

In order to evaluate the efficacy of this BLS training, a survey was conducted to evaluate, not the resuscitation skills, but the changes in attitude relative to the importance of BLS after completion of the training among the college students.

Methods: All the students at the Hokkaido College of High Technology participated in this survey. Several thousand students received questionnaires in the classroom and, following the instructions provided, they completed the survey.

Questions mainly queried: 1) the quality of the training; 2) the experience associated with witnessing a patient with cardiopulmonary arrest and what the rescuers did at the scene; and 3) if they thought it was necessary to try to improve their skills.

Participating students were categorized into three major groups according to their course of study: 1) medical; 2) non-medical; or 3) medically related.

Results and Discussion: All the data were analyzed in relation to age, gender, actual on-scene BLS experience, and the group to which they belong. The results will be discussed in detail.

Key Words: BLS; education of BLS; evaluation of BLS

Session 6A: Children and Disasters

Chairpersons:

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Emergency Psychotherapeutic Assistance to Children in the Areas of Armed Conflicts in the Former USSR

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The Compassion Center is a Moscow-based, non-governmental, charitable organization with the goal to render medical, social, and psychological help to victims of organized violence. Its "Children of War and the XXI Century" Program seeks to provide emergency psychological assistance to child victims of armed conflicts.

During the period from 1993 to 1997, a Compassion team, that included three psychologists, worked in Nagorno-Karabakh (1993–1994), Georgia, Abkhazia (1994–1995), Chechnya, Ingushetia, North Ossetia, Dagestan (1995–1997). During this period, 1,197 children and teenagers at the age from 5 to 16 years and 230 adults were examined. A total of 1,724 clients received psychotherapeutic assistance.

For evaluation, we used a set of non-verbal, projective tests, and short questionnaires to identify war-related stress disorders. For psychotherapy, we used short and mid-term psychological interventions.

Among our clients, both children and adults, the main stressogenic themes were as follows: loss of relatives; loss of home; anticipation of new losses and continuing or renewing of war; cruelty towards the clients himself/herself; scenes of cruelty; murders, deaths, war-

ravaged buildings etc.; and helplessness, hopelessness, impossibility to develop plans for future.

During acute period of trauma, practically all children manifested some of the war-related stress disorders, such as sleeping disorders, night mares, phobias, flash backs, anxiety, apathy, depressive symptoms, irritation, somatic symptoms. Without treatment during postponed period, they also developed such serious psychosomatic and psychological disorders as ticks, enuresis, stammering, vegeto-vascular dystonia, behavioral deviations, high level of hostility and aggressiveness, decrease of cognitive abilities, and maladaptation.

Our experience shows that during the acute period of trauma as the war continues or immediately after it stops, short- and mid-term interventions can be applied to large numbers of clients in a short period of time to decrease the amount of psychological damage the children suffer from. During the postponed period, it is necessary to apply a complex system of psycho-social rehabilitation, that requires much more human and material resources.

Key Words: armed conflicts; children; emergency psychotherapeutic assistance; post-traumatic stress disorder; war-related stress disorders

Database of Disabled Children Injured in Disasters

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The disorganization of the structure and functions of health services and social security systems during existing major disasters now are complicated further with migrations of the affected population. This has resulted in a breakdown of the strict succession of the medical services and of the recording of medical data.

The Russian Database for Disabled Children receives information about children who have been injured in disasters and who are destined for Centers for Disaster Medicine. At present, the database is programmed for use at the health services and social security agencies. An electronic analogue of the medical card of the patient includes: 1) personal particulars for a child; 2) information about his/her parents, near relations, or tutors; 3) a life anamnesis (medical history); 4) diagnoses; 5) information about the stages of treatment; 6) disability; and 7) the need for rehabilitation.

The database is used for: a) decision support about the size and a period of rehabilitation for the disabled children who received injuries at different disasters; b) improvement in the registration process; and c) the rational organization of the stages of the medical and a social measures being used. The database also includes: 1) an estimation of function and pathologic changes (in accordance with International Classification of Impairment, Disabilities, and Handicaps) that give the rights for disabled; 2) an analysis of the numbers and structure of the disabled children, including receipt of efficient dates; 3) control of rehabilitation for different stages of care; 4) an estimation of a level of restriction; 5)

an analyses of social adaptability for the disabled child; and 6) an estimation of need for prosthetics and subsidiary means. The database is used for guiding long-term, national programs, and for estimating the expenses of the material resources required for their use.

