

simply using regular medical skills.

The author suggests that international colleagues support each other in large disasters and develop academic exchanges so as to improve emergency care organization and skills.

Key Words: deaths; disabilities; earthquake; injuries; Rescue Emergency Medicine

A Nuclear Disaster Handling Manual

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This March 1997, a large scale of accident in a nuclear waste plant occurred in Tokaimura, which is located at a distance of approximately 150 km from the center of Tokyo. More than 30 people who were working in the plant were contaminated. This accident reminds us of the potential for the occurrence of mass casualties by radioactive substances.

In the event of a disaster, the National Hospital Tokyo Disaster Medical Center will take charge of disaster-related medical care. In this Institute, we have been developing a disaster manual that focuses on the handling of casualties subjected to nuclear contamination. The development of this manual is discussed.

At the present, many problems remain when treating casualties contaminated with radioactive substances. Among them was the difficulty of determining the existence of the contamination with accuracy, effective methods for decontamination of the victims, the use of drugs that will promote excretion of toxic substances, transportation of patients, special rooms where contaminated patients are admitted, the storage and disposal of the polluted materials and water, and legal problems

Key Words: contamination; manual decontamination; nuclear disaster; radioactive substances

Analysis of the Kinds of Diseases Encountered in the Shanghai Prehospital Emergency Care Service: 1991–1995

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The author analyzed 467,674 cases of prehospital emergency care provided by the Shanghai Medical First-Aid Center during 1991–1995. The aim of this analysis was to determine the disease spectrum of prehospital emergency care provided in Shanghai, and to identify ways by which to improve the level of prehospital emergency care.

Results: There were 268,300 males cases (57.3%) and 199,374 female cases (42.6%). The ratio of male to female was 1:345. 49.2% of the patients were ≥ 60 years of age; 20% of the cases were critically diseased or injured. The five leading causes that demanded prehospital emergency care in rank order were: 1) traumatic injuries; 2) cerebrovascular diseases; 3) cardiac diseases; 4) acute abdominal pain; and 5) respiratory diseases. The five leading causes of prehospital deaths were: 1) cardiac

diseases; 2) suicides and intoxication; 3) respiratory emergencies; 4) cerebrovascular diseases; and 5) neoplasms. The results also showed the characteristics of monthly distribution of several disorders.

Conclusion: Cardiac diseases, cerebrovascular diseases, respiratory tract diseases, injuries, and intoxication should be the focal points for prehospital emergency care instruction, and ambulance equipment and drug supplies should fit the demands of these diseases and fit the seasonal changes in disease spectrum.

Key Words: causes of death; disease distribution; prehospital emergency care; Shanghai

The Disastrous Epidemic 0-157 (Escherichia Coli) Food Poisoning in Osaka

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In July 1996, more than 6,000 children suffered from acute food poisoning caused by Enterohemorrhagic Escherichia Coli-0-157 after eating school lunches in Sakai City of the Osaka Prefecture. Sakai City has a population of approximately 900,000 and neighbors Osaka City (about 20 km to the south).

Severe diarrhea, vomiting, and bloody stools led some children to consult local physicians on 11 July, but the number of victims increased abruptly on 13 July (Saturday), and overwhelmed the capacity of pediatric medical services in Sakai. The number of children who needed admission was 32 on 13 July, and increased to 493 on the next day. Hospitals in Sakai were so crowded with the ill children that some of the children had to wait 6 hours for consultation. On the other hand, hospitals in Osaka City (neighboring city to Sakai) were not crowded, and the out-patient departments and wards were quiet as in a normal weekend.

The Osaka Prefecture Emergency Medical Information Center (OPEMIC) looked for vacant beds in all of the Osaka Prefecture to Sakai Fire Department and Health Bureau of Sakai City Government from the evening of 13 July; 152 patients were transferred to 44 hospitals in other cities. Osaka City General Hospital (OCGH) received 15 moderately ill patients in the first two days. As all the pediatric beds of OCGH were occupied on the afternoon of 13 July, six additional beds were prepared in the emergency center. Eight more patients were transferred to OCGH by the request of OPEMIC. In total, 23 children were admitted and six of them were seriously ill due to dehydration and/or acute renal failure (hemolytic uremic syndrome).

All of the patients recovered within one month without any sequelae. However, three children treated in other hospitals died from Hemolytic Uremic Syndrome and encephalopathy.

This disastrous epidemic was inadequately recognized. The congestion and the confusion of the hospitals in Sakai in the first few days could have been avoided.

