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PAKISTAN ARMED FORCES MEDICAL JOURNAL

SGIC SUPPLEMENT

"The Challenge of Medical Response in Emergency Situations"

Surgeon General's International Conference 2016

The supplement is mainly based on the proceedings of Surgeon General's International Conference

held on April 28th – 30th 2016 at Army Medical College, Rawalpindi, Pakistan

Original Article

Pak Armed Forces Med J 2016; 66 (Suppl-2): S113-16

ORIGINAL ARTICLES

PATTERN OF SIGNIFICANT MUSCULOSKELETAL TRAUMA AT CMH NOWSHERA

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ABSTRACT

Objective: To observe the pattern of significant musculoskeletal trauma in a geographically restricted area in order to plan an effective management strategy.

Study Design: Observational study.

Place and Duration of Study: The study was conducted at Combined Military Hospital Nowshera from October 2009 to August 2011.

Material and Methods: All patients, irrespective of age and sex, reporting with significant musculoskeletal trauma requiring surgical intervention were included in the study. All those cases which did not require surgical intervention like fracture clavicle, one part fracture of upper humerus, undisplaced minor fractures were excluded. Data was recorded and descriptive statistics were used to analyze the data.

Results: A total of 330 cases of musculoskeletal trauma comprising 301 cases of fractures and 29 cases of joint dislocations were managed at Combined Military Hospital Nowshera during the above mentioned period. Age ranged from 1 year to 80 years, mean age being 32.42 (SD= 20.925) with male to female ratio of 4:1. Tibial shaft fractures were the commonest in young adults whereas fractures of lower radius were commonest in elderly population. The injuries were managed by closed means or by open surgeries and fixation as found most suitable.

Conclusion: In our setup major portion of musculoskeletal trauma is due to road traffic accidents especially due to motorcycle accidents followed by injuries during physical activities. Appropriate preventive measures including provision of adequate public transport, discouraging over speeding during motorcycling and strictly obeying traffic rules should be an integral part of health policy to reduce significant musculoskeletal trauma. Similarly proper prior training and gradual buildup of strenuous physical activities during military courses can also reduce the number of these patients. While establishing medical setups the distribution of musculoskeletal injuries should be kept in mind with regard to provision of equipment, implants and training of orthopedic surgeons.

Keywords: Musculoskeletal trauma, Pattern.

INTRODUCTION

In today's mechanized world musculoskeletal trauma has gained major importance as a health care problem[1]. It is expected that approximately one fifth of the entire universal burden of disease is due to trauma[2]. It's appropriate management would help a great deal in improving general health standards. Although many of the exact safety and injury treatment technologies may not be transferable to third world countries such as ours, the overall scientific approach to injury prevention could be[3].

To plan an effective strategy one must be aware of the pattern of such trauma in a particular area. Despite the toll from injury, scarce attention has been paid to the problem. Although a tremendous amount of resources are consumed caring for injured patients at hospitals throughout the developing world, minimal attention has been directed towards better understanding of cause of injury, its prevention

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and systematic efforts to improve trauma management system. The amount of funding devoted to such efforts is a small percentage of that allocated to other health problems in the developing countries[4]. Studies have been carried out to establish the pattern of trauma with population based incidence data is lacking[8]. In the following study distribution of significant musculoskeletal trauma i.e. the one requiring surgical intervention reported to C.M.H. Nowshera is presented. CMH Nowshera is the major hospital of the area which receives injuries

Table-1: Showing distribution of musculoskeletal trauma (fractures).

Bodya reas affected	Regions affected	Adult cases	Paediatric cases
Lower Limb Adults= 37.6% Children= 5.5%	Ankle	4 (1.21%)	Nil
	Tibial Shaft	64 (19.4%)	3 (0.91%)
	Tibial Plateau Fracture	4 (1.21%)	Nil
	Patella	4 (1.21%)	Nil
	Distal Femur	4 (1.21%)	Nil
	Shaft of Femur	14 (4.24%)	14 (4.24%)
	Neck of Femur(Intracap)	4 (4.24%)	Nil
	Neck of Femur(Extracap)	6 (4.85%)	1 (0.3%)
	Total	24(37.58%)	18 (5.45%)
Upper Limb Adults= 24.2% Children= 10.9%	Fractures Around the Shoulder	5 (1.51%)	Nil
	Fractures of the Humeral Shaft	11 (3.33%)	3 (0.91%)
	Distal Humeral Fractures	3 (0.91%)	11 (3.33%)
	Radius and Ulna	14 (4.24%)	21 (6.36%)
	Fractures of the Distal Radius	44 (13.33%)	1 (0.3%)
	Fracture of radial shaft	3 (0.91%)	-
	Total	80 (24.24%)	36 (10.91%)
Foot Adults= 4.2% Children= 0%	Calcaneum	4 (1.21%)	Nil
	Talus	3 (0.91%)	Nil
	Metatarsals	7 (2.12%)	Nil
	Total	14 (4.24%)	Nil
Hand Adults= 8.5% Children= 0.3%	Carpal Bones	4 (1.21%)	Nil
	Thumb	5 (1.51%)	Nil
	Four Medial Metacarpals	2 (0.7%)	Nil
	Phalanges	17 (5.16%)	1 (0.3%)
	Total	28 (8.49%)	1 (0.3%)

Table-2: Distribution of joint dislocations.

	Regions Affected	Adult cases	Paediatric cases
Joint Dislocations Adults= 8.8% Children= 0%	Hip	5 (1.51%)	Nil
	Ankle	1 (0.3%)	Nil
	Shoulder	15 (4.57%)	Nil
	Elbow	5 (1.51%)	Nil
	Wrist	1 (0.3%)	Nil
	Metacarpophalangeal and Interphalgeal joints	2 (0.6%)	Nil
	Total	29 (8.79%)	Nil

regards to a particular activity like sports or pertinent to a specialized age group[5-7]. Musculoskeletal trauma represents a considerable global health burden, however, reliable

from training centers located in Mardan, Risalpur and Nowshera. It also caters for the military families residing nearby. This study will add significantly in evolving a cost effective health

care strategy in this area with regards to musculoskeletal injuries.

MATERIAL AND METHODS

This observational study was carried out at Combined Military Hospital Nowshera over a period from October 2009 to August 2011. Patient's sampling was done by consecutive non probability sampling technique. A total of 330 patients were included in the study. Operation room record of CMH Nowshera was scrutinized and all those cases of musculoskeletal trauma requiring surgical intervention were included. While all those cases which did not require surgical intervention like fractures of clavicle, one part fracture of upper humerus, undisplaced minor fractures etc were excluded from the study. All cases who presented and were treated in other hospitals initially were also excluded from the study. Record of all these cases was scrutinized to find the type and distribution of musculoskeletal trauma. Data was arranged according to the type of trauma like fractures or joint dislocations. The region wise distribution of trauma was also noted. Adult and pediatric trauma was separately listed. All the collected data was analyzed in SPSS version 17.0. Mean and standard deviation was calculated for quantitative variables like age. For qualitative variables like gender, type of trauma and region wise distribution, frequency and percentage were calculated.

RESULTS

A total of 330 cases of musculoskeletal injuries were managed in operation theatre at CMH Nowshera from October 2009 to August 2011. Out of these 330 cases, 301 (91.21%) cases presented with fractures while 29 (8.79%) cases were having joint dislocations. Age ranged from 1 year to 80 years, mean age being 32.42 (SD= 20.925). Distribution of patients by gender shows 264 (80%) were males and 66 (20%) females with male to female ratio of 4:1. Musculoskeletal injuries in adults were 275(83.33%) whereas pediatric cases were 55(16.67%). The region wise distribution of these musculoskeletal injuries is shown in the tables-1 and 2.

Musculoskeletal injuries of upper limb were 168 (50.91%) while lower limb injuries were 162(49.09%). Out of the upper limb injuries, the most common was fracture of distal radius i.e. 45 (13.64%). Tibia was the most commonly affected bone in lower limb, seen in 71 (21.51%) cases. This injury mainly resulted from motorcycle accidents. Fracture of the distal radius was the second most common injury in our patients mainly due to fall on outstretched hand. This was seen in adults as well as in elderly population. Sports, pelvic and spinal injuries were not very common in our study. Joint dislocations occurred only in adult patients, shoulder joint dislocation being the most common, occurring in 15(4.57%) patients. The other joint dislocations are shown in table-2. They were treated by closed means or by open surgeries and fixation as required.

DISCUSSION

Musculoskeletal trauma is emerging as a major health care problem in today's mechanized world[1]. Its importance is further increased by the fact that it affects the most active population of the society[3]. If it is not managed appropriately it leads to lingering problems which is very detrimental to the individuals, their family members and the society. Its pattern varies in areas. In our setup due to large influx of motor cycles and very poor traffic control system, this pattern is different as compared to other areas where sports injuries are more prevalent[5]. In a local study, fractures comprised 94.3% of musculoskeletal trauma while joint dislocations were seen in 5.7% of cases[9]. Of those cases with fractures, 62.3% were closed and 32% were open fractures. Lower limb injuries (53.64%) were found to be the commonest followed by upper limb (44.73%) and spine (1.61%)[9]. In another study, there were 99% people who presented with fractures and 1% with dislocations[10]. These results are comparable with the pattern presented in our study. According to the frequency of a certain pattern we can evolve a cost effective

health care strategy where specialized care for a certain pattern could be allocated to a specific setup. That setup could focus on that pattern and repeated doing would improve the outcome. Similarly specialized equipment which is very expensive, like for spinal surgery and pelvic surgery could be reserved for specialized centers. This would certainly improve the cost effectiveness. Appropriate measures i.e., provision of adequate public transport, discouraging over speeding during motorcycling and strictly obeying traffic rules should be an integral part of health policy. Similarly proper training during military courses can also reduce the number of musculoskeletal injuries.

CONCLUSION

In our setup major musculoskeletal trauma is the result of either road traffic accidents or injuries sustained during military training. Road traffic accidents are especially due to motorcycle accidents which have suddenly increased out of proportion due to acute shortage of public transport and availability of motorcycles on installments. Tibial fractures share the major chunk of these injuries due to both road traffic accidents and injuries occurring during military training activities. In case of children the major cause is fall on outstretched hand resulting in high number of forearm and lower humeral fractures.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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Original Article

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EXPLORATION OF WAR WOUNDS IN SUSPECTED VASCULAR INJURIES IN A COMBAT SUPPORT, "B" CLASS MILITARY HOSPITAL

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ABSTRACT

Objective: To study the role of surgical exploration for vascular damage in penetrating war wounds, in the absence of diagnostic facilities.

Study Design: Descriptive/observational

Place and Duration of Study: Combined Military Hospital Kohat, Pakistan, from 4th Aug 2009 to 31st Dec 2011.

Material and Methods: All wounded military personals having penetrating wounds with expected vascular injuries with positive soft signs were included in the study. Patients having abdominal, thoracic, intracranial vascular injuries, mangled limbs, and positive hard signs were excluded from the study. The debridement incision was extended to exclude the vascular injuries in the proximity of wound. The facilities like Doppler, Duplex scanning, angiography, and CT Angiography, is not available in this "B" Class Hospital.

Results: Total 58 patients were received with expected vascular injuries. Nine were excluded and only 49 fulfilled our criteria. They were all male mainly young patients ranging age 18-45; with mean age 28.5 years (SD:7.65). Gunshot wounds caused 42(86%), splinters 6(12%) and stab 1(2%) injuries. Region wise injured vessels were lower limb 27 (55%), upper limb 14(29%), face and neck 7 (14%), genitalia 1 (2%). Out of 49 explorations, 30(61%) vessels were found injured, so negative exploration was 19 (39%). Amongst injured vessels fourteen (47%) were repaired and sixteen (53%) were ligated for haemostasis. In 5(17%) patients reversed autogenous venous graft was applied, and in 9(30%) patients end to end anastomosis/lateral repair was done. Postoperatively there was no amputation, two (6%) vessels thrombosed needed redo, and 5(16%) got infected.

Conclusion: In combat trauma, Exploration of vessels still remains a good option in "B" Class hospital, not having diagnostic facilities, and travelling time to "A" Class hospital is expected to increase warm ischemia time.

Keywords: Blast injuries, Combat trauma, Extremity, Gunshot injuries, Military trauma, Penetrating wounds Vascular injuries, Vascular repairs.

INTRODUCTION

Hemorrhage in vascular injuries remains a leading cause of potentially preventable death on the modern battlefield. So dealing with vascular trauma has a peculiar importance in the life and limb saving effort at war front. Warm ischemia time is an important deciding factor in the outcome of vascular injuries. Transportation of casualties from front line to base hospital is not a simple task especially when combat is going on. Luckily Pak Army has facility of helicopter evacuation along with efficient ambulance services. War casualties are given top priority. Although Amputations and vascular ligations were being done even before the World Wars, but trend has changed in Korean and Vietnam Wars due to early evacuation which enabled the surgeons to repair and apply autogenous graft for revascularization. Our past goal of saving ''life over limb'' has been shifted to the current goal of saving both ''life and limb" because of modern advances in critical care, damage control surgery, military armor technology, availability of

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diagnostic techniques and prosthetic grafts[1]. Still in "B" Class hospital diagnostic facilities do not prevail, and further transfer to "A" Class facility will waste precious time. We are left with one of the choices either wait and watch or explore.

MATERIAL AND METHODS

This study was designed as descriptive/observational. It was carried out in CMH Kohat from 4th Aug 2009 to 21st Dec 2011. All wounded military personals having penetrating wounds with expected vascular injuries with positive soft signs were included in the study. Patients having abdominal, thoracic, intracranial vascular injuries, mangled limbs, and positive hard signs were excluded from the study. Total 58 patients were received with expected vascular injuries. Nine were excluded and only 49 fulfilled our criteria. All war affected casualties were entered into a data base registry prospectively. Along with demographic data, Specific patterns of injury, mechanism of vascular injury, site and type of vessel injured, and the presence of any associated trauma were recorded. Clinical assessment noted in the form of hard and soft signs. Table-1. Vascular repairs were analyzed by the type of repair performed. The initial outcome, including the need for amputation was recorded. Primary care was delivered at scene by paramedics and medical officers in field. The vascular surgeries were being carried out by General and Orthopedic surgeons because no vascular surgeon is available in this "B" Class Hospital. Vascular surgery care is provided at CMH Rawalpindi "A" Class Hospital. "B" Class Hospital does not have facility of Doppler, duplex scanning, angiography and CT Angiography. Our study of exploration of vascular injuries is purely based upon clinical assessment, means soft signs of vascular injuries. As all patients had penetrating injuries, so wounds were opened for debridement. The wounds were extended slightly more to have a look upon vessels in the bullet/splinter tract. Vascular injuries associated with bone fractures, bones were stabilized first. Bleeding branches of main vessels, and vessels supplying the areas having good collateral circulations were ligated. Rents in major vessels were primarily closed and defects were repaired with autogenous reverse venous grafts. All wounds were considered contaminated, and coverage of the arterial repair with local healthy tissue flaps was used to reduce the risk of arterial rupture. Data was analyzed on SPSS.20.

Table-1: Showing signs of vascular injuries.

Hard signs	Soft signs
1. Active hemorrhage	1.Proximity of wound to major vessels
2. Large expanding / pulsetile hematoma	2.History of Hemorrhage / Shock
3. Bruit / Thrill over wound	3.Non Expanding Hematoma
4. Absent palpable pulses distally	4.Diminished pulse compared to contra lateral
5. Distal Ischemic manifestations (pallor, pain, paralysis, paresthesia, pulselessness, poikilothermia).	5. Anatomically related nerve injuries/bone fractures.

Table-2: Soft signs and complications in vascular injuries.

Nomenclature	Detail	Numbers	Percentage
Soft signs	Proximity of wound to major vessels	49	100%
	History of Hemorrhage / Shock	35	71%
	Non Expanding Hematoma	10	20%
	Diminished pulse compared to contra lateral	49	100%
	Anatomically related nerve injuries/bone fractures.	28	57%

RESULTS

During 2years and 5 months, 612 war causalities were operated in CMH Kohat. There were 58 patients who presented with penetrating war wounds with signs of vascular injuries, 9 patients were excluded (6 had amputations, and 3 had thoracic/abdominal vascular injuries), only 49 patients were included in this study. All personals were male with age ranging 18-45; mean age was 28.5 years (SD:7.65). Main cause of injury was gunshot wound (GSW), followed by Splinters and Stab.Fig-1.

Maximum injuries were seen in lower extremity (55%) followed by Upper extremity (29%), neck (14%), and genital (2%) regions. [Fig-2] Soft signs found in patients were shown in Table-2.

Out of 49 patients, 30 (61%), had vascular injuries. Negative exploration was only In 19 (39%). Amongst injured vessels, 14 (47%) were repaired/grafted, and 16(53%) were ligated for haemostasis. Amongst 14 repaired/grafted vessels, 5 (17%) patients grafted with reversed autogenous venous graft, and 9 (30%) vessels were repaired end to end anastomosis/lateral repair.Fig-2.

Repaired vessels included 6 upper limbs, 6 lower limb, one each for facial and genital vessel. Amongst all injured vessels, we had 17(57%) pure arterial, 3(10%) venous and 10(33%) mixed vascular injuries. Two patients needed fasciotomy following vascular repair. Bone fractures were associated with vascular injuries in 24 (80%) patient.

Postoperatively no patient ended up in amputation but we had two thrombosis. In one patient emboli lodged in distal vessel, leading to ischemia of supplying compartment but limb was saved with compromised blood supply. Second patient had thrombus at vascular anastomosis; patient was referred to "A" Class hospital for extra-anatomical bypass grafting. Infection rate was (n=5, 16 %), because of potentially infected penetrating war wounds. Most of infections settled down with antibiotics and did not affect vascular repairs.

DISCUSSION

The ongoing military conflict on our western border has lead to thousands of combat casualties. Diagnosis and management of occult vascular injuries is utmost important because it contributes a lot to the life and limb saving effort in these wounded soldiers. The study found that the rate of vascular injury in modern combat is 5 times higher than in previous wars and varies according to operational tempo, mechanism of injury, and type of war[2]. Management of war vascular trauma is different than peace, due to large numbers of the wounded, shortage of expert vascular surgeons, and resources[3]. We studied only combat penetrating trauma, even in civil 94.4% vascular injuries are because of penetrating wounds[4]. The injured patients in combat trauma are usually young patients; our mean age was 28 where as average age in Iraq

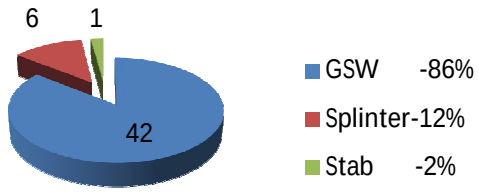

Figure-1: Causes of combat vascular injuries.

and Afghanistan wars was 29 years[5]. Regarding pattern of injuries we had maximum patients of GSW 86% followed by splinters 12%, stab2% where as in Iraq-Afghan War Fox CJ et all had 64% explosive device and 25% with GSW and in world war II, Korean and Vietnam war >64% of vascular injuries were of IED. The distribution of injuries in our study was lower extremity n-27(55%) followed by Upper extremity n-14(29%), neck n-7(14%), and genital n-1(2%) regions. Distribution in Iraq-Afghan war was 51% lower extremity, 39% upper extremity, 7% neck and 3% pelvis[5]. We had 80% of vascular injuries

associated with bone fractures where as in Iraq war 1/3 rd(33%) of vascular injuries were associated with fractures[3]. We had 17(57%) pure arterial, 3(10%) venous and 10(33%) mixed vascular injuries, where as other centers showed 76.3% arterial and 23.7% venous injuries[6]. We explored all the cases who had soft signs of vascular injury, our positive exploration rate was 61%. Other surgeons in Pakistan had probably the same setup so they also advocated exploration[7,8]. Angiography was found positive in 68% of patients with diminished pulse (soft sign)[9]. Military explosives with splinters produce deep cavitational effect leading to lot of dead tissues with segmental arterial loss. This will need thorough debridement before vascular repair. In missile fragment like gunshot and stab wounds arterial laceration is common. Mobilization of the arterial end in a young patient with non disease arteries often allows the construction of a tensionless primary arterial repair[10]. In most cases in which the injured segment is 1 cm or less, dissecting and freeing edges and performing a primary anastomosis is frequently possible[2]. Development of compartment syndrome in vascular repair is a devastating complication, immediate fasciotomies are recommended if there is a significant arterial injury or a mixed arterial/venous injury[11,12]. We had 2 fasciotomies following vascular repairs. Limb loss in World Wars due to vascular injuries were 40% which reduced to 15% in late Korean and Vietnam wars, because of introduction of autogenous grafting[2]. Generally, the science and understanding of injury and its therapy are continually improving. The decrease rate of amputations is because of damage control surgery. The forward area surgeons have switched over to temporary vascular shunts and fasciotomy instead of ligation and application of tourniquet[13]. Narrow pre hospital tourniquet are replaced with pneumatic tourniquet, and extra luminal balloon tamponade are used for temporary haemostasis[11]. The use of tourniquets, especially those left for prolonged periods, markedly increases the incidence of amputation of an injured extremity[2]. During World War II: Popliteal artery injuries were routinely ligated with an amputation rate of 73%, which reduced to 32% in Vietnam War because of arterial repair procedures[14]. Warm Ischemia of striated muscles >4-6 hours leads to myonecrosis and major amputations[14,15]. In a combat setting the decision between limb salvage and amputation requires mature surgical judgment which depends upon the location,

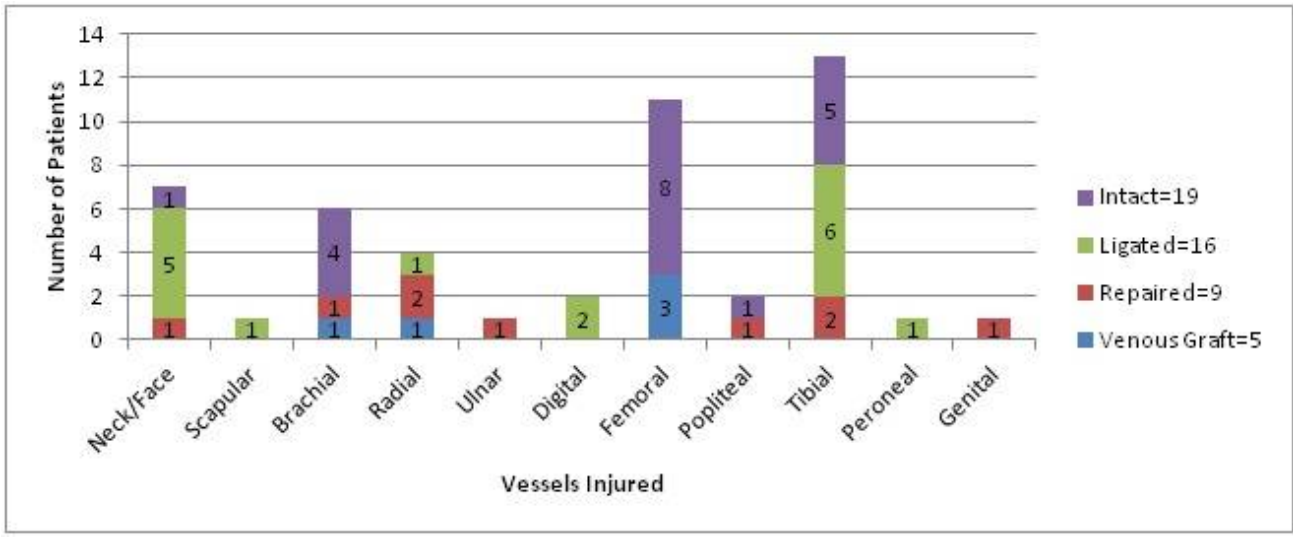

Figure-2: Anatomical distribution of vascular injuries.

available resources, severity of injury, and, overall condition of the patient. Distal pulses may be intact in 20% of cases of arterial injuries[14]. Duplex is highly operator dependent and may fail to detect all arterial injuries. The liberal application of arteriography provides high-yield data in the vascular evaluation of extremities injuries[16]. CT Angiography is reported to have a sensitivity of 95.1% and specificity of 98.7%[17]. On the basis of war experience using prosthetic grafts for combat injuries is uniformly associated with poor outcome, and their use is to be discouraged[5,18]. Vacuum dressings have expedited the wound closure, which reduces the requirement of rotational flaps or split thickness graft[11].

