

operational safety have been emphasized. But the research about emergency medical system for patients occurring in the high speed train and stations is insufficient. So author analyzed the project on development of emergency medical system for cardiac arrest in the high speed train and stations.

Methods: The project on development of emergency medical system for cardiac arrest in the high speed train and stations was analyzed retrospectively and the real situation was confirmed by interviewing the staffs and visiting the high speed train and stations. The education on both basic life support and PAD (public access defibrillation) for staff of the high speed train and stations was analyzed. Simulation was performed for adequate distribution and arrangement of AEDs (automatic external defibrillators) in the high speed train and stations.

Results: The education on both basic life support and PAD (public access defibrillation) for staff of the high speed train and stations was performed to 1323 persons from October 2008 to June 2009. Total 51 AEDs were arranged in 6 stations and 87 AEDs were arranged in the high speed train. One AEDs were arranged for successive 6 passenger car in a train. Public education by repeated video playing in the high speed train was started.

Conclusions: The emergency medical system for cardiac arrest in the high speed train and stations was developed by training staffs and arranging AEDs initially. The next step will be developing the disaster medical system in the high speed train.

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(A174) Epidemiology, Seasonality, and Geo-Distribution of Trap Gun Injuries in Anuradhapura Area

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A trap gun (TG) is a locally manufactured, illegal barreled weapon with a simple trigger mechanism. Trap guns are frequent in agricultural areas of the country. Once the gun is set, it bursts automatically upon the triggering. Since there is no present person selecting the target, the gun injures both animals and humans. A retrospective study was carried out to identify geo-spatial distribution, seasonal variation and injury patterns of TG injuries brought to Teaching Hospital Anuradhapura during 2007 to 2009. A prospective study will identify those in a more detailed manner. The abstract discusses some findings of this ongoing study and the retrospective study. In 2007 there were 107 TG injuries, and 68 in 2008. In 2009 the number increased to 126. Of the victims, 97.5% were males. The mean age was 36.98 years (SD = 11.36), with an age range of 13–69 years and an Inter Quartile Range (IQR) of 29–43 years. The majority of the injuries were lower limb injuries. A significant percentage showed compound fractures and soft tissue injuries. Amputations due to vascular injuries were low (1.5%). Of the cases, 99.5% were from peripheral rural villages. Tap gun injuries are less common during the “Yala” farming season extending from May to September, during which Anuradhapura gets less rain. Yet number of TG victims steadily increases as the “Yala” progresses. This trend continues during the initial half of “Maha” season. It gradually decreases in the latter part of “Maha”. Trap gun injuries remain below average from February

to July with the lowest number in April. The incidence of TG injuries is higher in Northwesterly administrative areas throughout the year, which share a common border with the “Wilpattu” game reserve. Further studies should be carried out to identify behavioral and socio-economical risks and economics of TG injuries.

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(A175) Traffic Injury Severity Prediction by Algorithm of Automatic Crash Notification System

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Introduction: Since 2009 automatic crash notification system (ACNS) using event data recorder (EDR) and mobile communication have been developed for early detection of traffic accident and prediction of physical injury of victims for increase of survival rate via early medical treatment. For adequate prediction of injury, authors developed the guideline and algorithm from parameters related to accident and medical situation. **Methods:** Expert survey was done about the adequate parameters related to accident and medical situation. Medical record of traffic accident admission was analyzed in a trauma center of a university hospital in Seoul, Korea. Additionally epidemiology of traffic accident death in a region was done. Afterwards data of medical record was linked to data of traffic accident insurance companies.

Results: The important parameters for prediction of physical injury of victims were as follows: Intercept, Δt , belt, age, intrus, sex, multiple, roll, ejection, narrow, height, weight, steering defect, track loc.

Conclusions: Prediction of physical injury severity of victims on traffic accident spot and immediate transfer of related information to adequate medical institution by automatic mobile communication can help the traffic accident victims and upgrade the trauma care system of traffic accident.

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(A176) Mechanical Ventilation in Disasters: “To Intubate or Not to Intubate – That is the Question!”

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The provision of mechanical ventilatory support for large numbers of casualties in disasters is a complex, controversial issue. Some experts consider this modality unsuitable for large disasters and a waste of resources better devoted to eminently salvageable victims. However, the reality has usually been that rescue teams bring with them some ventilatory capability, even if only for perioperative support. Also, there are many instances when the environment, the existing and potential capacities, allow for significant numbers of victims to be saved by providing artificial ventilation, that would otherwise have likely died. It is therefore important to discuss the issue, with all its complexity, so that the disaster preparedness and relief community fully understands its implications and makes informed, locally relevant decisions before and after disasters strike. The purpose of this presentation

