuspidale 13 (5,9%), PMD 4(1,9%), Cardiopathie congénitale 12(8%).

Dix cas d'abcès péri annulaire ont été isolés dans notre population avec un taux de rupture de cordage de 3,6%.

La survenue d'évènement embolique était recensée dans 17,7%, une insuffisance cardiaque dans 34,5%, un anévrysme mycotique dans 5,9%, et un insuffisance rénale dans 10% des cas.

L'indication opératoire était posée dans 50,5%, d'ordre hémodynamique dans la majorité des cas (80%).

L'évolution a été marquée par 41 décès (18,6%). Le suivi moyen est de 62 mois, la survie globale est de 61% à 5 ans.

Conclusion : l'EI demeure une affection grave et ceci malgré les grands progrès diagnostics et thérapeutiques. Le caractère multiple et varié de ces complications notamment vasculaires nous incite à adopter une prise en charge thérapeutique précoce et adéquate, mais surtout d'appliquer une prévention codifiée et rigoureuse.

OC26

CARACTERISTIQUES CLINIQUES ET PRONOSTIQUES DE LA FIBRILLATION AURICULAIRE DANS LES CARDIOPATHIES ISCHÉMIQUES (À PROPOS DE 470 CAS)

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Introduction : La fibrillation auriculaire (FA) est le trouble du rythme le plus fréquent dans la population générale (prévalence 1 %, incidence annuelle 0,1 à 0,2%) sa fréquence augmente avec l'âge surtout au delà de 80 ans. La FA est aussi reconnue comme étant l'arythmie supra ventriculaire la plus fréquente au cours des cardiopathies ischémiques dont elle aggrave le pronostic.

But : Analyser les données cliniques, thérapeutiques et évolutives de la fibrillation auriculaire d'origine ischémique.

Matériel et méthodes : Nous avons étudié rétrospectivement les dossiers de 470 patients en fibrillation auriculaire, hospitalisés consécutivement au service de cardiologie de l'hôpital militaire de Tunis, durant une période de 5 ans (2000-2005). La fréquence de la

cardiopathie ischémique était de 13% (n=53). Nous avons divisé notre population en 2 groupes (groupe 1 : ischémique, groupe 2 : non ischémique). Nous avons comparé les données cliniques, échographiques et thérapeutiques des 2 groupes. L'analyse statistique a été effectuée au moyen du logiciel SPSS 11.5. Le seuil de signification statistique a été fixé à 0.05.

Résultats : L'âge moyen de nos patients est de 60.5 ans avec une discrète prédominance masculine (sexe ratio 1.34.)

Le groupe 1 se distingue du groupe 2 par un âge plus avancé (70% des patients du groupe 1 avaient plus de 65 ans contre 41% des patients du groupe 2), une nette prédominance masculine (77% vs 54%), une prévalence du diabète plus marquée (47% vs 18%).

La tolérance clinique et hémodynamique de la FA est moins bonne dans le groupe 1 par rapport au groupe 2 avec survenue de dysfonction ventriculaire gauche chez 17 % des patients du groupe 1 contre 5% de ceux du groupe 2.

Il n'existe pas de différence significative entre les 2 groupes concernant les accidents thromboemboliques et le maintien des anticoagulants au long cours.

La persistance de la FA après une année d'évolution est plus fréquente dans le groupe 2 (60% vs 41%). La mortalité est nettement plus élevée dans le 1er groupe avec un $p < 0.0001$

Conclusion : La FA est un marqueur de risque dans les cardiopathies ischémiques exposant à une surmortalité et un surcroît de survenue d'insuffisance cardiaque. La mortalité demeure plus élevée, malgré le maintien du rythme sinusal à moyen terme. La reprefusion myocardique pourrait en diminuer l'incidence et améliorer le pronostic.

OC 27

ON THE ANALYSIS AND POSSIBLE PREVENTION OF SYMPTOMS RELATED TO VIRTUAL REALITY EXPOSURE.

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The exposure to different virtual reality situations, as in the case of flight simulators, can induce several side effects which are usually pointed out as Simulator Sickness (SS) syndrome. Due to its negative effects on learning and training, and to the possible presence of after-effects (both motor and sensory), SS can play a significant role when simulator training activities are planned. To analyze signs and symptoms related to SS, the Pensacola Simulator Sickness Questionnaire (SSQ) was developed in the eighties, and this is still a valuable method to analyse the clinical consequences of flight simulator exposures. Moreover, the SSQ can also be adopted to evaluate the effectiveness of preventive tools, aiming at reducing SS. In a study from our laboratory, we analysed SSQ data in subjects undergoing a standard ground based spatial disorientation training inside a flight simulator, in order to evaluate the SS prevention obtained with different pharmacological tools. During each experimental day, all subjects filled in the SSQ several times to follow up the hypothetical onset and/or duration of SS. In addition, both postural instability (with the use of a stabilometric platform), and sleepiness symptoms were evaluated. Results indicated a strong increase of sickness after flight simulation that linearly decreased, showing pre-simulator scores after 1.30 hours. Unfortunately, none of the pharmacological tools administered in our study resulted really effective in reducing SS symptoms as detected by the SSQ, although some additional side effects were observed. Therefore, the SSQ resulted also effective in monitoring SS, even under pharmacological effects and during a prolonged period of data analysis (12 hrs). Finally, due to some limitations observed during our study, specifically related to the current form of SSQ, an improvement of this test can certainly be proposed.

OC 28

“A SPATIAL DISORIENTATION SURVEY OF HELLENIC AIR FORCE PILOTS”

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Introduction: Spatial disorientation (SD) continues to be a largely unyielding problem in military and civilian aviation. SD training remains the sole solution of coping with this effect. In order to have more efficient training, we asked pilots the illusion they have probably had experienced in their flying career, attempting to study the prevalence and incidence rates of illusions and their correlation with specific types of aircraft

Method: An anonymous questionnaire was distributed to pilots of Hellenic Air Force during their annual physical examination at Hellenic Air Force Center of Aviation Medicine, during 6 months period. The questionnaire gathered information such as age, type of aircraft flown, flying experience. The pilots were asked to give the number of times they experienced each of the listed illusions. Statistical analysis was performed by using SPSS 8.0

Results: A total of 407 surveys were collected. The mean age of the participants was 31.4±5.4 years old, and their flying experience 1012±908 hours. The most common types of aircraft flown were F4 and A7. 140 pilots (34.4%) answered that they had never experienced any kind of illusion. Among the other 267 pilots, 71 reported that they had experienced 1 illusion (26.6%), 185 (69.3%) had experienced 2-10 different types of illusions and 11 above 10 different types of illusions (4.11%). The top 5 illusions reported were the leans (47.2%) primarily with F4, the Coriolis illusion (39%) primarily with F4, blending of earth and sky (38,2%) primarily with F4 and A7, flight instrument reversal (24.3%) primarily with F4 and sloping clouds or terrain (22.8%) primarily with F16 and A7. When asked to report their most personally critical illusion, 185 pilots responded. They classified the severity of their illusion to flight safety 111 (60%) as minor, 68 (36.75%) as significant and 6 (4,9%) as severe.

OC29

PERCEIVED PAIN DURING A LOWER-LIMB LOADING TEST PREDICTS DISCHARGE FROM MILITARY SERVICE.

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Enrolment to the Swedish Armed Forces takes place one to two years before basic training. Applicants to ranger units will be excluded if they have existing knee pain. The objective of this study was to evaluate the capacity of a screening tool to detect knee pain and predict discharge from basic military training (BT). An additional aim was to examine the reproducibility of pain intensity ratings in relation to the tests.

