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Gender differences in cardiovascular health even us physicians don’t know enough about

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Heart disease kills more than five times as many women as breast cancer. Most women and their physicians don’t know this. Despite over two decades of advocacy by women’s health researchers, approximately 70% of the cardiovascular research continues to focus on males. This is not good for women’s heart health.

In January, the Federation of Medical Women of Canada hosted an evening dinner and lecture on the gender differences in cardiovascular health. We were honoured to have two experts in their fields: Dr. Thais Coutinho, Chief, Division of Cardiac Prevention and Rehabilitation, Chair, Women’s Heart Health Centre and also an assistant professor in the Department of Medicine at the University of Ottawa. Joining her was Dr. Amel Arnaout, Program Director, Division of Endocrinology and Metabolism Residency Training Program and assistant professor in the Department of Medicine at the University of Ottawa.

Here’s what we learned.

Chronic hypertension (HTN) is the number 1 cause of death and disability worldwide, and is particularly ominous in women, who are at greater risk of myocardial infarction, stroke, heart failure and target organ damage than men. Women with chronic HTN are at an increased risk of death compared to men (14% vs 11%). Gender matters in hypertension and pregnancy is the first stress test.

Left to right: U of Ottawa MD student, Julia Lombardi, Dr. Amel Arnaout, Dr. Thais Coutinho, Dr. Bev Johnson, U of Ottawa MD student Sara-Michelle Gratton.

Hypertensive disorders of pregnancy are common, present in about 7% of all pregnancies, and increase the risk of chronic hypertension in the future. According to Dr. Coutinho, a large proportion of these women are not diagnosed and/or are sub-optimally treated. This presents an increase in the chance of myocardial infarction, stroke, heart failure and death with HDP in a dose-response manner – the most severe the HDP, the greater impact later. Dr. Coutinho stressed that an obstetrics history should be obtained as part of the cardiovascular work-up and risk profile and that there is a critical need for systemic programs for referral detection and management of risk in these women. Early detection and lifestyle modifications need to be implemented early on in women with HDP to prevent further cardiovascular implications.

More than 1/3 of patients with HDP are unaware of future risk for cardiovascular disease. In addition, a study conducted in 2012 at one hospital demonstrated that internist and obs-gyn are not fully aware of the increased risk of myocardial infarction and stroke in women who have had pre-eclampsia; only a small proportion of them routinely provided counseling to women about cardiovascular risk reduction. There is some hope that aspirin may provide some protection, but Dr. Coutinho stressed that clinical trials of aspirin in the prevention of future CAD after HDP are needed. Overall, she said, there is very poor knowledge and communication between providers and affected women.

We also learned that roughly 3.4 million Canadians, or 9.3% of the Canadian population, are affected by Diabetes Mellitus (DM). Although this chronic disease shares common risk factors, pathological mechanisms, complications, diagnostic methods, management principles, and treatment in both genders, there are important differences between men and women when it comes to DM. As Dr. Arnaout emphasized, gender does matter when it comes to Diabetes Mellitus.

Obesity increases the risk of developing pre-DM/DM, particularly visceral obesity. With higher obesity rates and a tendency to more visceral fat, women with obesity may be at

greater risk of developing DM. The development of DM is closely tied to income-based socioeconomic status in women. In Canada, it is women with lower household income and food insecurity who have a have a higher DM risk. Gestational DM (GDM) is a strong independent risk factor for the future development of DM in both a mother and her baby.

Differences continue in terms of screening, where women demonstrate lower fasting glucose levels and higher 2-hour glucose levels compared to men and, if menstruating, are more prone to anemia which can interfere with HbA1c levels. This means that the standard method of screening, which often starts with fasting glucose and HbA1c levels, may actually be inadequate in women. To screen higher risk women for DM, Dr. Arnaout recommends starting with a 2-hour Oral Glucose Tolerance Test (OGTT) and HbA1c to reduce the risk that they will slip through the cracks. She also recommends that women with GDM be counseled appropriately and screened for DM annually for the rest of their lives to avoid delayed diagnosis and therapy.

And the differences go on. A diagnosis of DM negates the relative cardiovascular protection a woman is provided. Compared to individuals without DM, the risk of CAD increases 2- to 5-fold in women, whereas it only increases 1- to 3-fold in men. There is also a greater risk of CAD-related mortality in women versus men with DM.

Dr. Arnaout stressed that a particularly aggressive cardiovascular risk factor management is warranted in women with DM. Women respond more effectively to external sources of support and display higher rates of attendance at education and therapy sessions. Providing DM education through formal counseling sessions is encouraged. Interventions specifically aimed at weight loss are proven to yield greater benefits in women when it comes to clinical and psychological parameters. Weight loss through dietary changes, exercise, and other lifestyle modifications should therefore be strongly encouraged and preference should be given to medications known to be cardioprotective and weight-loss inducing for optimal management of DM in women – Metformin, Glucagon-Like Peptide-1 Agonists, and SGLT-2 Inhibitors are all known agents. As with starting any medication, says Dr. Arnaout, the key is to start low and go slow.

The research is becoming clear. Gender does matter when it comes to women's heart health. This February, help raise awareness about women's heart health by joining in the Wear Red Canada Campaign February 13, 2019 to raise awareness about women's heart health. Find out more at: https://cwhhc.ottawaheart.ca/how-get-involved/wear-red-campaign

Dr. Beverly Johnson is chair of the Gender Equity and Diversity committee with the Federation of Medical Women of Canada.

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