Using Linear Logistic Regression to Evaluation the Patient and System Delay and Effective Factors in Mortality of Patients with Acute Myocardial Infarction

Authors : Firouz Amani, Adalat Hoseinian, Sajjad Hakimian

Abstract : Background: The mortality due to Myocardial Infarction (MI) is often occur during the first hours after onset of symptom. So, for taking the necessary treatment and decreasing the mortality rate, timely visited of the hospital could be effective in this regard. The aim of this study was to investigate the impact of effective factors in mortality of MI patients by using Linear Logistic Regression. Materials and Methods: In this case-control study, all patients with Acute MI who referred to the Ardabil city hospital were studied. All of died patients were considered as the case group (n=27) and we select 27 matched patients without Acute MI as a control group. Data collected for all patients in two groups by a same checklist and then analyzed by SPSS version 24 software using statistical methods. We used the linear logistic regression model to determine the effective factors on mortality of MI patients. Results: The mean age of patients in case group was significantly higher than control group (75.1±11.7 vs. 63.1±11.6, p=0.001).The history of non-cardinal diseases in case group with 44.4% significantly higher than control group with 7.4% (p=0.002).The number of performed PCIs in case group with 40.7% significantly lower than control group with 74.1% (P=0.013). The time distance between hospital admission and performed PCI in case group with 110.9 min was significantly upper than control group with 56 min (P=0.001). The mean of delay time from Onset of symptom to hospital admission (patient delay) and the mean of delay time from hospital admissions to receive treatment (system delay) was similar between two groups. By using logistic regression model we revealed that history of non-cardinal diseases (OR=283) and the number of performed PCIs (OR=24.5) had significant impact on mortality of MI patients in compare to other factors. Conclusion: Results of this study showed that of all studied factors, the number of performed PCIs, history of non-cardinal illness and the interval between onset of symptoms and performed PCI have significant relation with morality of MI patients and other factors were not meaningful. So, doing more studies with a large sample and investigated other involved factors such as smoking, weather and etc. is recommended in future.