

Poster Presentations

RESUSCITATION IN A METROPOLITAN AREA

Gosta M Lotz MD, Stephan Halbig MD, Christian Byhahn MD and Volker Lischke MD PhD
Anaesthesiology, Intensive Care Medicine and Pain Control, J. W. Goethe-University, Frankfurt, Germany

Objective: To determine survival from out-of-hospital cardiac arrest in the Frankfurt EMS system and compare the findings with results from literature.

Methods: The city of Frankfurt, a metropolitan area with 650,000 residents, has a two-tiered EMS system with emergency medical technicians (EMT) without defibrillation capability on the first tier (BCLS) and paramedics assisted by a physician on the second tier (ACLS). EMS protocols from January 1, 1997 through March 31, 1998 were retrospectively analyzed according to Utstein style recommendations.

Results: Of 504 consecutive cardiac arrests on which resuscitation was attempted, 447 met entry criteria as primary cardiac events. 35,8% of those patients were admitted to hospital. The rate of hospital discharge was 7,8%. 144 patients (32,2%) presented with initial rhythm of ventricular fibrillation (VF) at the time the second tier reached the scene. Those had a significantly better survival to discharge rate than the 255 patients (57,1%) initially in asystole (VF: 17,4% vs. asystole: 3,1%, $p < 0,05$). Survival was also significantly better for patients suffering from cardiac arrest in public (public: 17,6% vs. home: 6,8%, $p < 0,05$). Other known risk factors (age, witnessed arrest, bystander CPR) did not show to be significant for survival.

	year	patients	admitted to hospital	discharged alive
21 studies	1976-2001	15323	33,1%	13,9%
Frankfurt	2002	447	35,7% ($p > 0,05$)	7,8% ($p < 0,05$)

Comparison of Frankfurt results vs. meta-analysis

Conclusions: The overall survival rate was significantly lower than those reported in similar studies, compiled in our meta-analysis. Key reason for the poor outcome may be the large proportion of patients with the initial rhythm of asystole. The "Chain of Survival"¹ should be strengthened by the introduction of early defibrillation by EMTs. Whether the implementation of early defibrillation for EMTs can improve the relatively poor survival rates will be analyzed in an ongoing study of the Frankfurt EMS system.

Reference:

1. Circulation 83:1832-1847