Adult ADHD

ODPRN

The Ontario Drug Policy Research Network (ODPRN) conducted a drug class review on the effectiveness, safety, and accessibility of drugs used in the management of attention deficit hyperactivity disorder (ADHD) in adults using multiple research methods. There are two types of medications approved for treatment in adults: stimulants (short-acting and long-acting) and atomoxetine. Guanfacine, a non-stimulant medication, is approved in Canada for the treatment of ADHD in children aged 6-17 years of age.

ADHD is a well-known disorder in children and is steadily becoming a much more recognized disease in adults, which has been demonstrated by an increase in the number of prescriptions and the growing cost of ADHD drugs in Canada.

What did we find?

SAFETY + EFFICACY

Overall, the stimulant drugs are associated with an improvement in symptoms of ADHD in adults. Atomoxetine, the only non-stimulant drug that is approved for treatment in adults, has similar efficacy to the stimulants.

Common side effects to medications for ADHD include insomnia, headache, dry mouth, nausea, weight loss and decreased appetite.

Health Canada has issued several warnings related to these drugs including possible increased risk of sudden/cardiac death, and increased risk of suicidal thoughts and behaviours. Although long-term stimulant use can increase blood pressure and heart rate, it is unknown whether these effects increase the risk of serious cardiovascular events (e.g., increased risk of sudden death), as this has not been adequately studied (especially in adults over 50).

A review of literature indicated that abuse/misuse occurs, and is especially prevalent in college-age students; however our analysis showed that the percent of ADHD medication prescriptions that were potentially inappropriate was low (<0.3%) across all provinces.

COST

Spending on ADHD medications (stimulants + atomoxetine) totaled $14.6 million for adult users (≥18 years) in Ontario in 2014 for the publically-funded drug program, and it is projected to increase to $23.2 million by 2017.

If atomoxetine was moved from its current listing on the Ontario Drug Benefit formulary from Exceptional Access Program to Limited Use (LU), it would potentially decrease overall costs of ADHD drugs by approximately $1 million as generic pricing rules could be enforced (i.e., 25% of brand name).

ACCESSIBILITY + USE

All stimulants are listed under General Benefit, so there were no noted barriers to accessing the drugs. The non-stimulant drug, atomoxetine, is listed under the Exceptional Access Program, which may limit its access. Listing atomoxetine as Limited Use (LU) would increase accessibility to this medication, with an estimated increase in use from approximately 150 to 1800 adult patients per year.

Many ODB eligible patients discontinue their ADHD medication after 17 years of age. This could indicate a gap in ADHD care between adolescence and adulthood.

In the Ontario public drug program in 2014 there were 17,482 adult users (≥18 years) and 13,529 younger users (<18 years) of stimulants and atomoxetine.

What do we recommend?

1. List atomoxetine as Limited Use (for adults)
   - Atomoxetine was just as effective as stimulants for treatment of adult ADHD.
   - Listing atomoxetine as Limited Use for adults would increase accessibility for this medication and decrease expenditures for ADHD medications in adults overall.
2. No age restriction should be applied to stimulants or atomoxetine.
   - There is insufficient evidence to suggest that age affects response to ADHD treatment in adult patients.

Other considerations

1. Monitor the cardiovascular safety of stimulants and atomoxetine, especially in older adults with concomitant medical conditions.
   - Long-term stimulant treatment is associated with increases in blood pressure and heart rate. There is little data on the long-term safety of stimulants and atomoxetine in older adults (50+), especially those with concurrent medical conditions.
2. Health care practitioners should remain vigilant about the potential for misuse/abuse/diversion of stimulant medications.
   - Strategies and programs to prevent diversion could potentially reduce overall misuse of these medications.
3. No changes to the listing status of the available stimulants are recommended.
   - All stimulants commercially available in Canada are available as General Benefit in Ontario for all ages.

How did we conduct our studies?

The ODPRN conducted a drug class review consisting of multiple studies: a qualitative study to determine the experiences of use and prescribing; a systematic review to determine efficacy and safety; a pharmacoepidemiological analysis to determine patterns of use in Ontario and across Canada; an environmental scan to determine national and international guidelines and public drug coverage models; and pharmacoeconomic analyses to determine the cost of public drug funding under different coverage policies. Detailed descriptions of each of these studies are available at the ODPRN website: www.odprn.ca