synaptic cleft between nerves. OP compounds phosphorylate and irreversibly inactivate the active site of AchE after which the synapses can not hydrolyze Ach. This inhibition of AchE is believed to be the cause for the respiratory failure characteristic of OP poisoning. World-wide, there are approximately 100,000 cases of OP poisonings per year.

The antidotal effects of OP hydrolase (PTE) in acute OP intoxications were studied in mice. PTE was given intravenously prior or following the intraperitoneal or intragastric administration of OPs such as paraoxon (PO), DFP, sarin, and soman. Against the potent OPs such as DFP or sarin, the reversible inhibitors of AchEs such pyridostigmine, physostigmine, and heptylphysostigmine were administered intravenously 10 minutes prior to the administration of the OPs. The animals received atropine subcutaneously immediately after the administration of the OPs.

The PTE dose of 120 U/g body weight increased the OP hydrolyzing activity in mouse plasma up to 70-fold when measured 1 hour after its administration. The half-life of PTE in circulation was approximately five hours. The protective effect of PTE decreased progressively in the order: 1) PO, 2) DFP, 3) sarin, and 4) soman. Both pre- and post-PTE treatments were effective in PO intoxication. PTE also hastened the recovery of the PO-inhibited AchE activities. PTE-pretreated animals survived even at a 50-fold dose level when compared to the control mice without showing any major signs of intoxication. PTE also protected the brain and lung AchEs against inactivation by DFP, sarin, and soman. Heptylphysostigmine alone increased the brain AchE activities that had been inhibited by DFP. However, physostigmine was the most effective carbamate in sarin poisoning. The LD_{50} value for sarin was increased by 3.4- and 1.6-fold in mice receiving PTE and physostigmine, respectively.

In conclusion, PTE and physostigmine appears to provide at least experimentally effective therapy for OP intoxications.

Key words: acetylcholine; anticholinesterase; DPF; heptylphysostigmine; intoxication; organophosphate; paroxone; physostigmine; poisoning; pyrostigmine; sarin; soman; terrorist

Alarm, Response, and Command

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Historically, in many countries, we have thought we can bring the hospital functions out from the hospital without changing them very much from their original setting. In many countries, specialized functions for command, alarm, and response have not been well-developed until in the latest years. In some areas, this has not occurred. In many European countries and especially in the Nordic countries, experience with mass casualty situations has been limited for the last several decades. But with our sparse population, a limited number of hospitals and long distance coordination between areas and organizations far away may be necessary, even with a rather limited number of victims.

The command function must be provided by people with appropriate education and training. They should be well-prepared to use modern manual and technological systems for collecting information, calculation, decision-making, information/communication, documentation, and follow-up. The Alarm Centers must be trained, equipped, and prepared to function even under extreme workloads and stress, and must be the natural coordinators of several important tasks. The field personnel not only must be well-trained to perform their own tasks, but they need to be much more aware of the different levels of command under different circumstances than they are used in normal times. They must get the information they need appropriately and rapidly.

Within the United States of Europe, it might be more logical and efficient to transfer victims to neighboring countries rather than to transport them long distances within our own country.

Key words: alarm centers; alarms, command; cooperation; direction, hospitals, information; training; transport

ABSTRACTS OF INVITED AND SCIENTIFIC PAPERS

FREE Papers

ORAL Presentations

Joint First Responder Unit of Officials and Volunteers—The Pyhäjoki Model

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Pyhäjoki is a rural coastal commune of 3,800 inhabitants. The Health Station employs two full-time doctors. A 24-hour/day emergency service has its base in the Raahe Health Centre. A paramedic ambulance service operates from Raahe. During the years 1995–1996, the average time for the ambulance to reach the location of an emergency patient in Pyhäjoki was 23 minutes (range: 10–35 minutes). The average distance from the patient was 32 kilometres (range: 24–46 km). During this period, the Pyhäjoki Health Station was not informed about the situations by the emergency services dispatch centre even if the emergencies occurred in the immediate vicinity of the Health Station. It was not customary for the Health Station to provide treatment to patients outside of the station.