Acute Coronary Syndromes in Older Adults: A Review of Literature

Authors: Nicole K. Gillis, MS, RN, ACNS-BC, Cynthia Arslanian-Engoren, PhD, RN, ACNS-BC, FAHA, FAAN, and Laura M. Struble, PhD, RN, GNP-BC, West Bloomfield and Ann Arbor, MI
Section Editors: Nancy Stephens Donatelli, MS, RN, CEN, NE-BC, FAEN, and Joan Somes, PhD, RNC, CEN, CPEN, FAEN

CE Earn Up to 9.5 CE Hours. See page 292.

Introduction: Acute coronary syndromes (ACS) are the leading cause of death in older adults, aged 65 years or older. The clinical presentation varies, and the absence of chest pain may occur. Our purpose was to synthesize the published literature (2000–2012) to (1) examine the initial ED presentation of older adults with confirmed ACS, (2) identify knowledge gaps, (3) determine whether gender differences exist in the presentation of ACS, and (4) describe recommendations for practice and research.

Methods: A systematic review was conducted from September 2000 to September 2012.

Results: The review suggests that older adults with ACS report chest pain more commonly when arriving to the emergency department. Older adults have higher in-hospital mortality rates than adults aged younger than 65 years. However, older adults reporting an absence of chest pain on arrival are twice as likely to die compared with older adults with chest pain. With regard to gender differences, we note that men are more likely to present with chest pain whereas women are more likely to present with nausea. Women have higher in-hospital mortality rates both with and without chest pain presentation. Delay in time to arrival, as well as delay to primary percutaneous intervention, is reported for older adults with and without chest pain.

Discussion: Older adults with ACS are at risk for higher mortality rates and delays in time to treatment modalities. Early recognition of symptoms suggestive of ACS by the emergency triage nurse can improve patient outcomes.

Key words: Acute coronary syndromes; Emergency department; Emergency nurse; Older adult

Acute coronary syndromes (ACS), which include unstable angina and acute myocardial infarction, are the leading causes of death in older adults (aged >65 years).[1,2] Older patients who present to the emergency department with ACS and a chief complaint other than chest pain are often misdiagnosed[3] and undertreated[4–8] and have higher in-hospital mortality rates than adults aged younger than 65 years with chest pain.[1,9,10] Furthermore, individuals older than age 85 years diagnosed with ACS are more likely to die during their hospitalization compared with individuals younger than age 65 years (1:10 vs 1:100).[1] The risk continues 30 days to 1 year after hospitalization, with mortality rates of 15% for older adults aged 75 to 85 years and 25% for adults aged older than 85 years.[1] Clinically, the presentation of ACS in older adults varies, and an absence of chest pain may occur.[2,3,9–11] Age-associated changes and the presence of chronic comorbidities (eg, heart failure and diabetes mellitus [DM])[2] often account for these variations in ACS presentation. Patient gender may also influence symptom presentation.[4,9,12,13]

Nicole K. Gillis, *Member*, *Huron Valley Chapter*, is Clinical Nurse Specialist, Intensive Care Unit, Henry Ford West Bloomfield Hospital, West Bloomfield, MI.

Cynthia Arslanian-Engoren, *Member*, *Seagate Chapter*, is Associate Professor, University of Michigan School of Nursing, Ann Arbor, MI.

Laura M. Struble is Assistant Clinical Professor, University of Michigan School of Nursing, Ann Arbor, MI.

This study was completed as a part of master's scholarly project for the University of Michigan School of Nursing.

Support for this project was obtained from a Glacier Hills Student Scholarly Project Award (Ann Arbor, MI).

For correspondence, write: Nicole K. Gillis, MS, RN, ACNS-BC, Henry Ford West Bloomfield Hospital, 6777 W Maple Rd, West Bloomfield, MI 48322–3013; E-mail: nkblake@umich.edu.

J Emerg Nurs 2014;40:270-5.

Available online 3 May 2013.

