

Life After Near-Death: Long-term Functional Outcomes in Survivors of Emergency Department Thoracotomy

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Objective: Although the predictors of hospital survival after emergency department thoracotomy (EDT) are well established, little is known of the long-term, functional outcomes in those that survive their hospitalization. We hypothesized that EDT survivors are able to live healthful, productive lives. Our primary study objective was to analyze the long-term functional status and quality of life in EDT survivors.

Methods: Review of the trauma registry in our urban, level I trauma center between 2000 and 2010 revealed 37 of 448 patients survived their hospitalization following EDT. Demographics and clinical characteristics from the index hospitalization were analyzed in all hospital survivors. After exhaustive attempts to contact each survivor, 21 patients or caretakers were contacted and invited to participate in an outpatient functional assessment. The remaining 16 patients were lost to follow-up, none of whom were present in the Social Security Death Index. Outpatient evaluation by both Trauma and Physical Medicine and Rehabilitation staff included detailed demographic and social data, and a comprehensive functional assessment consisting of several validated scoring instruments (Mini-Mental Status Exam [MMSE], Glasgow Outcome Scores [GOS], Timed Get-Up and Go Test, Functional Independence Measure [FIM] Score, Rand Medical Outcomes Study Short Form-36 Health Survey [SF-36], and the civilian PTSD checklist).

Results: EDT survivors (n=37) were typically young (31.8 ± 9.4 years) males (92%) who sustained penetrating (gunshot wounds, 64.9%; stab wounds, 32.4%) injuries. While pre-hospital transportation varied (police, 46%; EMS, 35%; private vehicle, 19%), admission mental status was depressed (GCS, 7.1 ± 5.1). After extended hospitalization (42.9 ± 40.6 days), disposition was varied (home, 61.8%; rehab, 32.4%; SNF, 5.9%) and hospital readmission was common (33.3%). Of 21 patients or caretakers contacted, two (9.5%) survivors had later died, one remained in a persistent vegetative state, one was incarcerated, and one was available only for phone interview. Each of the remaining 16 patients completed the full outpatient evaluation (mean time to evaluation, 60.8 ± 36.7 months from EDT). Of these 16 survivors, 81% were single, divorced, or widowed. Alcohol (50%) and illicit drug use (37.5%) were common. Only 25% were employed, while 12.5% had been incarcerated since their EDT. In the MMSE assessment, 75% of patients had normal cognition, 12.5% presented with moderate cognitive impairment, and 12.5% had severe cognitive impairment. Most survivors had the capacity to resume normal occupational and social activities (GOS, 1.4 ± 0.7). Thirteen of 16 (81.3%) survivors performed within normal range of the Timed Get-Up and Go Test. The SF-36 demonstrated below average outcomes for both physical (62.5 ± 34.9) and mental health (63.5 ± 33.2). Most evaluated survivors were functionally independent (93.8% feeding, 81% transfers), while 12.5% required assistance with bathing, dressing, and transfers. Four patients (25%) met PTSD criteria.

Conclusions: Our results indicate that long-term survival is possible after EDT. Although most EDT survivors are able to function independently, alcohol, drug use, and unemployment are common in this population. While the majority of our analyzed population had normal cognitive and functional capabilities, severe impairment, PTSD,

or eventual death does occur after EDT hospital survival. Decisions regarding whether to perform EDT should consider these long-term outcomes during the decision-making process.