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An integrated approach to improve Door-to-ECG time

Introduction: The objective of present study is to investigate whether an integrated approach could improve the target rate of door-to-ECG time for potential patients of ST elevation myocardial infarction (STEMI).
Methods: We conducted an interventional study at an urban hospital. The integrated approach included a chief-complaint-based ECG process initiated by a triage nurse, moving the ECG station to the triage area and facilitating the operation of ECG by a triage nurse. The intervention was performed from August 2014 to December 2014. All STEMI patients from January 2014 to June 2014 were enrolled as the control group and all STEMI patients from January 2015 to April 2015 as the intervention group. The primary outcome was the target rate of door-to-ECG time and secondary outcome was the target rate of door-to-balloon time.
Results: A total of 73 patients were enrolled: 34 before the intervention period and 39 after the intervention period. Before the intervention, 59% (20/34) of the pre-intervention group received an initial ECG within ten minutes of arrival. After the intervention, 95% (37/39) of the post-intervention group met the door-to-ECG requirement ($P < 0.01$). A significant improvement in the target rate of the door-to-balloon time was observed as well (67% vs. 90%; $p = 0.04$). After adjustment of co-variables by multivariate analysis, the effect of interventions was not affected by age, sex, mode of arrival or time of arrival.
Conclusions: By using an integrated approach, the target rate of door-to-ECG time could be improved in STEMI patients.