CONCLUSION

Exploration of vessels still remains a good option in "B" Class hospital, not having investigating facility, and travelling to "A" Class hospital is such that it increases warm ischemia time. Wait and watch policy can be adopted if hospital setting is supported with diagnostic tools like Doppler, duplex, angiography and CT Angiography.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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Original Article

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THE PATTERN AND FREQUENCY OF POST TRAUMATIC STRESS DISORDER IN SURVIVORS OF A TERRORIST ATTACK

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ABSTRACT

Objective: To find the pattern and frequency of post-traumatic stressdisorder insurvivors of terrorist attack and its association with socio demographic factors.

Study Design: Description cross- sectional.

Place and Duration of Study: Armed Forces Post Graduate Medical Institute (AFPGMI) Rawalpindi, from Oct 2010 to Dec 2010.

Material and Methods: A descriptive cross sectional study was conducted in a military residential area in Rawalpindi ten months after the terrorist attack on Parade Lane mosque on 4 December 2009. Non-probability convenient sampling technique was used to select a sample of 30 survivors of the terrorist attack. After taking informed written consent the data was collected using Urdu version of psychometric tools ,Impact of Event scale Revised (IES-R) and General Health Questionnaire (GHQ-28). Data was entered and analyzed using SPSS version 20.

Results: The study sample comprised of 19 males, 2 females and 9 children present in the vicinity of the mosque during the attack. Mean age of the respondents was 27 + 1.54 years. 6 respondents had primary and secondary level education respectively, 10 (33.3%) were matriculate, 3 (10%) were graduates whereas only 5 (16.7%) were master's degree holders. Married and unmarried were 17 (56%) and 13 (44%) respectively. 17(56.7%) survivors were injured and 13(43.3%) were uninjured during the terrorist attack. The frequency of PTSD positive individuals was 19(63%) and of PTSD negative individuals was 11 (37%) even 10 months after the terrorist attack. The children included in our study showed a higher frequency 8(90%) of PTSD than adults 11 (53%) whereas serving military personnel had lower frequency 1 (10%) of PTSD. The association of injury and PTSD is significant (p= 0.009) at 95% confidence level.

Conclusion: There was a high frequency of post-traumatic stress disorder was 19 among survivors of the terrorist attack ten months after a terrorist attack.

Keywords: PTSD, Survivors, Terrorism.

INTRODUCTION

Terrorism has occurred throughout the history but world experienced a global rebirth of terrorist attacks especially after the devastating attacks of 11 Sep 2001 in New York .The word 'terror' derives from the Latin 'terrere' meaning to frighten[1]. Although these events caused colossal loss of human life and infrastructure but the psychological impact of these terrorist attacks have been unprecedented.

The W.H.O. estimated that, in the situation of terrorist attacks throughout the world "10% of the people who experience traumatic events will have serious mental health problems and another 10% will develop behavior that will hinder their ability to function effectively[2]. The most common conditions are depression, anxiety and post-traumatic stress disorders. Post-traumatic stress disorder (PTSD) is one of the most frequent and debilitating psychological disorders documented in the aftermath of ma made disasters such as terrorism[3]. The point prevalence of PTSD in the

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general population, according to Global Burden of disease is 0.37%[4].

Posttraumatic stress disorder is an anxiety disorder that is the direct result of exposure to a traumatic event(s). The fourth edition of the Diagnostic and Statistical Manual (DSM-IV-TR) states that the characteristic symptoms of PTSD are grouped into three clusters re-experiencing the event, avoidance of reminders of the traumatic event, and hyper arousal[5].

Pakistan is a frontline state in the global war against terrorism Pakistan was not unfamiliar to terrorist activities even prior to 9/11, but its decision to participate in the "Global War on Terror" (GWOT) as a state policy exposed it to renewed and heightened activity of terrorist outfits. There has been a steady rise in terrorist acts especially suicide bombings over the past decade in Pakistan. The mortality and morbidity due to these terrorists' attacks have been unprecedented.

This study was conducted in the after math of one of the worst incidents of terror in which armed militants stormed a mosque during Friday prayers in Rawalpindi's secure military residential area.Nearly 150 people were offering their prayers inside the mosque. The attackers scaled a high brick wall by using a ladder and landed among the worshippers. They killed at least 40 people, almost half of them children and military officers, and wounded over eighty others before being gunned down by security forces after an hour long battle. The attack was carried out in such a way as to maximize the severity and length of the psychological impact

Taking this into account, the current study seeks to investigate the frequency and patterns of Posttraumatic Stress Disorder in individuals exposed to a human made disaster and their characteristics in terms of demographic variables. Furthermore, the present research seeks to demonstrate the focus on long term psychological consequences of a terrorist attack.

Table 1: Demographic details of the survivors (n=30).

Variables	Groups	Frequency (%)
Mean Age + SD	27.6 +1.54	
Gender	Male	19 (63.3%)
	Female	2 (6.6%)
	Children (Male <12)	9 (30%)
Educational Status	Primary	6 (20%)
	Secondary	6 (20%)
	Matriculation	10(33.3%)
	Graduation	3(10%)
	Masters	5(16.7%)
Occupation	Employed	14(46.7%)
	Unemployed	16(53.3%)
Injury	Injured	17 (56.7%)
	Uninjured	13(43.3%)

MATERIAL AND METHODS

A descriptive cross sectional study was conducted in a Military Residential Area in Rawalpindi ten months after the terrorist attack on Parade Lane mosque in December 2009. Non-probability convenient sampling technique was used to select a sample of 32 survivors of the terrorist attack. All the survivors were approached by the researchers, 2 declined to participate in the study so there was response rate of 93%. Participants were selected on the basis of inclusion criteria that were those who were present within the vicinity of the Mosque

during the attack. The survivors who were unwilling to participate were excluded from the study. The data collection tool were psychometric tools which were Impact of event scale Revised (IES-R) and General Health Questionnaire (GHQ-28). The researcher visited the houses of the participants for the purpose of collection of data after approval of ethical committee at the Armed Forces Post Graduate Medical Institute . Informed verbal consent was taken from the participants.

level education respectively, whereas only 5 (16.7%) were master's degree holders and 3 (10%) were graduates .Married and unmarried were 17 (56%) and 13 (44%) respectively. Regarding employment 16 (53.3%) were employed and 14 (46.7%) were unemployed. In this cohort of survivors 6 (20%) were serving military personnel, 19(63%) were family members of serving officers whereas there were 5 (16%) civilians. 21 (70%) of the survivors were present inside the mosque at the time of the terrorist

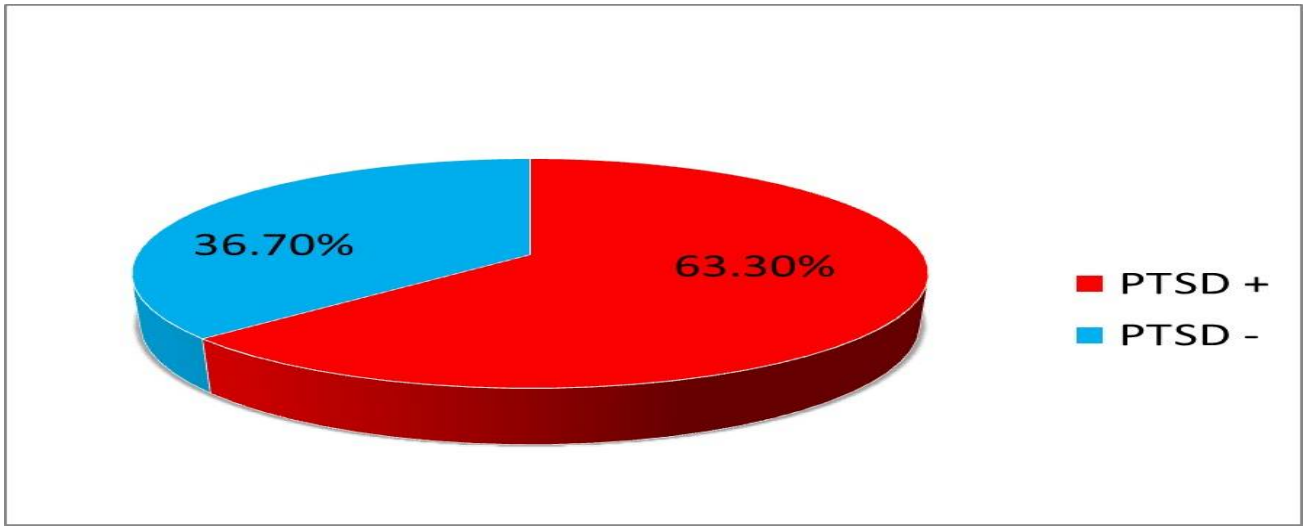

Figure-1: Frequency of PTSD among survivors of terrorist attack (n=30).

Data was entered and analyzed using Statistical package for Social Sciences (SPSS) version 20. Data including variable such as education, marital status were presented in the form of frequencies and percentages. Chi-square test of significance with 95% confidence level was used to find association between demographic variables such asage, gender, injury with PTSD.

RESULTS

The study sample comprised of 19 males 2 females and 9 children who were present at the mosque and around its vicinity at the time of the attack and witnessed the attack first hand. Mean age of the respondent was 27 + 1.54 years. The mean age of the children in the sample was 10 +1.2 years. 10 (33.3%) respondents were matriculate, 6 (20%) had primary and secondary

attack, 5 (16.7%) were within the vicinity of the mosque and on the road at the time of the attack respectively. About 17 (56.7%) survivors were injured during the terrorist attack and 13(43.3%) were uninjured during the terrorist attack. As far as the first exposure to terrorist attack 21(70%), felt the blast, 5 (16.7%) saw the blast and 4 (13.3%) heard the blast.

The mean score of the survivors on the Impact of Event (IES-R)scale was 24.8 +9.7(Range 7- 48). The mean IES-R score of the survivors inside the mosque was 27+ 1.4 and within the vicinity of the mosque was 18+6.3.

The frequency of PTSD positive individuals was 19(63%) and that of PTSD negative individuals was 11(37%) as shown in fig-1 even 10 months after the terrorist attack. The most

frequent symptom in the participants that were PTSD positive was avoidance8(43.3%) and the least frequent symptom was hyper arousal 4 (24.18%) whereas re-experiencing the event was 7(31.68%) [fig-2]. The children included in our study showed a higher frequency 8 (90%) of PTSD than adults 11 (53%) whereas serving military personnel had lower frequency 1(10%) of PTSD. The association of injury and PTSD is significant (*p*= 0.009) at 95% confidence levelThere was no significant association between education (*p*= 0.6), marital status (*p*= 0.09) and

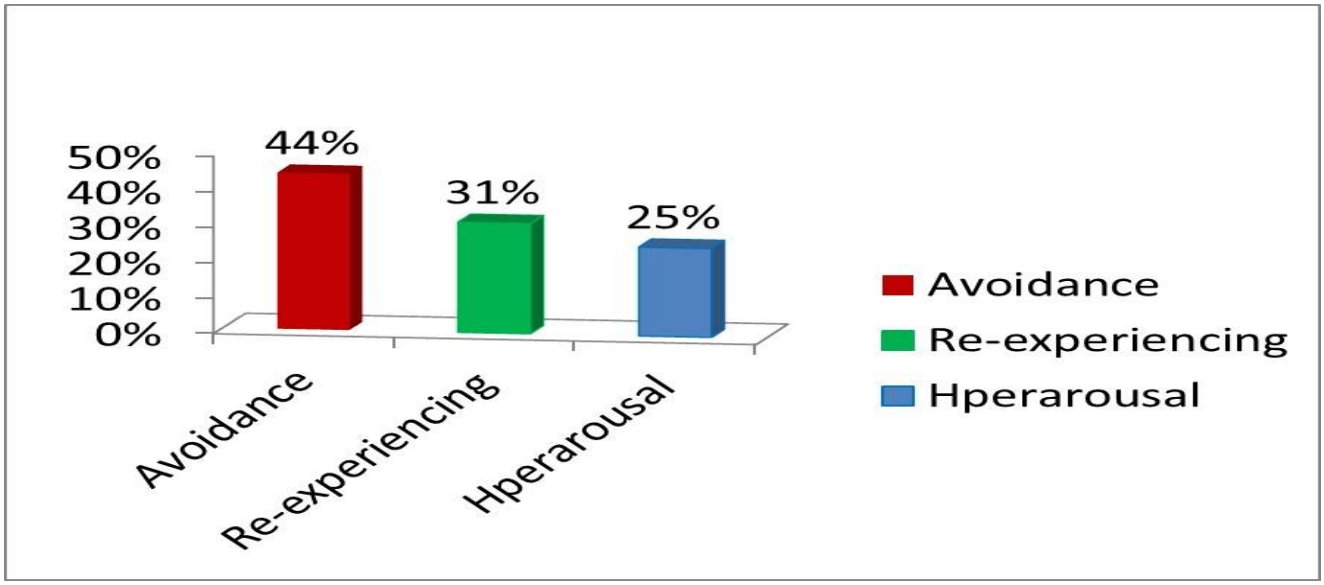

Figure-2: Frequency of symptoms of PTSD in survivors of a terrorist attack (n=30).

PTSD found in our study. Among the married survivors 12(70.6%) were PTSD positive while 5(29.4%) were PTSD negative. In the unmarried 3(23.1%) were PTSD positive while 10(76.9%) were PTSD negative. The PTSD positive in this cohort of survivors as far as the educational status was concerned was 3(50%) having primary and secondary education respectively, 6(60%) matric, 2(66.7%) graduate and 1(20%) Master's degree holder.

DISCUSSION

This descriptive cross sectional study revealed that the majority of the study population exhibited features of Post-Traumatic Stress Disorder even after nine months of the terrorist attack.However, estimates of the overall prevalence of PTSD after terrorist attacks range from 7.5% to 50%in the year after the event depending on the degree of victimization[6,7].

Our study population therefore has shown one of the highest reported figures (63%). It is twice the frequency reported (31%), in a study done after two years on the victims of a terrorist attack in France[8] The frequency of PTSD is also higher than the prevalence rates in Pentagon employees two years after the 9/11 terrorist attack (41%)[9].

The higher rates of PTSD seen in our sample could be on account of the ongoing threat and recurrence of terrorist activities that the population is exposed to in the interim period. The affected population was secondarily getting affected by other terrorist actions in the city of Rawalpindi, the twin city of Islamabad and in other parts of the country. This ripple effect of trauma has been described by Alexander and Klein[10]. The fact that the residents of Parade Lane continued to live in the same environment or in the vicinity of the terror inflicted mosque may have resulted in higher frequency of PTSD. This however is controversial as revisiting the site of

initial exposure can also enhance resilience and help treat the severity of symptoms of PTSD[11].

The most frequent symptom in the sample was avoidance (44.14%) and the least frequent symptom was hyper arousal (24.18%) The survivors constantly avoided going to the mosque or passing in front of it. In our sample the chronic physiologic hyper arousal to stimuli reminiscent of the trauma was also a feature of the trauma response. These findings were also in line with previous research[12].

Direct exposure to the attack was associated with a higher frequency of probable PTSD and significant levels of distress that persisted for more than nine months. The degree of exposure has been predicted as an important variable in several studies on effects of terrorist attacks. The prevalence of disorders among the directly exposed was 34.4%, whereas the prevalence among the not directly exposed was, PTSD (5.2%). This is similar to studies on the subject[13]. The severity of injury was related to posttraumatic stress disorder as 64.9% of injured survivors developed PTSD consistent with other studies showing the importance of injury severity include This study reaffirmed the fact that witnessing a close relative dying or sustaining serious injuries made the person more vulnerable to have PTSD[14].

The children included in our study showed a higher frequency (90%) of PTSD than adults (53%). A majority of children developed an obsession with trauma details, became hyper vigilant and more aggressive, experienced concentration problems and distractibility. The incidence of Post-Traumatic Stress Disorder among child survivors of specific disaster ranges from 30-60%[15,16]. The high frequency in our sample is also due to the physical proximity to the attack site and due to the increased parental trauma related distress following the attack, as a large no of parents of such children were indirectly exposed to this terrorist attack as they were living in the same vicinity. It affected the parent's capacity to create a post trauma climate of safety and security.

Although the study provides a better understanding of how demographic characteristics contribute to PTSD but it has certain limitations. The sample size was very small so diversity in terms of characteristics could not be achieved. However, this shortcoming is shared by many studies with the exception of the investigation of the responses of 2000 schoolchildren to the Oklahoma bombing[17], no large, randomized study of PTSD after a terrorist attack had been conducted until the telephone and internet surveys conducted after the New York 11 September[12] . Convenience sample was obtained due to which there is lack of randomization. The profile of the resulting cohort was skewed towards highly exposed, educated able bodied professionals .Participants were selected from one organization and majority were male so the role of gender in terms of high or low level of post-traumatic stress disorder could not be established.

CONCLUSION

It was concluded that there was a high frequency of post-traumatic stress disorder among the survivors ten months after a terrorist attack .The findings of the study this suggest that there is a dire need for emergency psychiatric management and long term psycho social rehabilitation of the survivors after the occurrence of such violent acts of terror.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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Review Article

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REVIEW ARTICLE

DISASTER MANAGEMENT – SURGEON'S PERSPECTIVE

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Disasters have haunted humans since the dawn of their existence. Not only hundred and thousands of lives are lost, they also disrupt the fabric of society. Disasters both natural and manmade have increased during the last few years[1]. Pakistan is faced with both of these forms of disasters. Floods occur nearly every year; earthquakes have also claimed thousands of lives and disrupted the social infrastructure. In the earthquake of 2005, more than 87,000 lives were lost, a similar number were injures and almost 2.5 million people were displaced[2]. After 9/11 incidence we are faced with a new form of disaster which has affected and touched nearly every one of us – the menace of terrorism. Pakistan Army and Army Medical Corps have played a vital role in emergencies and Mass Causality Incidences[3-4], whether it is the earthquake of 2005, floods of 2010. During a disaster all support services of a community play an important, but medical services are focus of attention and are faced with a daunting task to deal with a large number of causalities which are far beyond its capacity. It is therefore imperative that medical services are prepared for emergencies. Surgeons being at the forefront of trauma care share the main responsibility to manage the causalities. Until recently disaster management has not been part of traditional surgical curriculum and many surgeons do not have a clear understanding of their role in a disaster situation. The purpose of this paper is to look at the disaster management from a surgeon's perspective and in doing so to clarify what is expected from them and what the future holds as far as disaster management is concerned.

Classification of disaster incidents

There are different terms used to grade various disaster incidences. These can be used interchangeably. A Multiple Casualty Incident is defined as an incident involving multiple casualties that do not overwhelm the capacity of hospital trauma resources. A Mass casualty incident (MCI) involves a larger number of casualties which cannot be managed by an hospital and requires outside help[5]. A Disaster is defined by United Nations International Strategy for Disaster Reduction (UNISDR) as "A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources"[6].

