team and supplies to a hospital in Plattsburgh, New York. The medical personnel assisted staff by supporting the emergency medical services (EMS) system and staffing the hospital's wards and Emergency Department. The DMAT efforts provided relief for an overworked staff and overburdened system. Patients were treated for a wide variety of complaints, in addition to exposure to cold conditions and carbon monoxide poisonings from improper use of portable heating units. Teams were sent into nearby communities to evaluate the needs of individuals unable to leave their homes. A shelter utilizing DMAT personnel was set up in the hospital for people unable to return home. The extreme cold and frozen conditions persisted during the period of the deployment stressing those assisting with this disaster.

Conclusion: This hospital-based deployment presented a challenge to DMAT teams that train to function as independent medical units, but all involved worked hard and learned that flexibility is required in any disaster situation.

Keywords: assistance; cold; disaster medical assistance teams (DMATs); frozen; home-bound; ice storm; preparedness

General Session XIV

Trauma III

Wednesday, 13 May, 16:00–17:00 hours

Chair: ***Peter Baxter, Hisashi Sugimoto***

G-67

Diagnosis and Treatment of Traumatic Disruption of the Thoracic Aorta

Yasufumi Asai, MD; Katsutoshi Tannno, MD; Satoshi Nara, MD; Kazuhisa Mori, MD; Masashi Yoshida, MD; Yasushi Itoh, MD; Tetsuro Shoji, MD; Masamitsu Kaneko, MD
Sapporo Medical University School of Medicine, Sapporo City, Hokkaido, Japan

Purpose and Method: Traffic accidents are increasing in frequency in Japan. Ten cases of traumatic disruption of the thoracic aorta were encountered during ten years at Sapporo Medical University School of Medicine. These cases were analyzed.

Results: Nine cases were male, and one case was female. The average age was 50 years. The causes of the injuries were a traffic accident in seven cases and a fall in three cases. Six out of ten (60%) disruptions were located in the aortic isthmus. Among eight acute cases, four cases survived following surgery and one case survived after massive blood transfusion and intensive care. Two other cases of a chronic type were operated on seven months and 10 years after the accident, respectively; both were doing well. Three patients died of multiple organ failure and abrupt aortic rupture before surgery. Four recent cases were diagnosed by an enhanced computerized tomography (CT) with a helical scan. Digital subtraction angiography and trans-esophageal echo were done when needed. A heparin-bonded artificial lung and centrifugal pump were used for three recent cases of multiple traumas. In one case, they were used for support following respiratory failure, and in the two other cases, they were used to repair the aortic disruption.

Conclusion: Early diagnosis and surgical treatment are the appropriate treatment for aortic disruption. The use of a heparin-bonded, artificial lung and centrifugal pump is advantageous because they make possible a reduction in the dosage of heparin in the cardiopulmonary bypass at the time of traumatic aortic disruption.

Keywords: aortic disruption; artificial lung; incidence; pump, centrifugal; survival; thoracic aorta; trauma; treatment

G-68

Learning from the Diagnosis and Treatment of Ruptured Abdominal Aortic Aneurysms

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Eighteen cases with a ruptured Abdominal Aortic Aneurysm (AAA) admitted from 1986–1998 are reported. Six cases died, mortality was 30%. The site of rupture was mainly around a renal artery (seven cases; four survived). One case of AAA that ruptured to the portal vein survived; there were two cases of AAA that ruptured into the inferior vena cava, and one case died; there were two cases of AAA that ruptured into the duodenum, and one case died. The most severe rupture split was 4 cm in length. In this group, eight cases were blocked at subphrenic aorta, and nine cases of AAA were blocked by thoracotomy. The longest duration of rupture was 72 hours, and the shortest was four hours, with the average of 24 hours. Mortality was related to the duration of rupture, site of rupture, length of rupture, and the presence of other diseases.

Keywords: abdominal aortic aneurysm; aneurysm; surgical repair

G-69

Severe Hydrazine Sulfate Toxicity Responding to Pyridoxine Therapy

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Introduction: Hydrazine and its derivatives have been known for more than a century. An interesting pharmaceutical use of Hydrazine Sulfate is as an anti-cachexia agent; it is widely used by those who believe in alternative forms of cancer therapy.

Case Report: We report a patient with serious neurotoxicity from Hydrazine Sulfate who responded to high dose Pyridoxine. The patient was a 76-year-old male who was diagnosed with an inoperable oesophageal cancer. He declined dilatation and stenting of the lower oesophagus. In his quest for alternative anti-cancer therapies, he "surfed" the Internet and decided to treat himself with Hydrazine Sulfate. He imported Hydrazine Sulfate tablets from the United States. He then took 180 mg/day for two weeks and increased to 360 mg/day for five weeks.

