Helicopter Evacuation of Trauma Victims in Los Angeles: Does It Improve Survival? Reply to Letter

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We thank Dr. Hardcastle for his interest in and careful review of our article on the use of helicopters for transporting trauma victims in the metropolitan Los Angeles area [1]. In his letter [2], Dr. Hardcastle expressed concerns regarding the validity of our results which detected no difference in mortality between helicopter- and ground-transported patients for whom the transportation time exceeded 30 min. Dr. Hardcastle based these concerns on the fact that airlifted patients were more severely injured than their ground-transported counterparts, suggesting that this may have introduced bias into our results. Dr. Hardcastle proposed a comparison of the observed mortality with the *predicted* mortality to reveal a possible clinically significant difference in survival. Control of bias in retrospective studies may be challenging. However, the methodology that Dr. Hardcastle proposed to control for bias in our study will not improve the validity of the obtained results. To attain the predicted mortality we would need to utilize one of the scoring systems available, such as the revised trauma score (RTS) [3] or the trauma and injury severity score (TRISS) [4]. The use of these scores, however, has proven to be of limited value in predicting outcomes [5, 6]. In addition, we do not share the view that we would solve the issue of identifying *clinically significant difference* by comparing the actual mortality with the predicted mortality obtained from such scoring systems.

Nevertheless, in our analysis we used the vast majority of the variables upon which the calculation of these scores is based, such as GCS, blood pressure, and ISS. In addition, we used multivariable logistic regression to control for possible confounders. Therefore, it is expected that there will not be any difference between the compared groups with respect to observed and predicted mortality.

Nonetheless, we agree that a survival benefit for patients transported by helicopter may not have been clarified without any doubt in our studied population. The adjusted odds ratio (95% CI) of 0.72 (0.22, 2.35), depending on what we define as *clinically significant difference*, may cross the zone of clinical indifference and may therefore indicate that our results ought to be interpreted cautiously. This issue can be solved only by increasing the sample size.

We thank Dr. Hardcastle again for his insightful comments and we hope that we have addressed his concerns.

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