

Liraglutide: A Potential Treatment for Type 2 Diabetes

Current estimates from the Centers for Disease Control and Prevention indicate that almost 24 million Americans have diabetes. People with diabetes have higher than normal levels of sugar in their blood. When untreated, high blood sugar can lead to long-term complications that affect nearly every part of the body.

Diabetes is often described as either a complete lack of insulin (type 1 diabetes) or a partial resistance to insulin's actions (type 2 diabetes). Most individuals with diabetes have type 2 diabetes. In addition to their bodies being resistant to the effects of insulin, people with type 2 diabetes also have other abnormal responses to sugar, which cause their blood sugar levels to be high.

Many different types of medications are used to treat diabetes. Some of these drugs stimulate insulin release, some stop the liver from making sugar, some help the body respond better to insulin, and some block absorption of sugar in the digestive tract. Despite all the medicine options that target insulin or blood sugar directly, many



people with diabetes still have trouble reaching their blood sugar goals.

In addition to insulin, 2 other proteins, called amylin and glucagon-like peptide-1 (GLP-1), are also involved in controlling blood sugar. Their role is especially important in regulating blood sugar right after meals. These small proteins slow absorption of sugar from the digestive tract, block new glucose production by the liver, and produce feelings of fullness after meals so people do not eat as much. The drug exenatide (Byetta) imitates the actions of GLP-1 and has been approved by the FDA. A related drug, liraglutide, is currently under review by the FDA and could be approved in 2009.

The effects of liraglutide have been studied in 20 clinical studies in patients with type 2 diabetes. Overall, liraglutide appears to be effective when used alone, and it may also help other diabetes drugs such as metformin, glimepiride, and rosiglitazone work better. Liraglutide may be

FOR MORE INFORMATION

Medline Plus
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>

National Institutes of Health
nih.gov/about/researchresultsforthepublic/Type2Diabetes.pdf

Based on "Liraglutide: A Once-Daily Incretin Mimetic for the Treatment of Type 2 Diabetes Mellitus" by Joshua J Neumiller and R Keith Campbell, *The Annals of Pharmacotherapy*, September 2009, <http://dx.doi.org/10.1345/aph.1M134>. 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. This summary may be reproduced without permission for not-for-profit educational purposes only. Any other use must be approved by the publisher. © Copyright 2009, Harvey Whitney Books Company, hwbooks.com.
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especially helpful for people who are close to reaching their blood sugar goals, but have difficulty with blood sugar becoming too high after meals. In addition, the drug may be beneficial for people who need to lose weight.

Liraglutide has been at least as effective as exenatide in clinical studies. Like exenatide, liraglutide must be given by subcutaneous injections. Some people are uncomfortable with the idea of giving themselves an injection, but compared with exenatide, which has to be injected twice a day, liraglutide can be injected only once a day.

Some study patients experienced small increases in blood pressure and heart rate with liraglutide, so cardiovascular effects of the drug must be monitored. The most common side ef-

fects with liraglutide were nausea, vomiting, and diarrhea. These gastrointestinal side effects are lessened if the dose is started low and increased slowly. Another side effect that is being monitored closely in studies is pancreas inflammation; it has occasionally been seen with both liraglutide and exenatide. Since liraglutide slows absorption, it is probably wise to use the drug cautiously in combination with other medications that require rapid absorption, such as birth control pills or antibiotics.

If you have type 2 diabetes and have been unable to reach the blood sugar goals that you and your doctor have set, watch for more information about liraglutide. This medication might be available later this year and it might be just what you need to meet your blood sugar goals.