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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 Remifentanyl and TCI Propofol Anaesthesia

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Objective: This study was designed to investigate the differences between total intravenous anaesthesia (TIVA) of remifentanyl 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 remifentanyl/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 remifentanyl 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 remifentanyl (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/remifentanyl 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 remifentanyl/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 remifentanyl 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; remifentanyl; 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

(3.8%) were hospitalized in the field hospital for a duration range of 24 hours to one week. The spectrum of diseases included especially medical illnesses, and only a minority of the patients seen by the IDF field hospital had suffered earthquake-related trauma.

Conclusion: The activities of the field hospital enabled restoration of these abilities in the damaged city.

Keywords: clinic; earthquake; field hospital; illnesses; Israeli Defence Forces; mass casualties; operating theater; Turkey

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Ambulance Technicians' Indications for Prehospital Interventions

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Introduction: Little evidence is available about ambulance personnel's actual indications for use of prehospital interventions. Prehospital interventions increase on-scene time. Little evidence is available on their effect on outcome. In this study, ambulance technicians' use of prehospital interventions were compared with the patients' symptoms.

Method: Prospective, observational, registry study including 56 ambulance technicians from two ambulance stations in a Danish county and 5,516 cases in which a patient was brought to a hospital in 1998. The ambulance technicians recorded their use of prehospital interventions and their assessments of the patients' circulation and breathing.

Results: Ambulance technicians administered oxygen to 2,630 patients, or 47.3% of the patients brought to hospital, of whom 1,872 (71.2%) showed no symptoms of impaired breathing. An ECG was performed on 1,237 patients (22.3%); 584 (47.2%) of these patients showed no symptoms or signs of compromised circulation.

Conclusion: The ambulance technicians' indications for use of prehospital interventions were relatively wide.

Keywords: ambulance personnel; assessments; breathing; circulation; interventions, use of; oxygen; symptoms/signs

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Health Risks for Volunteer Flood Response Workers in the Flood Disaster, Germany 2002

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Introduction: During and after floods, short-term morbidity is known to increase because of infectious diseases and other reasons such as injury while cleaning or repairing property. This study examined the risk of (infectious) disease after contact with surface water, and the other nega-

tive health effects of flood response activities.

Methods: During the recent flood disaster in Germany, we examined the volunteer flood response workers of the German disaster relief organization (Technisches Hilfswerk), using a questionnaire and a stool specimen, which was tested for bacterial, viral, and parasitic pathogens. Of the 205 distributed questionnaires, 129 (62.9%) were returned. Out of 105 stool samples, 64 (61%) were submitted within one week, and were examined for salmonella, yersinia, shigella, campylobacter, EHEC, Norwalk-like virus, and parasites.

Results: Of the 129 volunteers, 105 (81.4%) had direct contact with surface water during work. A high percentage of volunteers (39.5%) reported health complaints. These included skin problems (14.0%), "flu-like" symptoms (7.8%), diarrhea (5.4%), fever/chills (1.6%), and "others" (24.0%). Ten (7.9%) volunteers contacted a physician. Stool examinations showed no pathogens. The risk for developing diarrhea and skin problems was increased (RR = 1.5, $p > 0.05$, n.s.) for volunteers who worked more than 10 days (75th percentile), and the development of "flu-like" symptoms was significantly increased (RR = 3.45, $p < 0.05$, 95% CI 1.07-11.1).

Conclusions: Infectious gastroenteritis seems to be no major problem during floods in developed countries. However, the risk of other health problems, such as skin irritation and injury should be considered.

Keywords: developed countries; diarrhea; fever; floods; "flu-like" symptoms; gastroenteritis; infectious diseases; morbidity; skin; stool; volunteers; workers

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Management of Mass Casualties from Earthquake in China

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Some parts of China are geologically active, as they belong to the Earthquake Zone of the Pacific Rim. Statistics show that in the last 100 years (1900-2000), there were 25 serious earthquakes, which killed 1,200,000 people. Now we pay special attention to the provision of first aid for the wounded, following the most serious earthquake in the Tong-shan Area of northern China. On 28 July 1976, a formidable earthquake of 7.8 magnitude occurred, killing 242,000 inhabitants, and wounding 164,000. Almost all of the buildings, high and low, in the city were demolished. These buildings included water and electricity supply systems and medical organizations. There were 218 Emergency Medical Support Groups from all over the country with memberships of 19,772 medical practitioners. They received 145,800 wounded persons. Among them, 63,400 were serious, and 29,600 were in critical condition. They required emergency surgery. Ninety-two percent of the wounded were treated with debridement, and others were separated into different categories with different treatment as follows: 3.9% were treated with laparotomy; 0.13% required intestinal repair, 0.26% with splenectomy, 1.5% with reduction of fractures, 0.2% with amputation, 0.13% with laminectomy, and 1.14% required other operations.