Reducing Cost Without Causing Patient Harm: Blood Glucose Test Strip Quantity Limit Policy

Background

- Self-monitoring of blood glucose for patients with diabetes on insulin therapy is considered an essential part of management. However, for most patients with type 2 diabetes not using insulin, frequent monitoring with blood glucose test strips (BGTS) is not considered clinically beneficial and may lead to decreased quality of life and well-being.
- In 2012/13, BGTS was the second most expensive product reimbursed through the Ontario Public Drug Program costing the province $139 million during that year. Given their high cost, as well previous evidence suggesting that there is no clinical benefit associated with frequent testing among non-insulin treated patients with type 2 diabetes the routine use of BGTS among this population has been questioned.
- In 2013, Ontario introduced a policy limiting reimbursements for BGTS that aligned with recommendations from the Canadian Diabetes Association. Following the implementation of this policy, annual provincial costs fell by more than 20% ($106 million to $86 million).
- Despite considerable cost savings, evidence is needed to understand the impact of this policy on patient outcomes among adults with diabetes in Ontario.

What were we investigating?

The impact of the BGTS quantity limit policy in 2013 on patient outcomes among adults with diabetes in Ontario.

Quantity Limit Policy

The annual quantity limits modeled includes a maximum of
- 3,000 reimbursed strips for patients using insulin,
- 400 strips for patients on oral antidiabetic drugs at increased risk for hypoglycemia (i.e., sulfonylureas, repaglinide), and
- 200 strips for all other patients with diabetes.

How was the study conducted?

- We conducted a population-based, cross-sectional time series analysis of all individuals aged 19 years and older who were eligible for public drug coverage with a diagnosis of diabetes between April 2008 to March 2015 in Ontario, Canada.
- Patients were categorized by age group (<65 vs. ≥65 years) and their diabetes drug therapy: insulin, oral hypoglycemic-inducing agents, oral non-hypoglycemic-inducing agents, and no drug therapy.
- Primary outcomes were emergency department (ED) visits for hypoglycemia or hyperglycemia. A secondary outcome of mean HbA1c was also included.
- A sensitivity analysis was conducted on a subgroup of high-volume BGTS users most likely to be affected by the quantity limit policy.

What did we find?

- The introduction of BGTS quantity limits led to no immediate significant changes on ED visits for hypoglycemia, hyperglycemia, or HbA1c in both age groups over the study period.
- Similarly, these findings were consistent when measured on the sub-group of high-volume BGTS users most likely to be influenced by the quantity limit policy.

Key points

- In 2013, Ontario introduced a policy limiting reimbursements for BGTS. This new policy appeared to have no immediate impact on the risk of hypoglycemia, hyperglycemia or blood sugar control (measured using HbA1C) among all patients, and the subgroup of those most likely to have been affected by the policy change.
- These reimbursement limits produce considerable cost savings without jeopardizing patient safety. More research is required in order to measure the long-term impact of these changes on patient outcomes.

Recommendations

Policymakers and Clinicians

- The introduction of a BGTS quantity limit policy in Ontario has resulted in considerable cost savings without causing any immediate patient harm. Other jurisdictions with high BGTS use may want to consider implementing similar restrictions.
- Further research is needed to assess the impact of these restrictions on long-term outcomes among this patient population.

Patient

- Talk to your doctor about an individualized plan for testing frequency based on factors such as current diabetes agents used, your level of glycemic control and history of hypoglycemia.
- If you currently use BGTS close to the maximum limits, consider whether testing less often is a manageable option for you.

For more information:  www.odprn.ca  @ODPRN_Research  @ODPRNResearch

Gomes, T et al. The impact of blood glucose test strip quantity limit policy on patient outcomes in Ontario: A population-based study. JAMA Internal Medicine, 2016.