

National Institute of Nursing Research: Acute Coronary Syndrome and Type 2 Diabetes

Older patients with type 2 diabetes experience less chest pain during acute coronary syndrome than those without diabetes. This indicates that type 2 diabetics may need additional training in recognizing other symptoms of ACS to reduce their chances of adverse health outcomes.

Lead Agency:

National Institute of Nursing Research (NINR)/National Institutes of Health (NIH)

Agency Mission:

The mission of NINR is to support research to establish the evidence base for patient care across the lifespan. From premature infants in the neonatal intensive care unit to middle-aged adults with chronic illness and elders at the end of life, NINR-supported research focuses on developing innovative and effective techniques and interventions that prevent disease and disability and improve quality of life and health outcomes for patients and their caregivers.

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General Description:

Acute Coronary Syndrome and Type 2 Diabetes

Twenty-two percent of persons with type 2 diabetes have cardiac autonomic neuropathy. Cardiac autonomic neuropathy (CAN) involves damage to autonomic fibers innervating blood vessels and the heart. It is hypothesized that this damage may affect sensory pathways that carry pain messages from the heart to the brain, leading to diminished or absent chest pain (silent myocardial ischemia). The consequences of silent ischemia in diabetic patients are particularly serious because a lack of symptoms or symptom recognition such as chest pain can lead to delays in seeking medical assistance during acute coronary syndrome (ACS).

This study examined symptoms of (ACS) in patients with and without diabetes. A convenience sample of 256 patients from two large medical centers in the Midwest participated. An inventory of ACS syndromes, classification of angina, and medical record reviews were used to collect data over a 25-month period. The results indicated that patients with diabetes were nearly half as likely to experience chest pain and more than twice as likely to experience unusual fatigue compared to a patient of the same age and sex without diabetes. Patients with diabetes experienced diminished physical

functioning and higher levels of angina and were more than 2 times as likely to experience unusual fatigue during ACS.

Long-standing fatigue resulting from diabetes may present an added risk for patients with diabetes by masking the symptoms associated with ACS. Patients who had diabetes for at least 10 years were more likely to experience difficulty breathing compared to either patients who had diabetes for less than 10 years or patients without diabetes.

The most significant predictors of the absence of chest pain were age and diabetes. Given that the incidence of coronary heart disease increases (CHD) with age, this finding is important as an older person with or without diabetes is 4 percent *less* likely to suffer chest pain as a person with the same diabetes status who is one year younger.

This study demonstrated that patients with type 2 diabetes experience silent myocardial ischemia. Patients with diabetes, therefore, may need to receive training in recognizing other symptoms of ACS to reduce their chances of experiencing adverse health outcomes.

Excellence: What makes this project exceptional?

This study demonstrated that patients with type 2 diabetes experience silent myocardial ischemia. Patients with type 2 diabetes, therefore, may need to receive training in recognizing other symptoms of ACS to reduce their chances of experiencing adverse health outcomes

Significance: How is this research relevant to older persons, populations and/or an aging society?

Heart disease is the foremost public health issue in the United States for both women and men. Age is a significant risk factor for coronary heart disease and diabetes, both underlying factors in heart acute coronary syndromes.

Effectiveness: What is the impact and/or application of this research to older persons?

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Innovativeness: Why is this research exciting or newsworthy?

Type 2 diabetes and obesity, twin epidemics and major risk factors for heart disease in the elderly, have increased 61 percent and 74 percent respectively in only 10 years. Furthermore, in every year since 1984, more women than men have died from cardiovascular disease. By identifying aging and/or symptom differences in acute coronary syndromes and determining if these differences persist after controlling for age, type 2 diabetes, functional status, and mood, may lead to age-specific assessment and treatment tools.