EACH YEAR, ABOUT 267,000 WOMEN DIE from a myocardial infarction (MI), and each year, as many as 9,000 women who have an MI are younger than 45 years. In spite of these alarming statistics, less than half of the women in a recent survey knew that cardiovascular disease was the leading cause of death in women and even fewer women, only 13%, felt that the greatest danger to their health was heart disease. Because many cardiac symptoms experienced by women are atypical, many women are unable to link their symptoms to heart...
disease, which often leads them to delay seeking treatment.¹

But since 1984, the number of women whose deaths were related to cardiovascular disease has exceeded those for men, and has continued to rise.² Despite these facts, women’s cardiovascular health risk continues to be overlooked. Research findings suggest that the delay of risk identification in women may be an important determinant of their higher mortality rates.³ Gender differences in recognizing and diagnosing MI and persistent gender disparities in treatment also are problematic.²,³ Specifically, women were less likely to receive guideline-based treatment and adequate preventive care for cardiovascular health, which, in turn, increases their mortality rate.³

With cardiovascular disease as the leading cause of death for women, your role in identifying MI in women is crucial.² In this article, we’ll highlight atypical presentations among women, so you can help patients with earlier diagnosis and improved risk assessment.

Looking at the literature
We performed a literature search for articles on the atypical presentation of MI in women. This literature provides evidence to support the need for modifying the assessments performed on women. The literature search generated 22 journal articles; 6 weren’t used because they didn’t have a clear link to identifying MI in women based on gender difference. Sixteen were relevant to identifying atypical presentation of MI in women; however, only 12 reported original research.⁴-¹⁵

Unawareness of atypical symptoms
Only about half of women with an MI present with chest pain.¹⁶ In fact, women are more likely to present with atypical symptoms such as fatigue, sleep disturbance, shortness of breath, back pain, upper abdominal or epigastriac pain, and nausea with or without vomiting rather than simply present with chest pain.¹⁶ Compounding the problem for women is that women may not believe they’re vulnerable to a heart attack, and may be less likely to identify their signs and symptoms as those of a heart attack.¹⁰ Also, women who experience signs and symptoms of MI tend to delay seeking medical care longer than men do; this plus misdiagnosis may compound the poor outcome.¹⁰,¹³ A promising finding is that after being educated about MI symptom presentation, women are more likely to be able to identify atypical MI symptoms.⁷

Women experience a greater diversity of MI symptoms, compared with men, according to a comparative survey of 82 men and women.⁹ Study findings also indicated that nonchest-pain symptoms occur frequently in women and may be falsely identified as musculoskeletal, gastrointestinal, or emotional in origin and deemed inconsistent with cardiac symptoms.⁶ Common MI symptoms in women, such as nausea, are less likely to be identified because most women expect that they’ll have severe chest pain when having an MI.⁷

Because recognizing and treating an acute MI within 1 hour of symptom onset is paramount in reducing the mortality rate, misinterpretation of these symptoms in women can be deadly.⁹ One correlational study demonstrated that women who didn’t have chest pain delayed seeking treatment longer than those who had chest pain. This translated into delayed diagnosis and less likelihood of receiving optimal treatment for an acute MI.⁹

Studies also have shown that the average delay for treatment in women is 1 hour longer than for men, which is clinically significant to the outcome.¹¹ One reason for this is that women tend to have greater prehospital care pathway delays than men have due to their atypical symptom presentation.⁹ Also, women tend to be managed less aggressively compared with men after an acute MI, including being less likely to have an invasive cardiac procedure, surgery, and referral for cardiac rehabilitation than men.¹⁴

Most women who delay seeking treatment for MI do so because they weren’t thinking of a heart attack as an explanation for their symptoms.⁵ Instead, women are more likely to attribute their symptoms to an MI if their symptoms match the media illustration of a heart attack, which are typically male-based symptoms.⁵ In fact, during an acute cardiac event, women are more likely to experience a variety of symptoms rather than the typical

Maintain a high index of clinical suspicion for MI in adult women in general and postmenopausal women in particular.
Men, women, and MI symptoms

