



## Pathology Biology Section – 2003

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### G12 Death During EMS Transportation

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The goal of this presentation is to study the cause and manner of death and other important epidemiological data of those individuals who die in an ambulance car during EMS transportation.

**Materials and Methods:** Retrospective analysis was made of 1,001 ambulance reports and autopsy records of deaths during EMS transportation between 1996 and 2001. According to local regulations, everyone who passes away while being in an ambulance car, after a 911 call, should undergo forensic autopsy evaluation. Statistical calculations were done from many points of view.

**Results and discussion:** Averagely 62% of the deceased were male, 38% were female (average m/f ratio was 1.58, but it was 2.18 in accidental deaths, and 1.29 in suicides). Natural cause of death was listed in 81.2% of the males (out of this was 71% cardiovascular mortality). Breaking down to age categories, natural cause of death was present in only 19 % in the age group between 21-30 y. and it was in 94% in the older age group (over 71 years of age). In females, the natural cause of death represented 82.2% and out of this cases 78% were cardiovascular origin, with scatter similar to males.

Upon further investigation natural causes of death, particularly cardiovascular deaths (pre-hospital cardiac arrest), it was obvious, that the majority of these events happened at home. Analysis will be given on other scenes of occurrence in different age categories by gender. Pathologic condition of the hearts was analyzed, regarding weight of the heart (left ventricular hypertrophy), myocardium (recent and old myocardial infarction), coronary arteries (AS, plaque rupture, etc.) and pulmonary arteries. Also compared were the accuracy of diagnoses made by ambulance personnel and diagnoses made after forensic autopsy.

Accidental cause of death was listed in 10.3% of males and 7.5% of females, with somewhat different age distribution curves. Major injuries will be detailed and the usefulness of resuscitation on moribund trauma patients while being in an ambulance car.

Suicide cases died during transportation represented 3.7% of all male cases and 4.6% of all female cases. Important details will be provided on the methods of suicides most likely lead to fatal outcome in such a short transportation time.

Homicidal victims were only 4.8% of all transported male patients and 5.7% of all female patients. Again, the method of homicides and the associated serious injuries will be presented.

Data will be presented on what part of the transportation process during which the patient was declared dead (before leaving the scene, first or second part of the transportation, dead-on-arrival/DOA). Also an important factor determining survival is the ambulance response time, how fast the ambulance crew can reach the patient and how they can follow the chain-of-survival concept. These particular issues will also be discussed.

#### Death in Ambulance Car, EMS Transportation, Out-of-Hospital Cardiac Arrest