

TRANSPORT OF UNSTABLE RESPIRATORY FAILURE PATIENTS ON EXTRACORPOREAL LIFE SUPPORT

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Introduction: We have used extracorporeal life support (ECLS) to manage 51 cases of severe adult respiratory failure with a 57% survival. Thirty-eight patients from outside institutions required emergent transport. Fourteen of these patients were too unstable to be safely transported using conventional ventilation and so were placed on bypass at the referring institution.

Methods: Diagnoses included ARDS (n = 8), pneumonia (n = 5), and asthma (n = 1). Pre-ECLS ventilator support included: $FiO_2 = 0.98 \pm 0.07$, Rate = 19 ± 5 , PIP = 57 ± 12 , PEEP = 14 ± 7 . Physiologic indicators of severity of respiratory failure included: $SaO_2 = 84 \pm 11$, $PaO_2 = 67 \pm 43$, $PaCO_2 = 48 \pm 22$, pH = 7.33 ± 0.16 , $Q_s/Q_t = 0.48 \pm 0.12$, $AaDO_2 = 586 \pm 76$, Murray Vent Score = 3.62 ± 0.51 .

Results: Transport with the patient on ECLS was performed by ground ambulance without adverse effects. The transport team included two ECLS physicians, two flight nurses, and two ECLS specialists. Distance transported was a median of 43 miles (range 6 - 248 miles). Median transport time was 8.0 hours (range 1.9 - 13.4 hours). Evaluation, initiation of bypass and stabilization prior to return required a median of 4.6 hours (range 1.1 - 7.0 hours). Twelve of the 14 patients (86%) survived to discharge. Total time on bypass was 223 ± 201 hours.

Conclusion: Patients with severe respiratory failure who are too unstable to transport safely using mechanical ventilation alone may be transported on ECLS with a high survival rate.

THE FINANCIAL IMPACT OF VIOLENCE ON AIR MEDICAL TRANSPORT

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Introduction: Violent acts are increasing in both number and severity with increasing numbers of victims being transported by hospital-based helicopter EMS (HHEMS). A retrospective, descriptive study was undertaken to determine the cost of care and to evaluate the financial impact of violence on air medical transport.

Methods: Clinical and financial data on all victims of violent trauma who were transported by HHEMS between January 1990 and February 1994 were included. Variables studied included age, race, sex, mechanism of injury, payor class, total charges, and total collections. Types of violent injuries included were gunshot wounds (GSW), stab, and assault. Financial records were reviewed for total charges. Collections for each payor class were based on actual payments received.

Results: Two hundred nine (209) patients were transported for injuries resulting from violent trauma. Total charges generated by those transports was \$638,087.08, and the total reimbursed was \$141,496.96 or 22% collected. The mechanisms of injury were as follows: GSW: N=155 (74%), Stab: N=36 (17%), and Assault: N=18 (9%). Mean age was 32, mean ISS 21, and mean probability of survival .677. There was an average ICU stay of 8 days, with mean total hospital days being 12. Collection analysis revealed that 6% was paid by Medicaid/Medicare, 12% by some form of third party payor, and 3% was self pay.

Conclusion: Although the number of victims of violence that were transported by HHEMS has nearly doubled during the time period of the study, the percentage of charges not recovered remains a constant. The overall impact of violence on health care resources and society is directly influenced by the financial profile of these patients transported by HHEMS.