All conscripts from a ranger unit, n=258, were screened and monitored during their basic training in order to investigate the consequences for military service among those who tested positive during the initial screening. The screening tool comprised the following tests; step-up, step-down, rising from a 0.40 m height bench and bilateral squat with self-rating of pain intensity, if any, on the Borg CR10 Scale. Conscripts discharged during BT were registered.

Conscripts who tested positive were at a higher level discharged compared to those who tested negative ($p < 0.001$). The predictive value that was indicated by the area under the receiver operating characteristic curve (ROC) was slightly higher for the step-down test (0.90) than for the rising test (0.82).

The reproducibility of pain ratings in relation to the tests was 'good' to 'excellent' (rs 0.77-0.98). We concluded that the test was reliable and valid for identifying knee pain. The tests also had a predictive value for conscript discharge from military service. The tests constitute a cost-effective tool in a systematic process for screening knee pain to identify high-risk groups for selection and for prioritising interventions during BT.

OC 30

MILITARY MEDICAL ACADEMY ACTS AS PART OF NATIONAL HEALTH CARE SYSTEM IN CRISIS OTHER THAN WAR

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BULGARIA, SOFIA, MILITARY MEDICAL ACADEMY

Different national institutions are involved in medical support management in crisis other than war. On national level the main are – Ministry of Health and Ministry of Defense. The aim of this study is to define the role of Military Medical Academy in providing medical support in crisis other than war.

The most important acts fulfilled by Military Medical Academy in

missions of medical support in crisis are: providing first medical aid, evacuation and specialized medical care. Medical teams, units and medical facilities formation take part in the organization of medical support. They execute treatment and evacuation support, provide hygienic and prophylactic support. In the response measures provided by Military Medical Academy in crisis situations are included: 1. Medical measures and evacuation: - medical triage – dynamic process, performed on all levels of the medical evacuation; - provide specialized medical care;- medical evacuation. 2. Management - complex activity for estimation of medical situation, taking decision about medical forces and means management in following sequence: - evaluation of medical forces and means capacities; - conclusions of medical situation evaluation; and 3. Specific tasks of medical establishments taking part in medical support in crisis time like - tasks and extent of medical care; - ways of medical supply; - enforcement and interaction with other medical organizations. The process of planning of medical support in crisis is given in the two main periods - in preparatory period and - during the crisis. The following activities are executed on different levels of medical evacuation: medical preparation of injured; filling of medical forms for the injured; medical evacuation management.

It is concluded that the military principles of the Military Medical Service and particularly Military Medical Academy are closely integrated in the national health system and in crisis other than war and act as part of it.

OC31

MEDICAL MISSIONS FROM MEDICAL SAUDI SERVICES DEPARTMENT (MSD) TO TREAT PATIENTS WITH CARDIAC DISEASE IN YEMEN AND ETHIOPIA.

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Medical Saudi Services Department (MSD) has previously launched a number of medical missions in neighbouring countries. In the year 2005 a medical mission was launched to Yemen with a team of 18 persons including one surgeon and a specialist, one anaesthetist and a specialist, two paediatric cardiologists, cardiac technicians and cardiac nurses. All of them were from the Prince Sultan Cardiac Centre which is the biggest cardiac centre in the Kingdom of Saudi Arabia. They were working together over a period of 18 days and performed 111 cardiac procedures including 76 surgical operations and 35 diagnostic and interventional procedures with a survival rate of 96%. The total number of patients seen by the team in different clinics established in Sana'a, Hadramoot and Mukala was more than 400 patients in the outpatient clinics

Another mission was sent to Ethiopia in the year 2006. During this mission 312 patients were seen and treated medically including adult and paediatric cardiac patients. During this mission technical and financial support was offered to our Ethiopian nation.

These missions played a significant role in delivering significant cardiac services to the Yemeni and Ethiopian patients and helped in training their local personnel in the field of practice.

OC 32

PLANNING FOR AN HOSPITAL SHIP

Vice Admiral Vincenzo Martines, MD
Italian Surgeon General
General Directorate of Military Health

An old Navy writer has defined the hospital ships as some true "floating cathedrals", with a large and positive visibility in every latitude and with particularly suitable for some specific requirements such as "mass casualties". Now in the new international scenario with more peacekeeping and peace-enforcing operations by the military corps of the industrialized countries the hospital ship has become a high profile option such as Timor East or during humanitarian actions for countries hit by natural calamities (earthquake in Turkey in 1999). Therefore this health ship will be used during civilian support operation as for example for the aids to countries hit by the tidal wave in Asia or by the Kathrina hurricane in New Orleans. An hospital ship has an expensive costs for management and maintenance and needs to be used continually for many opportunities. The fitting out of the ship needs to have a great flexibility, modularity and versatility according for the

mission such as in the healthy support to the Naval Squad, with operating rooms, intensive care beds and normal recovery beds, aimed at the emergency traumatology or in other hands during actions for Civil Defence with a large number of normal beds required for slight illness or refugees reception. In the modern medical concepts this Unit will have the ability in data communicating system like telemedicine equipment, the availability of adequate water supplies, supported by the autonomous ability in producing drinking water and large possibility for food stockpile for humanitarian use and self possibility for medical evacuation by helicopter. The realization of a Hospital Naval Unit represents an instrument usable for a management of various emergencies and can contribute to an Italian positive image all over the world.

OC 33

FREQUENT ATTENDERS TO THE EMERGENCY ROOM AT PRINCE RASHED BIN AL-HASSAN MILITARY HOSPITAL, JORDAN

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Objective: This study was carried out to establish the extent of inappropriate emergency room frequent attendance in a Jordanian community.

Methods: Data was collected from the emergency room register. Frequent attenders are these who made twelve or more visits during one year period. It was from September 1st 2004 to September 1st 2005. Data included total number of patients, number of frequent users, age, sex, presenting symptoms and time of presentation.

Results: Among the 73259 patients visited the emergency department, 1685 (2.3%) were found to be repeaters or heavy users. The most common age group involved in the study was between 40-64 years. 68% were males. Chest pain and shortness of breath, followed by abdominal pain and minor traumas were found to be the most common presenting symptoms.

Conclusion: The complexity of these patient's medical and psychosocial needs represents a great challenge for clinicians. Attempts to reduce the number of visits will likely require a multidisciplinary approach involving both health and community providers.

OC 34

TABAGISME ET OPÉRATIONS EXTÉRIEURES CHEZ 73 PERSONNES APPARTENANT AU SERVICE DE SANTÉ DES ARMÉES FRANÇAIS : UNE SITUATION ALARMANTE.

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En France, la prévalence du tabagisme dans les Armées reste supérieure à celle de la population générale. Elle tend à s'accroître lors d'opérations extérieures (OPEX). Aucune étude à ce jour ne s'est intéressée au tabagisme en OPEX chez des militaires français appartenant exclusivement au Service de Santé (SSA).

L'objectif de notre étude est d'évaluer le tabagisme et la dépendance nicotinique, avant départ et au retour d'OPEX, sur une même cohorte de personnels appartenant au SSA déployés au sein de formations sanitaires de campagne de 1er et 2ème échelon.

Le questionnaire standard du Réseau Européen des Hôpitaux Sans Tabac et le test de Fagerström ont été systématiquement proposés, entre Mars et Septembre 2006, chez 73 militaires (57 hommes et 16 femmes), appartenant au SSA, avant départ et au retour d'OPEX. L'analyse des données a été faite grâce au logiciel Epi Info 6.04 Avril 2001. Le test de Student a été utilisé pour comparer les moyennes, le test du Khi2 pour les proportions.

