Response to Letter Regarding Article, “Implementation of the Fifth Link of the Chain of Survival Concept for Out-of-Hospital Cardiac Arrest”

We would like to thank Mark and colleagues for their thoughtful comments on our study.1 About their first concern, we agree with the concept that the rate of intensive care unit admission correlates with the patients’ favorable outcome. However, we did not include intensive care unit admission as a predictor variable in the multivariable analysis because the purpose and intervention of the current study was to evaluate the effectiveness of the “fifth link,” a multidisciplinary postresuscitation care bundle that cannot be performed without intensive care unit admission. Therefore, it is not surprising that the intensive care unit admission rate increased as a result of the intervention.

We also appreciate their letter for giving us the opportunity to provide data about their second concern. As we mentioned in our article, the emergency medical system providers transported the patients to the nearest hospital.1 Only 1 tertiary and 2 nontertiary care hospitals are located in the center of the Aizu region, a suburban area. The other 9 nontertiary care hospitals are in the rural area. Travel from the farthest rural area to the tertiary care hospital by ambulance takes >90 minutes. The aged population is much higher in the rural area than in the center of the Aizu region (http://www.cms.pref.fukushima.jp/).

In the present study, there was a significant difference in the age of patients with return of spontaneous circulation between the tertiary and nontertiary care hospitals (tertiary, 66.9 years; nontertiary, 78.6 years; P<0.001). Although not statistically significant, the following factors showing less favorable physiological characteristics for nontertiary care hospitals may have contributed to the outcome: Bystander witness status (tertiary, 77.2%; nontertiary, 68.8%; P=0.22), presence of initial shockable rhythm (tertiary, 25%; nontertiary, 14.7%; P=0.09), and time from collapse to return of spontaneous circulation (tertiary, 28 minutes; nontertiary, 37 minutes; P=0.19). There was no difference in time from emergency medical system dispatch to arrival on scene (tertiary, 8 minutes; nontertiary, 8 minutes; P=0.60) or in the scene-to–hospital arrival time (tertiary, 21 minutes; nontertiary, 20 minutes; P=0.16). These data and the characteristics of our study area suggest that older age and other less favorable physiological characteristics may have contributed to the higher rate of rearrest after return of spontaneous circulation in nontertiary care hospitals. On the contrary, we believe that the opportunity to restore spontaneous circulation may be missed if the scene-to–hospital arrival time is made longer by transferring all cardiac arrest patients to a farther hospital, at least in our area. The fifth link is started after the first 4 in the chain.

Disclosures

None.

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