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The Incidence of Drug-Induced Diabetes in Patients Taking Anti-Hypertensive and Lipid-Lowering Medications: An Overview of Systematic Reviews

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health behaviour characteristics, comorbidities and health-related quality of life.

Results: Of 62,103 CCHS respondents, 4785 self-reported a diagnosis of type 2 diabetes. There were 1169 insulin users, of which 35% (n=405) were defined as early insulin users. Younger (<60 years) versus older (≥60 years) survey participants (adjusted odds ratio [aOR] 1.9, 95% CI 1.4–2.6) and those overweight (BMI 25.0–29.9 kg/m^2) vs. normal or underweight (BMI ≤24.9 kg/m^2) (aOR 0.4, 95% CI 0.3–0.6) had the most significant association with early use of insulin. Significant factors that were associated with early insulin use were post-secondary vs. no secondary school diploma (aOR 0.7, 95% CI 0.5–1.0), English versus a Non-English or Non-French first official spoken language (aOR 0.4, 95% CI 0.2–0.8), and former smoking versus never smoking status (aOR 0.7, 95% CI 0.5–0.9).

Conclusion: Age, weight, education, official language spoken and smoking status, were associated with initiating insulin use within 1 year of a diagnosis of type 2 diabetes.

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Effect of Loyalty to a Pharmacy on Antidiabetes Drug Adherence and Use of Guidelines-Recommended Drugs

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Objectives: Among individuals newly treated with oral antidiabetes drugs (AD), to assess the effect of pharmacy loyalty on adherence to AD and on the guidelines-recommended drugs: 1) ACE inhibitor (ACEi) or angiotensin receptor blocker (ARB); 2) lipid-lowering drug use.

Methods: Using Quebec administrative databases we carried out a cohort study of individuals aged ≥18 years who had started an oral AD between 2000 and 2006 and who had ≥2 years of follow up. Individuals who had filled all their prescriptions in the same pharmacy during the 1st year after oral AD initiation were considered loyal. Adherence to AD treatment (persistence and proportion of days covered ≥80%) and use of an ACEi/ARB and of a lipid-lowering drug were measured in the 2nd year. Outcomes were assessed using multivariate logistic regressions.

Results: Among 124,009 eligible individuals, 59.8% were loyal to their pharmacy, 80.8% were persistent with their AD, 78.2% of persisters were compliant with their AD, 64.1% used an ACEI/ARB and 63.7% used a lipid-lowering drug. Loyal individuals were more likely to be persistent (odds ratio: 1.13; 95% CI: 1.09–1.16), to be compliant with their AD (1.22; 1.19–1.26), to use an ACEI/ARB (1.17; 1.14–1.20) and to use a lipid-lowering drug (1.21; 1.18–1.24).

Conclusions: Pharmacy loyalty is associated with a better quality of AD use. It might be due to the fact that pharmacists can better play their role in optimizing their clients' drug use for patients loyal to their pharmacy as they can then rely on recorded drug use information that is comprehensive.

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Prevalence of and Risk Factors for Diabetes Mellitus Among Persons with Active Tuberculosis in Manitoba: A Population-Based Study

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Background: Manitoba continues to have incidence and prevalence rates of both TB and diabetes well above the national average. Diabetes has been identified as a risk factor for mortality (and morbidity) in persons with TB disease. TB screening and treatment for LTBI, if diagnosed, are recommended for persons with insulin-dependent diabetes. The objective of this study is to evaluate the prevalence of and risk factors for diabetes at or before TB disease.

Methods: A population-based retrospective analysis was used to describe the co-existing conditions. All records of persons with TB disease reported from 1995/96 to 2012/13 were linked to the diabetes cohort (CCDSS) of the same period. Those with a diabetes diagnosis, which occurred in or before their TB diagnosis year, were counted as co-existing diabetes. Descriptive statistics and logistic regression were used to describe the risk factors of co-existing diabetes.

Results: Two thousand one hundred seventy-one active TB cases were reported in the study period. 290 (13.4%) TB cases had diabetes at the time of their TB diagnosis. Adjusted regression analysis revealed that age and ethnicity/origin were associated with co-existing diabetes. Using age ≤29 years as reference, the risk of having co-existing diabetes was 13.4 (6.4–28.0), 37.1 (17.8–77.2), and 38.7 (18.4–81.2) times higher for aged 30–44, 45–59 and ≥60 years group, respectively. First Nation and foreign-born persons had an increased risk of having co-existing diabetes.

Conclusion: The results of this study support TB screening and comorbidity management in the populations (FN and foreign born) with high burden of both diabetes and TB.

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The Incidence of Drug-Induced Diabetes in Patients Taking Anti-Hypertensive and Lipid-Lowering Medications: An Overview of Systematic Reviews

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Purpose: To conduct an overview of systematic reviews measuring the incidence of drug-induced diabetes in patients taking HMG-CoA reductase inhibitors (statins), beta-adrenergic blockers (BBs), calcium channel blockers (CCBs), thiazide diuretics and niacin.

Methods: Using a comprehensive search strategy, 2 independent reviewers screened citations from several electronic databases. Reference lists were hand searched. Systematic reviews of randomized controlled trials were eligible for inclusion. The primary outcome was the incidence of drug-induced diabetes. Secondary outcomes included major adverse cardiac events, fatal and non-fatal myocardial infarction and stroke, cardiovascular mortality and all-cause mortality. The methodological quality was assessed using the "assessment of multiple systematic reviews" (AMSTAR) checklist.

Results: Nineteen systematic reviews met the pre-specified criteria for inclusion. The mean (SD) AMSTAR score was 4.8 (2.8) out of 11. 6/9 meta-analyses comparing statins vs. placebo or control demonstrated a statistically significant increase in the risk of diabetes (relative risks [RR] ranged from 1.09–1.18). Pooled estimates for secondary outcomes demonstrated statistically significant reductions in cardiovascular outcomes for statins. Multiple pooled estimates for drug-induced diabetes were reported for BBs (12 estimates, RR ranged from 0.79–1.46), diuretic (12 estimates, RR ranged from 0.57–1.59) and 4/6 CCB (9 estimates, RR ranged from 0.75–1.27) reviews, as there were several active comparator groups.

Conclusions: Statin meta-analyses suggest there is an increased risk of diabetes associated with statin use; however, the cardiovascular benefits remain statistically and clinically significant. BBs, CCBs and thiazides do not appear to consistently increase the risk of diabetes, albeit the results vary by comparator.