

At A Glance

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Monthly highlights of ICES research findings for stakeholders

Popular diabetes medications have different rates of heart failure and death

Juurlink D, Gomes T, Lipscombe L, Austin P, Hux J, Mamdani M. Adverse cardiovascular events during treatment with pioglitazone and rosiglitazone: population based cohort study. *BMJ*; 2009; 339: b2942.

Issue	Rosiglitazone and pioglitazone belong to a class of drugs called thiazolidinediones, which are widely used to lower blood sugar levels in patients with type 2 diabetes. Both drugs are known to cause fluid retention and heart failure in some patients. Whether one is safer than the other has remained uncertain.
Study	Analyzed prescription records to identify 39,736 Ontario residents aged 66 or older who were started on either rosiglitazone or pioglitazone between April 2002 and March 2008. Patients were followed until death, hospitalization for acute myocardial infarction or heart failure, or March 2008, whichever occurred first.
Key Findings	Overall, 57.3% of patients started on rosiglitazone and 42.7% on pioglitazone. Compared to rosiglitazone users, patients treated with pioglitazone had a 23% lower risk of hospitalization for heart failure and a 14% lower risk of death from any cause. There was no significant difference in the risk of heart attack.
Implications	Among older patients with diabetes, rosiglitazone is associated with a significantly higher risk of heart failure and death than pioglitazone. Given the absence of a distinct clinical advantage over pioglitazone, continued use of rosiglitazone may not be justified.

Mild glucose intolerance in pregnancy may signal increased cardiovascular risk in later life

Retnakaran R, Shah B. Mild glucose intolerance in pregnancy and risk of cardiovascular disease: a population-based cohort study. *CMAJ*. 2009; 181(6-7): 371–376.

Issue	To test for gestational diabetes mellitus (GDM), pregnant women are given a glucose challenge test (GCT). If the test result is abnormal, an oral glucose tolerance test (OGTT) is then given. If this test does not show GDM, no further testing is needed. While women with GDM have an increased risk for cardiovascular disease (CVD), it is not known if mild glucose intolerance during pregnancy is also associated with CVD.
Study	Examined health data of 435,696 Ontario women aged 20–49 without pre-existing diabetes who gave birth between April 1994 and March 1998 and followed them until March 2008. The women were divided into three groups: 349,977 women who did not have an OGTT (suggesting a normal GCT), 71,831 who did have an OGTT (suggesting an abnormal GCT) but did not have GDM, and 13,388 who had GDM.
Key Findings	The GDM group was 66% more likely than the normal GCT group to have a future cardiovascular event. Importantly, the group with an abnormal GCT but without GDM had a 19% increased risk of future CVD.
Implications	Women with even a mild glucose abnormality during pregnancy might benefit from extra cardiovascular risk factor surveillance and/or CVD screening.

Study finds 50% increase in inflammatory bowel disease in Ontario children in past decade

Benchimol E, Guttman A, Griffiths A, Rabeneck L, Mack, D, Brill H, Guan J, To T. Increasing evidence of paediatric inflammatory bowel disease in Ontario, Canada: evidence from health administrative data. *Gut*. 2009 Aug 2; [Epub ahead of print].

Issue	Inflammatory bowel disease (IBD) is the umbrella term for ulcerative colitis (inflammation of the colon) and Crohn's disease (inflammation in any part of the digestive tract). IBD is an important childhood chronic disease with 20–30% of patients diagnosed before age 20. There are no data on pediatric IBD in Ontario.
Study	As part of a study to validate the use of health administrative data in identifying cases of childhood-onset IBD, analyzed more than 3,000 Ontario residents aged 15 and younger diagnosed with the disease between 1994 and 2005.
Key Findings	Algorithms were created which accurately identified 95.1% of patients with IBD while only mislabeling 0.5% of healthy children with the disease. The number of children with IBD increased by 50% since 1994. In those under age 18, IBD prevalence per 100,000 children increased from 42.1 to 56.3 between 1994 and 2005. The risk of developing IBD increased in those under age 10, while remaining stable in 10- to 17-year-olds. Ontario has one of the highest rates of pediatric IBD in the world.
Implications	The increase in the likelihood of IBD in Ontario children could be due to environmental factors, the changing composition of Ontario's immigrant population, earlier diagnosis by trained specialists, or a combination of all three. The implications of earlier disease onset need to be better understood.

