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POSTERS

Management of Multi-Casualty Accidents in Small to Moderate-Size Hospitals

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Introduction: Accidents that produce large numbers of casualties are a burden on the small and medium-size general hospitals because they lack resources to deal with all the patients in an effective and timely manner.
Design: A management plan was developed, and was implemented every time there was an accident that produced more than 10 victims.
Results: The plan was tested in actual situations 13 times during the year 2002. The total number of patients managed according to this plan was 320. Of these, 72 arrived dead to the emergency department; 152 were admitted, of whom 11 died in hospital. The remainder were discharged alive from hospital.
Conclusion: Multiple casualties that arrive simultaneously in small to medium-size hospitals are always a problem for any treatment facility because they overwhelm the resources of the hospital. So a plan to meet such contingencies must be ready and understood by all the providers. The details of this management plan and outcome from its use will be discussed.

Keywords: accidents; emergency departments; hospital; management; multiple casualties; outcome; plan; providers; resources
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Earthquake Disaster Response and Cooperation in a Guatemalan Community

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I. Introduction
A. Earthquakes: major disasters in the Central American country of Guatemala
B. Minimal literature concerning disaster planning and mitigation in developing countries
C. Purpose: to evaluate a Guatemalan community's response to a simulated earthquake in the particular areas of injury pattern recognition, mobilization of resources, field triage, and transport times to the hospital.

II. Methods
A. Design
  1. Escalating drills of severity in a Guatemalan community
  2. Evaluator: University of Massachusetts Department of Disaster Emergency Medicine
B. Population
  1. 120 volunteer victims
  2. Government officials
  3. EMS, rescue, military, medical, and communication personnel
C. Setting: Quetzaltenango, Guatemala
  1. An elementary school
  2. A government building
  3. A landslide area
D. Interventions
  1. Training and preparation of responders
  2. Written quiz
  3. Earthquake drill
  4. Written evaluations
E. Main Outcome Measures
  1. Recognition of injury patterns
  2. Resources and interagency cooperation
  3. Triage percentages
  4. Mean transport times by statistical analysis

III. Results
A. Recognition of injury patterns
  1. 69 subjects
  2. 67% average score
B. Resources and Interagency Cooperation
  1. Activation times
  2. Equipment
C. Triage Percentages
  1. Total victims transported to hospital: 57/120 (48%)
  2. Under-triage rate of red victims as yellow: 7/17 (41%)
  3. Under-triage rate of red victims as green: 1/17 (6%)
  4. Over-triage rate of black victims: 5/9 (55%)
D. Mean Transport Times
  1. Critical victims: 00:18 minutes
  2. Non-critical victims: 00:30 minutes
  3. Critical versus non-critical victims demonstrated a p-value <0.05

IV. Discussion
A. Earthquake Injury Patterns
  1. 61% unaware of earthquake injury patterns
  2. 48% transport rate of victims
B. Resources and Interagency Cooperation
  1. Incident command center and structure
  2. Communication system by ABRON
  3. Composition of rescue personnel
  4. Role of military
C. Triage
  1. Triage system(s)
  2. Triage classification percentages
  3. Casualty collection centers
D. Transport
  1. Equipment

a. Vehicles
b. EMS equipment
2. Victim transport rates
3. Mean transport times: critical versus non-critical victims

E. Preparation for International Assistance
F. Study Design Problems

V. Conclusion

A. Significant Mean Transport Times between Critical versus Non-critical Victims
B. Other Areas of Concern

Keywords: assistance; communications; cooperation, earthquakes; Guatemala; injury patterns; interagency; interventions; military; outcomes; resources; response; transport times; triage
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TIVA Remifentanil and TCI Propofol Anaesthesia