A History of Disaster Medicine

Disasters had a great impact on humanity. They have not only caused misery, but in many instance shaped our history. Volcanoes and earthquakes have destroyed entire civilizations[7], epidemics and pandemics have reduced population of large areas to less than half. We can find several reports of disaster management throughout history of mankind. The river control system of Amenemhet III (1817–1722 BC) and evacuation and of population of Pompeii at the time of eruption of volcano Vesuvius (AD 79)[8] are few such examples. But probably the greatest advancement in the field of organized disaster management came with the establishment of Civil Defense system established first in the UK through Civil Defense Act of 1948[8]. The governments and civil agencies started to work towards reducing the risk posed by various

disasters. The UN declared 90's as the International Decade for Natural Disaster Reduction (IDNDR) which was followed by establishing International Strategy for Disaster Reduction (UNISDR)[9].

The greatest advancement in medicine for disaster can probably be attributed to the French Surgeon Dominique Jean Larrey, who worked in Napoleon Army. He developed a plan for rapid evacuation of casualties and established a clear system of triage of war wounded[10]. The next significant step in managing mass casualties is seen in the American Civil War. The Union Army established a system of organized evacuation and treatment of the wounded[7]. Since then each war and each disaster has contributed to the development of disaster medicine. Still there is considerable difference among the developed and developing countries in the manner in which the medical services are organized and perform in case of a catastrophe.

Dealing with a disaster situation

Establishing a command and control centre

One a disaster had happened there is initial chaos. The most important aspect in smooth management is to establish a system of command and control so that all the relief efforts are coordinated. If a country or society has planned this beforehand then the situation is not that chaotic. Therefore most of the countries have a national organization which manages such instances. In Pakistan National Disaster Management Authority was created in 2007 with a purpose to "to deal with whole spectrum of Disaster Management Activities"[11]. Similar organizations are present in most of the countries and also at international level for example United Nations International Strategy for Disaster Reduction (UNISDR). An effective command and control centre is also required at the local level and in the hospital as well. Since such a system is inbuilt in the Army Medical Corps therfore it is so successful in disaster situations.

Casualty load and Surge Capacity

Whenever a mass casualty incidence occurs more and more casualities are brought to the nearby hospital. As the number of casualties increase the capcity of hospital to provide optimal care decreases. The number of casualties after which this deterioration occurs is called surge capacity. It is not the total number of casualties that determines surge capacity but the number of critically wounded, because such patients `drains most of the hospital resources'[5]. So each hospital must know how many crtically wounded it can treat at a time rather than the total number of casualties.

Triage

There are usually a large number of casualties after a major incidence. Whatever is the nature of an MCI and the number of casualties, distribution of injuries remains the same. About 10-15% will have severe injuries and a third of them will have life threatening injuries[5]. As the resources are limited therefore it is important of pick up those with more serious and life threatening injuries. This is done through triage. Triage come from a French word 'trier' meaning to sort or separate[12]. This has been an important aspect in the management of casualties since its introduction by French Surgeon Baron Dominique Jean Larrey, Surgeon in Chief to Napoleon's Imperial Guard[13]. When faced with a huge number of casualties this may raise some ethical issues but this is the best way to save as many lives as possible. Triage is by no means a one off process but it's a dynamic process and patients category changes according to clinical status[13].

Triage Systems

There are usually three phases of triage; the initial pre hospital triage done at the scene which assess roughly the number of causalities in order to prepare for disaster, the second is done by first clinician arriving at the scene and the third triage is done in the hospital when physical parameters are recorded and the patients status is more clear[13].

There are many triage systems in use all over the world[14], each has its own pros and cons. Commonly used systems are START, SALT and SMART. Until recently START (simple triage and rapid treatment) was used to sort out casualties. parameters. In fact senior doctors or a senior trauma trained nurse should be assigned to triage causalities arriving in the hospital[17]. Senior clinicians with all their experience are best suited for this difficult task. Some authors even

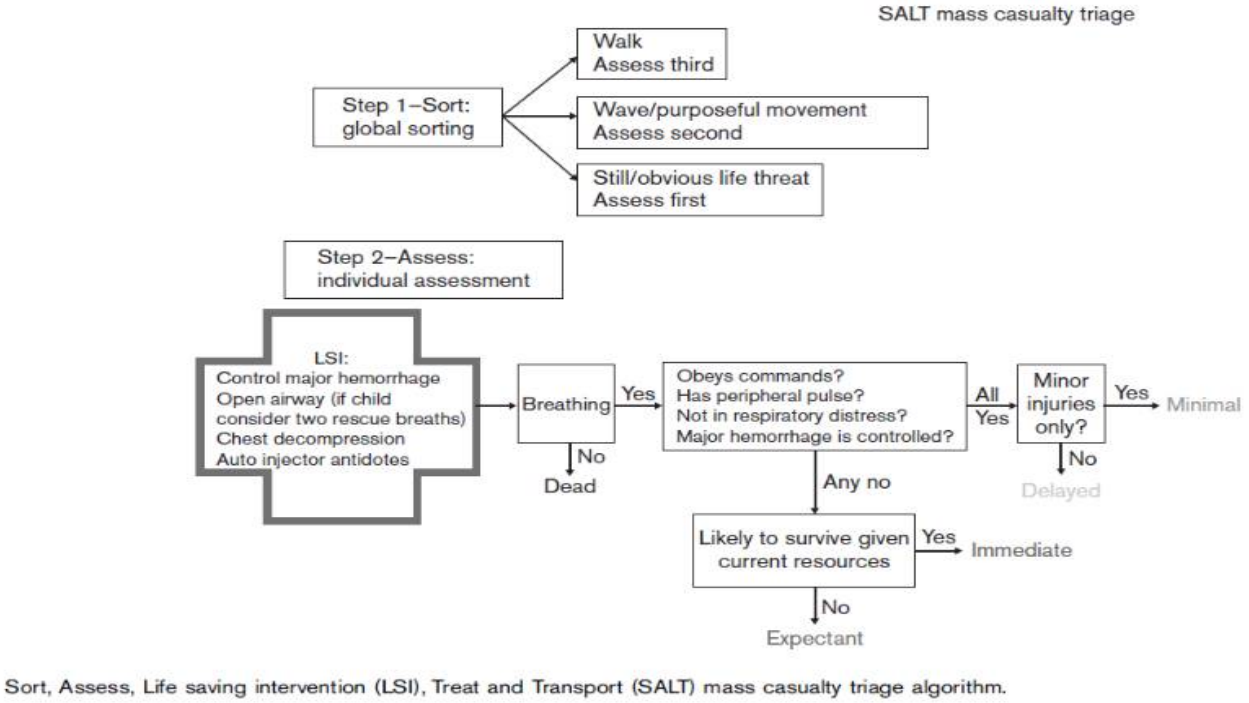

Figure: SALT Algorithm[16] (Reproduced with permission).

It divides casualties into four categories—immediate, delayed, minor, and deceased. One of the shortcoming of this system has been over triage[15]. This was addressed by SALT system. SALT (Sort, Assess, Life saving interventions, Treat and Transport) system of triage was developed by the US Centres of Disease Control[16]. The algorithm of SALT is shown in fig-1. The other commonly used system is Smart Incident Command System developed by TSG Associates (Halifax, Yorkshire, UK)[14]. Although the SALT system has been accepted by American College of Surgeons and many other organizations; we need to assess which system suits our peculiar circumstances and use it accordingly. It should also be clear that these systems of triage are for field use and triage done in hospital also takes into account physical advocate 'sequential triage' wherein triage is performed twice either by same physician or by two physicians- one in the ambulance dock and other one in the emergency department[5]. This further divides critically wounded patients into 'critical' (which are 5% of total load) or urgent. A whole trauma team is assigned to the critically wounded, while the urgent cases are directed to emergency department where one trauma teams looks after many patients. In this way hospital resources can further be focused where they are required.

Management in the field

If an incidence occurs in an urban area with hospital nearby, the best approach is 'scoop and run' as it is the time to definite care that determines the outcome. In such a case the main focus of treatment is to take care of Airway,

Breathing and Circulation. But if the incidence had taken place in a rural area then it may be necessary to provide some treatment because transport facilities may be limited. In such cases a field hospital may be established to provide necessary treatment before causalities are transferred to base hospital. These makeshift hospitals usually provide first aid to patients, take care of life threatening conditions and carry out damage control surgery[17].

Damage Control Surgery

Damage control is a term used in Navy to indicate "the capacity of a ship to absorb damage and maintain mission integrity"[18]. This term was popularised by Schwab in 1993, but its original concept was presented initially by Lucas and Ledgerwood in 1976. In the contest of poly trauma patient it involves restoring physiology rather than anatomy. This means addressing the issues that pose an immediate threat to life; securing airway, putting in chest tube if required, securing haemorrhage–repairing major blood vessels or use of shunts where possible, doing craniotomy if required, controlling GI spillage, packing abdomen and temporarily closing abdomen. It also involves liberal use of blood rather than crystalloid, taking patient to intensive care, re warming and the returning to operating theatre after 24-48 hours for definitive procedures. Damage control surgery should not be over used. It should be used only in patient who are approaching 'physiological exhaustion'[18].

Debridement and Initial wound Care

Debridement is the basic principle of trauma surgery. This should be taken seriously and performed with a religious zeal and should be done as soon as possible. A proper debridement involves lying open all the wounds, irrigating with copious amount of saline, removing all the dirt and foreign material and excising all the dead tissues[17]. Wound sustained by high velocity missiles should be enlarged and all the dead tissue affected by cavitation is excised. If there is an associated fracture, it should be fixed by an external fixator. Active immunization against tetanus should be considered in appropriate candidates, broad spectrum antibiotics should be started. The patient should be nursed in a warm environment and should be given appropriate analgesia.

Continuity of Care

It has been shown that during a major incidence there may be disruption of continuity of care because most of the trauma teams work in shifts and handing over the patients to the next team might not be perfect[5]. It is therefore imperative that all the patients must be carefully handed over to the next team with a clear account of what has been done and what is the next plan.

Preparing for Disaster-Modern disaster management

Modern disaster management is a four step process. These are mitigation (i.e. reducing the hazard posed by disaster), preparedness, response and recovery. Mitigation "either seeks a hazard less likely to occur or to reduce its negative effects if it ever occurs"[8]. It is the first two steps that we can focus while we are not exposed to an emergency situation. For example mitigating the risk of floods may involve constructing dykes, levees and dams. For Tsunami a simple early warning system may be installed.

As far as preparation is concern, the masses in general and relief agencies especially medical community in particular should be trained to deal with the situation. There should be a robust rescue and ambulance service. All the hospital must be equipped with good trauma centres. All the doctors involved in care of the trauma patients should be trained in ATLS or PTC and should be able to triage casualties effectively.

Telemedicine and Disaster Management

Last decade has seen tremendous growth in mobile technology. What seems impossible a decade ago has become a necessity. Mobile internet has become fast, leading to uninterrupted streaming of audio and video data

from one user to another. It is therefore not surprising that this technology has been used in many disaster situation. Although telemedicine is an established field, its use in disaster medicine is still evolving. Li Tan Shi reports successful use of telemedicine technology to connect onsite medical team with experts in a main hospital to treat casualties[19]. Timothy Case identified five areas in which mobile technology can assist in the management of disaster : "disaster scene management, remote monitoring of casualties, medical image transmission (teleradiology), decision support applications and field hospital information technology (IT) systems"[20]. Similarly Asif Zafar et al reported successful use of telemedicine in Pakistan's 2005 earthquake[21]. Telemedicine is also useful in disaster situation in critical care[22] and neurosurgery[23].

CONCLUSION

Although no one has control over naturally occurring disasters, we can prepare ourselves to these catastrophic events by planning, adopting a national strategy to mitigate the risk; training our public and strengthening our trauma systems.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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PAKISTAN ARMED FORCES MEDICAL JOURNAL

SGIC SUPPLEMENT ABSTRACTS

"The Challenge of Medical Response in Emergency Situations"

Surgeon General's International Conference 2016

The supplement is mainly based on the proceedings of Surgeon General's International Conference

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ABSTRACTS
"THE CHALLENGE OF MEDICAL RESPONSE IN EMERGENCY SITUATIONS"
SURGEON GENERAL'S INTERNATIONAL CONFERENCE - 2016

MASS CASUALTY MANAGEMENT IN COMBINED MILITARY HOSPITAL QUETTA

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ABSTRACT

Objective: To review the mass casualty management at Combined Military Hospital Quetta (CMH QTA), from 2012 to 2015 and to recommend measures for enhancement of capabilities in order to handle major mass casualty scenarios in the current security situation.

Study Design: Descriptive, Cross sectional.

Place and Duration of Study: CMH QTA, from January 2012 to December 2015.

Material and Methods: This study was a review of the patients brought to CMH QTA, in different types of mass casualty events from 2012 to 2015. The type of trauma, the procedure carried out and the patient outcome in each case was recorded. The data was analyzed and based upon the mortality and morbidity of casualties, the evaluation of facilities available and required was carried out.

Results: Over a period of four years, out of 3507, the highest number of casualties (42%) was received in year 2013. Civilians represented the commonest victims (79%) followed by army personnel (13%) and frontier Corps (8%). The gunshot wounds and IED blasts were on the top (53.5%) as a cause of mass casualty followed by road traffic accidents (37.5%). The highest number of patients (89%) underwent minor procedures like debridement, stitching and aseptic dressing. Twenty five percent of patients required a team work of various surgical specialists.

Conclusion: The existing resources are sufficient for managing minor and moderate casualties but proper planning and enhancement of resources (equipment and personnel) is essential to cope with any probable major casualty event. We recommend proper training of paramedical staff for receiving, transporting and emergency management of casualties.

Keywords*:* Casualty, Management, Mortality, Trauma.

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RECONSTRUCTION OF GUN SHOT WOUNDS BY AUTOGENOUS BONE GRAFTS

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ABSTRACT

Introduction: Ballistic injuries are high velocity injuries which result in disruption of facial structures and anatomy. Every injury is unique in nature and poses a challenge to the treating surgeon. Due to extensive tissue loss resulting from gunshot wounds, a team approach with a staged treatment plan is important for the management. If incorrectly managed, this may leads to infection, graft rejection and wound dehiscence with consequent complications.

Management: The definitive management aims at restoration of aesthetic, and functions. Osseous defects due to trauma or ablative surgery have devastating impact on individual's life. The

timing and sequence of the surgical procedures used for reconstruction and rehabilitation of maxillofacial gunshot injuries are crucial to a successful outcome and aesthetic result.. In literature numerous options have been discussed for their reconstruction. This presentation describes our experience of maxillofacial reconstruction with autogenous non-vascularized bone grafts.

ROLE OF PLASTIC SURGEON IN WAR INJURIES, EXPERIENCE AT CMH PESHAWAR AND CMH RAWALPINDI

Tahir Masood Ahmed

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ABSTRACT

War injuries are not simple injuries. These injuries often have much more soft tissue damage and contamination than initially apparent.After initial resuscitation and life saving measures the plastic surgeon has to play a long inning. The goal is no tonly to get wound closure but also to return the victim to the pre injury functional status.

At CMH Peshawar and CMH Rawalpindi I had the opportunity to manage a large number of war casualties due to ongoing war scenario in Pakistan.

Primary surgical wound management was done either at field hospital or at base hospital when patients were evacuated directly by air or road.

Majority of injuries were caused by explosion followed by firearm.

Almost all wounds were closed in delayed primary setting after repeated debridements (2-3) and sometimes negative pressure wound dressing (NPWD) application.

The concept of reconstructive ladder was followed. Infection was the most common complication resulting in skin graft or flap loss.

Secondary econstruction for bone, tendn and nerves were done later after adequate soft tissue coverage.

BARRIERS IN MANAGEMENT OF EXTREMITY VASCULAR TRAUMA

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ABSTRACT

Vascular Trauma to extremity requires meticulous evaluation, prompt action and astute judgment to achieve desired results. Here we present common lapses in management of extremity vascular trauma that were observed during last three years.

Material and Methods: All the patients with vascular trauma presenting to vascular surgery department at CMH Rawalpindi, who were

either missed initially or had undesired outcome after management for vascular trauma during last three years were included and analyzed.

Results: There were seven patients in whom hard signs and eleven patients with soft signs were missed, five patients were diagnosed to have a major arterial injury but because of non availability of surgeons with experience in vascular trauma had adverse outcome. There were five patients with mangled extremity were revascularized but ultimately had amputation. Eight patients had vascular repair but which failed due to some technical errors. One of them lost his limb.

Conclusion: Management of vascular trauma starts with recognition. Treatment needs an adequate training in vascular surgery.

TEMPORARY VASCULAR SHUNTS FOR VASCULAR TRAUMA

Nauman Imtiaz

ABSTRACT

Background: Due to increase in violence and war on terror we are receiving significant number of vascular injurycases. Due to shortage of vascular surgeons and delay in evacuation of these cases to proper facility many patients lose their limbs. In recent military campaigns in Iraq and Afghanistan, role of temporary vascular shunt has been highlighted as a measure to gain time and as a damage control entity.

Objective: The objective of this study was to present our experience in using these shunts and to examine their effectiveness.

Materials: Vascular trauma cases in which temporary vascular shunt was used during transfer of patient, another priority surgery or as damage control were studied from 1st May 2006 to 31th July 2014 at CMH Rawalpindi, Lahore and Quetta consecutively. Location of shunt, material used as shunt, time of vascular repair after shunt placement, shunt patency and limb survival were examined.

Results: Twenty one cases of vascular injuries in which temporary shunt were placed were studied. All shunts were placed in proximal arteries using different sterilized materials according to the size of vessel. Only one shunt got dislodged during transfer. Six shunts had partially thrombosis but adequate circulation persisted. In two cases shunt was completely thrombosed but in both limbs were salvaged. All shunted injuries were reconstructed with vein or PTFE graft. Early limb salvage was 91.4% in which temporary vascular shunt was used.

Conclusion: Temporary vascular shunt is a safe and effective modality to gain time during transfer of a patient as well as a damage control measure.

CHALLENGES FACED BY AMC & AFNS IN EMERGENCY SITUATIONS: A TRIANGULATION DESIGN STUDY AT CMH MULTAN, PAKISTAN

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ABSTRACT

Background: Nursing in the emergency department is a multipart and specialized practice. Emergency nurses are known as “Generalists”. They are responsible for all the activities being held in emergency departments. Doctors and nurses in emergency situation work as a team but encounter

many challenges while receiving and managing single case or multiple cases at a time. The most problems are due to infrastructural incongruity, process constraints and lack of skillfulness of emergency team.

Objective: To know the variety of challenges faced by AMC and AFNS in emergency situations

To find out feasible solutions for challenges and bringing it into practice.

Significance of Study: This study will directly be helpful for all stakeholders of health care. The organizations, administrators, AMC AFNS and utmost important patients will get benefit after this study.

Study Design: A triangulation (qualitative, quantitative and outcome research) approach was used to conduct the study.

Study Frame work: Avedis Donabedian's model of quality assessment and improvement (structure, process and outcome) and WHO emergency instruction manual was used as study framework.

Methodology: An interview schedule was used to collect data from four house surgeons, three medical trainees and seven AFNS about their experiences in emergency reception of cases in ITC, CCU and trauma center. Later on a questionnaire was developed to collect the data from the emergency areas. A Questionnaire was developed on the feedback from interview and document WHO instruction for emergency situations and quality care model of Avedis Donabedian. Questionnaire was named as Emergency Management Questionnare (EMQ). Data was collected from 18 doctors and 30 AFNS working in various emergency units CMH Multan. Informed consent was taken from every participant. Double entry of data was done on SPSS and data cleaning was done in third check. Data was analyzed and presented in descriptive form. Open ended interview schedule gave rise to multiple suggestions which are reported in recommendations.

Results: The compiled was from both medical and surgical units of the hospital. Data was analyzed qualitatively and quantitatively. The categories from qualitative analysis were formed as communications issues amongst health care providers, non working of old life saving equipment, non trained staff and mismanagement emergency cases. Quantitative descriptive analysis also showed the high percentages about the non availability of resources, structural incongruence with needful situations and process limitations

Discussions/ Recommendations:

Based on study results, the recommendations are reported as:

At Local Level:

- Adherence to local SOPs
- Personal professional growth
- Ergonomics with available resources

At organizational level:

- Trauma/crisis trained staff
- Introduce magnet ambulances
- Trained ambulance staff
- Advanced health gadgets
- Provision of ample resources and machinery
- Resource managers (prompt biomedical services)

At national level: Nation friendly Health care delivery system, Devolution health plan for government/non government sectors

Keywords: Challenges, ER, ED, Emergency situation, Peadiatape, Megnet ambulances.

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DISASTER VICTIM IDENTIFICATION BY DNA PROFILING

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ABSTRACT

A disaster, as defined by the World Health Organization (WHO), is "a sudden ecological phenomenon of sufficient magnitude to require external assistance". Identification & disposal of the dead bodies is one of the main components of any disaster management. Whether natural or manmade, mass disasters often result in severe fragmentation, putrefaction and commingling of the remains of victims. As a result the traditional identification methods based on the anthropological and physical

characteristics of the victims are frequently inconclusive. This is the reason why DNA profiling has become the gold standard for victim identification in mass disaster incidents as well as for any forensic cases where human remains are highly fragmented and/or degraded beyond recognition. Beside natural disasters the prevailing security situation in our country has also led to various catastrophic incidents affecting civilian as well as Army personnel /installations. In order to facilitate Military agencies involved in investigating such incidents Pak Army established a state of the art Forensic Medical Sciences Laboratory (FMSL) at Armed Forces Institute of Pathology in 2012. Forensic DNA lab at FMSL played a significant role in DNA testing and victim identification for the April 2012 Giyari disaster as well as the recent air crashes in Naltar and Mansehra during the year 2015. The process consisted of collection of reference samples from the close biological relatives of the missing person. The tissue samples of the disaster victim and the reference samples were analyzed with the same genetic markers (i.e. Short Tandem Repeat markers). Statistical tests were then carried out to assess the strength of the alleged biological relationship for the identification of human remains. The DNA lab at FMSL has also been carrying out profiling of the perpetrators of the terrorist attacks. A Military DNA database thus created facilitates our intelligence agencies in tracking these criminals/terrorist groups. In this presentation we shall discuss the steps in the management of the disaster victims with respect to DNA identification, our experiences and the lessons learnt during these situations.

