Cardiovascular Update

September 2019 | Volume 4, Issue 5

A newsletter from the BayCare Cardiovascular Service Line

Women and Cardiovascular Disease

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"We must change our perception of heart attack…" ~ Dr. Nanette Wenger

Cardiovascular disease is the number one killer of both men and women in the United States. However, cardiovascular disease in men and women isn't necessarily the same disease process. There are sex-specific differences in presentation, treatment and risk factors in patients with cardiovascular disease. Raising awareness of some of these important sex-specific aspects of cardiovascular disease in women is crucial.

Presentation

In a recent study, women with acute myocardial infarction (AMI) were noted to have close to an hour longer median time from start of symptoms to the time they presented for medical care.[1] Not only do women tend to present later than men for medical evaluation, they often exhibit different, less typical symptoms. These less typical symptoms can contribute to a delay in therapy, wasting precious time in the event of a myocardial infarction. While chest pain is still the most common symptom of a myocardial infarction in either sex, women with ST segment elevation MI (STEMI) are more likely than men to present without chest pain.[1] Less typical symptoms that women may experience also include neck pain, jaw pain, generalized malaise, pain in between the shoulder blades, constricting feeling around the chest (sometimes described as "my bra feels too tight"), epigastric pain, weakness, palpitations and nausea. Women tend to describe more associated symptoms than men in the setting of chest pain.[1]

Management

Once recognized, treatment of STEMI is fairly standardized for both men and women, usually involving emergent cardiac catheterization. The challenge is early recognition to avoid delays in treatment. Another challenging aspect of management is the diagnosis of myocardial infarction with no obstructive coronary artery disease (MINOCA). Women presenting with acute myocardial infarction (AMI) are more likely than men presenting with AMI to have MINOCA.[2]

The diagnosis of MINOCA can be made when there's an elevated troponin, symptoms of myocardial ischemia and/or new EKG changes, no coronary artery stenosis greater than 50 percent by angiography and no specific alternate diagnosis.

After angiography demonstrates no significant obstructive lesions, other causes of troponin elevation need to be ruled out, such as pulmonary embolism, Takotsubo

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Upcoming Conference

Saturday, October 12
8am–3pm

BayCare C.A.S.E. (Cardiovascular, Arrhythmia, Surgery, Endovascular) Symposium

Renaissance Tampa
International Plaza Hotel
Tampa

To register:
BayCareCardioConference.org

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cardiomyopathy (also more common in women than men), other cardiomyopathies, myocarditis and spontaneous coronary artery dissection (SCAD) to name a few. It's important to remember that SCAD is also more common in women and can be obstructive or nonobstructive by angiography.

Potential underlying mechanisms for MINOCA include plaque disruption, supply-demand mismatch, nonobstructive SCAD, coronary vasospasm, coronary thrombus/embolism and coronary microvascular dysfunction.[2] Additional diagnostic modalities frequently used in the catheterization lab can be very helpful. These include instantaneous wave-free ratio (iFR), fractional flow reserve (FFR), optical coherence tomography (OCT) and intravascular ultrasound (IVUS). These modalities are used to uncover the cause for MINOCA. Additionally, cardiac MRI, which is also available within the BayCare system, may be used for further investigation.

Treatment is tailored toward the specific underlying etiology. Secondary prevention is important and statins and ACE inhibitor/angiotensin II receptor blockers have been shown to be helpful.[3] Beta blockade had a trend toward beneficial effect,[3] but shouldn't be used when the underlying mechanism is vasospasm. Risk factor modification and lifestyle changes should be addressed during hospitalization as well. These patients should also be referred to cardiac rehab, which is available within the BayCare system. Overall prognosis depends upon the underlying mechanism for the MINOCA presentation. However, there's a high likelihood of recurrent angina within the next year.[4]

Risk assessment

Women tend to have more risk factors present compared to age-matched male counterparts.[5] These well-established risk factors for development of coronary artery disease include diabetes mellitus, tobacco use, hypertension, obesity, hyperlipidemia and family history of early coronary artery disease. Clinicians are all accustomed to asking these questions and modifying these risk factors when appropriate. Unfortunately, risk assessment tools in the past haven't been well tailored to women.

More recent data has shown that pregnancy complications can be predictive of future cardiovascular disease. The American Heart Association has issued a recommendation that each complete cardiovascular history include a woman's pregnancy history. This should include information about eclampsia, pre-eclampsia, number of pregnancies, gestational diabetes, age of menopause and birth weight of babies.

Women with a history of pre-eclampsia have increased risk of later having a stroke, hypertension and microvascular disease.[6] Having low birth weight babies, hypertensive disorders of pregnancy or gestational diabetes increases the risk of ischemic heart disease later.[5]

A recent meta-analysis didn't show increased risk of cardiac events in women who received fertility treatments to become pregnant. There was, however, a possible elevated risk of later stroke.[7] Interestingly, data from a small study presented at Heart Failure in Athens, Greece, earlier this year indicated a five-fold increase in incidence of peripartum cardiomyopathy (PPCM) in mothers who received fertility treatments compared to those who didn't.[8] Further research is required and currently ongoing.

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