

**Objective:** The aim of this study was to evaluate the effectiveness of the Japanese emergency system for out-of-hospital cardiopulmonary arrest (oh-CPA).

**Background:** Sudden CPA patients in Tokorozawa City and the surrounding cities (population of approximately one million) are transported to the hospital by the Japanese Emergency Medical Service (EMS). In the past, Japanese EMS personnel were permitted to perform only bag-valve-mask ventilation and external cardiac compressions for CPA patients. However, since 1991, specially trained emergency medical technicians (EMT) have used defibrillators and intubation devices (except for endotracheal tubes).

**Patients and Methods:** 1,039 CPA cases were studied. Prognostic factors influencing outcomes from CPA were evaluated using multivariate analysis (quantification theory type); these variables included etiology, age, gender, witnessed arrest, bystander CPR, crew of EMS (EMT

or not), time interval from collapse to arrival, and arrival status (CPA or not).

**Results:** Spontaneous circulation returned in 393/1039 patients (37.8%), and 263 (25.3%) were admitted to the hospital wards. Forty-eight (4.6%) survived, and 13 (1.3%) recovered fully. Five full recovery cases were resuscitated by an EMT, and four of them returned to spontaneous circulation following defibrillation during ambulance transport. Influential factors for survival were arrival status, time, and etiology.

**Conclusion:** Further improvement of the Japanese EMS system is needed. Continued EMT education will be necessary to accomplish the goal.

**Key words:** airway management; cardiopulmonary arrest; defibrillation; emergency medical technicians (EMTs); intubation; outcome; prehospital; resuscitation; survival

## ABSTRACTS OF INVITED AND SCIENTIFIC PAPERS

### FREE Papers

#### Poster Presentations

#### Organophosphate Insecticides Poisoning— Causes of Death

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**Introduction:** Remarkable improvement in the results of the management of acute peroral poisonings with organophosphate insecticides (OPI) have been attained. Despite these gains, the problem has not resolved completely. A mortality rate of 25–30% still exists.

**Subjects:** The causes of death in the group of patients admitted with acute peroral poisoning of OPI were studied. The data were abstracted from clinical observations and results of medical forensic examinations.

**Results:** The causes of death in the group of 87 patients who died of acute OPI poisoning were investigated. Of the total number of deaths, 39.1% occurred during the toxicogenic phase and 60.9% during the somatogenic phase.

It should be emphasized that within the first 12 h, the main causes of death were due to coma with brain oedema and respiratory center paralysis and exotoxic shock (90% of all deaths). In the late toxicogenic phase (12–48 h), the main cause of death was exotoxic shock (65%). In the early somatogenic phase (3–6 days) the main cause of death was related to complications due to infection, mostly pulmonary (48.8%), and hemodynamic failure. The forms of hemodynamic failure were acute left ventricular failure, secondary somatogenic collapse, and dysrhythmias despite treatment with potassium. There were no significant differences between the clinician's and pathologist's decisions regarding the cause of death.

**Conclusion:** These data provide directions to improve the methods of intensive care for acute OPI poisoning.

**Key words:** dysrhythmias; hemodynamic failure; intensive care; left ventricular failure; organophosphate poisoning; phases of care; secondary infection; shock

#### Do Medical Curricula Produce Emergency Preparedness?

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**Introduction:** Every qualified medical doctor is expected to act effectively and logically in a sudden emergency situation. Ideally, this preparedness should be reached gradually during the medical curriculum in the university before qualification. According to anecdotal information, many young medical doctors have uncertain feelings about their abilities when they start their work as general practitioner or have their first night duty in a minor hospital. Because there are no documented data of preparedness or skills achieved with guided training, we studied the medical students in Finland immediately before they completed their studies.

**Methods:** We personally submitted a standard questionnaire to all medical students of the five medical faculties and asked questions concerning their theoretical knowledge, expertise, and readiness to deal with the most usual emergencies.

**Results:** The answers indicate that the theoretical knowledge included in lectures is estimated to be sufficient, but that the practical training of emergency procedures is limited to only a few if any, occasions. Their estimation of