THE ROLE OF FAMILY PHYSICIANS IN EMERGENCY SITUATIONS

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ABSTRACT

Natural disasters affect multiple lives each year. Family physicians play a central role in the health care system of any country. Being present within communities throughout the country they serve as frontline health care professional responders within the areas where disasters and emergencies take place. The need for primary care services increases greatly in the months following a disaster. Disaster victims often present with both acute primary care problems like chest infections, gastroenteritis, injuries etc and later with mental health issues like Post Traumatic Stress Disorder. In addition they are also required to deal with emergencies presenting in their clinical practice. In Pakistan there are 116845 registered MBBS doctors to date, majority of whom practice as general practitioners.

As first responders it is critical that they are trained to be effective in situations requiring urgent interventions. The first step in this regard is to create awareness among them regarding their role in disasters and emergencies. Training for disaster situations and emergencies within their practices is critical for an effective and efficient response when faced with those situations. Organization and planning are important for preventing chaotic emergency responses. Curricula of MCPS and FCPS for Family Physicians within the country includes emergency medicine training. However a component of disaster medicine training needs to be included within this curriculum. In addition specific short skill based courses in emergency and disaster medicine needs to be developed and implemented through various academic institutions including the College of Physicians and Surgeon Pakistan.

Besides training, general practitioners and family physicians collaboration should be set up with national disaster cells within the regions to ensure a well-organized emergency response. They also need to keep their clinics adequately supplied with emergency medicines including sutures and casting material. Being adequately trained, prepared and being an integral part of the national and regional disaster response team will go a long way in managing disaster and emergencies.

MEDICAL EMERGENCY RESPONSE PLANNING THROUGH SCENARIOS

Awais e Siraj

Prime Minister's Performance Delivery Unit

ABSTRACT

Scenario planning is a discipline for rediscovering the original entrepreneurial power of creative foresight in contexts of accelerated change, greater complexity, and genuine uncertainty. (Pierre Wack)

Scenario planning opens the future to multiple perspectives – rather than a single, business-as-usual, view of what the future will hold. Scenario approach is a methodology, providing space for input from stakeholders, expert and non-traditional - even maverick - views. The methodology is capable of integrating the multitude of seemingly unrelated, often chaotic, inputs into a limited number of coherent, internally consistent stories about the future; thus providing a basis for building successful strategies and organizations.

To remain effective in strategy and inter-active policy and to avoid policy disasters the policy makers need to be able to handle increasing levels of dynamic complexity. Being able to notice "dots on the horizon" and bringing possible future developments into the strategic conversation in a timely manner is a key skill.

This presentation on scenario-based thinking will enable the healthcare policy makers and strategists to:

- Explore multiple, plausible, pathways into the future of healthcare.
- Approach medical emergencies the from multi-disciplinary perspectives
- Tap into relevant disciplinary expert knowledge and embed this in the broader policy perspective
- Tap into new and non-traditional views on the issue
- Involve a broad spectrum of key stakeholders in the strategic conversations
- Make a robust preparedness plan and strategy that has incorporated all the certainties and uncertainties of future.

DYNAMICS OF THE LABORATORY IN AN EMERGENCY SITUATION; THE STAT SYSTEM OF DELIVERY FROM THE PATIENT TO THE PATIENT

Hina Qureshi

ABSTRACT

An efficient laboratory is a crucial requirement in any health care facility. It is a significant resource which contributes in raising the medical care and its special role in critical care or emergency situations cannot be overlooked. The successful operation of a laboratory depends upon its competence in terms of responsibility, quality and appropriate use.

A laboratory affiliated to an emergency department experiences great demand for its services. Much of these tests require stat results. To improve patient care and to avoid long waiting and delays in the stat reporting of results, it is important to know the dynamics of the laboratory and its appropriate use both by the end user as well as by the lab staff.

This didactic presentation emphasizes the role of laboratory in conducting stat or urgently required test results.

Keywords: Emergency Medicine, Laboratory.

ROLE OF NURSES IN DISASTER PREPAREDNESS AND MANAGEMENT

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ABSTRACT

Nurses are often called upon to provide aid and care during a variety of disaster events, including war environments, complex emergencies with displaced populations, large-scale disasters that disrupt the normal delivery of health care to the community, and local emergencies that temporarily strain resources. In these settings, nurses utilize their unique skills, abilities, and understanding of the community to the betterment of the population by striving to deliver the highest attainable level of care that the adverse circumstances allow. This became evident after the earthquake of October 8, 2005 in Pakistan. Disaster preparedness and disaster management have received a high level of attention in the aftermath of the Pakistan's recent experience with floods and earthquakes. The critical thinking and problem-solving skills of nurses, coupled with their flexibility and adaptability, help provide the methods for managing the difficulties that arise during disasters, such as shortages of supplies and staff and failures in communication. Although no two disasters are exactly the same, and nurses often must be able to improvise and adapt their care practices, they must be well-versed in their potential role to effectively deliver care in a disaster. This preparation comes through education in relevant disaster topics, skills acquired through hands-on practice, interaction with preparedness procedures, and a firm understanding of local and regional capabilities and resources.Nurses possess the necessary coordination and delegation skills which,when coupled with their care management experience, positions them to serve capably in healthcare leadership roles during disasters. Nurses, therefore, should be well-prepared for their potential role in a disaster setting and should participate in all phases of a disaster to the fullness of their capabilities.The objective of this article is to review the literature to date to throw light on role of nurses in handling disasters that are yet to come and managing disasters afterwards.

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ETHICAL CHALLENGES FACED BY NURSES IN EMERGENCY SITUATIONS: A MIXED DESIGN STUDY AT AFIC, AND CMH RAWALPINDI, PAKISTAN

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ABSTRACT

Background: Working in the emergency department give rise to unique ethical considerations. Nurses in the emergency department face a complex and specialized practice where multiplex and invasive interventions are often executed without obtaining informed consent from the patient or the surrogate. Ethical problems are often exacerbated by time constraints, lack of detailed information, and a high incidence of impaired cognitive abilities in the patients. When patients arrive in the ED[1], the triage nurse has little time to gather detailed information. Instead, a quick assessment is completed and actions are taken based on protocols, rather than the patient's preferences.

Objectives:

1. To assess the knowledge of AFNS[2] about ethical consideration and ethical decision in face of emergency situations.
2. To find out the ethical challenges face by AFNS
3. To recommend legal solutions for dealing with ethical challenges during emergency situations.

Significance of Study:

This study will directly be helpful for all stakeholders of health care. The organizations, administrators, physicians, surgeons, nurse and utmost important patients will get benefit in time and case management, if AFNS on duty in ED will be trained and authorized for triaging, task delegation, surrogacy and proxy signatures.

Study Design: A qualitative and quantitative mixed approach will be used to collect the data.

Emergency of Department[1], Armed Forces Nursing Services.

Methodology: Initially few registered nurses will be interviewed about their experiences in emergency reception of AFIC and emergency areas of CMH Rawalpindi. Later on a questionnaire will be developed to collect the data from the emergency areas. The questionnaire will be developed on the feedback from interview and document of PNC COE. Data will be collected from 30 AFNS working in various emergency units of AFIC and CMH Rawalpindi. Data collection will be done between March and April, 2016. Descriptive analysis will be done for drawing conclusions.

Results: In general, there exists a consensus regarding advanced training of ER nurses, since they are obligatory to take timely decisions about triaging, task delegation, surrogacy and proxy signatures for mentally or physically compromised patients. However, what specific areas require attention will be determined after the collection of data, analysis and completion of the said study.

Keywords: Ethical Challenges, ER, ED, PNC, COE, Proxy signatures, Triaging, Mix Study, Emergency Situation.

COLLEGE OF PHYSICIANS AND SURGEONS PAKISTAN (CPSP) ROLE IN EMERGENCY SITUATIONS

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ABSTRACT

Emergency situations calling for prompt response of medical profession can arise from time to time in different shapes and magnitude, such as wars, terrorism, blasts, epidemics, earthquake, resurgence of diseases, etc.

First pre-requisite for a prompt and swift medical response in emergency situation is preparedness, which requires:

- Awareness of various shapes of emergency situations and their specific requirements
- Ability to perform the required tasks
- Commitment and Attitudes

The PowerPoint presentation reflects upon the rich experience of the College of Physicians and Surgeons Pakistan (CPSP) spread over the years in preparing specialist care in the country through its fellowship and membership programs, which also cover all forms of emergency situations. The presentation further enumerates the international short courses CPSP is conducting today that are specifically designed to prepare medical professionals to meet the emergency situations. The author also highlight presence of its infrastructure in all big cities of the four provinces, which demonstrates its capacity of harnessing a rapid response of medical professionals in emergency situations in any part of the country.

In the last part of the presentation the author presents a proposal requiring National and Provincial Disaster Management Authorities to work closely with organizations such as Armed Forces Medical Corps, College of Physicians and Surgeons Pakistan and Pakistan Medical Association, which have the infrastructure and capacity to plan and deliver at grass root levels to meet the challenge by maximizing medical response in such situations.

THE CHALLENGE OF MEDICAL RESPONSE IN EMERGENCY SITUATIONS

Muhammad Tahir Nisar

ABSTRACT

In the wake of an emergency situation, the effects of a disaster can have catastrophic consequences on the inhabitants of the community and may result in significant injuries and loss of human lives. Since a large number of casualties can easily inundate the existing but partly destroyed medical facilities, establishing emergency health services is critical. In all emergency situations, the pinnacle of medical services must focus on meeting both short-term and long-term needs of the victims. The health problems occurring in disaster hit area might be related to food and nutrition, water and sanitation, mental health, climatic exposure and shelter, communicable diseases, health infrastructure and population displacement. Jahandad Society for Community Development (JSCD) has been at the forefront in providing the much needed relief to the victims during emergency situations faced by the Pakistan for over a decade. JSCD's experience highlights the challenges faced in medical response during emergency situations and how factors such as emergency preparedness, pre-impact Emergency Operation Plans (EOPs), potential roles of stakeholders and strategic engagement of partners could help in managing emergencies effectively and efficiently at the local and national levels.

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PAK ARMY MEDICAL RELIEF MISSION NEPAL EARTHQUAKE: DISASTER PREPAREDNESS IMPLEMENTED!

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ABSTRACT

Introduction: On 25th April 2015, a 7.7 magnitude earthquake hit Nepal with epicenter near the Chinese border between the capital of Kathmandu and Mount Everest, resulting in an estimated death toll of over 8000 people, about 21000 injuries and widespread destruction including centuries' old temples and religious structures. It was the worst natural disaster to hit Nepal since 1934. Many countries stepped in to help the government of Nepal deal with the humanitarian crisis. Among the first to arrive was the Pak Army Field Hospital; having moved to location in Bakhtapur within 19 hours of the onset of the earthquake, ready to receive casualties within 24 hours of arrival and fully functional in 3 days. The scale of humanitarian support input by the team of 13 doctors, 4 nurses and 33 paramedical staff was significant and duly appreciated by the COAS of Nepal, Government of Nepal, UN under Secretary General and UN Special Envoy on Humanitarian Assistance to EU. The total duration of stay was 22 days. We share the experience, successes and lessons of the mission with focus on both the outcome and the pre-mission preparedness efforts.

Objectives:

To classify and identify patterns of the injuries/diseases presenting to Pak Army Field Hospital in Nepal earthquake.

To describe the Medical Relief Mission deployment sequence. To describe the pre- mission preparedness status and processes/efforts leading to readiness. To derive lessons for future enhancements /improvements.

Methodology: Recorded data of medical relief efforts was obtained during the mission were retrospectively analysed using SPSS v 21 creating frequency tables and graphs. Patients were classified into Earthquake-related Injury, Other Injury and Medical conditions using categories of a modified CDC mass casualty surveillance proforma. Earthquake related injury was defined as those presenting in the immediate aftermath of the earthquake with history of being

earthquake related. Non-earthquake related injuries were classified as Other Injuries. Significant achievements under duress and against odds were highlighted. Difficulties faced at various steps were identified and listed.

Preparedness plans dated 11 Apr 2012 prepared by GHQ Medical Directorate were evaluated retrospectively for planned sequence of implementation, move planning documents, lists of materials method of storage and human resource allocation planning. The role of previous earthquakes and numerous terrorist attacks in generating focus on disaster preparedness was noted. An insight into the vision of planners was developed. Shortcomings in planning based on difficulties faced in the field were identified.

Results: A total of 2168 patients presented to the Pak Army Field Hospital at Bakhtapur during 22 days of deployment. There were a total of 770 (35.5%) earthquake related Injuries and other injuries were 1398 (64.5 %). A total of 57 patients were admitted whereas 741 were detained. Mean hospital stay was 3.24 days. Surgical procedures included 393 minor and 32 major operations, 02 births and 01 death due ischemic heart disease. Most common injuries were fractures and soft tissue injuries of limbs. 807 patients underwent investigations of which 731 were labs and 76 were ultrasounds.

On receipt of instructions from Military Operations directorate the Disaster management Cell was set up at 141 Med Battalion and CO and all doctors/nurses/paramedics nominated within initial hours. Travel documents were urgently arranged and materials moved for transport. Communication lines were established with 141 Med Battalion as hub of activities. Initial deployment of men and materials (advance party) was tpt on initial two C130 flights reaching on 26th April 2016. Camp was set up within 6 hours of arrival at Bakhtapur and casualties' reception begun; hospital was fully established to start surgeries on 29 April 2013. In addition to medical facilities the hospital fulfilled the criterion of a fully dieted hospital providing meals to indoor patients/staff.

Pre-mission preparedness was based on a comprehensive document authored by GHQ Medical directorate on 11 April 2012 which included detailed plans of manpower, lists of materials and sequence of actions on immediate deployment. The vision was to be ready to move and deploy within 12 -24 hours and was based on a sense of responsibility to reciprocate for support provided to Pakistan by international community in the wake of the 2005 Muzaffarabad Earthquake.

Lessons for future deployment include avoidance of delay due to travel documentation by having earmarked manpower with ready passports, segregated and dedicated packing of materials with clear and appropriate labelling and improvement in shelters (state-of-the-art Alaska shelters) and equipment.

Conclusion: The Pak Army Field Hospital Medical Relief Mission to Nepal was an unprecedented success that was only possible due to the preparedness efforts already underway in advance. With a changing and increasingly uncertain world scenario, acuity of focus on disaster preparedness as an ongoing phenomenon is essential to dealing with crises that have become the rule rather than the exception.

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BARRIERS IN REINTEGRATION OF DISASTER AFFECTED DISABLED PERSONNEL AT WORKPLACE IN ARMY

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ABSTRACT

Introduction: Natural and man- made disaster have become a reality in every society which in case of country like Pakistan which has been confronted on one hand with natural disaster like earthquake as it has been and on the other hand has been suffering from maximum number of causalities and suffering during war on terror. The most devastating after math of these phenomenon is perhaps the disabled

humanity. As a frontline force in any disaster Pakistan Army has to suffer heavy toll of death but also rendered a huge number of soldiers disabled resulting in inability to earn bread and butter for themselves and for their families. Comprehensive rehabilitation at AFIRM and retention policy made it possible for disabled soldiers to work in unit in a productive way with respect and dignity However they come across some problems which lead to inadequate participation by disaster victims at workplace, confining them into homes, inability to utilize their skills, making rehabilitation ineffective.

Objectives: The objectives of the study are as follows:- To review the existing policy for disabled personnel after treatment and rehabilitation at AFIRM.

To study the barriers at work place adjustment met by the disabled personnel (Selected Categories) in their units after discharge from AFIRM.

To suggest recommendations for comprehensive rehabilitation management and to overcome barriers in reintegration of WWP at work place.

Methodology: A descriptive cross- sectional study was done at AFIRM Rawalpindi, officer's wards CMH and military college of signals RWP settings. Study was based on convenient sampling techniques as the study sample population included only disabled personnel which were present Indoor, OPD, CMH Rwp and Mil College of signals during the study duration. The questionnaire was translated to Urdu for JCOs and other ranks. The researcher could not find officer patient in CMH Officers ward and visited military college of signal. The main outcome variables were demographics, types of injury and the problems faced at the workplace. The data was collected, stored, and processed by using Microsoft Excel program.

Conclusion: It was found that there is need to concentrate more on some important stages of rehabilitation management. Units also need instructions from higher authorities on structural modifications needed for disabled personnel to make their work place and living disability friendly. There is a need to consider disabled personnel as normal individuals, improvement in vocational training standards, behavioral change by service comrades, psychological counseling at regular intervals to motivate WWP to practice vocational training at workplace. Officers ward need to be established at AFIRM to ease out WW officers and to avoid delay in their rehabilitation as CMH lacks almost all modalities of rehabilitation and structural modifications in officers' ward. There is also need to constitute a functionality assessment board at AFIRM to assess the functionality of disabled personnel after complete rehab at the time of discharge.

Keywords: Health, International classification of functioning disability, Rehabilitation.

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COMBAT MEDICAL SUPPORT SYSTEM IN DISASTER MANAGEMENT – AN ANALYSIS

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ABSTRACT

Introduction: Disaster planning and response to mass casualty incident pose a unique demand on the medical community. Because they would be required to confront many casualties with bodily injury and surgical problems acutely and infectious disease burden and other disabilities for some time. Therefore, an effective response to disaster and mass casualty events should focus on an "all hazards" approach, defined as an ability to adapt and apply fundamental disaster management principles universally to any mass casualty incidents, whether caused by people or nature. Organizational tools such as assessing and evaluation of the previous disaster situations, making

plans for future management and doing moke exercises.

Objectives:

To study the existing Combat Medical Support system in Pakistan (Pak) Army in context to Disaster Management.

To study a model design of combat medical support system in contemporary army (US model)

To assess gaps between Existing and Model Combat medical support systems.

Methodology: A cross sectional descriptive study was done using convenient sampling technique. Mixed method approach was used to collect data i.e by checklist, situation analysis approach, interview of the key informants and survey questionnaire developed. A population size of 100, medical commanders both at higher and lower level were chosen for responding to opinion survey questionnaires while key informants both medical and non-medical commanders at different levels in the chain of provision of combat medical support system were interviewed.

Conclusions: Results showed an overwhelming desire to improve combat medical support system for disaster management, training of personnel, deployment of field medical setups and enhance communication between the different tiers of support. Time is ripe to develop the Field Medical Units to have a robust combat medical support system. It will help establish a better and sustainable combat medical support system in the field.

Keywords: Combat Medical Support System, Combat Medics.

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DENTAL TRAUMA AND EMERGENCY EVENTS REQUIRING URGENT DENTAL CARE

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ABSTRACT

A plethora of orodental tissue trauma and emergency events requiring urgent dental care are presented in medical emergency set-ups. Similarly, when new dental appliances are provided, events of pain, discomfort and even inhalation / ingestion as well as de-bonding and breakage of dental appliances or their poking components are quite common. When such event happens in areas where specialists dental setting, expertise and services are not available, sufferers are left without necessary remedies for unnecessary prolonged period of distress and discomfort. It is therefore important to increase awareness and provide necessary training and education to both general dental and medical practitioners working in the outside non teaching and specialist settings to help them deal appropriately with such dental emergency situations.

The presentation intends to elaborate upon the various orodental emergency situations and their management, as they may arise and presented to medical /dental practitioners working in non specialist settings.

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HAEMATOLOGICAL MANAGEMENT OF MASSIVE HAEMORRHAGE

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ABSTRACT

Despite significant improvement in security situation in Pakistan, mass casualties resulting from terror attacks remains a major concern for medical facilities of Armed Forces. About 40-50% of trauma related

mortality and 80% of deaths in operation theatre are due to blood loss. It is estimated that 3-10% of patients admitted with trauma require massive transfusion. Management of massive haemorrhage requires multidisciplinary approach and close liaison between surgical team, blood bank and support services.

Initiation of Massive Transfusion Protocols (MTPs) and specific management of situations requiring massive transfusions including trauma, gastrointestinal bleeding and obstetrical haemorrhage are useful in decreasing mortality but equally important is judicious use of blood components, understanding of definition and patho-physiology of massive haemorrhage and managing the consequences of massive transfusion. Similarly, monitoring and management of coagulopathy and use of pharmacological agents also vital in managing such challenging situations.

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LESSONS LEARNT AT MAXILLOFACIAL TRAUMA MANAGEMENT OF VICTIMS OF APS PESHAWAR MASSACRE

Syed Gulzar Ali Bukhari

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ABSTRACT

- Oral and maxillofacial region is gifted with four out of five special senses, the complexity is added with additional job of phonation, mastication, respiration and esthetics. Many a time life is saved on the cost of face, and face is again needed to face the harsh realities of life.
- The management of trauma of this region requires an in depth understanding of forms and functions of orofacial region. The maxillofacial surgeons of Pak army are quite capable of meeting this challenge due to their unique combination of training in ENT, plastic / gen surgery, ITC and anesthesia.
- This makes the oral & maxillofacial surgeons an integral part of trauma management team. Team approach becomes more imperative especially when the situation of APS massacre like disaster is to be managed. In such situations under mentioned hierarchy of actions, when performed meticulously, ensure an optimal outcome.
- Air way control
- Asepsis
- Damage control surgery for early restoration of forms and function
- Vascular integrity / preservation
- Absolute stability of reduction
- Maintenance of biological seal of orofacial wound
- Nutritional and general medical suppor

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LIFE DISTORTION AFTER A BLAST

Aizaz Saleem

ABSTRACT

Background: Terrorist acts all over the world are on the increase. Recently even developed western countries faced this menace . Tackling this problem needs multifaceted approach.We as health providers should be aware and be ready to deal with it in the light of our knowledge about the explosives used , injuries expected , quick triage , appropriate management and rehabilitation of the victims.

