

Sex differences in Acute Myocardial Infarction

Mahdi Moshki¹; Mohammad Zareie²; Haydeh Hashemizadeh^{1,3,*}

¹Social Development and Health Promotion Research Center, Department of Public Health, School of Health, Gonabad University of Medical Sciences, Gonabad, IR Iran

²Nursing Department, Shirvan Nursing Faculty, North Khorasan University of Medical Sciences, Bojnurd, IR Iran

³Department of Nursing, Quchan Branch, Islamic Azad University, Quchan, IR Iran

*Corresponding author: Haydeh Hashemizadeh, Social Development and Health Promotion Research Center, Gonabad University of Medical Sciences, Gonabad, IR Iran. Tel: +98-9155113305, E-mail: haydeh_h_z@yahoo.com

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Dear editor,

Coronary Artery Disease (CAD) is the common cause of mortality and disability worldwide. Usually women with CAD are older and have more risk factors than men. If they have diabetes, hypertriglyceridemia and metabolic syndrome, they would be at greater risk of CAD than men (1). Experimental studies have shown that gender has an important role in cardiovascular physiology and pathology. On the other hand, some conditions such as hypertensive disorders of pregnancy, gestational diabetes, peripartum dissection and polycystic ovarian syndrome only occur in women. Migraine, coronary spasm, lupus erythematosus, vasculitis and the Raynaud's phenomenon are more common in women. Moreover, post menopause hypertension, diabetes, obesity and inactivity are common in women. Naturally, coronary vessels are smaller in size in women than in men (2). Because acute myocardial infarction (AMI) is an important cause of mortality and morbidity in developed and developing societies, and due to lack of local information on gender related epidemiological differences of CAD, this study was performed to compare age, hypertension, diabetes and mortality in men and women with AMI in Quchan, Iran, from 2008 to 2010.

This study was conducted on all patients hospitalized in coronary care unit (CCU) of Mosabnejafar hospital in Quchan from April 2008 to May 2010. Records of all patients with a diagnosis of AMI were assessed. In total, 200 patients who met the inclusion criteria were hospitalized in the aforementioned CCU. All patients had a medical diagnosis of AMI in their records, which was made by a cardiologist (based on ECG and enzyme tests). Descriptive statistics were performed and T test was used to analyze the data.

From 200 patients, 33% were female and 67% were male. Independent sample t-test showed a significant difference

between the mean age of females (64.12 ± 13.25) and males (59.46 ± 3.11) ($P = 0.04$). Totally, 24% of males and 50% of females had hypertension. In addition, 9.8% of males and 17% of females had diabetes mellitus. These findings were consistent with a previous report by Kazemy and Sharifzadeh in which 71.9% of patients with AMI were males, while females with AMI were older than men (3). Another study conducted in Tehran also reported that diabetes mellitus, hyperlipidemia and hypertension were more common in females with AMI than in men (4). In the present study, hospital mortality was higher in females with AMI than in males (10.4% vs. 8.6%). This finding was consistent with the results of Anderson and Pepine reporting that the odds ratio of hospital mortality is approximately 2.65 times more in females with AMI than in males (5).

In conclusion, a gender difference existed in AMI. The prevalence of some important risk factors (such as diabetes and hypertension) seems to be higher in females than in males. Moreover, females have worse prognosis than males after AMI. Therefore, the healthcare team, including nurses and physicians, should pay more attention to the female health, especially in females with AMI. Community interventions should also be implemented to reduce the risk factors of CAD and AMI with special focus on female health.

Authors' Contributions

Study concept and design: Haydeh Hashemizadeh; Acquisition of data: Mohammad Zarei; Analysis and interpretation of data: Dr. Mahdi Moshki; Drafting of the manuscript: Dr. Mahdi Moshki; Critical revision of the manuscript for important intellectual content: Haydeh Hashemizadeh; Statistical analysis: Haydeh Hashemizadeh; Administrative, technical and material supports: Dr. Mahdi Moshki; Study supervision: Mohammad Zarei.

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