
Women and Heart Attack

By University of Michigan Cardiovascular Center

(HealthNewsDigest.com) - ANN ARBOR, Mich. - The gender gap is alive and unwell in heart disease, a new international study finds, with women differing from men on everything from symptoms to treatment in both heart attack and severe chest pain.

One of the most striking findings was that women were twice as likely as men to have "normal" or "mild" results on an exam of their heart's blood vessels, with no single blockage taking up more than 50 percent of any one blood vessel.

This was despite the fact that their other test results showed they were definitely having a heart attack, or a form of chest pain called unstable angina.

The study is being published online today in the journal *Heart* by a team led by researchers from the University of Michigan Cardiovascular Center. It's based on data from 25,755 men and women in 14 countries who had a heart attack or chest pain episode between 1999 and 2006, and are included in the Global Registry of Acute Coronary Events.

All of the patients had an angiogram, which allows doctors to see blockages in the heart's blood vessels - a major cause of heart attacks and chest pain. The lack of serious blockages may have something to do with other differences the researchers found: differences in how women were treated and how well they fared.

In all, among patients with the same level of coronary artery disease, women were significantly less likely than men to receive drugs called beta blockers, statins and ACE inhibitors - all of which are considered crucial to preventing further heart episodes. And no matter how serious their blockages, women were less likely to receive an angioplasty or a stent to open up their blood vessels.

By six months after their heart attack or angina attack, women with more advanced coronary artery disease were more likely than men to have died, or to have suffered another heart attack, a stroke or another problem that sent them to the hospital.

The researchers also found that the symptoms women reported when they first reached the hospital were often different from those the men complained of. While 94 percent of men and 92 percent of women reported they felt chest pain, women patients who didn't cite chest pain were more likely to experience "atypical" symptoms such as nausea and jaw pain.

"We've made great strides in treating women with heart disease, but these data show there's still much to be done - and that we need to find out whether women might have blockages that are 'invisible' on angiograms," says senior author Kim Eagle, M.D., FACC, the Albion Walter Hewlett Professor of Cardiovascular Medicine.

Eagle, a director of the U-M Cardiovascular Center, is co-chair of the publication committee for GRACE, which was launched in 1999 and funded by unrestricted funds from Sanofi-Aventis. The company has no role in the collection, analysis or publication of data from the GRACE registry, which includes patients from hospitals in North and South America, Europe, the Middle East, Asia, Australia and New Zealand.

Says study co-author Lisa Jackson, M.D., MPH, an assistant professor of cardiovascular medicine at U-M, "We have two education challenges ahead, based on these data: educating

women that they should seek immediate attention for both the classic heart attack symptoms and atypical sudden symptoms, and educating physicians that non-obstructive coronary artery disease is still disease and needs to be treated seriously."

The findings echo data from earlier studies, which have found differences in the symptoms women experience during a heart attack, and the tests and treatments they receive during or after an attack.

The lack of serious blockages, or obstructions, on the angiograms of many women heart attack patients has led experts to suspect that women may have blockages in smaller blood vessels that can't be seen on conventional angiograms. Or, their blockages may have been fleeting, disappearing before the images can be made.

Either way, these women still have issues serious enough to cause a heart attack or unstable angina, and those issues need to be addressed through preventive treatment, the authors say.

The under-treatment of women - and men - with non-obstructive coronary artery disease may set patients up for more heart attacks and other problems in the future, say Jackson and Eagle. In fact, both women and men with mild obstructions had similar outcomes six months after their heart attack or angina episode.

Part of the problem is that many patients and physicians don't yet see coronary artery disease for what science has shown it to be: a whole-body problem that must be prevented or managed through lifestyle changes as well as medications and, for emergency cases, treatments such as angioplasty or bypass surgery.

Only through improvements in diet and exercise habits, quitting smoking, controlling blood pressure and blood sugar, and using medication when needed, will people with non-obstructive disease keep themselves from progressing to worse problems, says Jackson, who is part of the Women's Heart Program at U-M. "We need a more comprehensive, whole-body approach to prevention," she says.

GRACE, headquartered at the University of Massachusetts Medical School, is now completing two-year follow-up on patients. Analysis of further results will likely yield more insights into differences between men and women in cardiovascular disease. At the same time, Eagle and Jackson are now looking to data from a U-M registry of patients with heart attacks and chest pains to find more clues.

In addition to Eagle and Jackson, the new study's authors include first author Sujoya Dey, M.D., a clinical lecturer in cardiovascular medicine at U-M, Marcus Flather of the Royal Brompton Hospital in London, Gerard Devlin of the Waikato Hospital in New Zealand, David Brieger of Concord Hospital in Australia, Enrique Gurfinkel of the ICYCC Favaloro Foundation in Argentina, Phillippe Gabriel Steg of Hopital Bichat in Paris, and Gordon FitzGerald of the University of Massachusetts.

More information on GRACE is available at www.outcomes.org/grace. More information on the U-M Cardiovascular Center is available at www.med.umich.edu/cvc.

Facts about U.S. women and heart disease:

- . Every year, 459,000 women die of cardiovascular disease; it's the leading cause of death for women.
- . Every year in the U.S., 365,000 women have a heart attack, and another 180,000 suffer the chest pain of unstable angina. Heart attacks kill 64,200 women each year.
- . Previous studies, and the new study published in *Heart*, have shown differences in how women experience heart disease symptoms, and how they are diagnosed and treated.

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