La prévalence du tabagisme est de 46,5% (34/73) avant le départ, 45,2% (33/73) au retour. La consommation moyenne journalière est de 14,8 cigarettes (médiane à 15, extrêmes entre 1 et 35) avant le départ, pour 16,4 au retour (médiane à 17,5, extrêmes entre 5 et 35). La surconsommation moyenne est de 7 cigarettes/jour dans le sous groupe des 13 fumeurs ayant avoué une augmentation de leur

intoxication tabagique au cours de l'OPEX. Avant départ, 47,1% des fumeurs (16/34) sont dépendants vis-à-vis de la nicotine (score de Fagerström > 4) contre 51,5% au retour (17/33). Avant le départ en OPEX, 55,9% des fumeurs (19/34) déclarent avoir bénéficié d'informations sur l'arrêt du tabagisme.

Les séjours en OPEX s'accompagnent d'une surconsommation tabagique et d'une augmentation de la dépendance, ce même chez des personnels du SSA, supposés être plus sensibilisés aux méfaits du tabac que les autres catégories de militaires. Il semble utile d'élaborer rapidement une stratégie de lutte contre le tabagisme dans les Armées, ce qui pourrait passer par une meilleure diffusion de l'information et des aides possibles au sevrage.

OC35

STUDY ON MECHANISM OF OXIDATIVE STRESS AND APOPTOSIS ON PULMONARY EDEMA INDUCED BY PHOSGENE

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Goal of the study: That phosgene (COCl₂) is an economical and versatile reagent was discovered by John Davy in 1812 and is now widely used in organic chemistry. As an important raw material of chemical chemosynthesis, phosgene was used in the production of medicine, tincture and pesticide etc. in the past, and at present it is regarded as a pollutant in different environmental samples. As a lung choky poisonous gas it was used as a chemical weapon during World War I. Due to its special physical and chemical properties which vastly volatilize poignant asphyxiate poisonous gas over 8.2, the dangers by means of its fatality in the war and terrorism is gradually increasing. In China, phosgene is produced or used as a raw material in many factories. A lot of people have contacted with it, so the accidents of phosgene poisoning occasionally happened (Qu, 2003; Wang et al., 1998; Yang et al., 1998). Toxic phosgene doses inhaled into the terminal respiratory passages render the blood-air-barrier more permeable to blood plasma, which is gradually collected in lung (Diller, 1985). Researchers all over the world try to explain the mechanism of pulmonary edema induced by phosgene. Jonathan Borak (Borak and Diller, 2001) suggested phosgene activity resulted from at least two separate chemical reactions, acylation and hydrolysis. Acylation results from the reaction of phosgene to nucleophilic moieties such as the amino, hydroxyl and sulfhydryl groups of tissue macromolecules. In addition to acylation, phosgene is hydrolyzed to hydrochloric acid on moist membranes and may provoke irritation and tissue damage. However the cellular mechanism of pulmonary edema still remains unclear. This paper investigate the mechanism of oxidative stress and apoptosis on pulmonary edema induced by phosgene.

Materials and Methods: 40 rats were randomly divided into control group and three experimental model groups with 10 rats in each group. All the three trial model groups were exposed to phosgene at the concentration of 539 ppm for 5 min. The rats in the three experimental model groups were killed by cervical dislocation separately at 1th hour, 3 th hour and 5 th hour but the rats in control group were killed at 5 th hour. The lungs and serum of the rats were collected immediately for further determination. The lungs were analyzed for ratio of lung wet/dry weight and pathological alternation. The lipid peroxidation product was determined by the modified method of Yagi (Yagi, 1976). The total activity of SOD was determined by the modified method of Kono Y (Kono, 1978). GSH was assayed by fluorometric estimation method (Brown and Lutton, 1988). Catalase (CAT) activity was assayed by the method of Aebi (Aebi, 1984). Total amount of nitrogen oxide (NO) was measured by the Griess method (Green, 1982). The activity of NOS was measured using a kit purchased from Nanjing Jiancheng Institute (Nanjing, China). The method reported by Dobbs LG et al. (Dobbs et al., 1986) was used to isolate and culture cell from lung type II cells in rats. Apoptosis was determined by electron microscope and flow cytometry (Dobbs et al., 1986). DNA ladder was observed by DNA gel electrophoresis. Terminal deoxynucleotidyl transferase (TdT) were tested using the TUNEL kit (Booster, Inc., Wuhan).

Results and discussion: After exposure to phosgene, the weight ratio of lung wet to dry increased with the passage of the time. There was significant difference after 3 h ($p < 0.05$). The content of TBARS of lung increased, and 3 hours later, it was remarkably higher than that in control group ($p < 0.05$). After the exposure to phosgene, the activity of SOD and the content of GSH decreased dramatically ($p < 0.05$) while

the activity of CAT increased significantly ($p < 0.05$), with only the content of GSH in serum decreased ($p < 0.05$). At the 1 hour the content of NO in the lungs of the rats was much higher than that in control group ($p < 0.05$). At 5 hour, the content of NO in lungs and serum was much lower than that in control group ($p < 0.05$). The activity of NOS in lung decreased significantly at 1 hour ($p < 0.05$) increased slowly to the same level of NOS in control group. However, the activity of NOS in serum increased after the exposure to phosgene, and at 5 hour, it was much higher than that in control group ($p < 0.05$). A large amount of fluid effusion was observed in alveolus of rats induced by phosgene. Ratio of apoptosis cells (40.26 ± 7.74) in positive group was higher than that in negative group ($1.58 \pm 1.01 \geq p < 0.001$). DNA ladder alternation was detected by DNA gel electrophoresis. Apoptosis of epithelia and vascular endothelia in lung were found by TUNEL. Conclusion: A model of pulmonary edema has been successfully established. The mechanism of pulmonary edema in rat induced by phosgene is involved in oxidative stress and apoptosis of the lung cells in rats.

OC36

DETERMINATION OF THE PHYSICIANS' RISK PERCEPTIONS WHO WORKED UNDER IONIZING RADIATION RISK IN GMMMA HOSPITAL

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This is a cross-sectional study carried out in Gülhane Military Medical Academy (GMMMA) Hospital between February and April 1996, to determine the physicians' risk perceptions about ionizing radiation at the departments which exposure to ionizing radiation was likely and to assess the factors influencing their perceptions. Finally, 87.2% (n=157) of the physicians (N=180) could be reached. It has been determined that 30.8% of the participants had low risk perception level. While 25.7% of those who were in the "high exposure group" have been determined at the "low perception level", only 9.9% of those who were in the "low exposure group" have been determined at this level. A statistically significant difference between two exposure groups in respect to the risk perception levels has been found ($p < 0.01$). A statistically significant difference, also, among the participants' status with respect to usage of protecting glove and coat during X-rays has been found ($p < 0.05$).

As a result, the factors affecting the physicians' risk perceptions must be taken into account in order to inform them about their occupational risks and to enlighten them about the conditions of their working environment for making them conform to the protecting precautions.

Key words: Risk, perception, ionizing radiation, physicians.

OC 37

CHARACTERISTICS OF MEDICAL RESCUE AND PATHOLOGICAL RESEARCH IN OVERSEAS ACTION

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Objective: Overseas action such as emergency disaster relief and peacekeeping troops and so on include China increased day by day. There are much difference in geographical environment and natural conditions between various countries in the world. Various special environment and military work initiates various injury. In order to guarantee peacekeeping and rescue personnel's health, it is necessary to develop pathological research related to injury. Materials and Methods: Through epidemiology investigation and animal experiment, thorough system research was carried out to elucidate the vulnerate regularity, pathology characteristic and pathogenesis of human body influenced or injured by special region and environment.