Seven weeks after commencing Hydrazine Sulfate, he developed serious neurotoxicity characterised by encephalopathy. He required mechanical ventilation and intensive care. He was treated with 5gm of intravenous Pyridoxine.

Twenty-four hours after the administration of Pyridoxine, his cerebral function was appropriate and his encephalopathy improved. His subsequent recovery was complete.

Conclusion: High dose Pyridoxine is a useful therapy in Hydrazine toxicity. We will review the relevant literature on Hydrazine toxicity.

Keywords: cancer, cachexia; oesophageal; encephalopathy; hydrazine sulfate; hydrazine toxicity; neurotoxicity; pridoxine; toxicity

G-70

Development of Iotrolan Test for the Diagnosis to Traumatic Rupture of the Duodenum

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Introduction: An Iotrolan® test was developed to early diagnosis of traumatic rupture of the duodenum, and its usefulness was evaluated. In the past, the Gastrografin® test was reported to be a useful method for diagnosis to perforation of the upper digestive tract. However, if mis-swallowed, Gastrografin® can cause life-threatening chemical pneumonia. Iotrolan does not cause chemical pneumonia even if mis-swallowed. We performed a basic experiment using this very safety contrast media to make early diagnoses of traumatic duodenal rupture.

Purpose: If there is a duodenal rupture, Iotrolan leaks from the ruptured site into the peritoneal or retroperitoneal cavity, resulting in the absorption and rapid elimination of the material into the urine. This phenomenon is utilized to reach a diagnosis of duodenal rupture.

Methods: Urinary Iotrolan levels were measured using Computerized tomography (CT) scans. We used rabbits for experimental subjects. They were categorized into four groups: 1) oral treatment group (rabbits with intact digestive tracts given oral doses of Iotrolan); 2) intraperitoneal group (rabbits with intact digestive tracts given Iotrolan intraperitoneally); 3) duodenal rupture plus intraperitoneal treatment group (rabbits given Iotrolan intraperitoneally after induction of perforative peritonitis by creation of duodenal rupture); and 4) duodenal rupture plus oral treatment group (rabbits with duodenal rupture given Iotrolan orally). The four groups were compared for absorption of Iotrolan from the digestive tract and peritoneal cavity and elimination into urine.

Results: In the presence of duodenal rupture, Iotrolan was absorbed rapidly from the peritoneal cavity and quickly eliminated into the urine. In the absence of duodenal rupture, very little Iotrolan was eliminated into urine following oral administration, and the finding differed significantly from that in the duodenal rupture group.

Conclusion: The results indicate that the Iotrolan test, which measures urinary Iotrolan levels, should provide an early and reliable diagnosis to traumatic rupture of the duodenum. We will attempt to use this test clinically.

Keywords: diagnosis; duodenum, rupture of; Gastrografin; Iotrolan; pneumonia, chemical; trauma

General Session II

Hospitals in Disaster II

Wednesday, 13 May, 16:30–17:30 hours

Chair: *Edita Stok, Chiho Fujii*

G-82

Adaptation of the Hospital Emergency Incident Command System (HEICS) for Use in a University Teaching Hospital

David Jaslow, MD, MPH;[1] Jodi Jones, BA[2]

1. Temple University Division of Emergency Medicine
2. Temple University School of Medicine

Introduction: The Hospital Emergency Incident Command System (HEICS; Paul Russell, RN, Orange County, California USA) was designed as an incident management system primarily for use in community hospitals. These institutions are not likely to have a large human resource pool available to supplement the disaster response.

Objective: To design a system of incident management suitable for use in disaster response within a university hospital.

Methods: The HEICS template was modified to accommodate the needs of a 500-bed university teaching hospital located in a major east-coast U.S. city.

Results: Three major elements are addressed in this university model of the HEICS. Several operations section job descriptions have been modified specifically for physicians and three new physician officer positions have been created in radiology, psychiatry, and occupational health. Roles and responsibilities have been created for allied health providers, such as physical/occupational therapists, and for in-training personnel, including medical and nursing students. Their tasks are mostly labor intensive, which allows more highly trained personnel to concentrate on supervisory and patient-care issues. Lastly, a position description and section plan has been developed to effectively safeguard and manage the information systems within the hospital and physical plant.

Conclusion: Adaptation of the HEICS for use in a university teaching hospital requires few technical changes, although position descriptions may need to be created or rewritten for physicians, who are more likely to be available and interested in command positions. Appropriate utilization of allied health providers and in-training personnel present in these institutions may alleviate the problem of supervisors performing menial tasks.

Keywords: hospital incident command system; incident management; information systems; personnel; physicians; responsibilities; roles; teaching hospital