

The Medical Response to Nuclear and Radiological Accidents in China

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A nuclear or radiological accident is an unintended or unexpected event occurring with a radiation source or during a practice involving ionizing radiation that may result in significant human exposure and/or material damage. It includes accidents with reactors, industrial sources, and medical facilities. Not only workers, but also members of the public including children, have suffered radiation injuries as a result of nuclear and radiological accidents over the past few years. The accidents involved external irradiation and occasionally included internal and skin contamination. Over the past few years, the International Atomic Energy Agency (IAEA) has issued publications that provide information on general recommendations to physicians for the diagnosis and treatment of radiation injuries resulting from a nuclear or radiological accident. They also may serve as safety guides providing general recommendations for emergency preparedness, including some medical aspects and guidance on radiation protection criteria for health consequences. The medical assistance to be provided may be considered at several different levels depending on the seriousness of the accident. These levels would extend from a local on-site emergency station, medical service facility, and regional hospital to a large central hospital with specialized facilities.

In the People's Republic of China, the Center for Medical Assistance in Nuclear Accidents of the Ministry of Health (CMANA) was established in 1993. The CMANA functions as a national, professional institute for medical assistance in nuclear accidents including drafting of the National Emergency Program for Nuclear and Radiological Accidents, preparing medical responses and assistance for accidents, and developing medical treatment for injured persons in nuclear and radiological accidents.

Key words: assistance; International Atomic Energy Agency (IAEA); China; injuries; medical responses; nuclear accidents; radiological accident

Prehosp Disast Med 2001;16(2):s87.

Clinical Treatment of Severe Head Injury from Falls

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Injuries from falls are one of the leading causes of accidental death, second only to traffic accidents. From January of 1998 to May of 1999, 96 cases with injuries from falls were treated in our hospital, including 13 cases of severe head injury. According to the Glasgow Coma Scale Scoring system (GCS) standard, a severe head injury is one whose GCS score does not attain a score of "8" after head recovery, or those whose scores have been down to this level. In these cases, emergency treatment after recovery of heart and lung function and timely surgery for patients whose

symptoms and signs agree with the surgical standards, must be performed first. Early, effective support of ventilation and circulation is not only a fundamental measure, but also the foundation for brain recovery, and surgery is the key of life. In addition, large doses of hormones, induced sleep, and hypothermia treatment also contribute to recovery.

Key words: falls; head injury; recovery; resuscitation; signs; symptoms; treatment

Prehosp Disast Med 2001;16(2):87.

Preventable Trauma Deaths and Prehospital Care in Pakistan

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Introduction: Preventable trauma deaths have been well-studied in developed countries. Very little is reported on the incidence and factors leading to preventable trauma deaths in developing countries. The objective of this study was to evaluate the trauma deaths in a university hospital in Pakistan, and to identify any deficiencies in care.

Methods: Trauma deaths were identified from a trauma registry: 279 patients presented from 01 January 1998 to 31 December 1999, and there were 17 deaths. The probability of survival using the trauma injury severity score (TRISS) was calculated, and outcome was compared with western norms. In addition, a multidisciplinary, peer review committee reviewed these cases. They classified deaths into preventable, potentially preventable, and nonpreventable categories, and identified factors responsible for poor outcome. A time line for all phases of care also was generated.

Results: There were 6 (35%) preventable, 7 (41%) potentially preventable, and 4 (24%) nonpreventable deaths. The median injury severity score was 25 (range 9-75), and the mean value for the revised trauma score was 4.4 ± 2.6 . The TRISS predicted 12 deaths. The mean of the time to definitive treatment was 6 hours and 54 minutes. The absence of prehospital care, lack of communication, and interhospital transfer of trauma patients contributed significantly to poor outcome. In addition, nonadherence to the principles of advance trauma life support also was a major determinant of poor outcome.

Conclusion: A large proportion of the trauma deaths in a developing country like Pakistan is potentially or completely preventable. Improved prehospital care and applications of the principles of early trauma care should significantly improve outcome.

Key words: deaths; prehospital; preventable; trauma; TRISS

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Prehosp Disast Med 2001;16(2):s87.