Results and discussion: 1. Plateau pathology: In plateau environment, air is thin and oxygen is deficient; climate is dry and cold; sunshine is long and temperature difference is big; ultraviolet ray is intense and cosmic radiation exists, all these abnormal conditions badly affect health, further develop into various acute or chronic "high altitude maladjustment"; 2. Pathology of cold injury in cold areas: In cold area,

cold injury occurs prominently while performing tasks and undergoing battles, including whole body cold injury (namely frozen stiff, central-temperature drop to 35 °C below) and local tissue cold injury (namely frostbite, contains freeze and non-freeze cold injury). The pathology process experiences four stages: pre-freeze, freeze and thawing, response after thawing and tissue necrosis; 3. Pathology of tropics jungles injury: Some countries locate tropics and subtropics where the temperature is high and the rain is enough in whole year. The forest is high and dense, which make it easy to multiply for wild animals and the insects disseminating disease. Some animals possess pathogenesis through biting the person directly. These conditions are also suitable for various virulent plant growth, which can easily cause toxication and anaphylaxis if human eat by mistake; 4. Pathology of hot exposure injury: The synergism of temperature, humidity, aircurrent and radiating heat may cause hot convulsion, hot failure and heat stroke; 5. Pathology of desert and Gobi injury: Natural conditions are bad in Asian, African and American mainland. It is extremely hot in summer and severely cold in winter. The regional insect intermediated epidemic disease and endemic disease invasion, especially when war injury or trauma occurs in severely cold situation, mostly compound frostbite. All these aggravate the local and whole body pathological changes, increase the mortality rate, and retard the injury repair; 6. Others (For example noise, vibration, electromagnetic wave, military training, gallery, trophopathy, aviation, navigation and so on are all abridged) [1,2].

Conclusion(s): In overseas action, military pathological research contains both "sickness" and "injury", also has special military "wound", so its research methods possess particularity: we should combine laboratory research and scene research, human body research and animal experiment studies, overall organ level research and molecular cell level research, qualitative localization research and quantitative investigation, pathological basic theory research and practical achievement research for precaution, diagnosis and therapy together.

OC 38

SERVICEMEN SOCIAL AND PSYCHOLOGICAL PROBLEMS AT INTERNATIONAL MILITARY OPERATIONS

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Centre of Strategic investigations of Lithuanian Military Academy recently have made study „Servicemen social and psychological problems at international military operations“, based on questionnaire. Two groups were interviewed: persons just returned home from mission and those who served few years ago in missions in Balkans or Iraq. As study data showed, problems during mission are various: psychological support, social care and possibilities to connect with relatives at home, low salary, high psychological tension for a long time, so it should influence not only them, but their families too. Additional adaptations problems and less support from friends are due to not enough information about mission's importance for the country in mass media. Superficial knowledge about missions push members to the "psychological catacombs", and they are trying to isolate themselves from family or friends. It was found, that motivation for mission is complex: not only money, but possibility for realisation of personality, increasing of professional skills, new experience etc. So after returning home it is desirable to get not only higher salary, but some moral contribution as well as higher position.

The findings of other psychological survey of Military Leaders (NATO HFM-081 RTO Task Group (RTG) 'Stress and Psychological Support in Modern Military Operations', questionnaire, returns from 16 nations) have emphasized the importance and the need for integrated mental health support at pre-deployment, during deployment, and post-deployment. In general, the participating military leaders reported perceiving little stigma associated with stress-related responses and help-seeking behaviour. Respondents also stated their preferences for concrete and specific information related to recognizing and managing psychological stress reactions on deployment. The information obtained will be used to guide the development of a HFM-081/RTG booklet containing information and practical guidelines for military leaders on managing operational stress.

OC 39

PSYCHOLOGICAL PROBLEMS AND ADAPTATION OF SOLDIERS

1st leut Andrius Jurgaitis, *Capt. Danute Lapenaite, *Capt Ramute Vaicaitiene*, Capt Edita Levulienė**, Capt Natalija Zinkuviene, Vida Gričienė***

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Soldier's adaptation problems during basic training period usually are associated with high psychological tension. The main task of pilot study made in Rukla training regiment in 2004-2005 was to evaluate stress feeling of conscripts during first weeks of training.

Subject: Totally 1089 conscripts answered questionnaire on stress feeling which consists of 37 questions. Questionnaire was filled twice - at the beginning of the service and at the 8 week of basic training.

Results. It was obtained that more conscripts felt anxiety at the beginning of the service (5.1 percent) comparing with those serving eight weeks (2.2 percent). Soldiers were lonely more frequent at the beginning of the service (39.8 percent) than after some time spent in Training regiment. The same tendency was shown calculating trust index - conscripts were less trustable to servicemen at the beginning of the service than after 8 weeks (67.0 percent versus 80.6). After 8 weeks training conscripts showed less anger reactions against leaders than at the beginning of the training period - 29.7 comparing to 23.0 percent. In contrary, they showed more anger reactions against servicemen at the investigated period after 8 weeks of basic training. Suicide thoughts and sleeping disorders were more frequent at the beginning than in later period of service. Physical load seemed to be very high more often at the beginning of training period. Contacts with family were less frequent at the beginning of the service - they were limited to 17 percent of conscripts but at later period only to 4.6 percent of persons.

Conclusion: Psychological support during adaptation period is necessary and very useful as the main problems raised at the beginning of the training period of one year service in Lithuanian Armed Forces.

OC 40

MEDICAL SUPPORT IN NATURAL DISASTERS AND INDUSTRIAL ACCIDENTS

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The medical support in natural disasters and industrial accidents is very close by its characteristics to the principles of the military medicine. The aim of this study is to define the main rules, manpower needed and the organization which should provided to ensure adequate medical support in natural disasters and industrial accidents. It is of crucial importance to define the type and amount of medical care needed in the disaster region, and in the medical evacuation levels, to bare in mind the possibility of secondary lesions of the casualties and medical staff and analysis the information about the medical situation. Complex activity should be undertaken for estimation of medical situation, taking decision about medical forces and means management in following sequence: evaluation of medical forces and means capacities; conclusions of medical situation evaluation; tasks and extent of medical care; ways of medical supply. The plan of medical support in preparatory period is carried in the following order: general and medical command and coordination, information support, logistic, staff, medical supply. While the plan of medical support in occurring crisis is carried in the following order: mobilization of medical means, deployment of medical emergency units, real medical support including protective measures, decontamination, triage, immediate medical care, evacuation and transfer of injured in medical facilities, hospital medical care, anticipation of medical losses, determination of medical care extant. In ensuring medical support management in crisis situations the medical stuff should be ready to undertake:

- Maneuver of medical units; - Maneuver of medical care extent;
- Medical support management includes:
 - Developing of medical forces (units, teams, medical facilities, units for anti-epidemic measures);
 - Providing transport (ambulances, reanimobiles, medical aircrafts, etc);
 - Deployment of medical units;
 - Medical evacuation of casualties to assigned and specialized medical

facilities;

- Definitive health care.

In conclusion the principles military medicine and the way Military Medical Service functions are most corresponding to the way medical support in natural disasters and industrial accidents should be carried out. That is why Military Medical Service and particularly Military Medical Academy, is closely integrated in the national health system in case of natural disasters and industrial accidents, especially with its qualified specialists, up-to-date equipped structures and affiliated hospitals on the territory of all the country. Its good organization is a guaranty for good results and effectiveness.

