Can the "golden hour of shock" safely be extended in blunt polytrauma patients? Prospective cohort study at a level I hospital in eastern Switzerland

Joseph Osterwalder

BACKGROUND: The objective was to test, in this trauma system, the North American hypothesis that exceeding the 60-minute limit for the entire prehospital time ("golden hour of shock") increases mortality of blunt polytrauma patients. METHODS: In a prospective, observational, cohort study conducted between 1990 and 1996, a severity characterization of trauma (ASCOT) score was used to compare the actual mortality with the predicted mortality in 107 blunt polytrauma patients (Group 1) with prehospital rescue periods < or = 60 minutes (time from accident until arrival at the emergency department). The same comparison was performed for 147 blunt polytrauma patients (Group 2) with rescue periods > 60 minutes. Inclusion criteria were blunt trauma of at least two body sites, an Injury Severity Score (ISS) of > or = 8, and direct admission to the trauma centre. Multivariate regression analysis was performed to test for bias and confounding, and to identify factors that might influence mortality. Odd ratio (OR) and 95% confidence interval (CI) were calculated. RESULTS: The mortality in Group 1 was 14%, and was not statistically significantly higher than the 10.2% observed for Group 2. 4.8 patients, or 47% more than predicted, died in Group 1 (p = 0.057). The corresponding figures in Group 2 were 4.2 patients or 22% fewer than predicted (p = 0.19). Multivariate logistic regression confirmed this trend with a significant mortality odds ratio of 8 (95% CI 1.7 to 38.5) for Group 1 compared to Group 2. Significantly more patients in Group 2 were treated by emergency physicians. CONCLUSIONS: It appears in this trauma system, in which emergency physicians often are deployed, that the 'golden hour of shock' can be extended safely in many blunt polytrauma patients, since this was associated with better survival figures than in those patients for whom the time was < 1 hour.

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