Limitations in Upper-Extremity Weight-Bearing Increase Length of Stay in Polytraumatized Patients

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Purpose: There are little objective data available to guide weight-bearing restrictions in polytrauma. However, these restrictions have the potential to have a profound effect on patients' ability to regain functional independence. The purpose of this study was to identify whether upper-extremity weight-bearing in patients with combined upper- and lower-extremity injuries affects hospital length of stay (LOS), disposition status, and/or independence with physical therapy at time of discharge.

Methods: The study included 371 patients with combined upper- and lower-extremity fractures from 2006 to 2015. Patients were included if they were ≥16 years who sustained combined upper- and lower-extremity fractures. The primary outcomes were hospital LOS and disposition status. A secondary outcome measure was time to mobilization with physical therapy during hospital admission, documented as ability to stand-pivot-transfer with physical therapy. Method of treatment and postoperative weight-bearing status were at the discretion of the attending surgeon.

Results: Univariate analysis demonstrated that mean hospital LOS was significantly longer for patients whose weight-bearing was restricted in either upper extremity than those who were bearing weight with bilateral upper extremities (15.2 days vs 10.3 days, $P < 0.001$). A significant difference was shown in disposition (12% to home in those with weight bearing vs 6%, $P < 0.001$) and independence with physical therapy (28% required maximum assist or were completely dependent in those with weightbearing vs 40%, $P < 0.001$) between the 2 groups. Linear regression analysis showed that upper-extremity weight bearing was an independent predictor for decreased hospital LOS and was associated with a 23% decrease in hospital LOS when adjusted for confounders.

Conclusion: Permitting polytrauma patients with combined upper- and lower-extremity injuries to bear weight in bilateral upper extremities is associated with a decrease in hospital LOS, improved disposition status and increased independence with physical therapy at time of discharge (all $P < 0.001$). Allowing upper extremity weight bearing has the potential to encourage mobility after polytrauma, which may even result in quicker return to independence, and perhaps also contribute to cost reductions.

See pages 401 - 442 for financial disclosure information.