OC 41

KEY PERFORMANCE INDICATORS IN BRITISH MILITARY TRAUMA MANAGEMENT

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Introduction – Key performance indicators (KPI) have been used in civilian trauma management for a number of years. For the past twelve years, British military trauma care has been audited using 50 KPI covering pre-hospital care, emergency medicine, critical care, surgery and rehabilitation. These KPI had been adopted directly from civilian trauma practice. With the high tempo of recent military operations in Iraq and Afghanistan, unprecedented experience has been gained by British military medical practitioners in combat trauma. In an effort to improve combat trauma care, it was considered imperative to review these KPI for their applicability in modern conflict and to assess additional indicators. Relevant indicators can then be used to assess service provision and compare standards and outcomes of combat trauma care against best available evidence.

Method - A workshop was organised with representatives from pre-hospital care, emergency medicine, critical care, general surgery, orthopaedics, head and neck surgery, rehabilitation medicine and pathology. Attendees were senior military doctors, surgeons, specialist nurses and paramedics with extensive military trauma experience over recent decades. The workshop divided into groups to discuss performance indicators within specialist areas. There followed an open forum where all attendees discussed the final list of proposed KPI, this allowed cross discipline debate and streamlining of the workshop's output.

Results - The workshop produced 60 performance indicators in total, with 30 directly relating to surgical specialities.

Discussion - The opportunity to bring together such a diverse and experienced group of combat trauma specialists to overview British military trauma performance is unique. Through the workshop we have developed up to date and relevant KPI covering all aspects of combat trauma management. When applied to the British prospective military wounding database we will have a powerful tool in identifying systematic deficiencies and as a result improve overall performance in trauma management.

OC 42

NEUROPROTECTIVE EFFECT OF A FLAVONOID FROM PORTULACA OLERACEA ON HYPOXIA MICE AND ITS MECHANISM

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Objective - Hypoxia affects the work capacities and health of army men stationed in high altitude. So it is significant to discover effective medicines to overcome the high altitude hypoxia. Our previous studies showed that one of the Portulaca Oleracea flavonoids could lengthen the survival time of hypoxic mice. Brain is usually the most sensitive tissue in organic body to hypoxia. We suppose this PO flavonoids might have neuroprotective effects. In present study, we investigated the neuroprotective effect of PO flavonoids and its mechanism to provide experimental base for the discovering a new medicine to prevent the effect of high altitude hypoxia.

Materials and Methods: After being orally administered with different doses of the flavonoids or water, continuously for seven days, adult male BALB/c mice were adopted normobaric low oxygen environment (10% oxygen and 90% nitrogen) for different time. The mice cerebrum was used for histological analysis by HE. The degrees of pyruvate

kinase (PK), phosphofructokinase(PFK), lactic acid (LD), lactate dehydrogenase (LDH), adenosine triphosphate (ATP) were detected with detection kits, and the mRNA and protein levels of EPO in the cortices were analyzed. PC-12 cells and primarily cultured nerve cells were used for MTT assay and the degree of LDH in the culture medium was checked to confer the results.

Results and Discussion: Histological analysis indicated the flavonoids lessened the brain damage. Mice in the group administered with the flavonoids 1 mg/d had significantly higher levels of PF, PFK, ATP and LDH in the cortices, especially under the hypoxic environment for 24 hours. The flavonoids could enhance the EPO mRNA and protein expression in the cortices. MTT assay results showed that the flavonoids or the herb-containing serum could raise the cell viability and decrease the degree of LDH in the culture medium in a dose-dependent manner.

Conclusions: In present study, we demonstrated that the flavonoids had neuroprotective effects. Employing these substances to prevent and cure high altitude hypoxia will be of great significance for enhancing the battle effectiveness of army men stationed in the high altitude.

OC 43

APTITUDE AU SERVICE ARMÉE À PROPOS DE 265 CAS

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Introduction : L'asthme constitue la principale cause d'origine respiratoire d'inaptitude au service armée.

But de travail:Etudier la part de l'asthme dans les étiologies respiratoires d'inaptitude au service armée en Tunisie.

Materiel et methodes : Il s'agit d'une étude rétrospective colligeant 265 soldats adressés pour examen d'aptitude au service de pneumo allergologie à l'hôpital militaire de Tunis au cours d'une période allant du janvier 2006 au mars 2007.

Résultats : L'examen clinique et les investigations ont conclu à 227 jeune recrues inaptés soit 85 % contre 38 aptes soit 15 %. Les étiologies sont représentées par l'asthme dans 198 cas objectifé soit par un test de provocation bronchique positif dans 162 cas, soit à l'EFR par un trouble ventilatoire obstructif réversible dans 36 cas. Les autres étiologies sont représentées par : kyste hydatique opéré dans 8 cas, séquelles de traumatisme thoracique dans 5 cas, pneumothorax drainé dans 9 cas, séquelles de tuberculose pulmonaire ou ganglionnaire dans 5 cas et pleurésie dans 2 cas.

Conclusion : La pathologie respiratoire occupe une place importante parmi les étiologies d'inaptitude au service armée dominé par l'asthme qui est de plus en plus fréquent dans la population des jeunes tunisiens.

OC 43.1

AIR SICKNESS MANAGEMENT OF PILOTS IN INDIAN AIR FORCE Wing Commander Atul Gupta - INDIA

Incidence of Air Sickness in ab-initio Pilots during flying training is one of the major causes of attrition. The main problem being exposure to abnormal motion stimuli to which the ab-initio Pilot is unfamiliar and hence unadapted. Non-pharmacological methods of management are the only viable mode of management in Military Aviation as; anti-air sickness medication precludes the Military Pilot from flying. No.2 Aeromedical Training Centre has been managing air sick ab-initio Pilots undergoing flying training at Air Force Academy. Air Sickness desensitization therapy (ASDT), a form of non-pharmacological method, involves both psychological (counseling and yoga) and physiological (Physical exercise therapy and Barany Chair rotation) methods of approach to achieve satisfactory vestibular habituation. With past success rates (79.1%), comparable to world wide figures, one of the causes of concern has been persistence of air sickness in those who successfully underwent ground based ASDT (8.7%). The present study spanning two years include 28 Trainees from Jul 2005 to Feb 2007, has achieved a high success rate (96.43%) with no persistence. This was possible by modifying the existing desensitization therapy (DT) protocol and incorporating a few factors in the management.

Keywords: Air sickness (AS), Ab-initio Flying Training, Air Sickness Desensitization therapy (ASDT), Aero Medical Training Center (AMTC), Physical Exercise Therapy (PET), Yogic Exercise.

OC 44

ETUDE DU PROFIL CLINIQUE ET ÉVOLUTIF DES ENDOCARDITES INFECTIEUSES À STAPHYLOCOQUE AUREUS : A PROPOS DE 53 CAS DU REGISTRE EIMONA

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Introduction : L'endocardite infectieuse (EI) représente une pathologie à morbidité et à mortalité élevée et cela malgré le développement des moyens diagnostics, le traitement antibiotique et les techniques chirurgicales. Parmi les germes responsables de cette EI, le Staphylocoque Aureus de part son haut potentiel pathogène, aggrave le pronostic immédiat et à long terme.

Patients et méthodes : Nous avons étudié le profil épidémiologique, les caractéristiques cliniques et échographiques de 53 patients (pts) ayant une EI à Staphylocoque Aureus parmi 240 patients atteints d'EI (selon les critères de Durack de la Duke University), le germe a été identifié sur au moins trois hémocultures pratiquées dans les 48h suivant la suspicion du diagnostic.

