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Effect of delay time on in-hospital mortality in a Hispanic Population hospitalized with acute myocardial infarction. The Puerto Rico Cardiovascular Surveillance Study: 2007, 2009 and 2011.

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Conflictos de interés: Los autores declaran no tener conflictos de interés alguno.

Abstract

Introduction: In the United States, heart disease is the leading cause of death for both men and women. One of the main categories of heart disease is acute myocardial infarction (AMI), which is responsible for 1.5 million events per year. Data show that longer delay time to treatment limit the beneficial use of thrombolytic therapy with optimal use during the first hour after symptom onset. The purpose of this study is identify if an association exists between delay time and in-hospital mortality and to explore which factors impact delay time to treatment in a Hispanic population of Puerto Rico hospitalized with AMI. **Methods:** Study Design: A non-concurrent prospective design was conducted using a secondary analysis of the Puerto Rico Cardiovascular Surveillance Study. Data were abstracted from the medical charts of 21 health care facilities using International Classification of Diseases, 9th Revision (ICD-9) codes 410-41. Each case was validated according to the World Health Organization (WHO) criteria for AMI. Only patients with incidental AMI and adults > 18 years of age were included. Variables: Dependent variable is in-hospital mortality and independent variables are delay time, demographics, transportation mode, teaching hospital, angina, coronary artery bypass grafting, congestive heart failure, diabetes, hyperlipidemia, hypertension, current smoker and stroke. Analysis: Distribution of categorical variables were expressed in frequencies of percent and associations were analyzed via X2 test. Distribution of numerical variables were expressed as the Mean (Standard Deviation) and associations were analyzed via ANOVA and t-test. Binomial logistic regression was used to test for the unadjusted and adjusted association between delay time and mortality. Statistical analysis was conducted utilizing SPSS software, and statistical significance was defined as $p<0.05$.

Results: Inclusion criteria resulted in a total population of N=2624. After adjusting for confounders, three independent associations were observed in reference to in-hospital mortality. Patients that arrived with delay time

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between 60-240 min and >240min had greater mortality rates as compared to patients that arrived <60min, OR 3.3 (95%CI 1.5-7.4) and 3.7 (95%CI 1.7-8.2), respectively. For every 1 year increase in age there is a 1.5% increase in mortality rate, OR 1.015 (95%CI 1.001-1.029).Transportation mode became statistically significant. Patients that used private transport are 1.5 times more likely to expire as compared to patients that used EMS transport, OR 1.5 (95%CI 1.022-2.2). **Conclusion:** A strong association between delay time and in-hospital mortality was observed. This finding supports what most literature review already show among other ethnic groups.

Keywords: acute myocardial infarction; delay time; mortality; Puerto Rico