Objective: To assess the workplace capacity and capability of a multidisciplinary trauma response team while dealing with mass casualities

Study Design: Descriptive retrospective.

Place and Duration of Study: CMH Quetta, 6 months.

Methods :Record of blast victims of 10 jan 2013 [incident 1] and 16 feb 2013 [incident 2] were analysed . Their triage proformas , admission papers and oprating notes were scrutinized regarding color coding , type of injuries , initial management and definitive management .

Results: Incident 1 – total no of injured were 121 of which 19 were red [requiring emergency surgery] , while 81 were black [brought in dead] .

Incident 2 – total no of injured were 180 of which 29 were red , while we receieved 64 black.

Triage time was satisfactory in most of patients. Among survivors , musculosketal was the most commonly involved system.2 % patients underwent emergency amputations.

Conclusion: Quick and reliable triage by experienced triage leader , and presence of multidisciplinary trauma response team reduces morbidity and mortality in blast victims.

INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS IN EMERGENCY CARDIOLOGY

Sajjad Hussain

ABSTRACT

Emergency cardiology care requires speedy and accurate decision making to start therapy. When cardiologists are not available on site, communication of clinical information and results of ECGs and imaging studies from hand held devices in the field or peripheral hospitals to cardiologists in a tertiary care or other regional hub can save time, effort, and human resource, and improve patient care, efficiency, and productivity of the system. We can potentially use Local area networks, Wide area networks and 3G, 4G networks (which are now available over a wide area of the country) to transmit images of patients, ECGs test results, echo video clips in different digital formats in emergency situations to a central data collection centre. From there it can be passed onto relevant cardiology services in the area. This scenario holds true not only for peripheral hospitals but also for deployed troops. Successful models of remote cardiology consultations already exist. Good examples are those of the Spanish army, US army and NATO forces deployed in Europe. The question: is this really achievable in our scenario? I believe yes. With the establishment of National University of Medical Sciences (NUMS) we now have a hub that can actually perform a complete assessment for project needs in this scenario as well as link the infrastructure and useful human resource spread all across the country. We need to develop a business case analysis for tele-cardiology that will allow self sustainment of services based on sound economic expectations. The assessment will have to dig up technical solutions with procurement and dispersion of “off the shelf” cardiology and non cardiology hardware and non-proprietary software. These systems have to ensure patient, organizational confidentiality and security, fail safe data protection and offer system redundancy and back up mechanisms in relation to technical systems failures. Having said that the telecardiology system will have to be standardized and we would have to articulate the human factors as challenges in developing remote regional cardiac consultation. We will also have to identify the legal, regulatory, and security concerns for remote teleconsultation. Any proposed program for telecardiology, this is in no way meant to be exhaustive and complete at this point in time.

ANALYSIS OF TRIAGE AND MANAGEMENT OF TWO MAJOR BLAST INCIDENCES OF 2013 IN CMH QUETTA

Aizaz Khan

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ABSTRACT

Objective: The menace of terrorist acts all over the world are on the increase. Tackling this problem needs multifaceted approach. Health providers should be ready to deal it by knowing about the explosives used ,injuries expected , quick triage , appropriate management and rehabilitation . Our objective is to assess the workplace capacity and capability of a multidisciplinary trauma response team while dealing with mass causalities.

Study Design: Descriptive retrospective.

Place and Duration of Study: CMH Quetta, 6 months.

Materials and Methods: Record of blast victims of 10 Jan 2013 [incident 1] and 16 feb 2013 [incident 2] were analyzed . Their triage documents , admission papers and operating notes were scrutinized regarding color coding , type of injuries , initial and definitive management .

Results: Incident 1 – total no of victims were 121 of which 19 were red [requiring emergency surgery] , while 81 were black [brought in dead] . Incident 2 – total no of victims were 180 of which 29 were red and 64 black. Average Triage time was 1 min per victim. Among survivors , musculoskeletal was the most commonly involved system.2 % patients underwent emergency amputations.

Conclusion: Quick and reliable triage by experienced and multidisciplinary trauma response team indirectly reduces morbidity and mortality in blast victim

Keywords: Triage, management, blast victims, Quetta.

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A TERTIARY CARE HOSPITAL AMIDST WAR ARENA – CORNERS AND CREVICES FACED BY HOSPITAL ADMINISTRATION

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ABSTRACT

Objective: To study the stresses and strains faced by Hospital Administration of an Army Tertiary Care Hospital providing medicare to trauma casualties from Military troops engaged in operations as well as from other incidents of War on Terror, and the modalities adopted by Hospital Administration to cope successfully with these stresses.

Study Design: Descriptive study.

Place and Duration of Study: The study was conducted at Combined Military Hospital Peshawar over a period from September 2014 to March 2016.

Material and Methods: The experiences of administrative stresses, faced during command of Combined Military Hospital Peshawar from September 2014 till date were used as parameters for study. Retrospective data of casualties including Shuhada was collected from statistics office of Combined Military Hospital Peshawar. Experiences of other administrative officers and specialists involved in trauma team were also shared to remove the recall bias. Data was also collected from newly established ITC and OTs in Surgical Complex, for last one year (from March 2015 to March 2016). Photographs of VIP visits were retrieved from archive section of ISPR office of Corps Headquarters.

Results: The study proved that hospital administration undergoes peculiar corners and crevices during crisis as well as in post crisis period. The cost effective modalities adopted by Combined Military Hospital Peshawar administration proved time tested and helped to sail through difficult times with ease.

Conclusion: 24/7 influx of casualties to a tertiary care hospital, located in war zone may make the hospital

administration a daunting task but a sound planning with foresightedness and a well knit team can make this formidable task feather light.

Keywords: Hospital administration, Tertiary care hospital, Surgical Complex.

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THORACIC WAR INJURIES. AN EXPERIENCE OF 10,836 PATIENTS OVER THE PERIOD OF 14 YEARS

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ABSTRACT

Background: To determine the surgical management of thoracic war injuries.

Methodology: An observational descriptive study was conducted in the department of Thoracic Surgery, Postgraduate Medical Institute, Lady Reading Hospital Peshawar from June 2002 to Dec 2015. The record of all trauma patients that had fire arm, bomb blast and drone injuries undergoing surgical intervention over a period of fourteen years was reviewed.

Results: The study included 10,836 patients; 10,216 were having fire arm injuries chest, 549 had thoracic injuries in 351 bomb blasts and 72 were having thoracic injuries in 153 drone attacks. Male to female ratio was 2:1. All patients were initially managed with tube thoracostomy. Emergency Thoracotomy was done in 405/10216 (3.96%) fire arm injury cases, 172/549 (31.32%) in Bomb blast injuries and 16/72 (22.22%) in drone injuries. Rest of the patients i.e. 10232/10836 (94.42%) were stable and treated with low pressure suction and incentive spirometry. clotted hemothoraces were successfully evacuated in 561/10216 (5.49%) fire arm injury, 69/549 (12.56%) Bomb blast injuries, 14/72 (19.4%) drone injuries through postero-lateral thoracotomy. Morbidity was 15.27% in drone injury, 14.75% in bomb blast injury, 5.66% in fire arm injury. Mortality was 8.19% bomb blast injury, 6.94% in drone injury, 2.91% in fire arm injury.

Conclusion: Thoracic injuries are best managed by initial intubation, observation and supportive treatment. Emergency Thoracotomy is indicated in unstable patients (hemodynamically or respiratory wise) regardless of the volume of blood loss. Emergency thoraocotomy was maximally done in bomb blast injury, followed by fire arm injury and followed by drone injury. Morbidity was the highest in drone injuries (15.27%) followed by bomb blast injuries (14.75%) and followed by fire arm injury (5.66%). Mortality was the highest in bomb blast injuries (8.19%), followed by drone injury (6.94%), followed by fire arm injuries (2.91%).

Keyword: Fire arm injury, Bomb Blast Injury, Drone Attacks.

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PREPARING SOLDIERS FOR LOW INTENSITY CONFLICT WARFARE: A MEDICAL PERSPECTIVE ON EMERGENCY PREPAREDNESS IN KHUZDAR, PAKISTAN

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ABSTRACT

Objective: To explore the efficacy of audiovisual aids and scenario based group tests for enhancing understanding and decision making in first aid and developing master trainers among soldiers.

Place and Duration of Study: Khuzdar Garrison, Balochistan over a period of 12 months from Jan 2013 to Jan 2014.

Material and Methods: A series of 4 first aid cadres lasting 10 days each were conducted at Khuzdar

Garrison, Balochistan over a period of 12 months from Jan 2013 to Dec 2013 involving just under 300 soldiers of various ranks. PowerPoint presentations with videos were given in a sequence that introduced the soldier to the problem and then its solution i.e. The Problem-Solution sequence after which hands on practice was done in groups, ensuring participation of each and every individual. Practical (single and then multiple) clinical scenarios were to be handled by groups of 2 -4 individuals. On completion each group reviewed its own performance while the audience gave a critique focusing on omissions and best order of priority. Discussions on master training and improvisation in the field were held. End of course written assessment was taken. Core learning concepts were concisely put into a pictorial format on a foldable card that could fit in a uniform pocket for reference in combat situations.

Results: Of the 5 major participant battalions, 3 were able to arrange first aid cadres each lasting 7 days using the same PowerPoint presentations and techniques.

Conclusion: It is possible to effectively educate soldiers in first aid despite low educational attainment if good quality instruction methodology including modern audiovisual aids is utilized. To be effective in the field combat scenario, the material imparted to the soldiers should include aspects of decision making and prioritization of interventions.

Keywords: Army Medical First Responder, Battlefield Medical Response Training, First Aid Training.

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STRUCTURAL HEART INTERVENTIONS IN EMERGENCY SITUATIONS

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ABSTRACT

Objective: To assess the role of structural heart inerventions performed in emergencies.

Study Design: This is retrospective analysis of our cases where emrgency was notified either from severe acute myocardial infarction (MI) leading to ventricular septal rupture (VSR) and acut cardiac decompensation, or some other heterogenous conditions like residual / missed problems during open heart surgery leading to decompensation in surgical ICU, acquired AV malformations from operational terrorist injuries leading to patient's agony, or acute hypertension fron missed coarctation leading to malignant hypertension and heart strain.

Place and Duration of study: Our this data is from June 2012 to Feb 2016, performed as emergency procedures in AFIC / NIHD Rawalpindi.

Patients and Method: Patients with acut MI admitted to cardiac ICU and requiring emergency closure of VSR but refused by the surgeon were selected. The age was 35 -70 years (mean 56 ± 10). On echocardiography 29 cases were considered suitable. All the procedures were done with femoral arteriovenous access. The defect visualised with pigtail LV angiogram and crossed with long terumo wire from LV side to make AV loop. In about 2/3 of the cases (18/26) balloon sizing of the VSD was was also done and device 4-5 mm larger than defect size selected. In 10 cases we selected ASD device due to very large defect.

Two cases 12 and 6 years old, operated for Tetrology ware unable to be weaned off from the ventilater in 3-7 days, ware found to have left over Rt BT shunt in one case while 2 MAPCAS in other. The BT shunt was closed with 8/6 ADO-I while MAPCAS were occluded with 2 free coils.

A serving NCO from operational area reported with agonizing buzzing sound not letting him sleep in last 5 days after recovery from minor pellet injuries of head and neck area, was found to have Acquired

arteriovenous malformation (AVM), was successfully identified with carotid angiogram and occluded with coil.

Another soldier from operational area with severe hypertension was found to have severe coarctation and with femoral artery approach coverd CP stent was implanted to relieve the gradient.

Results: In cases of VSR we achieved procedure success in 85% and overall success in 70% of cases. In post op Tetrology cases, aquired AVM and coarctation stenting we achieved 100% results. Though the case with coarctation is still on antihypertensive medications but his functionality has improved and his medications are minimal.

Conclusion: Stuctural heart interventions can be life saving in emergency situations.

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MINIMUM INITIAL SERVICES PACKAGE (MISP) FOR REPRODUCTIVE HEALTH IN DISASTER MANAGEMENT RESPONSE BY ARMED FORCES IN PAKISTAN

Naila Azam

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ABSTRACT

Background: Emergencies and large-scale disasters have significant impact on public Health, health infrastructure and the delivery of health care. Emergencies have a disproportionate effect on the poorest and most vulnerable, particularly women and children. Pakistan is among the ten countries with the highest under 5 mortality ratios in the world and evidence proves that neonatal mortality rates are also highest in areas affected by humanitarian emergencies.

Objective: We examined crisis response experience of various armed forces units to determine need for inclusion of MISP (Minimum Initial Services Package) in their function to provide effective reproductive health services for the dependent population in their respective AOR.

Methods: Data was collected to ascertain the demographic profile of TDPs in various disaster management response situations by the armed forces medical corps in camps during the year 2015.

Various curative and preventive services offered at each camp were assessed for need of appropriate and effective services leading to sustainable rehabilitation of population.

Results: The data of armed forces medical response units at the flood relief camps in central Punjab in July 2015 and KPK Earthquake relief camps in October 2015 revealed 80% of population residing in camps comprised of women and children. The services offered were those for Diarrhea (32-40%), Fever (86-90%), Respiratory Tract infections (80-83%), Injuries (45-60%) and Skin diseases (23-37%) in both the camps. Despite presence of women of reproductive age in both camps, there was no recorded delivery or presence of trained birth attendant in the health care workforce record. The mortality record however revealed no maternal mortality but high perinatal and infant mortality. Assuming this record as measure of unmet need of MISP for Reproductive Health in Disaster response; a plan has been proposed for implementation of MISP in all disaster response by armed forces units when called to action in aid to civil government.

Conclusion: Sexual and reproductive health (SRH) is a significant public health need in all communities, including those facing emergencies. Universal access to reproductive health should be integrated into all national strategies and contingency plans at all levels.

Keywords: MISP (Minimum Initial Services Package), Sexual and reproductive health (SRH).

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AN UPDATE ON PROCEDURAL OUTCOMES OF PRIMARY PCI IN PATIENTS WITH STEMI AND ITS IMPACT ON IN-HOSPITAL MORTALITY AT A TERTIARY CARDIAC CARE CENTER

Naseer Ahmad Samore, Hafsa Khalil, Sohail Aziz, Fida Hussain, Safdar Abbas, Imran Fazal, Tariq Hussain, Farhan Tayyab, Shahid Abbas, Asif Nadeem, Ayaz Ahmed, Jehanzab Ali, Shaista Naseem

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ABSTRACT

Objective: To determine the primary and secondary outcomes of primary percutaneous coronary interventions (PCI) in ST segment elevation myocardial infarction and to measure the success rate of primary PCI procedure at AFIC/NIHD.

Study Design: A descriptive cross-sectional study.

Materials and Methods: The study was conducted in the Cardiology department of AFIC/NIHD, a tertiary care cardiac institute at Rawalpindi. The data was collected from an ongoing registry. It is an update on procedural outcome of PPCI over the 4 year duration from October 2011 to January 2016. Total 2136 patients who underwent primary PCI were included in this study. Procedural outcome, success and in hospital mortality were notable variables.

Results: The mean age was 59 ± 10.88 years. Patients of age group 58-75 and above 75 year were having high mortality rate of 2.1% and 2.5% respectively (p-value<0.783). There were 1975 (92.3%) males and 164 (7.7%) female. 378 (17.6%) patients were found to be diabetic (p<0.554), 608 (28.4%) hypertensive (p<0.736), and 637 (29.7%) patients were smokers (p<0.868). Family history of ischemic heart disease was positive in 323 (15.1%) patients, which is a significant factor with the p-value=0.028. Anterior, inferior and lateral myocardial infarction was present in 1116 (53.8%), 920 (44.3%) and 19 (0.9%) patients respectively (p<0.800). The Median time from the onset of symptoms to the arrival in the hospital was 210 ± 562.8 min (p< 0.001) and median door to balloon time was 56.25 ± 2.6 min (p<0.566). Left anterior descending (LAD) was the culprit artery in 1115 (56.1%) patients followed by right coronary artery (RCA) 659 (33.2%) & left circumflex artery (LCX) in 174 (8.8%) cases (p<0.001). 44 (2.1%) patients died in the hospital.

Conclusion: High success rate with low mortality rates can be achieved in our set up. However more studies and long term follow up is required to validate our results.

Keywords: Primary percutaneous coronary intervention (P.PCI), ST segment elevation myocardial infarction (STEMI).

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PESHAWAR SCHOOL ATTACK; CHALLENGES AND OPPORTUNITIES IN MANAGEMENT OF PSYCHOLOGICAL TRAUMA

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ABSTRACT

Objective: To document the culturally sensitive stage based approach adopted to deal with the psychological trauma of adolescent boys, their parents and teachers who were exposed to the gruesome terrorist attack on 16th Dec 2014 in Army Public School (APS) Peshawar

Study design: Action research methodology

Place and Duration of the Study: The study started post APS attack on December 2014 in Peshawar and continued till May 2015

Material & Methods: Following the action research methodology, community participation was emphasized and teachers, parents and other stake holders participated in meetings and through

consultative process each step of trauma assessment and management was finalized.

Results: Psychological rehabilitation of trauma victims, students, their families and teachers, was provided and support was ensured to all undergoing stress.

Conclusion: A consultative approach with action based research methodology proves to be beneficial in times of crisis by providing both response to an emerging need in times of crisis and also generates understanding with regard to management of trauma in a culturally sensitive manner.

Keywords: Psychological Trauma, APS Attack, Action Research, Culture Sensitive Intervention, Rehabilitation.

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NATURAL DISASTER- FLOODS OF 2010- CMH NOWSHERA DAMAGE, RESPONSE AND RESTORATION- AN ANESTHETIST'S PERSPECTIVE

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ABSTRACT

Introduction: CMH Nsr was a fully functional 400 bedded B Class hosp, full of life and activity looking after the sick and wounded of Nsr Garrison, when on 29th July 2010 evening, it was flooded with raging river Kabul. The danger was eminent and response had to be quick. There were 208 indoor patients including 10 patients in ITC.

In rising waters, all of the 208 patients, 40 families including children, AFNS Offrs, JCO's and sldrs. were successfully evacuated to ASC Centre Nsr. Essential electro medical eqpt including operation theatre eqpt was also salvaged. The evacuation started at 2000 hrs and was complete by 0200 hrs. 30thJul.

The first baby was delivered at the new loc. at 0300 hrs.

Being the only available anesthetist, I had to be the part of the evacuation process and the estb. Of the emergency hosp. which I had to command during this crisis. Six years later, now I can share the problems we encountered, the lessons we learnt and the tremendous amount of human efforts involved to restore back the damaged hospital. What we learnt can be used to prepare ourselves better for the future catastrophes.

Sequential Response

Phase I

Estb. of emergency medical services

Phase II

Assessment of losses and estb. an interim hosp.

Phase III

Estb. of a new 400 bedded modern hosp.

Activity at the newly estb emergency center

Restoration of original CMH functioning

After restoration of 60% of less damaged structures / incurring min.

finances and augmentation by MASH, the hosp.was able to take upto 50– 60% of the original work load.

Human workforce to restore the damaged hospital

The restored hospital- time line

Appreciation for the work well done

Problems and shortcomings

Conclusion/ future planning

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PAEDIATRIC VICTIMS OF EARTHQUAKE 2005 – ANALYSIS AND LESSONS

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ABSTRACT

Objective: A massive earthquake struck North Pakistan on 8 October 2005. Children formed a major proportion of the victims who were treated in Military Hospitals. The objective of this paper is to evaluate the types of injuries and the procedures carried out on the admitted children, and to present their special needs with specific recommendations based on these experiences.

Study Design: Retrospective, Descriptive.

Place and Duration of Study: Military Hospital, Rawalpindi from Oct 2005 to Dec 2005.

Materials and Methods: Up to 12 year was the age of children admitted to Paediatric surgical ward of Military Hospital (MH), Rawalpindi. Inclusion criteria included all patients who required admission for treatment. Patients who had minor injuries not requiring indoor treatment and those who were dead on arrival were excluded. The files of admitted patients were analyzed for type of injuries, procedures performed, complications, and causes of death. Focused analysis and audits were performed.

Results: The total number of patients admitted was 1720, of which 561 (32.6%) were children, ranging in age from 18 days to 12 year. The number of operations performed was 2289, which included 694 (30.3%) in children. Sixteen (1.5%) amputations in adults included 3 in children. There were 4 children out of the 16 deaths (1.9%) which occurred in hospital, while 76 dead bodies were received.

Conclusions: Children have special needs. After the initial days of life and limb saving, it is important to quickly divide the manpower into teams with a major emphasis on plastic, orthopedics and spinal surgery. Shifts have to be introduced quickly and to utilize the volunteer manpower early and judiciously. Prevention of tetanus is essential.

Keywords: Pediatric; Earthquake; Military hospital; surgery

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THE ROLE OF NURSE IN EMERGENCY PREPAREDNESS

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ABSTRACT

Objective: To explore the roles of nurses in emergency preparedness among military nurses in Pakistan and to find out factors affecting emergency preparedness.