Résultats : Il s'agit de 24 hommes et 29 femmes, âgés en moyenne de 36 ± 18 ans, ayant une cardiopathie sous jacente dans 47 % des cas (25 pts) : 6 cardiopathies congénitales et 19 atteintes valvulaires dont 11 porteurs de prothèses. Parmi notre population, 36 pts (67,9%) avaient une altération de l'état général, un état de choc cardiogénique chez 4 pts et des signes d'insuffisance cardiaque (NYHA > III) chez 19 pts (45,9%). La porte d'entrée était dentaire chez 9, pulmonaire chez 5 et veineuse chez 3 pts. Une végétation a été identifiée chez 44 pts : mitrale chez 19 (35,8%), aortique chez 12 (22,6%), mitro-aortique chez 2 (3,8%), tricuspide chez 7 pts (13,8%) et sur matériel de stimulation chez 4 pts (7,6%). Au cours de l'évolution, 17 pts (32,1%) ont développé une insuffisance cardiaque, globale chez 9, une embolie artérielle chez 8 pts (15,1%) dont 4 cérébrales, un infarctus pulmonaire chez 3 pts (5,7%) et 4 anévrysmes mycotiques (7,5 %) compliqués d'hémorragie cérébrale chez 3 d'entre eux, une insuffisance rénale aiguë chez 4 pts (7,5%). Le traitement chirurgical a intéressé 28 pts (52,8%), de cause hémodynamique chez 23 pts (43,4%). Le décès à court et à moyen terme a été observé chez 10 pts (18,9%). Une rechute de l'EI chez 7 pts (13,2%) et une récurrence chez 2 pts (3,8%).

Conclusion : L'EI à Staphylocoque Aureus reste une affection grave (18,9% de décès) qui nécessite une prise en charge urgente le plus souvent chirurgicale en raison des lésions valvulaires délabrantes caractéristiques de ce germe.

OC 45

CONGENITAL HEART DISEASE.... WHAT THE NURSES NEED TO KNOW

By: Dr. Howaida Al Qethamy, Senior Consultant Pediatric Cardiac Surgeon, Head of Cardiac Surgery, Prince Sultan Cardiac Center, Riyadh, Saudi Arabia

The nurses working in a cardiac center or cardiac department dealing with patients with congenital heart diseases should know first what do we mean by congenital heart disease (CHD), and what are the different types of CHD e.g. cyanotic or acyanotic, etc. And they should be aware of different ages which CHD discovered at for example: pre mature, neonate, child or as an adult & whether the patient should be managed medically or surgically, what sort of position those children should be nursed with. What investigations or preparations they should have, sort of operation they are going to have, to be able to understand things that they are going to face pre and post surgery and how can they be ready to nurse those patients post catheter or post operative. What parameters they should observe in the ICU and the wards and what advices they should give to the parents or children. Monitoring and management of pre and post operative, cyanotic spells, pulmonary hypertension, heart failure, apnea, arrhythmia, heart block, fever, seizures, neurological problems, low cardiac output syndrome, low urine output, any signs of ischemia, etc. The cardiac nurse should be able to anticipate problems which she/he carefully monitors patients' vital signs and should be aware of how to start managing those problems and give first aid management until she/he gets the help from other senior colleagues and doctors. Hard work, good experience, patience, good manners, cooperation, patient's tender loving care are the key word for any successful cardiac unit.

OC 46

COR TRIARIATUM

By: Dr. Howaida Al Qethamy, Senior Consultant Pediatric Cardiac Surgeon, Head of Cardiac Surgery, Prince Sultan Cardiac Center, Riyadh, Saudi Arabia

Cor triatriatum is an uncommon cardiac anomaly occur in 0.1% of children with congenital heart disease. We reviewed our result in 20 patients presented with Cor triatriatum in the last 20 years (from March 1983 to August 2002). Mean age at repair was 20 months (1-132). During a mean follow up period of 31 months (2-156) there was no death. All patients were in sinus rhythm except one patient who needed pacemaker insertion one week after repair. 14 patients were asymptomatic and 6 were New York Heart Association Class I. Cor triatriatum is amenable to surgical repair with excellent result when diagnosed early and when not associated with other severe cardiac anomalies.

OC 47

PRISE EN CHARGE DU PNEUMOTHORAX SPONTANÉ : A PROPOS DE 372 CAS

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Introduction : Le pneumothorax spontané est une pathologie fréquente du sujet jeune dont la prise en charge thérapeutique a connu des progrès.

Objectif : Analyser et évaluer les différentes méthodes thérapeutiques du pneumothorax spontané.

Matériels et méthodes : Notre travail consiste en une étude rétrospective sur dossiers de patients ayants présentés un pneumothorax spontané, colligés au service de Pneumologie-Allergologie CHU la Rabta sur une période de douze ans allant de 1995 à 2006.

Résultats : Il s'agit de 372 cas de pneumothorax survenus chez 307 patients dont 302 hommes et 5 femmes (65 récidives). L'âge moyen était de 38 ans avec des extrêmes de 15 à 86 ans. Le tabagisme a été retrouvé chez 88.9% des patients. Des antécédents broncho-pulmonaires étaient retrouvés dans 18.8% des cas. Le pneumothorax était idiopathique dans 76.85% des cas et secondaire dans 23.2% des cas. Au cours du premier épisode, le repos a été préconisé dans trente cas, l'exsufflation à l'aiguille dans trente cinq cas, le drainage thoracique aspiratif dans deux cent cinquante neuf cas, la thoracoscopie vidéo assistée dans huit cas et la thoracotomie dans sept cas. Au cours des récidives, le drainage a été préconisé pour les premières récidives homolatérales et le traitement chirurgical pour les récidives controlatérales et les deuxièmes récidives homolatérales. Le taux de récurrence était plus important pour les pneumothorax traités par exsufflation (26.3%).

Discussion et conclusion : La prise en charge du pneumothorax spontané a fait l'objet de plusieurs études récentes, mais il n'existe pas de recommandations consensuellement admises. En effet, elle dépend de l'étendue du pneumothorax, du terrain et des habitudes de chaque équipe médicale. Nous proposons à travers cette étude un arbre décisionnel concernant la prise en charge du pneumothorax adaptée à notre pratique courante.

OC 48

LES TROUBLES DU RYTHME CARDIAQUE CHEZ LES NAVIGANTS

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Introduction : Le milieu aéronautique, de part le stress, les accélérations et l'hypoxie favorise la genèse et l'aggravation des troubles rythmiques (ESV+ESSV) ; ceux-ci peuvent, dans leurs formes répétitives, entraîner une défaillance hémodynamique, voire une syncope, et mettre en péril la sécurité aérienne. Par ailleurs les troubles du rythme sont parfois l'expression d'une cardiopathie sous jacente incompatible avec le vol ; de ce fait toute extrasystolie doit être bien considéré, chez le navigateur, et être explorée.

Présentation du travail : Nous nous proposons d'étudier la prévalence cumulée de l'extrasystolie chez le personnel navigant tunisien ; ses

rapports avec une cardiopathie silencieuse et son influence, éventuelle, sur le déroulement des missions et sur l'aptitude.