is to describe the ethical dilemmas, the technical and clinical considerations for such an endeavor. Ethical considerations: providing the most care to the most victims is the dictum of disaster medical management. Lowered standards of care are accepted and often the norm. However, in many moderate and even major disasters, the ability exists to save lives that will certainly be lost otherwise, by providing intensive care including mechanical ventilatory support, or may be provided if the managers so determine. Is it then ethical, to allow certain victims to die when such support may be available? What is the cost-benefit ratio of such a decision? Who should receive this limited resource? The young and healthy? The very sick? The salvageable? The post-operative? For how long? Until the international team leaves? Types of ventilator-dependency in disasters: (1) Primary ventilatory failure, normal lungs, prolonged ventilator dependency, e.g. botulinum toxin; (2) Combined ventilatory and hypoxemic failure, short to medium-term ventilator dependency, e.g. Sarin gas intoxication; (3) Primary hypoxemic failure, parenchymal lung injury, prolonged ventilator dependency, e.g. Anthrax, mustard gas, ricin; (4) Perioperative and prophylactic ventilatory support, short term but unpredictable. Ventilator supply versus demand: (1) Insufficient ventilators for first few hours only, then supplies come in; (2) Insufficient ventilators for days, then national or international relief expected; (3) Insufficient ventilators and no expected supplies. Care environment: (1) ICU, minority of casualties; (2) General floors: inexperienced nursing, medical staff; (3) Insufficient monitoring devices; (4) Insufficient numbers and quality of respiratory therapists; (5) Commercial companies normally providing technical support understaffed. Basic requirements from the ventilators: allows spontaneous ventilation, incorporates some alarms (ideally disconnect and minute volume), made by a reputable and stable company (will be there when the disaster strikes), low cost, user friendly, long shelf life, quick activation from storage, low weight and volume, few spares, few or generic disposables, little and simple maintenance, independent of compressed oxygen (i.e. electric, multiple voltages, long-life battery). The system: Mechanical ventilation is a complete patient care unit comprising: Bed and space, Oxygen supply, Vacuum, Cardiorespiratory monitor, Mechanical ventilator, Nursing staff, Medical staff, Expert consultatory staff, Logistic and technical support staff. Potential mechanical ventilators: (1) BVM or bag-valve-tube; (2) Transport-type, pneumatic or electrical ventilators; (3) Intermediate capability pneumatic, electrical or electronic ventilators; (4) Full capability intensive care ventilators; (5) Single patient use ventilators.

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(A178) Evaluating the Feasibility of Verbal Analogue Scale among Emergency Care Providers in Assessment and Management of Acute Pain in Trauma Victims

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Background: Acute pain assessment and management in trauma victims is often overlooked in emergency department (ED).

Visual analogue scale is the preferred scale for assessment and management of pain however, its role in a busy ED is limited. The objective of this study was to evaluate the feasibility of verbal and visual analogue scale among emergency care providers.

Methods: Emergency caregivers were instructed to use both pain scales wherever feasible for assessment, management, and monitoring of pain in 100 non-consecutive alert patients. A separate, pre-tested survey questionnaire addressing the feasibility of each pain scales was surveyed among emergency care providers (emergency physicians, nursing staff). A Likert scale (1 to 5) was assessed for cooperativeness, availability of time for assessment, the format, the peak period feasibility, the monitoring ease and the amount of work load. Binary scale (yes and no) was used to measure the overall utility in assessment and management of pain.

Results: Out of 100 patients enrolled, the verbal analogue score was used in all patients and visual analogue score was used in 30 patients. The average Likert scale score for verbal analogue score questionnaire was 1.7 and the average Likert scale score for visual analogue score questionnaire was 3.9. On the overall utility both scales were found to be useful in all patients.

Conclusions: Both the scales were found to be useful in overall assessment and management of pain. However, there was a favorable trend towards using verbal analogue scale among emergency care providers.

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(A179) A Survey of Rapid Sequence Intubation (RSI) Complications in Immam Hossein Medical Center Carried Out by Emergency Residents

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Introduction: Critically ill patients in emergency department frequently require emergency airway management. This procedure in our ED is carried out by emergency medicine resident with rapid sequence intubation (RSI). This study investigates complications of tracheal intubation carried out in critically ill patients including: (1) hypoxemia and hypotension (2) aspiration and esophageal displacement (3) pneumothorax and right bronchus intubation.

Methods: Data were collected on consecutive intubations carried out by EM residents over a 29 months period. Between 195 patients only 100 patients had including criteria to enter this study. Also we compare the complications and success rate among three level of personnel carrying on the procedure. (first to third year of emergency medicine residency).

Results: 109 consecutive intubations were carried on in 100 patients. Oral translaryngeal intubation was done in all patients. Three intubations required more than 2 attempts and hypoxia occurred in 34 cases. Aspiration was diagnosed by direct vision in 5 cases. Hypotension was found in 5 cases causing death in 3 of them during the intubation or in 30 minutes following the procedure. Esophageal displacement occurred in 10 of the attempts but all were recognized and reintubated. Success rate between three personnel levels are as follow: in first year residency 82% and in second year residency 94% and in third