Study Design: This is a cross sectional, descriptive survey

Place and Duration of Study: The study is carried out at College of Nursing, Armed Forces Post Graduate Medical Institute Rawalpindi and duration is one month from 1st to 31st Mar, 2016.

Material and Methods: A tool consisting of One Hundred and Twenty (120) Structured Questionnaires were distributed to 150 nurses after taking informed consent by using convenience sampling in the College of Nursing, Armed Forces Post Graduate Medical Institute Rawalpindi.

Results: The findings of this study recognized that 50% of the participants were within the age range of 40-49 years. All the participants 100% were female and 56.7% of the participants were at the rank of Major 39% of which have working experience in almost all the departments including accident and emergency department. 37.3% of the participants had a working

experience between 21– 30 years. 76% of the participants had a clear and correct understanding of the concept of emergency preparedness. Also, 52% of the participants strongly agreed that the roles of a nurse in emergency preparedness are enormous and central to emergency preparedness. Most of the participants 97.3% ticked all the tools itemized for emergency preparedness use and 94% of the participants selected all the factors affecting emergency participants.

Conclusion: Nurses perform an exhaustive list of activities in emergency situations. The role of the Nurses is fundamental to emergency preparedness as an armament of health care professionals. It is the need of time that, nurses must receive better basic and continuing education for competency in emergency response to accomplish their roles in hospital and community.

Keywords: Disaster, Preparedness, military, role, Nurse, Pakistan.

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DISASTER MANAGEMENT IN EMERGENCY SITUATION

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ABSTRACT

Objective: The relevant research in response to disaster management is still in its infancy, especially in low income countries. This research work aimed on status of disaster health management, lesson learnt from the crisis and challenges faced in Pakistan.

Study Design: Cross sectional studies

Place and duration of studies: This study was conducted at Armed Forces Post Graduate Medical Institute, Rawalpindi from january2006 to july2006.

Material and methods: A scoping review method was used to address the challenges faced in disaster management in Pakistan. Major health electronic databases of WHO, international disaster management society and Pakistan National / Army publications on disaster planning were searched to identify the core disaster management problems.

Results: Since 2006 considerable progress has been achieved in the health disaster response system in Pakistan. However, there remain challenges that hinder effective health disaster responses, including disaster-resistant infrastructure safety, the lack of specific disaster plans, poor emergency coordination among volunteers. Additional challenges include the fragmentation of the emergency health service system, a lack of specific legislation for emergencies, disparities in the distribution of funding, and inadequate cost-effective considerations for disaster rescue.

Conclusions: To reduce disaster related mortality and morbidity, need is to focus on lesson learnt from past management experience through corresponding policy strategies at multiple levels (e.g. volunteer management community, hospital, and healthcare system level) and to provide regional leaders a foundation for building disaster / trauma systems / volunteer cells by acquiring the necessary concepts and educational tools.

Keywords: Disaster management; Disaster response; Health system; Emergency situation; Medical aid challenges.

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MATERNAL RESUSCITATION –EMERGENCY RESPONSE AND CURRENT GUIDELINES-A CASE SERIES

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ABSTRACT

Managing a maternal cardiac arrest is an extremely challenging and trying task for emergency department staff as there are two patients, the mother and the fetus. Since out-of hospital cardiac arrests carry the worst outcomes, emergency medical services also play an integral part in the management process. The optimal management of a maternal cardiac arrest requires the participation of several different non emergency teams, as well as the use of specialized equipment neither of which are part of the usual emergency department code protocols. Maternal cardiac arrest is the most complicated arrest scenario.Yet, since maternal arrest is such a rare event, preparations for maternal cardiac arrests are minimal and receive the least attention. Perimortem cesarean section should be done within 5 minutes of cardiac arrest if resuscitation is ineffective in maternal interest .the emergency rooms should be prepared to handle this scenario and protocols should be in place..We present in this case series the outcome of patients who had in hospital cardiac arrest and the subsequent management they received.

Keywords: Cardiac arrest, Perimortem cesarean section, Cardiopulmonary resuscitation.

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BARRIERS IN REINTEGRATION OF DISASTER AFFECTED DISABLED PERSONNEL AT WORKPLACE IN ARMY

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ABSTRACT

Objective: To determine the barriers at work place adjustment faced by war wounded disabled personnel (Selected Categories) after discharge from AFIRM.

Study Design: Descriptive cross-sectional study

Place and Duration of Study: AFIRM Rawalpindi, officer's wards CMH and military college of signals Rwp from November 2014 to June 2015.

Material and Methods: Study was based on convenient sampling techniques .The main outcome variables were demographics, types of injury and the problems faced at the workplace. The data was collected, stored, and processed by using Microsoft Excel.

Results: There were 30% soldiers among the respondents and 35% had been discharged from AFIRM for over 3 years and had availed of leave more than 1 year since discharge from AFIRM. 73% reported support from family but 55% reported non supporting behavior of colleagues at work place besides awkward ness in work environment due to special needs.

Conclusion: There is need to concentrate more on some important stages of rehabilitation management. Units also need efforts on structural modifications needed for disabled personnel to make their work place and living disability friendly.

Keywords: Rehabilitation, activities of daily living, international classification of functioning disability and health.

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PSYCHIATRIC SUPPORT SERVICES AND EVALUATION OF COMBAT STRESS IN TROOPS OF OPERATION AL-MIZAN

Sohail Ali

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ABSTRACT

Introduction: Op Al Mizan started in 2007 and resulted in the largest ever presence of military in the FATA area to reclaim the Government's authority in and around the South Waziristan Agency. The conflict and war between the troops of Pakistan Army and hostiles in the area caused innumerable injuries and casualties, which became the order of the day during the years 2008 - 2011 (the period in which these services were carried out). Dept of Psychiatry at CMH Kohat took on the challenge to address the psychological injuries of these troops. After thoroughly evaluating the situation and establishing the needs of the area, a comprehensive plan was made and put into action with the following objectives:

Objectives: Assessment of psychological needs and provision of psychiatric support services to the families of troops.

- Assessment of nature of psychological injuries including PTSD amongst the combat exposed troops.
- Provision of best psychiatric support services to the psychologically injured soldiers

Methodology: The plan involved a multipronged approach and addressed the following chapters:

Assessment and provision of services were carried out simultaneously. The assessment of families involved use of psychometric testing with GHQ-12, BDI and PCL-Civilian version. Those testing positive on one or more of these tests were provided with specific treatments

Creating awareness and educating the medical staff about psychological injuries, through a series of training workshops and interactive lectures

Educating the commanders about combat stress and its management, at unit level, in headquarters and in areas of deployment

Developing psychiatric support service for families of Officers and troops through Psychological 1st Aid, counseling sessions, EMDR and pharmacotherapy

Carrying out research and evaluation of combat stress amongst troops using a battery of psychometric tests and individual clinical interviews. The tests included BDI, PCL-Mil version, CES, ISS, SF-36, Coping Methods and PTGI. The sample of the troops comprised of 889 soldiers assessed over a period of 4 years.

Results and Discussion: This project spanned over a period of almost 4 years and with help of two very dedicated clinical psychologists, the whole process was completed. The results of the project are shown here in the form of graphs and tables and the audience will be apprised about the details and development of a working model for a comprehensive Mental Health Response to combat situation as it happened in Kohat between 2008 and 2011.

Conclusions: A comprehensive Mental Health Response is essential to any modern military to minimize injuries and dysfunction, to maximize its battle worthiness and ensure the long term health of the most vital weapon i.e. the soldier. Pakistan Army, now involved in an unconventional war, has suffered its share of injuries, both physical and psychological. The subject presentation provides a working model for adoption and incorporation into the Medical Services Response to Combat for the Armed Forces of Pakistan.

PLANNING FOR COMPREHENSIVE GYNAECOLOGY AND OBSTETRICS SERVICES IN DISASTER MANAGEMENT

Ambreen Anwer

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ABSTRACT

Background: Pregnant women, infants, and children are adversely affected by disasters resulting in an increased number of infants with intrauterine growth restriction, low birth weight, and a small head circumference. Emergency plan specifically for need of women and children during disaster are currently underdeveloped to provide for healthy pregnancy.

There is limited awareness of the obstetrics specialization need in the world of disaster planning structure.

0bjective of study: The purpose of study is to formulate and organize plan for obstetrics services at ground zero, and then link it to regional comprehensive reproductive services.

Study Design: Descriptive study

Place and Duration: Record of Obstetrics and gynecology services provision during earthquack (Nepal 2015), Floods in Sindh (2011), IDP covers Nowshera (2009 and 2010). Each cover of minimal one month duration maximum one year

Results: No formal planning of Obstetrics and gynecology care on site of incident was done except provision of gynaecologist as a person.

There is no policy of triage and transfer of patient to regional comprehensive care.

Conclusion: To improve the outcome of obstetrics services we need strategies linking initial minimal services to comprehensive reproductive health services. This will include three major steps:

- Prioritization of disaster planning of obstetric units
- Organizing and begining training at the Central Advisory Level
- Making a national collaboration of obstetric services in Disaster with National societies as SOGP (Society for Obstetrics and Gynaecology) and MISP (Minimal Initial service package) and Ministries for Health and Women Affair

Keywords: Disaster Management, Reproductive health services in disaster, Triage in Obstetric Emergencies.

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EFFECTS OF AWARENESS CAMPAIGN ABOUT EBOLA VIRUS DISEASE EPIDEMIC AMONG HEALTH PROFESSIONALS OF UNITED NATIONS PEACE KEEPING FORCES IN LIBERIA

Adeel Gardezi, Khalid Piracha, Azhar Chaudhry, Abid Hussain

ABSTRACT

Objective: To assess the effectiveness of awareness campaign and learning methods among Health Care workers of United Nations Peace Keeping Mission in Liberia during Ebola Virus Disease (EVD) outbreak of 2014.

Study Design: Observational Study.

Place and Duration of Study: The study was conducted at Pakistan Field Hospital XI, Monrovia, Liberia from March 2014 to June 2014.

Materials and Methods: A team of Doctors of Pakistan Army level II+ hospital (PAKMED XI) initiated the effort of training of HCW in Liberia for dealing with "Suspected" or "Probable" cases of EVD. HCW from Pakistan and other nationalities were enrolled and divided in eight groups for three weeks training program. The prior knowledge of every HCW was assessed with a questionnaire at the beginning of each training cycle. Participants were given theoretical knowledge as well as practical demonstration of

"donning" and "doffing" of Personal Protective Equipment (PPE). At the end of training program, participants' knowledge was assessed again with same questionnaire.

Results: One hundred and Seventy three (n=173) individuals were enrolled at the beginning of training program. Twenty one individuals could not complete requisite training. Questionnaires from remaining 152 participants showed a mean score of 2.15 (scale of 1 to 5) in prior knowledge and preparedness to handle EVD cases. At the end of training session, the mean score was 3.85 showing a shift towards better knowledge, self-confidence, improved PPE handling and lessening of fear of the epidemic.

Conclusion: Limitations to deal with situations like EVD epidemic can be effectively addressed with better awareness programs, practical skills teaching and sustained efforts for preparedness when sincerely undertaken.

Keywords: Ebola Virus Disease, Personal Protective Equipment.

EMONC (EMERGENCY OBSTETRICS & NEWBORN CARE) TRAINING TO REDUCE MATERNAL & NEWBORN MORBIDITY AND MORTALITY

Sadiah Ahsan Pal

ABSTRACT

Objective: The aim of regular EmONC trainings based on global evidence based guidelines, is to build the capacity of maternity staff to deal with the major causes of maternal mortality in Pakistan i.e. Postpartum and antepartum haemorrhage, Eclampsia, Obstructed labour, Sepsis and Unsafe abortions. Training is also provided in early recognition of birth asphyxia and its management as it is the major cause of morbidity & mortality for the newborn, as well as other common causes of morbidity.

Study Design: Retrospective analysis of 3 days EMONC trainings for maternity staff of various tertiary care hospitals

Place and Duration of Study: Five Training workshops conducted at different tertiary care hospitals in Karachi and Lahore, from 2009 to 2011

Materials and Methods: Adult based learning methods were employed in these 3 days interactive trainings, so that timely quality emergency care is provided, by improving the knowledge and skills of the duty staff. Role Plays, mock emergency drills, check lists, videos and interactive lectures were employed in training

Results: Five workshops with an average of 30 participants were evaluated. The feedback evaluation forms were anonymous. All training sessions were appreciated, especially the emergency mock drills, role plays, videos, Condom balloon tamponade for PPH, AMTSL,MVA & Misoprostol use in Obstetric & Gynae practice. All participants in all 5 workshops improved their knowledge scores in the Post Test; majority showed more than 2 fold improvement and felt confident about dealing with real life emergency situations for the mother & neonate

Conclusion: Women die in childbirth sometimes even after reaching a tertiary care facility. Such EmONC trainings help reduce iatrogenic deaths, by improving knowledge & skills of maternity staff.

Keywords: Emergency Obstetrics Newborn Care Training, EmONC, Post partum Haemorrhage, Misoprostol, Magnesium Sulphate, Eclampsia, Sepsis, Essential Newborn care, adult & newborn resuscitation.

ROLE OF PHYSICAL MEDICINE AND REHABILITATION IN DISASTER MANAGEMENT

S R A Kirmani

ABSTRACT

Objective: The objective of the study is to highlight the role of Physical Medicine and Rehabilitation in disaster management.

The study is based on reviewing literature and from our own local experience in the management of Spinal injury and Amputees during and after 2005 earth quake disaster.

Studies from Hurricane Katrina, NewOrleans USA; Recommendations of WHO and Europea Union have been documented for preparedness for Medical emergencies.

Another study conducted by Johns Hopkins Hospital and Red Cross, Red Crescent societies have been quoted for training of Health workers and related personnel.

Role of PM&R in Floods in USA, earth quakes in Pakistan, China, Haiti and Iran has been recognized by all International Organizations including International Society of Rehabilitation and Physical Medicine ISRPM.

Early rehabilitation results have been reported in reduction of duration of hospitalization, early restoration of function, prevention of secondary and tertiary complications and help prevent psychological trauma.

Delayed treatment becomes more difficult to manage with contractures, pressure ulcers, Urinary tract infection, deformities and chronic pain which make rehabilitation more expensive with poor outcomes.

Keywords: Rehabilitation medicine, disability, disaster management, EArly rehabilitation.

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THE CHALLENGE OF MEDICAL RESPONSE IN EMERGENCY SITUATIONS

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ABSTRACT

Background: Pakistan is not only a disaster prone country as we have been witnessing both manmade and natural disasters nationally for a couple of years causing loss of precious human lives and property but the frequency and intensity of such disasters have also increased in the recent past. Many reasons seem to be responsible like Pakistan is located in the most vulnerable region, which is prone to intense climate change and natural disasters due to its diverse range of terrain stretching cylindrically from the Arabian Sea to the Himalayan peaks beside cross cutting issue like poverty, unplanned population growth, urbanization, law and order situation etc.

Response During Disasters by Community: Disasters are local phenomena's and the first responders are always the community individuals before mobilization of formal organizations at the district/provincial and federal level depending upon the severity of situation. In 1995, when an earthquake of 7.2 on Ritcher scale hit the Kobe city in Japan, it was observed that 60 percent residents were evacuated by their own efforts and 20 percent were rescued by the neighbours. Therefore we can say that well trained/well equipped human resource is required at the local level for managing any type of disaster before the activation of other organizations and resource mobilization at the higher level as community in any case is the first responder to react.

Response Model Used in Developed World: For mitigating the effects of disasters, highly organized and coordinated efforts are required by different organizations working at the grass root level with

clear distribution of roles and responsibilities. In developed countries, the response mechanism is mainly based on the concept of Integrated Emergency management (IEM), comprising of three pillars i.e Police for cordoning off the area/maintaining law & order, Ambulances/Medical staff for the provision of health care, and Search and Rescue teams. All these organizations worked in close coordination with central command post, controlling and monitoring the incident command officers in the field.

Integrated Emergency Management (IEM) works as:

Emergency Operating Centres (EOC), Emergency Response Room (ERR) act through Information Communication Technology (ICT), First Responders (field)

Emergency Response Room (ERR) also called co-location- comprises three disciplines (fire brigade, medical service, police) as mentioned above and they worked as

- Integrated System: an operator working in the room can take any call
- Multi-disciplinary System: operators of the 03 disciplines are housed together, but each can take discipline specific calls
- Virtual System: operators not housed in the same room, but have face to face contact through ICT

Hospital Emergency Incident Command System (HEICS) is also required for better coordination in relief efforts.

So we can say that a very well organized, well established response mechanism exists which is required for dealing with any type of emergency situation

Response Model used in Developing World like Pakistan:

Developing countries, including Pakistan are highly vulnerable to all types of disasters and during the last few years we have consecutively observed multiple disasters. Response mechanism adopted over here is not that much organized or well coordinated due to a number of reasons. For example it has been observed that during emergency situation, there is uncontrolled influx of large no of people to the incident site thus further deteriorating the situation. Lack of coordination among different organizations working during response was found to be the major issue. Emergency department-1122 plays an important role during response phase of any type of disasters but unlike developed countries this organization is performing the role of fire brigade/search and rescue, medical service and police altogether as a single department thus putting extra burden on one organization instead of utilizing the services of other organizations as well in a coordinated manner.

Moreover, overwhelming/extreme health emergencies which couldn't be controlled by the local government alone, army's role become critical for managing such situations. From this discussion we can say that in countries like ours we have multiple organizations (civil/army/INGOs/NGO,s) respond to different types of disasters but lack of coordination/harmony among them is considered to be the primary hurdle in the way of well coordinated health response mechanism thus leading to waste of resources and duplication of work as this may lead to the establishment of many parallel health systems. These parallel health systems duplicate services in one area while leaving others uncovered.

It is the responsibility of the government (civil/army) and humanitarian organizations (INGOs/NGOs) to understand the main purpose of coordination which is required for achieving maximum impact within available resources. Parallel health care facilities are required when local health care facilities are non operational or with limited capacity.

As discussed earlier, disaster is a local phenomenon and need local response. Therefore it is important to strengthen the local health system through local organizations. The emergency health programme must be in line with the government's health policies like provision of essential drugs, treatment protocols and referral systems. During emergencies, priority should be given to common health conditions such as trauma injuries, acute infections. It should also involve networking of all available health providers both from the public and private sector including community health workers.

Role of Military during disasters: army is usually considered to be the earliest first responders to disasters. Its main role is to provide assistance to the civilian authorities including civilian health system. The military's hierarchical command structure allows it to respond to disasters in a rapid and coordinated manner. They have easy access to resources and are equipped to perform vital functions in disaster response such as resource distribution, security services, search and rescue, logistics assistance,

transportation to otherwise unreachable communities and field hospital staffing and management.

Traditionally, military is usually not involved by humanitarian organizations for ensuring neutrality, impartiality and independence. But in case of overwhelming complex situations the concerns about neutrality become irrelevant and allow all organizations (military/civil/humanitarian) to work together.

Challenges of Health Response During Disasters include:

1. Hazard mapping

2. Health infrastructure safety: Disaster resilient/safe hospitals to remain functional during disasters with a back-up system (electricity, water, communication). Therefore, structural standards to be enforced to reduce casualties from disasters

3. Preparedness Plans: Health Preparedness/Response plan at national/local level

Specific disaster plan for different types of disasters with specific protocols/SOPs by hospitals- to be developed, in advance in the light of communities 'resources, hazards and other unique factors

Trained HR- for dealing emergency situation with availability of all essential supplies- simulation exercises

Capacity building of the community as they are the first responders in first aid/BLS

4. Disaster medical response capability: A rapid and effective medical response by the local health authorities like field triage, transport, and transfer. Healthcare facilities need to be self-sufficient for the first 48 to 72 hours;

5. Recovery: Rehabilitation specially in terms of psychosocial support or psychological intervention

6. Others: Networking/Coordination among all stakeholders including health care facilities/resource mobilization

DEWS

Disparities in funding distribution among urban and rural health care facilities Funds allocation required to local primary healthcare centres and hospitals so that they can improve their capacity as the first disaster responders, Low level of preparedness/coordination at all level.

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ROLE OF PHYSIATRISTS IN POST DISASTER SCENARIOS- LESSONS LEARNED FROM EARTHQUAKES IN THE LAST DECADE

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ABSTRACT

Objective: To document the emerging role of rehabilitation medicine physicians (physiatrists) in disaster management.

Study Design: Mixed methods study.

Material and Methods: Authors had firsthand experience in the acute and emergent care and rehabilitation of trauma patients after Pakistan, China and Haiti earthquakes. An electronic literature search (English, 1965-2015, keywords: trauma, rehabilitation, disability, spinal cord injury, amputation, disaster, earthquake, physiatry, physical medicine and rehabilitation, nerve injury) was carried out. Experience sharing through committees, online forum, and communications were a conducted with physiatry colleagues internationally

Results: The patterns of injuries among survivors of recent disasters have, range from mild (single limb fracture) to catastrophic (spinal cord injury, amputation, traumatic brain injury). Historically physiatrists have not participated the acute disaster management phase or in the emergent post disaster rehabilitation planning. This task is usually relegated to the trauma, orthopedic and general surgeons.

In these three recent earthquakes, Physiatrists provided direct patient care, including guidance in the evacuation of survivors with pre-existing disabilities, transport of persons with spinal trauma, treatment of

wounds, fractures, pain, spinal trauma patients and persons with amputations. Physiatrists devised appropriate plans for conservative management of fractures. Education of local staff and coordination of rehabilitation was initiated. Monitoring, prevention and treatment of secondary complications including prolonged immobility, pressure ulcers, chronic pain, urinary, bowel and respiratory dysfunction was performed. Physiatrists helped in patient counseling and family education, and have played a critical role in identifying the longer term needs for patients newly disabled, to assist in health planning.

