Obtaining a Pre-Hospital Electrocardiogram by Emergency Medical Personnel Shortens Total Ischemic Time for ST Elevation Myocardial Infarction Patients

ACC Poster Contributions
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Background: Pre-hospital electrocardiography (PH ECG) decreases door-to-balloon (D2B) time for STEMI patients. However, obtaining an ECG at the scene might prolong ischemic time. We investigated the impact of obtaining a PH ECG on both scene and transport times for patients with chest pain suspected of cardiac origin (ccCP).

Methods: We analyzed the City of San Diego Emergency Medical System runsheets of patients with ccCP from January 2003 to April 2008. Both the scene times (ST) and transport times (TT) were compared before (01/2003 - 12/2005) and after (01/2006 - 04/2008) implementation of the PH ECG. Among patients with a PH ECG, ST and TT were compared in patients with and without STEMI.

Results: There were 21,742 patients (62±17 years; 53% male) evaluated for ccCP during the study period. Implementation of PH ECG resulted in no difference in ST (19:50 vs. 19:57 min:sec, p = 0.177, 95% CI -0.03 - 0.18) or TT (14:01 vs. 14:08 min:sec, p = 0.19, 95% CI -0.04 - 0.18). In STEMI patients (n = 303), significant decreases in both the ST (93 sec; 18:27 vs. 20:00 min:sec; p < 0.0001; 95% CI 0.46 - 0.21) and TT (52 sec; 13:18 vs. 14:10 min:sec; p = 0.027; 95% CI 0.06 - 0.37) were observed (Figure 1), resulting in a reduction of scene to hospital time of 2:24 min:sec (31:47 vs. 34:11; p < 0.0001; 95% CI 0.11 - 0.37).

Conclusion: PH ECG for patients with chest pain does not prolong scene or transport times. For STEMI patients, both scene times and transport times are actually reduced, resulting in a reduction in total ischemic time.

Figure 1.