



Why Women aren't Ideal Candidates for Reperfusion Therapy: A literature Review

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Background

- Coronary artery diseases especially Acute Myocardial Infarction (AMI), is considered one of the most common cause of morbidity and mortality among women all over the world.
- Research and clinical trials reviled the importance of reperfusion therapy to reduce mortality and improve outcomes
- In spite of the benefits of reperfusion therapy, research evidence support that women are less likely to receive reperfusion therapy for the symptoms of AMI.
- The objective of this literature review was to explore factors related to underestimation of women treatment using reperfusion therapy when they experience AMI.

Methods

A comprehensive search in MIDLINE, CINAHL, PubMed and hand search were conducted using keywords: acute myocardial infarction, women, coronary heart disease, and reperfusion therapy. Search results included publications between 1990 and 2017 in English.

Findings

Women Biology

- Difference in the cardiovascular anatomy and physiology between men and women may contribute to differences in cardiovascular disorders in women.
- Women have a smaller body size and in turn a smaller heart size and smaller coronary artery vessels.
- The nature of women body and fluctuation of estrogen levels throughout their life would interpret why women have different presentation of heart conditions and higher in-hospital mortality after heart attaches and after coronary artery bypass graft surgery.



Unawareness of CHD risk factors

- The major modifiable and non-modifiable coronary heart disease are more common in women than men.
- The presence of one risk factor is associated with doubling the risk of having CHD and AMI.

Perception of personal risk of CHD

- Women are not aware of their personal risk and believed that it is very unlikely that they would have a heart attack in their lifetime.
- Women believe that breast cancer is their first health threat, and they underestimate the risk of developing CHD. However, the reality is that 1 of 28 women dies of breast cancer, 9 while 1 of 2 dies of CHD (AHA, 1999; Mosca et al., 2000).
- The misperception that CHD and AMI are men's diseases is one reason why women are less likely to seek early treatment for AMI symptoms (Dracup et al., 1995).

Unawareness of AMI Symptoms

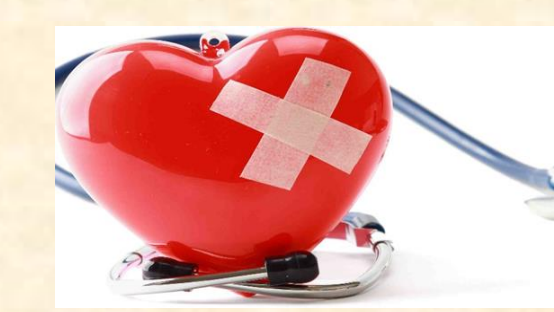
- Women, especially those over 75 years of age (Goldberg et al., 2000), and those with risk factors such as hypertension or diabetes, are more likely to present atypically (Herlitz, Karlson, Richter, Strambopm & Hyalmarson, 1992).
- Typical symptoms in women include back, neck or stomach pain accompanied by nausea or vomiting (Mosca et al., 1997), shoulder pain (Charney, Walsh & Nattinger, 1999; Culic, Eteravic, Miric & Silic, 2002;), fatigue, sleep disturbances and general lethargy for weeks before an AMI occurs (Anderson & Kessenich, 2001; McSweeney et al., 2003).
- When the number of risk factors increase, the likelihood of experiencing chest pain decreases (Canto et al., 2000).
- Because women do not know what the AMI symptoms are, they might be in danger of mislabeling their symptoms and not taking appropriate action.

Perception of AMI symptom seriousness

- The interpretation of the meaning of the symptoms influences decisions about seeking care.
- Women who think their symptoms are serious and caused by cardiac events were those who asked for care earlier (Bleeker et al., 1995; Burnett, Blumenthal, Mark, Leinbergm & Coliff, 1995; Clark, Bellam, Shah & Feldman, 1992; Dracup & Moser, 1997; Meischke et al., 1999).
- Women perceive that breast cancer is their first killer and they underestimate the symptoms of AMI when they experience them.

Treatment seeking behavior

- Women experiencing AMI showed a variety of treatment seeking behaviors to manage their health problems ...
 - Trying to relax, self-medicating or praying (Reilly et al. (1994)
 - Contact family members mainly sons or daughters (Alonzo, 1986).
 - Hoping that symptoms may go away
 - Waiting, thinking of anything else and ignoring the symptoms (Scherck, 1997).
 - Seeking social support and contacting family members (Dempsy et al., 1995)
- Women contact a medical professional only for chest pain. For the less common symptoms such as sweating, nausea, shortness of breath or unexplained fatigue, women were more likely to wait or deny the symptoms



Delay time to treatment

- The first response among women with AMI is more often inappropriate and treatment-seeking behavior is attributed to prolonged prehospital delay (Lefler, 2002).
- Reported mean delay time for women ranges from 4 to 24 hours, and the median delay time ranges from 2 to over 6 hours (Dracup et al., 1995; Goldberg et al., 1992).
- Studies identified 3 phases of delay; patient delay, travel delay, and hospital delay. Patient delay was found to be the most important phase that contributed to impediment in receiving thrombolytic therapy for AMI.
- Unfortunately, women experiencing AMI symptoms tend to spend some time communicating with family members which influence their action to either self-medicate, or seek medical help, and cause a longer delay.

Health care providers' unawareness of women presentation of AMI

- A physician may recommend over-the-counter medication or rest, or even fail to interpret the symptoms accurately or relate them to psychological causes (Hartford, Herlitz, Karlson, & Risenfors, 1990; Kereiakes et al., 1990).

Outcomes

- Worse physiological prognosis in the first 30 days and after 6 months following MI diagnoses (Wilkinson, Laji, Ranjadayan, Parsons & Timmis, 1994).
- More myocardial damage as measured by infarct sizes and Left Ventricular Ejection Fraction (LVEF) (Liem et al., (1998)
- Higher morbidity and mortality rates (
- Higher incidence of repeated infarction less favorable recovery, longer intensive care unit stays and lower long-term survival (O'Conner et al., 1995).

