Clinical Corner

Metformin - an Oldie in a World of Newbies

A diabetes treatment update from MaineHealth Chronic Disease Team by *Elizabeth Nalli*

There is no shortage of new and exciting drugs in the world of diabetes. GLP-1 receptor agonists, SGLT2 inhibitors, new basal insulins . . . the list of recent pharmaceutical breakthroughs in the world of diabetes is extensive. So, I was surprised when I went to a diabetes conference this month and heard pharmacist Jessica Bates comment in a lecture that she "loves metformin" and repeatedly sang its praises. Her talk inspired me to discuss metformin this month.

Metformin is not new. Although it was only approved in the U.S. in 1995, metformin has been involved in diabetes management for 60 years. The ADA and AACE both identify metformin as the first choice medication to use when treating Type 2 Diabetes. It helps treat Type 2 Diabetes by enhancing insulin sensitivity, increasing the peripheral update of glucose and reducing hepatic glucose output. Studies have shown cardiovascular benefits with metformin and it is either a weight neutral or weight loss drug. It does not cause hypoglycemia. In addition to this, it is inexpensive (for example: multiple strengths and releases are all on the Walmart $4 30-day supply list). Despite these strengths, there are sometimes some hesitations about using metformin. Here are some common myths that present the use of metformin and the correct facts.

Myth: Metformin causes renal impairment

Fact: Metformin does not cause renal impairment. It is excreted by the kidneys, so with renal impairment there is the risk that metformin could accumulate, but metformin itself does not cause renal impairment. The FDA recently updated metformin use recommendations for patients with renal impairment. Metformin's label now says that it is safe to use in patients with eGFR >= 30 mL/min/1.73 $m^{2.}$.

Myth: Metformin causes lactic acidosis

Fact: When used correctly, the increased risk of lactic acidosis with metformin is either zero or close to zero. Another biguanide, phenformin, is known to cause lactic acidosis. However, this medication was removed from the U.S. market in 1976. Metformin is different than phenformin.

Myth: If a patient has not tolerated metformin in the past, it is not an option

Fact: Past intolerance does not necessarily rule out metformin for a patient. Many patients do experience metformin intolerance, mainly gastrointestinal distress. However, there are strategies to help overcome this intolerance for some patients:

1. Use extended release formation (this formation is still less expensive, it is on Walmart's list of $4 medications for 30-day supply)

2. Take with the largest meal of the day
3. Titrate up slowly to the desired dose
4. If off metformin for > 2-3 days, re-titrate to the desired doseDiabe
5. Discuss with patients the evidence based benefits of metformin and educate patients that most GI side effects subside after 2 weeks of adherence to daily metformin therapy.

For more information or any questions, please feel free to contact Elizabeth Nalli.