0099-1767/$36.00

http://dx.doi.org/10.1016/j.jen.2013.03.003

Because symptoms often indicate the presence of disease, older adults with ambiguous symptoms may not be immediately recognized by ED personnel as having ACS. Emergency nurses are often the first health care providers to assess and triage older adults for ACS and initiate evidence-based protocols (eg, aspirin or oxygen). Inasmuch as older adults account for more than 23% of ED visits,[14] emergency nurses must be knowledgeable and vigilant in their assessment of ACS in this at-risk population. Even though optimal treatment modalities for ACS have been extensively studied, few studies have specifically addressed ACS symptom presentation in older adults.[15,16] Therefore the purposes of this article are to (1) synthesize the published literature (2000–2012) to examine the initial ED presentation of older adults with confirmed ACS, (2) identify knowledge gaps in the literature, (3) determine whether gender differences exist in ACS presentation, and (4) describe recommendations for practice implications for emergency nurses and future research.

Methods

We conducted a comprehensive search of the literature using the following electronic databases: Cumulative Index to Nursing and Allied Health Literature, Nursing and Allied Health Source, PubMed, Joanna Briggs Institute, and Cochrane Collaborative. The search is limited to September 2000 to September 2012. The following search terms were used in combination and isolation to identify literature that met the inclusion criteria: older adults, elderly, ACS, myocardial infarction, symptoms, emergency department, emergency nurse, chief complaint, and presentation. Included were articles describing the presentation of ACS symptoms in men and women aged at least 65 years and written in English. Excluded were literature reviews, meta-analyses, case studies, dissertations, and master's theses.

A total of 149 articles were initially identified; we excluded 134 articles that failed to describe older adults' chief complaint upon ED arrival. Of the remaining 15 articles, 4 were excluded because of the type of study (literature reviews, meta-analysis, and case study). A total of 11 articles met the inclusion criteria and are presented (Figure).

Articles are reviewed for initial presenting symptoms, patient demographics, medical history, and time to presentation. Cardiac interventions and mortality rates are also noted. Initial symptoms include the following: presence or absence of chest pain, shortness of breath (SOB), diaphoresis, nausea, back pain, and left or right arm pain. Medical history variables include hypertension, DM, family history of cardiac disease, previous myocardial infarction, and smoking. Cardiac interventions (primary percutaneous coronary intervention [PCI] and coronary artery bypass graft) and mortality outcomes (in hospital and 30 day) are also described.

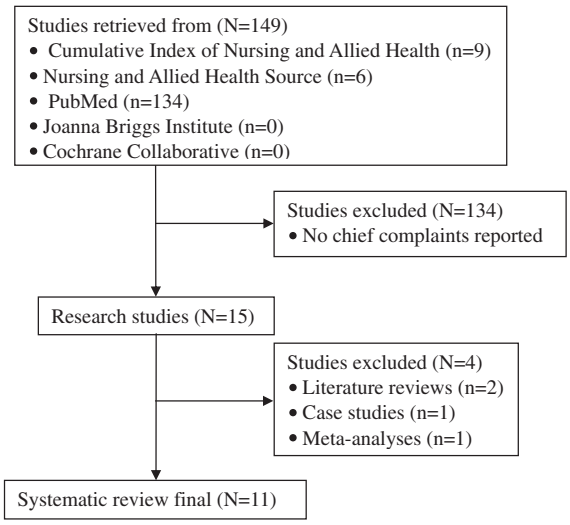

FIGURE
Inclusion and exclusion criteria search strategies.

Results

Of the articles reviewed, 8 of the 11 studies[2–4,9–13] had a body of evidence with low initial quality according to the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) criteria.[17,18] All 8 studies had observational designs with low bias. Only 1 of the studies had a moderate- to low-quality body of evidence because of the secondary analysis of randomized controlled trials,[19] whereas the remaining 2 studies had a very low-quality body of evidence because of the descriptive and secondary analysis design.[20,21]

Chest pain is the most frequent symptom of older adults with ACS (Table 1).[2–4,9–13,19–21] The 3 common chief complaints of older adults are chest pain, SOB, and diaphoresis.[2,11–13,19,20] Of older adults, 50% to 80% report chest pain,[2–4,9–13,19–21] 40% to 60% report SOB, and 15% to 56% report diaphoresis.[2,3,12,19–21] Approximately 20% of older adults report nausea and back pain.[2,3,12,13,19–21] Left arm pain occurs more frequently (23%-35%) than right arm pain (6%-15%).[12,20] Whereas 6 studies report chest pain, 2 report that up to 24% of older adults do not report chest pain when presenting to the emergency department