<table>
<thead>
<tr>
<th>“Atypical” MI symptoms in women</th>
<th>MI symptoms present in both genders</th>
<th>“Typical” MI symptoms in men</th>
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<tbody>
<tr>
<td>Absence of chest pain or vague chest discomfort</td>
<td>Diaphoresis</td>
<td>Chest pain</td>
</tr>
<tr>
<td>No radiation of pain</td>
<td>Shortness of breath</td>
<td>Jaw pain</td>
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<tr>
<td>Back pain</td>
<td>Fatigue</td>
<td>Pain between shoulder blades</td>
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<tr>
<td>Heaviness of arms</td>
<td>Weakness</td>
<td>Shoulder pain</td>
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<tr>
<td>Lightheadedness</td>
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<td>Arm pain</td>
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<td>Epigastric burning</td>
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<td>Neck pain</td>
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<td>Nausea</td>
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<td>Headache</td>
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<td>Vomiting</td>
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<td>Feeling flushed</td>
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“Atypical” MI symptoms in men often described by women are typically chest pain that men often describe. See Men, women, and MI symptoms for a comparison of symptoms based on gender.

Risk assessment
During the past 2 decades, deaths from coronary heart disease have declined among men, due in part to the national awareness campaigns about heart disease. The same can’t be said for women, despite recent women-focused campaigns. Assessing MI risk in women also is challenging because of noteworthy differences in the prevalence and outcome of risk factors in women compared with men. Risk factor screening or assessment for common modifiable coronary heart disease risk factors is done for most women in the years before their first cardiac event; however, screening without effective treatment of abnormal results is of no proven value. The compound problem of misperceptions of risk in women and frequently atypical symptom presentation lead to women having a less aggressive pattern of care and a delay in diagnosis and treatment.

Implications for nursing practice
Because detailed evaluation of chest pain characteristics in women failed to yield typical features, either alone or in combination, nurses face a clinical challenge. Nurses should stay vigilant and have a high index of clinical suspicion for MI in adult female patients in general and postmenopausal patients in particular.

Nursing student clinical rotations through cardiac step-down and cardiac care units are opportune times for nursing faculty and clinical preceptors to heighten these future nurses’ awareness regarding women and MI.

In addition to educating their colleagues and nursing students, nurses who care for patients with coronary artery disease are in a unique position to educate patients and families about the symptoms of an acute MI. Educating women is vital in promoting early diagnosis, which ultimately decreases the mortality risk from an acute event. One opportunity for such instruction would be during discharge teaching, and a second opportunity would be during cardiac rehabilitation classes. Teaching and later reinforcing essential information regarding MI in women is critical. A woman who can recognize the symptoms of MI and quickly seek medical attention, instead of attributing her symptoms to a benign cause, can avoid disabling or life-ending consequences.

The National Heart, Lung, and Blood Institute (NHLBI) offers multiple patient education resources in English and Spanish, as well as educational posters to display in clinics. Also, NHLBI offers educational materials for healthcare professionals to supplement and update their knowledge regarding heart disease, including MI.

The American Heart Association also offers up-to-date information regarding heart disease and women and is the sponsor of the Go Red for Women campaign, also known as the Red Dress Campaign. This campaign offers sound resources for helping women to take control of their heart health, and provides screening opportunities for women, such as the Go Red Heart Checkup for Women, to assess risk for heart disease. The campaign also encourages women to
communicate with their healthcare provider and to schedule regular checkups to promote heart health.

NHLBI and partner organizations are sponsoring a national campaign called the Heart Truth, aimed at giving women a personal and urgent wakeup call about their risk of heart disease. The campaign will offer educational information for healthcare professionals and the public, including health tips designed especially for women. These heart health awareness campaigns for women and educational materials can help you enhance your own knowledge as well as promote learning in your patients.

As a nurse, you’re also an advocate for your female patients. Encourage them to take a proactive stance for their own healthcare to promote good heart health and well-being. Monitor whether your female cardiac patients are receiving diagnostic procedures and treatments that are on par with those received by male counterparts. If you see inequities, tactful communication with physician colleagues may enhance their awareness of the issue and promote more equitable treatment for women.

Taking things to heart
Heart disease is the leading cause of death for women in the United States, but many women are still unaware of this fact despite significant attempts to heighten awareness. Also, healthcare providers often don’t possess sufficient knowledge of differences in symptoms, diagnoses, risks, treatments, and outcomes between men and women with heart disease. Nurses are the ideal healthcare providers to address this knowledge gap. Educating women to recognize symptoms, assess risk, and seek early diagnosis for MI will contribute to improved treatment outcomes, elimination of gender disparities, and reversal of current trends regarding cardiovascular disease-related deaths in women.

References

Nurses are the ideal healthcare providers to address the knowledge gap about women and MI.

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