Correspondence

Impact of Travel Time on Same-Day Discharge after Elective Percutaneous Coronary Intervention

To the Editor:

Several investigators have shown the safety of same-day discharge (SDD) compared with next-day discharge after percutaneous coronary intervention (PCI).[1] Benefits of SDD include improved patient satisfaction, shorter length of stay, and cost savings.[2] Despite the demonstrated safety of SDD, its adoption has been poor in the United States.[3] An important contributing factor may be the travel time between the patient's residence and the hospital. This phenomenon has been described in a few other contexts, including critical limb ischemia and bypass surgery, but to my knowledge, there have been no studies to evaluate the association between travel time and SDD after PCI.[4,5] The objective of the current study was to evaluate the impact of travel time on the likelihood of SDD after elective PCI.

Data from 2009 through 2013 were obtained from the State Ambulatory Surgical Databases for Florida and New York. All adult outpatient encounters with a PCI procedure code were included. CDXZipstream™ geographic and routing analysis software (CDX Technologies; Randolph, NJ) was used to calculate the travel time between the patient's residential postal code and the hospital, and a multivariable logistic regression model was used to evaluate the adjusted impact of travel time on SDD after PCI. Encounters associated with travel times <30 min were included in a reference category, and those associated with travel times ≥30 min were divided into 6 equal quantiles.

A total of 55,229 outpatient PCI encounters, including 17,089 SDD encounters, were analyzed. The proportion of patients undergoing SDD after PCI was 32.4% among those with a travel time <30 min. When the percentages of patients with SDD were plotted by increasing travel time between the patient's residence and the hospital, the graph was bell-shaped. The highest SDD rates occurred for travel times of 32.3 to 35.1 min (36%), followed by 35.2 to 39.3 min (35.9%) and 39.4 to 45.4 min (35.6%), respectively. The bell-shaped pattern was also evident on multivariable logistic regression analysis.

This study revealed that travel time has a substantial impact on the likelihood of SDD after outpatient PCI, although establishing a causal relationship between travel time and SDD is not straightforward because of patient preferences and because patient characteristics may be differentially related to the physician's perception of safety after PCI. It is possible that patients with more comorbidities and higher-risk profiles live closer to hospitals and have a lower likelihood of SDD after PCI. However, the association between SDD and travel time, despite adjustment, suggests that travel time has some impact upon the likelihood of SDD after elective PCI.

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