Résultats : 5,5% des pilotes présentent des anomalies de l'excitabilité myocardique. L'extrasystolie ventriculaire (et/ou supra ventriculaire) est retrouvée chez 4,8% des OPL civils et 7,3% des Pilotes Militaires toutes catégories. Les pilotes atteints sont tous de sexe masculin, leur âge moyen est de 43ans pour les pilotes civils et 48 ans pour les Militaires. Les extrasystoles sont le plus souvent bénignes sur cœur sain mais une cardiopathie plus ou moins grave a été objectivée dans environ 30% des cas ; plus rarement une dysfonction thyroïdienne était responsable de l'extrasystolie.

Après traitement ; l'évolution était favorable dans la majeure partie des cas. Des inaptitudes temporaires ont été parfois indiquées devant l'exacerbation du trouble rythmique. Deux reconversions dans le transport et une inaptitude à l'admission pilote de combat ont été prescrites. Dans d'autres cas la cardiopathie sous jacente a imposé l'inaptitude définitive.

Conclusion : La découverte d'une anomalie de l'excitabilité myocardique devrait nous imposer une conduite diagnostique rigoureuse recherchant une cardiopathie sous jacente et la décision d'aptitude doit être collégiale avec la collaboration des cardiologues.

OC49

PSYCHOPHYSIOLOGICAL ASPECTS OF AIRCREW SPATIAL ORIENTATION DISTURBANCE IN MILITARY AVIATION.

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The problem of maintenance of aircrew spatial orientation is one of key problems of an aviation medicine now. According to representations developed to the present time, under spatial orientation it is necessary to understand constant and actively kept situational awareness of the pilot on a position and character of moving of an air vessel in space concerning a surface of the ground and other reference points which are taking place outside of an air vessel, and also about a condition and dynamics{changes} of change of separate parameters of flight connected to moving in three-dimensional space. The spatial desorientation is the condition of erroneous attitude control perception, that is erroneous sense of a position and movement concerning a plane of a surface of the ground.

According to the scientific views achieved now, it is possible to allocate the following principles of classification of a spatial desorientation: on the mechanism of occurrence - information, sensory (visual or vestibular-proprioceptive) or a psychological genesis; on a degree of an expressiveness (complete or partial), on feature of mental reflection in space (erroneous or true) and on a degree of realization (the fact of disturbance of spatial orientation is realized whether or not).

The most approved and generally accepted is classification on the mechanism of occurrence, in conformity with other principles, it is accepted to allocate with the Russian experts up to 8 types of a spatial desorientation while the American researchers manage three - 1, 2 and 3 types.

In research of mechanisms of a spatial desorientation the majority of authors now base on visual - vestibular model of realization of spatial orientation of the person. According to this model, spatial orientation is characterized at least by four variables, in this case four vectors in three-dimensional system of coordinates, namely: linear acceleration, linear rate, angle rate and sensation of a position concerning the gravitational vector, a termed subjective vertical. Owing to involving the various interactions, the specified four variables can variously be perceived and therefore, in part independently. When spatial orientation is carried out on the basis of all four vectors, it is complex process. The vestibular system estimates gravito-inertial force and angle rate whereas the visual system determines linear rate, a position and angle rate. The vestibular and visual signals describing rate, are summarized linearly. Separation of gravito-inertial forces on inertial and gravitational components occurs by means of the trochlea of a low pass filter submitted on the circuit (LP). Visually perceived rate and the acceleration integrated on time perceived by vestibular system, also are summarized linearly, however at dominance of the visual information. Vestibular and visual signals about a position correspond (are weighed) linearly and develop with idiotropic a vector.

In scientific - methodical aspect it is necessary to note, that now there are three basic approaches to studying mechanisms of a spatial desorientation of the pilot it is an analysis of results of investigation of

flying incidents, where took place a desorientation, these are researches of prevalence and an expressiveness of illusory sensations in flight, and also carrying out of experimental researches. Most frequently met vestibular illusions are illusion of a roll (up to 75 %), and also illusions connected with effect Coriolis and illusion of pitch up.

To most frequently met visual illusions should attribute loss of horizon of an atmosphere (up to 65 %), and also an inclination of horizon and a phenomenon of " a black hole » in night flight.

Taking into account an essential complicating of dynamic parameters of flight in perspective aviation technics, by us within the framework of lines scheduled have been started and now the experimental works directed on studying of psychophysiological mechanisms of occurrence of illusions of a spatial position as reflex vestibular and sensory reaction (mainly from otoliths) proceed at action complex{difficult} gravito-inertial forces.

The end result of definition of subjective spatial coordinates strongly differs at persons with preferably vestibular-proprioceptive and visual modality of perception. In the first case of illusion are expressed, but poorly changed from presence and character of visual reference points, and in the second - feebly marked at presence of adequate visual reference points and sharply grow in case of their absence. Thereof it is possible to assume, that in conditions of influence of G-loads, because of a lability of result of an estimation of subjective spatial coordinates, at pilots with preferably visual modality of perception it is necessary to expect high risk of disturbance of spatial orientation.

Appearing in conditions of G-loads of illusion of a spatial position are caused by a specific and adequate stimulation of the vestibular - proprioceptive device. Thereof acquaintance of the pilot with a characteristic spectrum of sensations at them in occurrence in ground conditions is possible to achieve only at carrying out of special psychophysiological training of the pilot on the dynamic simulators, allowing is greatest possible to model required physical parameters.

The comprehension of that a problem of conservation of spatial orientation of the pilot in conditions of action of dynamic factors of modern and perspective planes - fighters is practically insoluble without development of adequate dynamic simulators, has resulted in creation in the countries of the NATO separate and well provided material and financial resources of the given direction in system of psychophysiological training of pilots.

Thus an obligatory component of these dynamic simulators is the expanded system of visualization outer spaces due to modern projective systems or systems with a virtual reality, including operating modes with use of systems of night vision.

By present time two basic ways of rising of reliability of spatial orientation of the pilot were determined. The first is connected to perfection of means and ways of tool maintenance of spatial orientation of the pilot, that is with perfection of indication of a spatial position of an air vessel, and also controls of aircraft. The second - with development of methods and means of selection and professional training of pilots.

At the same time, some unsolved scientific problems of prevention of risk of a spatial desorientation in flight, and also potential aggravation of the given problem on perspective aviation technics, demands carrying out of some perspective scientific works.

OC50

THE CONCEPT OF PILOT PROFESSIONAL HEALTH PROTECTION

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At presence of some criteria of efficiency estimation of public health service different models, it becomes standard now to use as final criterion function condition of professional health and longevity of the attached contingent.

On the basis of existing theoretical development in the field of aerospace medicine, extreme medicine, professional health of persons of extreme professions should be surveyed as ability of an organism to keep set compensatory and protective mechanisms and to provide professional serviceability in all conditions of activity (Bugrov S.A., Ponomarenko V.A., 1987; Izmerov I.F., 1999, 2001; Ushakov I.B., 2002, etc.).

The concept of pilot professional health is based on two basic groups of factors - factors of flight performance and physiological systems participating in their influence realization.

Major factors of flight performance:

- Mechanical-acoustic: overloads, acceleration, vibration, noise;
- The changed gas medium and barothermal pressure: hypoxia, hyperoxia, hypercapnia, hypobaria, etc.;
- Temperature and microclimatic: hypothermia, hyperthermia, etc.;
- Radiations and fields: ionizing, non-ionizing;
- Toxic.

The separate and rather specific flight performance factor is information stress.

The basic physiological systems participating in realization of influence on flight performance factors:

- Locomotorium, secretory system and hydratational-electrolytic balance;
- Cardiovascular and respiratory systems;
- The central nervous and neuroendocrinal systems;
- Gastrointestinal tract;
- Hemopoietic and immune systems.

