

Conclusion: A significant population of earthquake victims die prior to hospitalization as a direct result of crush injuries. This fact warrants improved disaster planning for prehospital emergency medical services and a better understanding of the pathophysiology and early management of crush injury.

Reference:

1. Ricci E, Pretto E, et al: *Prehospital and Disaster Medicine* 1991;6:159-166.

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Impact of the 1989 Loma Prieta Earthquake on EMS Personnel and EMS Activities

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Objective: To characterize the activities of EMS personnel during the 1989 Loma Prieta earthquake.

Methods: Researchers sent a retrospective questionnaire to all prehospital care personnel in the San Francisco Bay area [California, USA]. Researchers interviewed selected personnel based on involvement in earthquake response activities.

Results: A total of 622 (41%) of the 1,508 personnel surveyed responded. Of the respondents, 35% indicated involvement in earthquake-related activities. Although most respondents felt resources were adequate and EMS activities sufficient and effective, numerous problems occurred. These included difficulties in reporting for duty, depletion of critical medical supplies, communications problems, coordination and control problems, jurisdictional conflicts, and incident-related stress.

Conclusion: Overall, emergency medical services (EMS) response was ample and effective although problems were identified. An examination of these problems has resulted in a number of vital considerations for future EMS disaster planning.

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Sociopolitical Aspects of Disaster Management

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Worldwide attention was focused instantly on the devastating earthquake in Armenia in 1988 and the nuclear disaster in Chernobyl in 1989 as a result of the glasnost policies pursued by President Gorbachev, prior to which numerous major natural and technological disasters were unknown. Media attention facilitated international response in both instances.

The vital process of recovery and reconstruction in Armenia, however, has been halted entirely by a total blockade of the Republic as a result of political turmoil in the region.

PREHOSPITAL MEDICINE

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Clinical Evaluation of Left Ventricular Asynergy Accompanied by Subarachnoid Hemorrhage

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Objective: To clarify the mechanisms of occurrence of myocardial damage in patients with subarachnoid hemorrhage (SAH).

Methods: A two-dimensional echocardiogram was performed in 494 patients with SAH who were admitted within 24 hours of the onset. Forty-eight patients (Group A) had left ventricular asynergy (LV asyn) and were compared to 446 patients without LV asynergy (Group B). The levels of plasma catecholamines and serum CPK were measured and the hemodynamics were assessed using a Swan-Ganz catheter.

Results: Left ventricular asynergy (LV asyn) was detected in 9.7% of all patients. In Group A, pulmonary wedge pressure was 18 ± 5 mmHg and cardiac index was 2.6 ± 0.5 l/min/m². Left ventricular ejection fraction was $37 \pm 13\%$ on admission and improved to $65 \pm 9\%$ within 15 days (6 ± 4 days) after admission.

	Group A (n=48)	Group B (n=446)
Age (yrs)	57±2	55±1
Blood pressure (mmHg)	147±6**/ 97±4	170±3 /96±2
Heart rate (/min)	95±4**	83±2
Serum CK (IU)	550±110*	340±20
Serum MBCK (%)	6.4±0.7**	1.9±0.3
Noradrenaline (pg/ml)	2,300±780*	850±120
Adrenaline (pg/ml)	1,700±480**	400±90

Data are expressed as the mean±SEM. **p*<.05, ***p*<.01

Conclusions: Myocardial dysfunction and damage with necrosis were found in SAH patients with LV asyn. Increases of plasma adrenaline and noradrenaline levels may play an important role in their etiology.

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Prehospital Treatment of Intravenous Heroin Overdose

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Objective: To investigate if patients treated for intravenous (IV) heroin overdose combine their abuse with other forms of stimulants, and to relate this to the results of the antidote treatment.