The Medical Society in Osaka should have responded more rapidly as it does for natural disasters or large scale accidents. The response was not so immediate because food poisoning was not recognized as a disaster. If a doctor who is trained on disaster management would have seen the chaotic situations in Sakai, the response of the Medical Society of Osaka could have changed.

Key Words: epidemic; escherichia coli; food poisoning; hemolytic uremic syndrome

Disaster Planning for Kinshasa City

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The natural, accidental, and/or human disasters disrupt the public health all over the world. Disasters can happen either in rich or in poor countries. Only good planning will allow the control of the consequences and decrease the effects.

Kinshasa is a metropolis in Africa, but hasn't evolved enough ways to resolve these problems. The crash disaster of type-K Market had shown that we were not sufficiently able to overcome these difficulties. In this study, the authors describe the disaster planning of Kinshasa City by using human and material resources. The basic management of this plan is to gather the hospitals and establish interventional areas.

Kinshasa has twenty-four zones. In each of them, a check of material resources (medical center, church, school, ambulances, ways of communications, etc.) had been done. Human resources (physicians, nurses, red cross rescuer, scouts, development's group) also has been checked. In a disaster, each of the twenty-four zones must begin to work itself before receiving any help. In this kind of management, Emergencies and Disaster problems must be resolved by local planning.

Key Words: Disaster; Kinshasa City; Planning

Session 4: Children—Training—Trauma

Chairpersons:

G. Hossll (Switzerland)

W. Kloeck (South Africa)

Recurrent Neurogenic Pulmonary Edema Following Grand Mal Seizures in a 13-Year-Old Boy: A Case Report

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Introduction: Neurogenic pulmonary edema (NPE) occurs with several neurologic disorders including head injury, subarachnoid and intra-cerebral haemorrhage, intracranial tumor, and epileptic seizures. We report two well-documented episodes of NPE in a 13-year-old boy with idiopathic epilepsy.

Case report: The child was admitted to the hospital following a grand mal seizure at home. On admission, he

was in a stable post-ictal condition and was transferred to the pediatric ward. Three hours later, he developed a second episode of tonic-clonic seizures with severe respiratory distress and was transferred to the ICU. Respiratory rate was 45/minute (min.), pulse rate was 140/min., SpO₂ with room air was 75%, PaO₂ was 45 mmHg. Chest examination revealed diffuse inspiratory rates. Continuous positive pressure ventilation (CPPV) was started immediately, and chest x-ray showed right-sided diffuse alveolar and interstitial infiltration with no cardiac enlargement. With a body temperature of 39.5°C, the patient was diagnosed as having aspiration pneumonia, and he was treated with penicillin and clindamycin. Bronchoscopy showed diffuse bronchial haemorrhage without signs of aspiration. The CPPV was continued, and during the next 10 h, the respiratory distress syndrome disappeared. The chest x-ray was normal 24 h later, compatible with alveolar edema. Two days later, the boy was completely well and transferred to the pediatric ward.

One month later, the same child developed a second episode of NPE following a tonic-clonic seizure. He was treated with oxygen and furosemide, and again, the pulmonary edema resolved rapidly. With a different anti-epileptic therapy, no further episodes of NPE occurred. **Conclusion:** NPE represents a rare but serious complication of generalized seizures. Aspiration pneumonia is the most important differential diagnosis in this context. It seems reasonable to initiate treatment for aspiration pneumonia until repeated chest x-rays and the clinical course clarify the diagnosis.

Key Words: aspiration; pulmonary edema; seizures

Assessment of the Teaching of First-Aid Practices

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A total of 40,000 first-aiders working principally on high-risk sites (traumatology, electrification, burns) were assessed in order to define the problems of perception, integration, and restitution of their training. A specific computer programme was designed in order to allow a reliable assessment, accessible through several items.

Of the 12,000 persons trained in 1995–1996, almost 11,000 first-aiders were being retrained. From a sample of 10,262 assessment forms, several criteria were studied: 1) length of time since completion of the initial training; 2) number of subsequent training courses attended; 3) professional categorization; and 4) level of responsibility within the business. The answers to the questions on first-aid were analyzed for each of these criteria. The analyses brought to light proposals on specific teaching methods according to the socio-professional activity of the persons concerned. The first-aiders with a low academic level possessed an excellent level of practical acquisition, but had a very weak capacity for decision-making. From the third training course attended onwards, these persons displayed a high level of knowledge and capacity to intervene.

First-aiders with intellectual abilities (researchers, teachers, etc.) conversely displayed a low level of deci-