Interaction of these groups of factors can be considered on syndrome-similar conditions models, and basic level of realization of interaction - adaptable potential formation and maintenance. Now the preventive cascade concept of rising of person organism tolerance to the influence of unfavourable ecological, professional social factors is developed, thus a supertask of the concept realization - conservation of health and prolongation of professional longevity.

Main principles of the cascade are reduced to an estimation of injuring effects risks on the basis of exposition, absorbed and effective doses ratio. The given ratio is resulted in biological and chronological age interrelation. The base for construction of professional health concept is elements of human factor concept. The main component of system « Crew - aircraft - environment » - is aircrew. High efficiency and reliability of aviation system functioning is achieved only in condition of development of its components taking into account pilot characteristics. Otherwise there are conditions for erroneous action. The reasons of erroneous action can be caused both negative qualities of pilot, and disharmony of aviation system components to human factor characteristics.

Pilot negative qualities and properties show his individual characteristics (personal factor), and also a product of imperfection of aviation system components.

Prophylaxis of erroneous actions is perfection of components of aviation system which are responsible for flight personnel characteristics and determine the contents, organization and conditions of his activity, and also optimization of qualities and properties of separate pilots.

The basic directions of human factor safety increase, following from the preventive cascade concept of professional health conservation consist in the following:

1. Medical and professional selection.
2. The forecast (pre- and not nosological diagnostics, dynamic medical control, examination).
3. Normalization of factors, ergonomics of "man - machine" systems, protection (collective and individual).
4. Training and education, development of professionally important psychophysiological qualities, tolerance increase to factors.
5. Correction.
6. Restoration, rehabilitation.

The important direction of realization of ways of professional health increase is use of flight active safety systems. The onboard active system of flight safety is intended for rising safety of flights and efficiency of aviation complex by continuous monitoring of onboard systems technical condition of the plane and normal functioning of aircrew, its intellectual support in dangerous situations. Also it can be used by planes of civil aviation.

OC51

PHYSIOLOGICAL AND PATHOPHYSIOLOGICAL MECHANISMS OF DEVELOPMENT OF HUMAN EXTREME STATES IN CONDITIONS OF A GRAVITATIONAL STRESS

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The problem of studying of mechanisms of development of human extreme conditions and system engineering of life support and protection at action of factors of the physical nature - as area of scientific knowledge - concerns to the major fundamental and applied

problems of modern physiology and pathophysiology. It has found the reflection basically priority directions of development of fundamental science, in series of target scientific programs and technologies as in Russia, and abroad.

Appreciably it concerns and to a gravitational stress, i.e. a stress caused by action on an organism of gravito-inertial forces of various intensity and a direction.

Fundamental aspects of the decision of the specified scientific problem are quite obvious and connected to expansion of scientific knowledge as in a subject domain of pathological physiology (pathophysiology of influences of extreme physical factors on an organism, a problem of a resistance of an organism, a problem of disregulatory pathologies, a pathology of a circulation, respiration, a locomotorium), and in interfacing areas of a science - physiology, morphology, biochemistry, hygiene, labour medicine.

Applied character of the given problem is caused by appreciable economic and humanitarian damage from connected with consequences of a gravitational stress of accidents which reaches hundreds millions dollars and comparable with expenses of the budget for a lot of medical programs.

As a result of the carried out researches in conditions of subfull-scale and natural modelling with participation of testers - volunteers mechanisms of activity cardiovascular and respiratory systems, a locomotorium and sensory systems of an organism of the man are investigated at influence of a gravitational stress of limiting intensity, including impulsive character and a body of a resulting gravito-inertial vector changed concerning an axis.

According to a pathogenic principle specific and nonspecific mechanisms of development of extreme conditions in conditions of a gravitational stress are allocated. Specific caused by mainly gravito-inertial shift of tissues and parts of a body also are shown hemodynamic disorders, biomechanical and biodynamic reactions, neurophysiological and sensory reactions. Nonspecific are caused by the general mechanisms of development of a stress.

The most serious and threatening extreme conditions owing to hemodynamic disorders are the gravitational syncope, a limiting exhaustion of functional reserves of an organism, development of disorders of a cardiac rhythm and conduction, disturbance of functions of external respiration. Owing to adverse biomechanical and biodynamic reactions probably occurrence of acute pain syndromes in a spine. Sensory reactions are accompanied by an opportunity of development by physiologically caused illusions of a spatial position and partial or complete loss of spatial orientation of the pilot.

The received results testify, that with augmentation of an onset rates g-load more than 1.0 unit/sec its tolerance is essentially reduced. Dependence of decrease of G-load tolerance from onset rate its increase is nonlinear function and to the greatest degree of decrease occurs to augmentation of onset from 1.0 up to 2.0 unit/sec. At influence of g-loads of a complex profile, probably, owing to increasing fatigue and a cumulation of adverse effects is observed the decrease of tolerance time gravitational stress on 37% on the average.

As a result of the analysis of pathophysiological mechanisms of hemodynamic disorders in conditions of a gravitational stress of impulsive character has been proved dose-related approach to normalization of allowable levels of g-loads the "head - basin", taking into account not only the maximal size, but also rate of change and cooperative time of action of an g-load. On the basis of the given approach criteria of norm and a pathology in these conditions as for practically healthy persons, and persons with initially changed functional state of health and the reduced functional reserves have been proved.

It is shown, that in conditions of a gravitational stress development of an extreme state of the person can be caused not only manifestations of convertible functional hemodynamic disorders, but also morpho-functional damages of soft tissues of a locomotorium, mainly cervical part of a spine. For the prognosis of risk of development of such damages the method of an estimation of biomechanical resistance of a cervical part of a spine in conditions of a gravitational stress has been developed.

Most and up to the end a unsolved problem is essential distortion of a sensorial area of activity of the person - operator and occurrence of steadyproof illusions of a spatial position of a vestibular-proprioceptive genesis which character of display essentially becomes complicated at change of a position of a head of the examinee is complex.

As a result of researches integrated biomedical and mathematical criteria of an estimation and the forecast of a functional condition of cardiovascular and respiratory systems of an organism, biomechanical

and biodynamic reactions, sensory reactions have been offered on the basis of the data of biomedical monitoring limiting the human factor in aircraft of functions of an organism in extreme conditions of activity. The given criteria are realized at system engineering maintenance of vital activity and protection of an organism of the pilot in serial and perspective samples of aviation technics, and also in series guiding and normative documents.

Results of the carried out researches have not only especially applied value for an aviation medicine, but also allow to develop effectively of some fundamental scientific directions in the field of theoretical and applied physiology of a circulation, biodynamics of a body, neurophysiology and sensory physiology. So, the technology of controlled regimens of pressure developed during researches in protective antigravitational devices allows effectively and with smaller expenses to solve a problem of development of a method of contrapulse of the lower half of body for problems of resuscitation and an intensive care.

Results have special interest also for the decision of scientific problems of a physical stress and development of extreme states in these conditions. From these positions of research on studying pathophysiological mechanisms of development of human extreme states in conditions of a gravitational stress should be continued.

OC52

L'HEPATOSTAT

PR Michel Rignault

L'Hepatostat est un appareil de compression – modulable et résorbable qui permet de sectionner et de réséquer, en aval du dispositif, Une partie plus ou moins large d'un viscère plein.

Ce dispositif est avant tout destiné aux résections hépatiques, de l'hépatectomie large à la résection angulaire biopsique.

Il élimine, pratiquement, toute perte hémorragique significative et permet une réduction significative du temps opératoire.