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## Using the team resource management to reduce door-to-electrocardiogram time of ST-elevation myocardial infarction patients in the emergent department

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American Heart Association (AHA) suggests primary percutaneous coronary intervention (PPCI) is the preferred treatment for ST-elevation myocardial infarction (STEMI) patient. Non-transfer patient, PPCI should be done within 90 minutes after hospital arrival. Our hospital, over 90% of STEMI patients door-to-balloon time (D2B) <90 minutes but over 20% patient door-to-electrocardiogram time (D2E) is >10 minutes. Motivation to accelerate the protocol and shorten D2E time is our concern. A retrospective cohort research enrolled non-transfer STEMI patients from 2011-1-1 to 2014-12-31. Focus on team resource management (TRM) model with ISBAR (Introduction, Situation, Background assessment, Recommendation) structural strategy to enforce team work in care training and mutual communication. As patients arrives hospital with chief chest complaint, chest tightness, breathing shortness and epigastric pain (over 30-yrs), triage nurse immediately send patient to chest pain area (bed, monitor, ECG machine and emergency packs). Brief communications ISBAR to nurse practitioners to medical history and perform ECG. Follow by ISBAR to emergency attending physician. Reading ECG, ER physician decide to activate protocol for PPCI. We construct the protocol on 2013-1-1. Patients enrolled from 2011-1-1 to 2012-12-31 group previous, and 2013-1-1 to 2014-12-31 to group afterward. Among 354 patients, 180 were in previous group, and 174 were in afterward group. Medical chart data recorded: Baseline clinical characteristics and angiographic findings, time interval difference and 30-days mortality. Two groups showed no difference regarding median time of D2E, D2B and door-to-cath lab (D2C). But the percentage of D2E<10 minutes in afterward group is significantly than previous group (90.2% vs. 67.2%,  $p<0.001$ ). Furthermore, both groups D2E<10 minutes increased percentage of D2C<50 min and D2B<70 min. Afterward group, patients D2E<10 minutes is significant than D2E<10 minutes (3.8% vs. 17.6%  $p=0.045$ ) in 30-days mortality. Our study focus on constructing rapid protocol and TRM strategy to shorten D2E, reduce D2B and decrease 30-days mortality. Previous studies developed strategies in reducing D2B time, included: 1) ED physicians activate the catheterization laboratory 2) call central page operator to activate laboratory 3) active catheterization laboratory bases on prehospital ECG 4) attending cardiologist always on-site. Some strategies require money, manpower but benefits less expectations. Our goal is to use TRM and achieve quick protocol without increase human and resources. Rapid diagnosis STEMI as chief complaints confirmed, perform ECG immediately as the most crucial step. Our protocol combine triage and ECG to reduce D2E time, accelerate procedures and obtain greater prognosis. In conclusion, our study demonstrates a method of using TRM strategy to shorten D2E is beneficial to reduce D2B time and decrease 30-days mortality.

### Biography

Ya-Hui Cheng has completed her MD from Mei Ho University in Taiwan and is studying her Master's degree in I-Shou University in Taiwan. She has been a Nursing Staff in Kaohsiung Chang Gung Memorial Hospital for 18 years.

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