
We are proud to offer a regular column on diabetes and related concerns every other



DAKOTA DIABETES
COALITION

Friday.



Dr. Johnson is a family practice doctor in Grand Forks with a special interest in diabetes -- and a special knack for writing. As a member of the Dakota Diabetes Coalition, he has generously made himself available to answer questions through our listserv. If you have comments, or questions for Dr. Johnson to address in future columns, please contact gailhand@q.com

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Future of diabetes

New Medications on the Horizon

In the last column, we discussed newer technological advances, specifically a new study that concerned continuous glucose monitoring. This week, we'll focus on some new medications, including several new distinct and novel classes. Diabetes medications continue to develop, furthering the explosion in treatments we have seen over the last decade. Although this may make treatment options more complex, it also allows the provider to individualize treatments for patients.

New incretin medications are most likely to appear sooner rather than later. Exenatide (Byetta) has been available for a little over 3 years. This is an injectable GLP-1 analog, given twice daily, which generally targets post-prandial blood glucose values, but also increases satiety in many patients, which may lead to modest weight loss. Exenatide's manufacturer has recently released data on a once-weekly formulation of this medication, showing similar efficacy and safety profiles when compared to the twice a day dosing. Liraglutide will be a similar

product, also a GLP-1 analog, which will likely be a once-daily product to be launched in 2009.

The only oral DPP-IV inhibitor on the market, Sitagliptin (Januvia) may be joined by at least one other in the next year, with vildagliptin (Galvus) having been approved in Europe earlier in 2008. Like GLP-1 analogs, these drugs primarily target post-prandial blood sugars. Neither DPP-IV inhibitors nor GLP-1 analogs are indicated to be used in conjunction with insulin, and are not indicated for use in type 1 diabetes.

Remember inhaled insulin, Exubra? Both Exubra and a product developed by NovoNordisk, but never marketed, have been discontinued. Inhaled insulin may not be entirely dead yet. The Technosphere inhaled insulin product is still in clinical trials, with a much smaller inhaler unit than Exubra's. Approval is pending the outcome of these studies, and inhaled insulin may still be an option for appropriate patients. Likewise, the concept of orally-administered insulin is still in trials. Two newer oral preparations were presented at the European Study for Diabetes meeting in Rome in September, 2008. These products, Capsulin, and IN-205, have about 10% bio-availability compared to injected insulin.

Other new, novel medication classes are also being studied:

- Anti-interleukin-1 beta antibody (XOMA 052) improves insulin secretion and A1C in type 2 diabetes. Mechanism is 'anti-inflammatory', given as IV infusion.
- Sodium-glucose co-transporter inhibitors: decrease ability of the kidneys to reabsorb glucose, allowing excess glucose to pass directly into the urine.
- Glucokinase activators: increase insulin production by the pancreas, lower blood glucose by increasing glucose uptake by the liver.
- Glucagon receptor antagonists: lower blood glucose by blocking glucagon, a hormone that increases blood glucose.
- Sirtuins: proteins that may have an anti-aging effect. Resveratrol, a chemical found in red wine, is a sirtuin activator. Preliminary studies have shown that sirtuin activators may help lower blood glucose in people with type 2 diabetes.

These proposed new medications, along with the technological revolution in diabetes treatment, exhibit how we live in very exciting medical times. As well, many current and future medications are being studied that hold hope to prevent type 2 diabetes, particularly in people with pre-diabetes.

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[Newest Diabetes Medications, Dr. Johnson's Column #32, Oct. 17, 2008](#)