The database is designed for IBM-compatible, personal computers. The software is written in FoxPro 2.6 for Windows and operates under MS DOS. Transmission of information is provided to the Russian Centers for Disaster Medicine System for consultative purposes about children, victims in disasters using the INTERNET. Subsequent development will allow members of a co-operative network an opportunity of teleconsultations and teleconferences (presently done off-line).

Key Words: disaster medicine; database; disabled children

Treatment of Children with Severe Compression Trauma

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During earthquakes (Armenia, 1988; Georgia, 1989; Sakhalin Island, 1995) and following apartment block explosions (Svetogorsk, 1995; Kaspiysk 1996), the incidence of compression trauma among hospitalized children was 24%. The prevailing cases suffered injuries of the extremities (>90%) accompanied by ischemic neuritis. There were 3–4 times more injuries of the lower extremities than those of the upper extremities, and 15.6% of the injured had fractures of long tubular bones.

The most common surgical procedure performed was fasciotomy (32.9%). After fasciotomy, 11% of the children had purulent wound complications. The best results were achieved using the so-called "subcutaneous" technique. The rate of amputations in the children with compression trauma ranged from 2.1% in Annenia to 10.7% on the Sakhalin Island.

Both conservative and surgical methods were used in the treatment of the patients with bone fractures and compression injuries. The most appropriate methods used were continuous skeletal traction and extra-focal and closed intramedullar osteosynthesis.

According to our experience, multi-organ failure (MOF) as a manifestation of "crush-syndrome" complicated treatment in 21.6% of the total cases. In the most severe cases, extracorporeal blood purification was used in 10% of the children with "crush-syndrome." Mortality in this group was 10.7%.

Therefore, the compression injuries in children caused by disasters are characterized by a high incidence of post-traumatic disabilities and high mortality rates.

Key Words: blood purification; children; crush-syndrome; disaster; multi-organ failure (MOF); treatment

Intensive Treatment Administered to Children with Crush Syndrome (CRS) after the 1995 Sakhalin Earthquake

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The earthquake in Sakhalin in May 1995 resulted in almost 3,500 deaths. Sanitary losses among children made 269 persons that died. Medical institutions in Khabarovsk admitted 27 children within the first four days. The severity of the condition of victims who were extricated from under collapsed buildings where they had been for 8 to 48 hours was related mainly to traumatic shock, crush syndrome (CRS), and hypothermia. The main types of injury were: CRS of extremities, 17; fractures of extremities, 6; and brain injury, 4 cases. Eleven children were admitted in a traumatic shock condition and 7 children with hypothermia. All of the patients were at different stages of dehydration and hypovolemia. Acute renal failure developed in 22 of these patients.

All of the children received complex intensive therapy consisting of: anti-shock treatment; post-syndromic intensive therapy; active detoxification techniques; and surgical treatment. The complex of methods used made it possible to withdraw 25 patients from the critical condition; two of the children died.

Treatment results enable us to arrive at the following conclusions:

- 1) Patients suffering from CRS should undergo medical treatment only at top-quality medical institutions with mandatory attendance of resuscitators, nephrologists, traumatologists, surgeons, immunologists, and functional diagnosticians;
- 2) An adequate, unbiased estimate of each patient's condition is necessary at an every stage of medical treatment;
- 3) Intensive therapy for CRS should be complex and inclusive of infusion therapy, inotropic support, extracorporeal methods of detoxification, and syndromic therapy;
- 4) The best results of CRS treatment are attained using carefully selected detoxification methods based on individual clinical picture and laboratory findings; and
- 5) Surgical intervention may be dangerous for fear of uncontrollable fatal bleeding and should be undertaken for vital indications only.

Key Words: acute renal failure; children; crush syndrome; disaster; earthquake; hypothermia; hypovolemic shock; injuries

The Organization of Micro and Reconstructive Surgery in Conditions of War—The Chechen Experience

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The specifics of war trauma are evident. Limb salvage procedures find their utmost application in a war scene. Employment of microsurgical procedures would help