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Objective: This study was designed to investigate the differences between total intravenous anaesthesia (TIVA) of remifentanil and target controlled infusion (TCI) of propofol and balanced anaesthesia with isoflurane/fentanyl in abdominal laparoscopic surgery. Emphasis was placed on haemodynamic reaction, BIS Index monitoring, recovery profile, postoperative side effects, and patient satisfaction.
Methods: Two hundred twenty patients were assigned randomly to receive either total intravenous anaesthesia with TIVA remifentanil/TCI propofol or balanced anaesthesia with isoflurane/fentanyl. After premedication (atropine, pethidine, and midazolam), and induction of anaesthesia (TCI propofol, cisatracurium) in both groups, either 1 microgram/kg fentanyl (Group I) or 1 microgram/kg/min TIVA remifentanil for induction; then 0.05–0.5 microgram/kg/min (Group II) was given. Anaesthesia was maintained with 0.05–0.5 microgram/kg/min TIVA remifentanil (Group II) and 3.5–6.5 microgram/ml TCI propofol or 1.5 vol% isoflurane (Group I). Both groups were ventilated mechanically with 50% oxygen in air. The administration of isoflurane and the infusion of the anaesthetics were adjusted to maintain a surgical depth of anaesthesia with BIS Monitor (42 ±6.6 in Group I and 44 ±7.2 in Group II). For postoperative analgesia, 20 mg pethidine was administered intravenously 5–10 min before the end of surgery for propofol/remifentanil group anaesthesia patients. After recovery, 0.25–0.50 mg/kg pethidine was given intravenously to both group patients. At the end of surgery, the anaesthetics were discontinued and haemodynamics, early emergence from anaesthesia, pain level, frequency of analgesic demand, incidence of PONV, shivering, and patient satisfaction were assessed. Parameters were recorded for 24 hours postoperatively.
Results: Recovery time after TIVA remifentanil/TCI propofol anaesthesia for Group II patients was significantly (p <0.05) shorter than for Group I patients after administration of isoflurane and fentanyl: (1) Spontaneous ventilation, 3.0 vs. 7.0 min; (2) Extubation, 4.5 vs. 9.0 min; (3) Eye opening, 4.0 vs 8.2 min; (4) Stating name, 5.5 vs. 13.0 min; and (5) stating date of birth, 0.0 vs. 15.0 min). There were no significant differences between the groups in shivering, pain score, analgesic demand, and PONV. The Group I patients responded to tracheal intubation with significantly higher blood pressure than the Group II.

During maintenance of anaesthesia, heart rate in patients in Group I was significantly higher (Group II: HR max +11/-10; Group I: HR max +23/-0.); Measured on a scale (Group I: 65%).
Conclusion: Compared with patients given standard, balanced anaesthesia with isoflurane and fentanyl, total intravenous anaesthesia with TCI propofol and TIVA remifentanil proved to be particularly suited for abdominal laparoscopic surgery. Its major advantages are haemodynamic stability, significantly shorter times of emergence, and the exceptional acceptance by the patients.

Keywords: anesthesia; fentanyl; haemodynamics; isoflurane; propofol; recovery; remifenanil; surgery, laparoscopic abdominal; target controlled infusion (TCI); total intravenous anaesthesia (TIVA)
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An Earthquake Disaster In Turkey: An Overview of the Israeli Defence Forces Field Hospital in Duzce — November 1999

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On 12 November 1999 at 22:00, a recurrent earthquake of 7.2 magnitude (Richter scale) struck Turkey three months after a previous earthquake disaster in the same region. This time, Turkey had suffered 705 fatalities and approximately 3,500 injured. The earthquake significantly damaged the infrastructure of the cities, including that of the health system. This time the damage was more localized than in the previous earthquake of August. Medical teams and rescue services from numerous countries were posted in the region and provided medical aid.

The IDF Field Hospital arrived at Duzce on day 3 after the quake. The team consisted of 100 personnel. The field hospital acted as a secondary referral center to the primary care clinics in Duzce, to several worldwide volunteering medical teams, and to the partially functioning three hospitals of Duzce. The IDF field hospital provided an operating theater and hospitalization facilities in the damaged city, whereas the local hospitals could not provide these services in the first two weeks after the quake. An outpatient clinic based on local medical volunteer personnel was functioning in the field hospital from day 5.

A total of 2,230 patients were treated in the field hospital between day 3 and day 11 of the earthquake. The frequency distribution of the medical problems seen in the field hospital was 37% pediatric diseases, 32% internal medicine, 21% general, orthopedic, and plastic surgery, and 10% obstetrics and gynecology. A total of 84 patients