Conclusion: Rehabilitation Medicine has an important role to play in the acute care and emergent rehabilitation phases following disasters. Timely rehabilitation interventions for newly injured , including Spinal cord injuries and lower limb amputations following the Pakistan, China and Haiti earthquakes resulted in reduction in morbidity and mortality among those with catastrophic injuries, and have increased the local capacity of communities to continue to provide ongoing rehabilitation services . I will be presenting an overview of these strategies.

Keywords: Pakistan, Rehabilitation, Disaster, Earthquakes, Disaster management, Lessons, Disability, Spinal injuries.

ANALYSIS OF PRE-HOSPITAL PHASE OF MASS CASUALTY INCIDENTS IN PAKISTAN- A QUALITATIVE, COMPARATIVE STUDY

Hunniya Waseem

ABSTRACT

Introduction: Since 2003, Pakistan has seen a surge in Mass Casualty Incidents due to increasing terrorism and civil conflicts. These incidents while leading to a significant loss of lives, resources and infrastructure have also posed significant medical challenges. With an emergency response system which was initially ill-equipped to deal with any natural or man-made disaster at the turn of the century, some headway has been made with introduction of a pre-hospital service which provides ambulances and paramedics on the scene. This paper studies different MCI's in the country in the year 2009-2010.

Material and Methods: Qualitative data analysis emphasizing on number of ambulances on the scene, response time, distribution of casualties. Data sources were records from Rescue 1122 and Edhi ambulance services. Semi-structured questionnaires were used with open ended questions to determine the challenges faced by responders.

Challenges Identified: Lack of a single Command and Control

- Public Chaos and Rioting
- Lack of security on site
- Overcrowding of ambulance on scene
- Reverse Triage
- Designated trauma receiving units- which? Why is it important to go to the Right Hospital?
- Socio-political Influences and Financial Gains
- Emergency Departments --? or Lack of them
- Dead on the Scene- Forensic Aspects
- Data collection and identification and follow up of casualties.

Comparison: As a few examples there will be a discussion about MCI management in different first world countries.

Conclusion: An identification of the challenges faced, lessons learned and how things can be improved in a Pakistani context.

ADMINISTRATIVE CHALLENGES FACED WHILE MANAGING 2005 EARTHQUAKE VICTIMS AT KRL HOSPIAL ISLAMABAD

Kamran Majeed

ABSTRACT

KRL Hospital Islamabad played a commendable role in the management of October 2005 earthquake victims despite limited resources and capacity. More than 780 surgeries were performed under anesthesia alongwith > 1200 dressings. Apart from casualties, attendants were also looked after. 100 beds were provided for the victims; a shelter was created as a step down facility for stable patients to take more emergencies. Later help was also provided in their rehabilitation.

Challenges faced, measures taken and recommendations for future response will be presented.

Challenges included building security, patient evacuation capacity enhancement, additional resources including funding, medical & prosthetic supplies, food, clothing, manpower, keeping morale high, accepting right patients, coordination, proper registry, creating & managing step down facility and finally disposal and rehabilitation.

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PAK ARMY MEDICAL RELIEF MISSION NEPAL EARTHQUAKE: DISASTER PREPAREDNESS IMPLEMENTED!

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ABSTRACT

Objectives:

To classify patterns of the injuries / diseases presenting to Pak Army Field Hospital.

To describe the Medical Relief Mission deployment sequence

To describe the pre-mission preparedness status and processes / efforts leading to readiness

To derive lessons for future enhancements / improvements

Study Design: Retrospective study.

Place and Duration of Study: Bhaktapur District Nepal from 26th April 2015 to 21st May 2015

Material and Methods: Recorded data of medical relief efforts was retrospectively analysed using SPSS v 21. Patients were classified into Earthquake-related Injuries and Medical conditions using categories of a modified CDC mass casualty surveillance proforma. Significant achievements under duress and difficulties faced at various steps were identified.

Preparedness plans dated 11 Apr 2012 prepared by GHQ Medical Directorate were evaluated retrospectively for planned sequence of implementation.

Results: A total of 2168 patients presented during 22 days of deployment.Out of these 770 (35.5%) were earthquake related Injuries and others were 1398 (64.5 %). 57 patients were admitted whereas 741 were detained. Mean hospital stay was 3.24 days. 393 minor and 32 major surgeries were performed while 02 births and 01 deathoccurred.Most common injuries were fractures and soft tissue injuries of limbs. 807 patients underwent investigations of which 731 were labs and 76 were ultrasounds.

- A Disaster management Cell was set up at 141 Med Battalion. Initial deployment of men and materials (advance party) was transported on two C130 flights. Camp was set up within 6 hours of arrival and casualties' reception begun.
- Pre-mission preparedness was based on a comprehensive document authored by GHQ Medical directorate.
- Lessons include avoidance of delay due to travel documentation by having earmarked passport ready

manpower, segregated packing of materials with clear labelling and improvement in shelters (state-of-the-art Alaska shelters) and equipment.

Conclusion; The Pak Army Field Hospital Medical Relief Mission to Nepal was an unprecedented success that was only possible due to the preparedness efforts already underway in advance

Keywords: Disaster preparedness, Nepal earthquake, Trauma.

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PREPAREDNESS OF MILITARY HOSPITALS FOR OUTBREAK OF INFECTIOUS DISEASES DURING DISASTER RESPONSE

Muhammad Ejaz

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ABSTRACT

Objective: To assess the existing preparedness level of a tertiary care hospital with reference to international protocol for outbreak of infectious diseases during disaster.

Study Design: Descriptive cross-sectional study

Place and Duration of Study: The study was conducted at Military Hospital Rawalpindi from October 2014 to July 2015.

Material and Methods: Mixed method approach was used to collect data i.e. by checklist, situation analysis approach, interviews of key informants and self designed survey questionnaire. A sample size of thirty doctors, thirty AFNS officers and sixty paramedics.

Convenient sampling technique. Descriptive statistics employed via Statistical Package for Social Sciences (SPSS) version 22.

Results: Hospital management was sensitized, most of the quality standards were being initiated and structures for infection control and prevention improved. There was need for better coordination between and within departments and service providers to make system harmonized and synergistic for all efforts to ensure control and prevent infectious diseases in the hospital for enhancing preparedness of MH for management of Infectious disease outbreak in any disaster.

Conclusion: Specific plans should be prepared and updated for effective response against outbreak of infectious diseases in emergency.

Keywords: Infectious Diseases, Hospital preparedness, International Protocol.

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DISASTER MANAGEMENT IN A RESOURCE LIMITED SET UP – A PATHOLOGIST'S PERSPECTIVE

Zujaja Hina Haroon

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ABSTRACT

Objective: To share experience of disaster management in a resource limited set up with other responders.

Study Design: Cross sectional Study.

Place and Period of Study: Combined Military Hospital Murree from October to December 2005.

Material and Methods: All the data regarding casualties, particulars of human and material resources was collected through hospital records. This data was then analysed to estimate the additional burden faced by the pathology department CMH Murree during 2005 earthquake. The strategy adopted and outcomes were also analysed.

Results: Total 555 casualities were received at CMH Murree between 8th to 12th October 2005; out of these 349 (61.3%) were civilians and 215 (38.7%) were serving. There was 2.8 folds rise in the patient load which was significant (*p*=0.01).The work load of blood transfusion was increased by 2.7 folds (*p*=0.01).The overall work load of laboratory also showed significant rise (2.6 folds, p= 0.01). The strategy adopted to cope up with this huge additional workload included efficient management of human and material resources through a motivated teamwork.

Conclusions: In disastrous situations, the challenges can be successfully faced through team motivation and efficient utilization of human and material resources.

Keywords: Disaster, Laboratory management, Team work.

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DISASTER MANAGEMENT : EXPERIENCE OF MANAGING 177 PATIENTS WITH BLAST INJURIES

M. Shaukat, A. Tayyab, S. Zakir, Ch. Kamran, HM. Amjad, G. Mustanser, I. Azhar, Z Muneeb, N. Rizwan, Madiha Sajid

ABSTRACT

Objective: To share the experience of managing disaster with a large no. of victims, in an urban setting. Pakistan is fighting terrorism for over the last 1 decade. The pattern of target population has gradually shifted to the thickly populated urban areas. The objective is to cause extensive loss of life and property. Disrupt daily activities, and create unrest with panic and insecurity. Easy and soft targets are selected for achieving these results. Recently a Public park in Lahore on March 27, 2016 was targeted. More than 300 people were injured, majority of them were treated in Allama Iqbal Medical College / Jinnah Hospital Lahore. The immediate response, invoking the disaster management SOPs,the obstacles and lessons learnt are discussed.

Study and Design: Accident and emergency department, of AIMC and Jinnah hospital Lahore.

Material and Methods: Victims of Blast Injuries of Gulshan e Iqbal Park Lhr., who presented in ER of JHL were studied. The explosion took place at around 6:40 pm in a Public Park crowded with hundreds of families with their children on Sunday. The Park was busier than normal on account of the ongoing spring festival and Annual Flower show, and Easter Sunday. The large number of visitors at the time of the explosion caused a very large no. of people to be injured.

Rescue work started, immediately and the first Ambulance of Rescue 1122 carrying injured patients reached in ER of JHL at 7:00pm followed by 147 patients who were brought to the hospital within the next 1 hour. There were injured patients all around in ER (medical, surgical) in corridors and even on the floor. Senior most consultant of Surgical Unit on Call took over the command and announced code orange in Hospital and all the doctors, paramadics, nursing staff from residential colony of JHL and students of AIMC were called and they reached the hospital in no time. Jobs were assigned to specific people.Resources were mobilized and routine stable patients present in emergency room were discharged and moved to other government hospitals. All the Administrative staff, Doctors, Nurses and Paramedical staff was called in, to which they responded very well. Senior Consultants including Principal AIMC reached in hospital in no time. Triage was started , Rescue agency contacted to co ordinate diverting to other hospitals, patients en route to Jinnah hospital.

The bodies of received dead were placed initially in front of exit gate of ER but a decision was immediately made and after co ordinating with the District Administration a decision was made to shift all dead bodies from all hospitals to Mayo Hospital. The Idea was to divert the public looking, to another place for

their convenience and to avoid un necessary congestion at the A and E department.

Patients with minor injuries were managed on bed and in Minor Operation Theatre,(MOT) while those with Major injuries, were immediately shifted to the Operating rooms, they were resuscitated and managed there, before being Operated in 6 Operation theatres, utilizing 24 OT tables, where Professors , Associate & Assistant Professors ,Senior Registrars with teams of PGRs started Rescue Surgical work. Meanwhile Call for blood donation was made on Air through the Electronic media, and the response students of AIMC and general public was , over whelming , a make shift blood bank in the OPD reception was set up to assist and help donors. Doctors of allied specialties, including Anesthesia, Orthopaedics, Neurosurgery, Radiology, urology and maxillofacial surgery made a valuable role in management. District Management and the Police force were given charge of the security and traffic of Hospital and its surroundings, Senior Police Officer applied Barriers on All Entry and exit points to facilitate the Rescue work and avoid hindrance in management. With all these efforts we were able to manage this disaster effectively.

Conclusion: It is concluded that although various SOPs exist in managing mass casualities but the value of prompt decision holds the prime and utmost importance. Managment of mass casualities in a setting having limited resources demands immediate response to incident, collaborative work of rescue teams and law enforcement agencies in brisk transfer of victims. Upfront approach of seniors, mutual coordination, team work of health care providers and national spirit of general public can make a big difference in minimizing the gravity and intensity of such a massive disaster.

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PREPAREDNESS OF AFNS FOR NATIONAL AND INTERNATIONAL EMERGENCY PLANNING AND RESPONSE

Zarina Naz,

ABSTRACT

Objective: To explore the preparedness of AFNS in emergency planning and response in trauma care and ICU units of various Combined Military Hospitals (CMH) and to find out factors affecting emergency preparedness.

Study Design: A cross sectional, descriptive survey was conducted.

Place and Duration of Study: This study was carried out between May - Dec, 2015 and the population for this study includes the AFNS officers working in trauma care and ICU of various Combined Military Hospitals of Pakistan.

Material and Method: A cross sectional, descriptive survey was conducted to explore the preparedness and planning in emergency situation and the population for this study includes the AFNS officers working in trauma care and ICU of various Combined Military Hospitals of Pakistan. The questionnaire was developed by the authors to collect data from the participants. A pilot study was conducted. Four hundred and eighty (480) participants were administered with structured questionnaire using simple random sampling technique. Data collected from the participants were coded and analyzed (descriptive) using the Statistical Package for the Social Sciences (SPSS) version sixteen.

Results: A total of 450 (94 %) AFNS officers completed the survey questionnaire. The findings of this study established that 34% of the participants were within the age range of 24-49 years. Near two third of the participants 63% were Lt and captain and 35% of the participants were at the rank of Major. 42 % of which work in trauma care and 58 % ICU unit, 55% had a working experience between 2-13 years. More than half 60% of the participants had a clear understanding of the concept of emergency preparedness. So also, most of the participants strongly agreed that the role of AFNS in emergency preparedness and planning is enormous and central. Most of the participants 53% and 55% ticked all the tools itemized for emergency preparedness use as well as the factors affecting emergency participants respectively. Moreover; results indicate that AFNS feel unprepared with insufficient knowledge and skills to respond to large scale disasters/terror attacked causalities. The sense of

preparedness varied according to the outbreak/disaster scenario with AFNS feeling least prepared to respond to the terrorism event. Approximately 55 % of respondents were unaware if their hospital had an emergency plan for a large-scale outbreak. AFNS expressed a low degree of confidence in the preparedness of emergency planning and response for future outbreaks.

Conclusion: AFNS of all military hospitals have indicated that disaster preparedness maximized safe condition, decreases vulnerability and minimizes risk to individuals when they are confronted by a hazard also looking at current situation of country, number of terror attacks and blasts at various places of community and number of causalities; considerably more training and information are needed to enhance preparedness for emergency planning and response is needed not only for trauma care and ICU but of all dept AFNS as an important members of the hospital.

Keywords: Preparedness, Planning, Response.
Combined Military Hospital, AFNS.

PREPARING FOR DISASTERS-WOMEN'S PERSPECTIVES

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ABSTRACT

Disasters are unplanned, but can be anticipated. Emergency preparedness is essential in such an event to maintain healthy pregnancies and ensuring good outcome for women and their families. Disasters whether man made or natural can overwhelm or either disrupts the existing medical system and there should always be a preparedness plan to cater for these emergencies.

Pakistan being at forefront of war on terror and prone to all kinds of natural disasters due to its topography like floods, earthquake and internally displaced persons needs robust plans to be in place. Women, infants and children are a vulnerable group especially during disasters. Any disaster preparedness plan should include needs for women and children during acute and recovery phase at a disaster. Obstetrician and gynecologists have a unique role in developing a plan that addresses the safety and medical needs of women in this scenario. A one size fits all evacuation plan is difficult to apply to all disasters however the commonest problems which woman face irrespective of the nature of disaster are lack of antenatal care, intrapartum care, dealing with obstetric emergencies, contraceptive services, mental health issues and sexual assault, other than food, nutrition and shelter problems. Obstetrics and gynecology services in Pakistan army have been managing women during these disasters and have a wide range of experience which includes earthquakes, floods and internally displaced persons. These experiences need to be shared with other organizations in order to formulate certain guidelines in cases of disaster management with emphasis on women's health.

Keywords: Women's perspective, disaster, obstetric emergencies.

THE EMERGING ROLE OF VASCULAR & ENDOVASCULAR SURGEON IN TRAUMA PATIENTS

Syed Naseem Haider

Quaid-e-Azam International Hospital, Islamabad Pakistan

ABSTRACT

Objective: The incidence and type of vascular trauma differ between various countries. In Pakistan, the major vascular trauma is due to firearm, blast and road traffic accident. Clear understanding of complex

vascular injuries in these patients is essential for management and a favourable outcome. These vascular injuries carry significant morbidity and mortality and involvement of a vascular surgeon early in management of these trauma patients are vital. In many European countries, vascular surgeon has become the important part of the Trauma team. Introduction of endovascular technique has really revolutionized the management of these patients. Use of haemostatic agents, occluding balloon or stent graft can be helpful in order to obtain haemostasis, vascular control or repair. Many complex and remote vascular injuries involving the extremities, abdominal or thoracic aorta or cervical vessels can be manage with endovascular techniques provided the patient is stable and all the necessary equipments and skills are available. Early results of this technique is promising but long term follow up and randomized prospective trial comparing standard vascular surgery with endovascular technique is required. The involvement of vascular and endovascular surgeon in management of these trauma patients is a challenge in Pakistan and require an input from all the governing bodies and training and fellowship programme for the existing and junior doctors.

Conclusion:-the management of vascular trauma patient is changing rapidly due to introduction of endovascular technique and require more complex team and support to optimize the care all over the world. The concept of vascular and endovascular surgeon be a part of trauma team is a real challenge in Pakistan.

MANGEMENT OF WAR INJURIES- EXPERIENCE AT CMH RAWALPINDI DURING 2013-2015

Tahir Masood Ahmed, Shahid Hameed

ABSTRACT

Objective: To determine the pattern of injuries and evaluate the results of different reconstructive modalities.

Study designs: Retrospective descriptive study.

Place and duration of study: CMH Rawalpindi, from January 2013 to October 2015.

Material and Methods: A total of 202 patients were managed. All victims of war against terror whether civilian or military personnel from all age groups were included.

Male to female ratio was 101:2. Age ranged from 14 to 54 years. Majority of these patients received primary surgical treatment within 6 hours. The data was collected from history, transfer notes and hospital medical records. It included patient's personal data, mode of injury, primary surgical treatment, and definite surgical treatment including coverage, reconstructive procedures and secondary reconstructions. All these cases were managed in collaboration with other specialties.

Results: A total 202 patients were managed, 154 were army persons and 48 were civilians

198 were males and 4 were females. 153 patients were victims of blast injuries and 49 had fire arm injuries. 68 patients had isolated injuries and 134 had simultaneous injuries. 171 patients received primary treatment within 6 hours and 31 after 6 hours. Primary closure was done in 19 patients, but majority of wounds were managed by delayed primary reconstruction. Secondary procedures like nerve and tendon repairs were done at later stages. Delayed primary closure was the commonest procedure (75 patients) followed by delayed primary skin grafts (67 patients). 11 unfortunate patients had amputations. And 5 patients expired.

Conclusion: All war wounds are primarily contaminated. Delayed primary closure is considered the optimal strategy. Improved means of casualty evacuation have decreased morbidity and mortality by timely provision of primary and definitive treatment.

Keywords: War wounds, Management.

LEVEL OF AWARENESS AND ATTITUDE REGARDING THE ZIKA VIRUS OUTBREAK AMONGST STUDENTS OF DIFFERENT MEDICAL COLLEGES OF RAWALPINDI AND ABBOTABAD

Fatima Zia, Amina Nadeem

ABSTRACT

Objective: This study investigated the level of awareness regarding the Zika Virus outbreak among the medical students of Army Medical College, Rawalpindi

Study Design: Cross sectional Descriptive survey.

Place and Duration of Study: Army Medical College Rawalpindi, Ayub Medical College and Frontier Medical College Abbotabad, over a period of 15 days, from 15th to 30 th Feb 2016.

Methods and Materials: A self-made pre-tested questionnaire was used and data was collected by non-probability convenient sampling. The sample size in this cross sectional descriptive survey was 124. Data was collected by online Google Forms as well as hardcopy of questionnaire.

Results: There were 62 (50%) males and 62 (50%) females in this study, belonging to AM College. Only 41.9% correctly knew that this virus is associated with congenital microcephaly as well as GuillianBarre syndrome while only 87% correctly knew that there's no vaccine available.Only 25% correctly knew that it has caused less than 10 deaths worldwide so far and around 77% was aware of its vector.Zika Virus has been the most important health issue in 2016, still 20% had never heard of this virus, which shows that some students do not keep themselves updated. Among those who knew about this illness, people generally had a good idea about the signs and symptoms of the disease, but they didn't know much regarding the mortality associated with the illness.

Conclusion: Unfortunately, the level of awareness was not even near the actual burst on ground, testimony of which is the hype that the international media is creating, about its complications. Our students need to keep themselves updated with the current affairs, especially of health significance.

Keywords: Zika, Awareness, Knowledge, Prevention.

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DISASTER PREPAREDNESS/MITIGATION MEASURES IN BUILDINGS LOCATED IN ISLAMABAD WITH SPECIAL FOCUS ON FIRE SAFETY

Sabina Imran Durrani

National Health Emergency Preparedness Response Network (NHEPRN-Ministry of NHRS&C), Pakistan

ABSTRACT

Study was conducted to assess disaster preparedness/mitigation measures in buildings located in Islamabad with special focus on fire safety by exploring the preparedness level/ safety measures taken by different organizations to make buildings places safe against disasters like, in line with National Disaster Policy/ Capital Development Authority (CDA) regulation for Islamabad and by examining the community knowledge attitude and practices owards disaster preparedness and response.

Data was collected through mixed methodology (quantitative/qualitative approach) from nine different zones both from the public and private sector, by using a check list to determine the safety & maintenance of infrastructure followed by in depth interviews from the occupants of these buildings and policy makers, for their internal and external safety preparedness and coordination with all stakeholders.

It was observed that more than two-third of the buildings were not having proper maintenance-related fire checklist (65 percent) and only on average 1.4 checklist have been observed in the institutions covered. This situation is worse among public institutions where three-fourth of institutions has not

maintaining fire checklist (2.3 fire checklist and 0.8 fire checklist with standard deviation 1.6 and 2.9 respectively).

