Evaluating correlation between neutrophil and congestive heart failure

M. Saravi  R. Alizadeh Navaei  F. Rouzbeh  M. Montazeri  SB. Ashraf Vaghefi

Abstract

Background: Acute myocardial infarction (MI) with inflammatory response is a result of tissue necrosis due to leukocytosis and increased number of peripheral blood neutrophils.

Objective: To investigate the relationship between neutrophils and congestive heart failure (CHF).

Methods: This cohort study was performed on 100 patients affected by acute MI who had two points out of three standard criteria (physical examination, enzyme and EKG findings) during the last 6 months of 2002 in Hayyanezad hospital, Babol, Iran. CHF was detected through physical examinations, medical history, chest X-ray, and echocardiography using a CFG 750 VinG Med Instrument at the fourth day of admission. Ejection fraction ≤ 40% was considered as heart failure. The data included parameters such as ejection fraction, age, sex, location of infarction, time of admission, use of thrombolitics accompanied with laboratory reports on leukocyte count, neutrophil and lymphocyte percentage at the first day of admission which were further analyzed using SPSS, Fisher’s exact examination, Univariate, and Loglinear statistical tools.

Findings: Out of 54 cases with neutrophilia greater than 65% (p=0.003), 25 patients were found to have developed heart failure at 4th day. There was a significant correlation between both neutrophilia and heart failure with sex (p<0.05). No significant correlation was found (p>0.05) when the age of patients taken into account.

Conclusion: Our data show that the neutrophilia of admission time correlates significantly with heart failure as an early onset of acute MI. This could be useful both in detection of high-risk people and also diagnostic and therapeutic measures.

Keywords: Neutrophil, Congenital Heart Failure, Heart Block