THE ANNALS OF PHARMACOTHERAPY **For Our Patients**℠

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Choosing the Right Diabetes Medication

Type 2 diabetes is a life-long disease in which patients have high levels of sugar (glucose) in their blood. It occurs when the body stops producing insulin or, more commonly, does not respond correctly to insulin, a hormone that is made by the pancreas. Insulin is needed to move glucose into cells, where it is used for energy. If glucose does not get into cells, too much remains in the blood, and the body cannot use it for energy.

Patients with type 2 diabetes are usually overweight and are resistant to insulin. Insulin resistance means that although insulin is being produced by the pancreas, the body's cells do not respond appropriately to it, and glucose fails to move into the cells.

Many different types of medication are available to help control blood glucose levels in patients with type 2 diabetes. The most common medications help the pancreas release more insulin (eg, glyburide, glipizide) or prevent the liver from making glucose (eg, metformin). However, within the past few years, newer drugs have become available that can be used with other diabetes medications. One example of a newer drug type are the glitazones. Glitazones help to decrease insulin resistance, making the body respond appropriately to insulin by moving glucose out of the blood and into cells where it can be used for energy. Another relatively new medication is called exenatide (Byetta). Exenatide seems to have multiple effects: increasing the release of insulin from the pancreas, blocking the liver from producing new glucose, slowing absorption of food from the digestive tract, and acting in the brain to help people feel "full" after eating meals.

Nearly all patients with diabetes are prescribed metformin, often in combination with glyburide or glipizide. But for patients who still do not reach their blood sugar goals, which drug should be added next? Doctors are often unsure whether a glitazone or exenatide should be added. The medical literature was reviewed to answer that question.

COMMON MEDICATIONS FOR TYPE 2 DIABETES

Exenatide (Byetta)
Glipizide (Glucotrol)
Glyburide (Diabeta, Micronase)
Metformin (Glucophage)
Pioglitazone (Actos)
Rosiglitazone (Avandia)

Based on "Addition of Thiazolidinedione or Exenatide to Oral Agents in Type 2 Diabetes: A Meta-Analysis" Nicole Pinelli, Raymond Cha, Morton Brown, and Linda Jaber, ***The Annals of Pharmacotherapy***, **November 2008**, http://dx.doi.org/10.1345/aph.1L198. **For Our Patients** is provided by ***The Annals*** to help explain the latest research and information relating to your medications. These summaries are for informational purposes only and are not a substitute for professional advice from your personal medical provider. If you have questions about this material, you should discuss it with your physician or pharmacist.
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The authors who conducted the literature review concluded that adding either a glitazone or exenatide to other diabetes medications can help patients reach their goal glucose level, and that the glitazones are probably a little more effective. However, glitazones can cause weight gain. In contrast, exenatide is associated with weight loss, but is more likely to cause gastrointestinal problems (vomiting, diarrhea, or nausea) during the first few weeks of use. So, although the addition of either a glitazone or exenatide may help lower a patient's blood glucose level, the patient and physician need to consider the side effects associated with each medication to determine which one might be the better choice.

If you have type 2 diabetes, you probably know that it is common for combination therapy to be used to lower blood glucose levels, using medications that work in different ways. Adding either a glitazone or exenatide to your existing therapy may help you reach your goal. If you are overweight, exenatide may be the best option. However, if you are unable to tolerate gastrointestinal side effects or if you are afraid of needles (exenatide is available only as a twice-daily injection) a glitazone might be a better option.

FOR MORE INFORMATION

American Diabetes Association
http://diabetesorg.healthology.com/diabetes/type-2-diabetes/focusareasub.htm

Medline Plus
www.nlm.nih.gov/medlineplus/ency/article/000313.htm

National Institute of Diabetes and Digestive and Kidney Diseases
http://diabetes.niddk.nih.gov/dm/pubs/riskfortype2/index.htm