Severe Angina Poses Three Times the Coronary Artery Disease Risk for Women Than Men

ScienceDaily (July 10, 2010) — Women who have the most serious form of angina are three times as likely to develop severe coronary artery disease (CAD) as men with the same condition, according to the July issue of the *Journal of Internal Medicine*.

Canadian researchers looked at the records of 23,771 patients referred for first diagnostic angiography over a six-year period.

They found that women over the age of 60 with CCS Class IV angina (as defined by the Canadian Cardiovascular Society) faced a 21% higher absolute risk of developing CAD than men. The trend was robust, even in younger women under 60, who faced an 11% higher absolute risk than men in the same age group.

However, when the data was adjusted for other variables commonly associated with CAD -- diabetes, high blood pressure, high cholesterol, smoking and age -- Class IV angina increased the risk by 82% in women and 28% in men. That means that women with severe angina face a three times greater risk of developing severe CAD than men.

"CAD is the leading cause of ill health and death in men and women in the western world, accounting for over a third of deaths" says lead author Catherine Kreatsoulas from the Department of Clinical Epidemiology and Biostatistics at McMaster University, Canada. "In fact, more women die from CAD than breast disease every year. Despite this, there is still a persistent perception that CAD is a man's disease.

"However, our research found that women with CCS Class IV angina, which means they are unable to perform any activity without symptoms and even suffer angina at rest, are significantly more likely to develop severe CAD than men with the same condition."

The authors believe that this information is vital for clinicians deciding which patients to refer for coronary angiography.

Severe CAD was defined by the authors as left main stenosis (abnormal narrowing of the blood vessels) of 50% plus, three-vessel disease with 70% plus stenosis or two-vessel disease including proximal left anterior descending stenosis of 70% plus. Angina was defined according to the Class 0-4 grades laid down by the Canadian Cardiovascular Society.

The researchers broke the patients studied down into two groups: younger (up to 60 years of age) and older (61 plus).

Other key findings included:

- Men were much more likely to have severe CAD than women (37% v 22%).
- Women with severe CAD were significantly older than men with CAD (70 v 66 years).
- There were more men than women in the younger severe CAD category (30% v 20%) and more women in the older category (80% v 70%).
- There were more male than female smokers in the younger age group (65% v 59%) and the difference was even greater in older patients (53% v 33%).
- However, there were more women than men with diabetes -- one of the strongest predictors of severe CAD in this study -- with a more significant difference in younger patients (46% v 25%) than older patients (32% v 27%). The age trend was more robust among women, with young women much more likely to have diabetes than older women.

- Women were also more likely to have high blood pressure in both age groups (younger: 65% v 56%, older: 77% v 67%).
- When it came to high cholesterol, there was no significant difference between women and men in both age groups, with the figures ranging from 70% to 72%.
- A multivariate analysis that took a wide range of factors into account showed that diabetes increased the risk of severe CAD by 100%, high cholesterol by 50%, Class IV angina by 143%, smoking by 10%, age by 5% and high blood pressure by 1%.

"Our finding that severe angina is significantly more likely to predict severe CAD in women than men is very important for clinical practice" concludes co-author Dr Sonia Anand, Professor of Medicine and Epidemiology at McMaster University. "We hope that this information will make it easier for doctors to identify women at risk of severe CAD and target diagnostic and treatment strategies accordingly."