Community had very low knowledge about risk and hazard. In general community had no idea about existing organizations, laws and regulation and was never contacted by any organization for providing awareness on fire safety& capacity building. Community had strong faith in God and was of the opinion that if an event is destines to happen it will occur irrespective of preparedness level. Organizations responsible were short of staff and funds with poor coordination among various organizations.

Study concludes that buildings in Islamabad are poorly prepared for disaster with special focus on fire safety.

THE ROLE IMPACT AND OUT COME OF ATLS(ADVANCED TRAUMA LIFE SUPPORT) TRAINING IN PAKISTAN

Mahmood Ayyaz

College of Physicians and Surgeons Pakistan, Karachi Pakistan

ABSTRACT

Objectives:

To examine that what has been the impact of ATLS Course in the challenges of modern trauma management withfocus on the background on the development of ATLS in Pakistan,

To evaluate the impact of ATLS on trauma related mortality and morbidity in Pakistan.

Study Design, Place and Duration of Study, Materials and Methods: We conducted a survey to evaluate the courses conducted in Pakistan and participants feedback regarding these courses. After taking ethical approval from CPSP ethical review board, a specially designed survey forms were emailed to 200 participants who did ATLS course from January 2008 till December 2016. All participants had undertaken the 8th and 9thedition) of the ATLS course.

Results: Out of 121 respondents 83% were males and 17% females, 79 % of respondents were of surgery and allied and 21% were of other specialties.84%of respondents were residents and 16% were consultants. They were asked to respond to the following questions on Likert scale:

- Have your triage skills improved?
- Has your ability to identify and deal with injuries to respiratory tract improved?
- Are you better able to recognize and manage airway injuries?
- Are you better able to recognize shock and manage it?
- Did the ATLS program have an overall beneficial effect on your patient management skills? And finally they were asked about whether they would recommend ATLS course to other doctors.

Conclusion: It was concluded that a systematic approach is the need of the day for the management of trauma patients. ATLS course significantly improves the trauma management. It improves the ability of doctors to triage and identify patients who are critically injured and need urgent care.

HEALTH CARE IN PAKISTAN – A SYSTEM'S PERSPECTIVE

Syed Fawad Mashhadi

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ABSTRACT

Health system in Pakistan has witnessed evolution and dates back to the medieval, traditional health care, health for all approach, primary health care approach and health systems strengthening approach for better health outcomes. The main objectives of health system are improvement in health, fairness in distribution of risk and finances and responsiveness to the nonmedical needs of the population. With decreasing expenditure on health care, booming private health sector and flourishing pharmaceutical industry, government can only reduce catastrophic health expenditures by the poor and impoverished through an efficient, effective, accessible and responsive public health system. Inter sectoral collaboration, community participation, social protection, equitable distribution of resources, people centric health policy, health work force development, evidence based health information system and quality assurance of essential medicines will strengthen health system in Pakistan.

Keywords: Equity, Fair financing, Health system, Pakistan, Responsiveness.

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CAUSES OF BLOOD DONOR DEFERRAL AND CHARACTERISTICS OF THE DONORS AT ARMED FORCES INSTITUE OF TRANSFUSION (AFIT)

Urwa Ejaz

Army Medical College, National University of Medical Sciences (NUMS) Rawalpindi, Pakistan

ABSTRACT

Objective: Blood Donation is vital to the provision of Transfusion services in a country. An efficient blood donor programme is important for providing safe transfusion services. Blood Donor Eligibility is determined by medical interviews, based on the guidelines set on a National level for donor selection. We aimed to identify the frequency of common causes of donor deferral in AFIT and to analyze the demographic details of the deferred donors.

Study Design: Retrospective analysis.

Place and Duration of Study: We took the data from Armed Forces Institute of Transfusion (AFIT) for the year 2010-11.

Methods and Materials: Donors with age ranging from 18-60 Years that reported to the blood bank were incorporated in this study. A comprehensive history had been taken from all the potential donors through a pre-formed Performa. We also had results of a detailed general physical examination by the appointed doctor at the blood bank. Furthermore, results of laboratory testing of the blood samples of potential donors was also available. A detailed analysis of the characteristics of the population reporting to AFIT was also done including their demographics. A total of 4662 donors were included.

Results: The commonest cause of the donor deferral was hepatitis C (HCV) (28.6%), the second leading cause was anemia (24%) and the third leading cause was hepatitis B (HBV) (16.8%). Syphilis was also a major cause of donor deferral causing the rejection of 10.4% donors. In this study the deferral rate was 7.3%.

Conclusion: Hepatitis is the leading cause of donor deferral in our setup, followed by Syphilis. The donor eferral rate in our setup is less than other setups worldwide. The leading causes of donor deferral are chronic infections and anaemia.

Keywords: Anemia, Donor Deferral, Hepatitis, Pakistan, Transfusion.

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PATIENT'S SAFETY WITH SPINAL CORD PROTECTION IN SPINE DEFORMITY SURGERIES; EMERGING NEED TO ESTABLISH INTRA-OPERATIVE NEUROPHYSIOLOGY (IOM)

M. Tariq Imtiaz

Kingdom of Saudi Arabia (KSA)

ABSTRACT

Study Design: A retrospective data review of >153 consecutive patients.

Place and Duration of Study: National Neurosciences Institute, King Fahad Medical City (KFMC), Riyadh Saudi Arabia.

Materials and Methods: Iatrogenic paraplegia during spine surgery is a devastating complication. Preventing such complications is important. (IOM) serves to help such patients/surgeons with successful surgeries and better post-op outcome using following IOM modalities. Somatosensory-Evoked-Potentials (SSEPs), Transcranial- Motor-Evoked- Potentials (TcMEPs), Electromyograms (EMGs) & Triggered-Electromyograms (TEMGs /screw stimulation). We also observed anesthetic effects with EEG monitoring including drop in hemoglobin / hematocrit, changes related with mean arterial pressure and positioning effects.

Results: 153 patients (n=104females, n=49males) with average age of 17years and cob-angle between 40-140 degrees. TcMEP changes noticed in n=56, 36.6%.TcMEP change resulting from surgical maneuvers n=43, 28.10%.TcMEP changes resulted from direct injury to the cord n=16, 10.45% & mechanicalintervention (decompression / hemivertebrectomy / correction) n=15, 9.80%. Mal-positioned screws n=12, 7.83%.Within this group n=9, 5.8% presented with both SSEP and TcMEP change. Changes in TcMEP due to anesthesia n=10, 6.53%. EMG irritation lasting >15 seconds in lumbar roots, n=14, 9.15%. Within this group, TcMEP drop noticed in 4 patients suggesting 25% predictability. TEMG changes in n=81, 52.9% where in n=42, 27.4% screws were<6mA.TcMEP change, n=12, 7.83% all fell under this group of screws below 6mA. 3018 screws were placed in 153patients with 19.73 screws / patient. 89 screws, 2.94% fell under dangerous/severe category.

Conclusion: Our data shows enhanced safety with comprehensive IOM in deformity surgeries, hence IOM is extremely important during such procedures.

Keywords: Intra-operative Neurophysiology monitoring, Somato-Sensory-Evoked-Potentials, Transcranial-Motor-Evoked-Potentials, Spinal-cord protection, Electromyograms, Triggered Electromyograms / Screw Stimulation.

POLICY OF THE JOURNAL

It is policy of the Pakistan Armed Forces Medical Journal (PAFMJ) to publish articles pertaining to different fields of medical sciences providing sufficient contribution to medical knowledge. The journal is presently being published bimonthly. The articles may include new experimental methods of medical importance; new results obtained experimentally; new interpretation of existing results or data pertaining to clinical problems; or epidemiological work giving substantial scientific information pertaining to medical sciences.

All such articles should aim for development of medical concepts rather than mere recording of facts. Incomplete studies will be discouraged.

AIMS AND OBJECTIVES

a. To publish original, well documented, peer reviewed clinical and basic sciences articles.
b. To inculcate the habit of medical writing.
c. To enable physicians to remain informed in multiple areas of medicine, including developments in fields other than their own.
d. To share the experience and knowledge for benefit of patients.
e. To document medical problems pertinent to military medicine like high altitude medicine, heat stroke, disaster management etc.
f. To achieve the highest level of ethical medical journalism and to produce a publication that is timely, credible, and enjoyable to read.

EDITORIAL FREEDOM

Chief Editor has full authority over the editorial content of the journal. There is no interference in the evaluation; selection or editing of individual articles either directly or by creating an environment that strongly influences decisions.

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An "author" is generally considered to be someone who has made substantive intellectual contributions to a study. Authorship credit should be based on:

1. Substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data.
2. Drafting the article or revising it critically for important intellectual content.
3. Final approval of the version to be published.

Authors should meet conditions 1, 2, and 3.

It is important to note that:

a. Acquisition of funding, collection of data, or general supervision of the research group, alone, does not justify authorship.
b. All persons designated as authors should qualify for authorship, and all those who qualify should be listed.
c. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content.
d. Once authorship certificate is submitted no further change will be allowed.

MANUSCRIPT PROCESSING

Upon the initial submission of the manuscript, the author is acknowledged and allocated a reference member for future correspondence. This process takes place within 2 days. The manuscript is categorized according to the type of article into Original, Review, Case Report and so forth. Each type of article has a special format and should comply with the updated PAFMJ Instruction to Authors, which are published in all issues. Normally an article is reviewed by at least two subject experts and the other member of the editorial committee. If the reviewer has not sent

review within stipulated period, a first and second reminder letters are sent within 2-3 weeks. If after the 2nd reminder the reviewer fails to reply, the matter is referred to editor who assigns it for an urgent review by one of the members of Editorial Advisory Board. The usual delay is in the reviewing process owing to the reviewer's professional and academic commitments. The reviewer's comments are communicated to the author. The revised version of the article is sent back to the reviewers. A period of 2-4 months is set to finalize the process. Accepted manuscript is then handed to statistician and bibliographer for data analysis and verification of reference respectively. The editor, then critically goes through each of the article, get their order, pagination and is sent to press for printing.

PEER REVIEW POLICY

Unbiased, independent, critical assessment is an intrinsic part of all scholarly work, including the scientific process. Peer review is the critical assessment of manuscripts submitted to journals by experts who are not part of the editorial staff. Peer review can therefore be viewed as an important extension of the scientific process. It is the policy of PAFMJ that every article received for publication is peer reviewed by at least two senior specialists of the concerned specialty. The "double blind" process is strictly followed. In certain controversial cases, the opinion of a 3rd reviewer is also obtained. In case of conflict of opinion between the two reviewers, the matter is referred to the Chief-editor.

CONFLICT OF INTEREST

Conflict of interest exists when as author (or the author's institution), reviewer, or editor has financial or personal relationships that inappropriately influence (bias) his or her actions (such relationship are also known as dual commitments, competing interests, or competing loyalties). However, conflicts can occur for other reasons, such as personal relationships, academic competition, and intellectual passion. Increasingly, individual studies receive funding from commercial firms, private foundations, and government. The conditions of this funding have the potential to bias and otherwise discredit the research.

When authors submit a manuscript, whether an article or a letter, they are responsible for disclosing all financial and personal relationships that might bias their work. To prevent ambiguity, authors must state explicitly whether potential conflicts do or do not exist.

It is the discretion of editorial committee of PAFMJ to resolve any conflict of interest between the author(s) and reviewers. Editors may choose not to consider an article for publication if they feel that the research is biased by the sponsors funding the research project.

PLAGIARISM

Plagiarism is the unauthorized use or close imitation of the language and thoughts of another author and representing them as one's own original work. Within the academia, researcher is considered academic dishonesty or academic fraud and offenders are subject to academic censure. Plagiarism can be unintentional or intentional reproducing academic material without appropriate citation. Similarly self plagiarism is the re-use of significant, identical or near identical portions of one's own work without citing the original work. This is also known as "Recycling fraud". Worst form of plagiarism is to steal the whole article from some journal and publish it under own name in another journal. Lately the use of internet has made it easier to plagiarize, by copying the electronic tests and using them as original work.

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BIOMEDICAL ETHICAL COMMITTEE

When reporting experiments on human subjects, authors should indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on

human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. If doubt exists whether the research was conducted in accordance with the Helsinki Declaration, the authors must explain the rationale for their approach, and demonstrate that the institutional review body explicitly approved the doubtful aspects of the study. When reporting experiments on animals, authors should be asked to indicate whether the institutional and national guide for the care and use of laboratory animals was followed.

In case of any study involving clinical trial, taking of informed consent of patients is mandatory.

Whenever editorial committee of PAFMJ feels necessary, the research paper will be referred to the ethical committee of the center for Research in Experimental and Applied Medicine (CREAM) based at Army Medical College, for its evaluation and approval.

EDITORIAL OFFICE

The editorial office has been established at Army Medical College, Rawalpindi, Pakistan.

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The editorial advisory board will be as per following appointments.

Surgeon General / DGMS (IS), Pak Army	Chairman
Chief Editor PAFMJ / Principal, Army Medical College	Member
Director General Medicine	Member
Director General Surgery	Member
Commandant AFPGMI, Rwp	Member
Deputy Surgeon General / DGMS (IS)	Member
DGMS (Navy)	Member
DGMS (Air)	Member

A meeting of editorial advisory board is held as often as required to give approval / decision on matters forwarded by editor pertaining to any change in the existing policy, appointment / deletion of any member of the editorial board and any other point.

THE EDITORIAL BOARD

The members of the editorial board are appointed keeping in view their professional competence (advisers) in different fields of medical sciences. The aim is to have members having wide experience in different fields of medical sciences. In addition to senior specialists from Armed Forces, senior professionals from civil sector as well as from foreign countries will be co-opted with approval of the editorial advisory board.

EDITORIAL COMMITTEE

An editorial committee consisting of chief editor, editor(s), joint editor, assistant editor(s) and the editorial secretaries meet at least once a month to expedite the business of the journal.

The editorial committee follows the guidelines provided by International Committee of medical Journal editors in" Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication" which can be downloaded from http: / / www.icmje.org /

PUBLICATION TIMELINES

Timelines for print and online publications are as under:-

Issue	**Month**	**Date**
1	Jan, Feb	28th Feb
2	Mar, April	30th April
3	May, June	30th June
4	July, Aug	31st Aug
5	Sep, Oct	31st Oct
6	Nov, Dec	31st Dec

GUIDELINES FOR AUTHORS

Articles and all editorial correspondence should be sent to Editor, PAFMJ C/O Army Medical College, Abid Majeed Road, Rawalpindi.

EDITORIAL

Each editorial is written by one member of the editorial board as solicited by the editor. The editorial is scientific review on one or two of the current topics pertaining to medical sciences (preference is given to subjects pertaining to Army health problems).

SUBMISSION OF ARTICLE

Original Paper

Manuscript must be accompanied by a certificate signed by author and all coauthors that they have seen and approved the final version of the manuscript and they have not submitted the manuscript to any other journal. All manuscript should be typed in double spacing on A-4 paper (8.25" x 11.70" = 21.0 cms x 29.70 cms) white bond paper with one inch (2.5 cms) margin on both sides. The article submitted should not exceed 2500 words (excluding references and abstract) with maximum 18-25 references and 3–5 figures or tables. If prepared on a word processor/computer, a properly protected, CD should be sent with the manuscript. Each manuscript should include:

1. Title page:

Complete title of the article
Name of author(s)
Department(s)
Institution(s) at which work was performed
Official phone/fax no, cell no, personal e-mail address (to whom correspondence is to be addressed) in case of posting please provide new address
Short running title for header

2. Structured Abstract:

Objective
Study Design
Place and duration of study
Patients and Methods
Results
Conclusion
Keywords 3 – 10 (Medical Subject Headings – MeSH) in alphabetical order

3. Text:

Introduction: This should summarize the purpose and the rationale for the study. It should neither review the subject extensively nor should it have data or conclusions of the study.

Patients and Methods: This should include exact method or observation or experiment. If an apparatus is used, its manufacturer's name and address should be given in parenthesis. If the method is established, give reference but if the method is new, give enough information so that another author is able to perform it. If a drug is used, its generic name, dose and route of administration must be given. Methodology section should contain (Without headings) study design, place and duration of study, sample size, sampling technique, inclusion and exclusion criteria, data collections procedure and data analysis procedure. Statistical method must be mentioned and specify any general computer programme used. The Info system used should be clearly mentioned.

Results: It must be presented in the form of text, tables and illustrations. The contents of the tables should not be all repeated in the text. Instead, a reference to the table number may be given. Long articles may need sub-headings within some sections (especially the Results and Discussion parts) to clarify their contents. Extra or supplementary materials and technical details can be placed in an

appendix where it will be accessible. It may be omitted from the printed version but may be published in the electronic version of the journal.

Discussion: This should emphasize present findings & the variations or similarities with other work done in the field by other workers. Detailed data should not be repeated in the discussion again. Emphasize the new and important aspects of the study and the conclusions that follow from them. It must be mentioned whether the hypothesis mentioned in the article is true, false or no conclusions can be derived.

Conclusion: Should be in line with the objectives and results.

Conflict of Interest: When authors submit a manuscript they must disclose all financial and personnel relationship that might bias their work. Authors must state explicitly whether potential conflicts do or do not exist. They should do so in the manuscript on the title page. Additional details can be provided if necessary in a covering letter which accompanies the manuscript. Authors of study funded by an agency with proprietary or financial interest in the outcome must sign a statement that they had full excess to all the data in the study and take complete responsibility for the integrity of the data and the accuracy of the data analysis. This statement should be submitted along with the manuscript.

Acknowledgements (if any): All contributors who do not meet the criteria for authorship should be covered in the acknowledgement section. It should include persons who provided technical help, writing assistance and departmental head that only provided general support. Financial and material support should also be acknowledged. Persons who have contributed materially but do not justify authorship can be listed as "clinical investigators" or "participating investigators" or "scientific advisors" or "critically reviewed the study proposal or collected data. Disclosure (Presentation of the article in any conference, seminar, symposium before submission to PAFMJ)

Authors contributions: Authorship credit should be based on 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. 4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Authors should meet conditions 1, 2, 3 and 4. (For details of Authorship Criteria kindly consult ICMJE guidelines)

Acquisition of funding, collection of data, or general supervision of the research group, alone does not justify authorship. All persons designated as authors should qualify for authorship & all those who qualify should be listed.

· All persons designated as authors should qualify for authorship and all those who qualify should be listed.

· Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content.

· In case of more than one authors in a manuscript, the contributions of each person listed as author in the study should be mentioned.

When a large, multi-center group has conducted the work, the group should identify the individuals who accept direct responsibility for the manuscript. These individuals should fully meet the criteria for authorship defined above and editors will ask these individuals to complete journal-specific author and conflict of interest disclosure forms. When submitting a group author manuscript, the corresponding author should clearly indicate the preferred citation and should clearly identify all individual authors as well as the group name. Other members of the group should be listed in the acknowledgements. Addition and deletion of authors may not be permitted after submission with authorship proforma signed by authors.

References: (**Fifty Percent References** should be **of last five years** and all references listed consecutively as numerical in parentheses. The final bibliography should be in the order in which they are quoted in the text and written in Vancouver Style). References appearing in a table or

figure should be numbered sequentially with those in text. DOI number of those references where it is available. PAFMJ follows Index Medicus style for references and and abbreviated journal names according to the list of Journals indexed in Index Medicus

Journals: Standard journal article. (List all authors when six or less; when seven or more, list only first six and add et al)

You CH. Lee KY, Chey WY, Manguy R. Electrogastrographic study of patients with unexplained nausea, bloating and vomiting. Gastroenterology 1980; 79: 311-4.

Chapter in a book: Weinstein L, Swartz MN. Pathogenic properties of invading micro organisms. In: Sodeman WA Jr, Sodeman WA, eds. Pathologic physiology: mechanisms of disease. WB Saunders, Philadelphia 1974; 457-72.

***4. Tables and Figures*:** 3 – 5 figures and or tables are allowed (each table, complete with legends and footnotes, should be merged in the manuscript).

5. Proof Reading: Final version of manuscript is sent to corresponding author for proof reading before publication to avoid any mistakes. Corrections should be conveyed clearly & Editor informed by e-mail.

Reviews: The purpose of a review is to provide clinicians, scientists and those in training with a clear and up to date concept of a subject of current interest. It should be very informative thoroughly referenced and easily readable with fluency of language. The text should not exceed 3-7 journal pages. For information's regarding the typing and reference style, please follow the instructions above. It should contain an unstructured abstract with 3-10 keywords (MeSH) followed by Introduction/Background and Discussion portions of the main article. Maximum word count should be from 2500 – 3000 words (excluding references and abstract) with 25 – 30 references

Field Medicine: It has been decided by the Editorial Board to include articles relating various aspects of military medicine in the journal. These articles reflect various medical problems faced by the troops deployed in the field or hard areas and the preventive measures to overcome them.

Rapid Communication: Rapid/Special/Short communication should be complete work, not merely a preliminary report and should not exceed 1500 words with one figure and/or one table. An editorial decision will be provided rapidly without reports. For writing and references style, please refer to the instruction above.

Case Report: Short report of cases, clinical experience, drug trails or adverse effects may be submitted. They should not exceed 700 words, 10 bibliographic references and either two concise table or one figure. The report must contain genuinely new information.

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Note: All articles submitted to PAFMJ must only be submitted to this journal and may not have been published elsewhere in part or total. The authors will be requested to sign an agreement to give the copyright to the publishers. The authors will be required to assist the editors for reviewing proof before publication.

LETTER FROM INSTITUTIONAL REVIEW BOARD / BIOMEDICAL ETHICAL COMMITTEE/ ETHICAL REVIEW COMMITTEE

Authors are required to send letter from Institutional Review Board / Biomedical Ethical Committee / Ethical Review Committee must be sent along with Original articles, Rapid communications and Case reports.

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