

Obesity may hinder optimal control of blood pressure and cholesterol

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Obese patients taking medications to lower their blood pressure and cholesterol levels are less likely to reach recommended targets for these cardiovascular disease risk factors than their normal weight counterparts, according to new research presented at the 2009 Canadian Cardiovascular Congress hosted by the Canadian Cardiovascular Society and the Heart and Stroke Foundation of Canada.

Dr. Vineet Bhan, a resident at the University of Toronto, sought to determine whether there were differences in reaching guideline-recommended targets for [blood pressure](#) and cholesterol levels according to body mass index (BMI) in a large number of individuals deemed to be at high risk for heart disease and stroke.

"In Canada, these high risk patients frequently do not reach their blood pressure and cholesterol targets," says Dr. Bhan. "The goal of our study was to see if obesity could be a factor."

He says that other studies have looked at obese individuals in the general population and found they were more likely to have high blood pressure, high cholesterol, and diabetes. "This, to our knowledge, is the first study looking at patients with established [cardiovascular disease](#) who are on treatment to see how obesity relates to the control of these risk factors," he says.

The study recruited 7,357 high risk patients who had a history of coronary artery disease, cerebrovascular disease, peripheral vascular

disease, or diabetes plus additional cardiovascular risk factors from nine Canadian provinces. This observational study, based on two outpatient registries, took place from 2001 to 2004, recruiting 95 per cent of the patients from family physician offices. The registries were led by senior co-author, Dr. Shaun Goodman, and coordinated by the Canadian Heart Research Centre.

"Although a direct cause-and-effect relationship cannot be proven, our data would suggest that pharmacologic treatment alone without achieving optimal weight may not be adequate," says senior author, Dr. Andrew Yan. "This is a potentially important message to get across to clinicians, especially primary care physicians who are on the front line managing these high risk patients in the long term."

Patients were classified into three groups according to their BMI:

- normal weight (BMI 30)

Researchers measured their rates of attaining guideline targets of blood pressure and cholesterol.

The majority of patients (3,261) were obese; 2,791 were overweight, and 1,305 were normal weight. After controlling for age, sex, diabetes, use of pharmacologic therapies and other confounders, the investigators found that [obese patients](#) were less likely to attain blood pressure and HDL levels than overweight or normal weight patients. However, there was no significant difference with regard to attainment of LDL-cholesterol targets.

Overall, 42 per cent of patients attained guideline recommended blood pressure targets, and 21 per cent achieved both blood pressure and LDL-cholesterol targets. The rate of attainment was less for overweight, and still less for obese patients in comparison with normal weight

individuals.

Among normal weight patients, 52 per cent reached blood pressure targets; among overweight patients, 47 per cent reached blood pressure targets; and among obese patients, 34 per cent reached blood pressure targets.

Dr. Charles Kerr, president of the Canadian Cardiovascular Society added that the firm linkage of obesity with a failure to achieve known targets for risk prevention in coronary artery disease is important. "It is very clear that there is an interaction here that is critical," says Dr. Kerr. "You can't as effectively lower your cholesterol or your blood pressure without losing the weight."

Obesity is associated with high blood pressure, [high cholesterol](#), and diabetes - three well-known risk factors for cardiovascular disease (CVD). Current Canadian, European, and American guidelines call for lifestyle changes and, if necessary, medication to control these risk factors to reduce obesity-related morbidity and mortality.

Source: Heart and Stroke Foundation of Canada

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