Risk factors for cardiovascular disease on the rise among Canada's young and poor

Lee D, Chiu M, Manuel D, Tu K, Wang X, Austin P, Mattem M, Mitiku T, Svenson L, Putnam W, Flanagan W, Tu J, for the Canadian Cardiovascular Outcomes Research Team. Trends in risk factors for cardiovascular disease in Canada: temporal, socio-demographic and geographic factors. *CMAJ*. 2009; 181(3-4): e55–e66.

Issue	Both temporal trends in risk factors for cardiovascular disease (CVD) in Canada and the impact of socioeconomic status on those risk factors remain unclear.
Study	Used population and community health survey data from 1994 to 2005 to examine temporal, socioeconomic and provincial trends in CVD and its risk factors—hypertension, diabetes, obesity and smoking—in Canadians aged 12 and older.
Key Findings	<ul style="list-style-type: none"> • An estimated 1.29 million Canadians reported having heart disease in 2005, representing increases of 19% for men and 2% for women, relative to 1994. Heart disease increased significantly: by 27% in the lowest income category, 37% in the lower middle income category, and 12% in the upper middle income category; it increased by only 6% in the highest income group. • Hypertension increased in all income groups: by 85% in the lowest income group, 80% in the lower-middle income group, 91% in the upper-middle income group, and 117% in the highest income group. Among Canadians aged 35-49, hypertension rose from 5.6% in 1994 to 12.8% in 2005—a 127% increase. • Diabetes increased in all but the highest income group: by 56% in the lowest income group, 93% in the lower-middle income group, and 59% in the upper-middle income group. Among Canadians aged 35-49, diabetes rose from 1.6% in 1994 to 2.6% in 2005—a 64% increase. • Obesity increased in all income groups: by 20% in the lowest income group, 25% in the lower-middle income group, 33% in the upper-middle income group, and 37% in the highest income group. Among Canadians aged 35-49, obesity rose from 1.5% in 1994 to 16.2% in 2005—a 20% increase. • Smoking rates declined across all income and age groups. • Trends in diabetes, hypertension and obesity were consistent for all provinces.
Implications	There is great potential for more CVD and worsening disparities in the future unless preventive efforts are directed toward at-risk groups and, particularly, younger people. Interventions to encourage healthy eating and exercise and the provision of affordable preventive strategies, such as smoking cessation therapy, may help to reduce these disparities.

Diabetic seniors taking antipsychotic drugs at higher risk of hospitalization for hyperglycemia

Lipscombe L, Levesque L, Gruneir A, Fischer H, Juurlink D, Gill S, Herrmann N, Hux J, Anderson G, Rochon P. Antipsychotic drugs and hyperglycemia in older patients with diabetes. *Arch Intern Med*. 2009; 169(14): 1282–1289.

Issue	Over the last decade, the use of antipsychotic drugs among seniors has increased dramatically, largely to control the behavioural symptoms of dementia. Do these medications increase the risk of high blood sugar (hyperglycemia) in older patients with preexisting diabetes?
Study	Examined health and prescribing records of 13,817 patients aged 66 or older with diabetes (insulin-treated, oral hypoglycemic agent-treated, and no diabetes drug therapy) who started treatment with an antipsychotic (limited to those funded by the Ontario Drug Benefit program) from April 2002 to March 2006 in Ontario. The likelihood of hyperglycemia among those taking antipsychotics was compared with those who had discontinued these medications for more than 180 days.
Key Findings	In all, 11.0% of the patients were hospitalized for hyperglycemia. Of those, 24.1% were being treated with insulin, 13.1% were on oral hypoglycemic medications only and 3.8% were receiving no drug therapy. Those who were newly treated with an antipsychotic drug were 50% more likely to be hospitalized for hyperglycemia compared to those who had discontinued treatment. The greatest risk occurred immediately after the first prescription for an antipsychotic, at which time there was a 6- to 15-fold rise in hospitalizations for hyperglycemia.
Implications	Options other than antipsychotic drugs should be considered for seniors with diabetes who have behavioral symptoms of dementia. If antipsychotic drugs are to be used, family members and health care providers should pay close attention to signs of deterioration in glucose control and be more vigilant about glucose monitoring. Further research is needed to determine if antipsychotic drugs increase the risk of developing diabetes in those who don't yet have the disease.