



The Pharmacist Activist

Volume 9, No. 12 • December 2014

Editorial



With Optimism!



My editorials usually address problems and challenges encountered in our profession and in healthcare – to the point that I occasionally pause to question whether my almost exclusive attention to problems is excessively negative. My answer to that question is “No!” because it is my continued conviction that the profession of pharmacy must do much more to address the problems that currently restrict our progress and potential. There is still a long list of problems to discuss in future editorials but they can wait for a month or more. It is especially appropriate at this time as we value the joy of the Christmas season and the hope of the new year to consider positive experiences and commentaries, and I have found the following to be particularly encouraging.

Helen Johnson – Tarrant, Alabama

If you google this subtitle you will find more detailed commentaries about this heartwarming experience. Helen Johnson lives with her two daughters, a niece, and two grandchildren in an apartment in Tarrant, Alabama. They had very little money and had gone two days without food. Helen went to a local Dollar General store but she was 50 cents short to buy a carton of eggs. When she realized this she put five eggs in her jacket pocket but was observed by a store employee who called the police. The eggs in her pocket actually broke prompting her to later observe, “I’m not a good thief at all.”

Police officer William Stacy soon arrived and spoke first with the store manager. He then spoke with Helen Johnson

and told her that the store personnel were not going to press charges. The officer then purchased a carton of eggs and gave them to her. When she asked how she could repay him, he told her not to shoplift again. She asked him if she could hug him and he said yes. Another customer filmed the scene on his cell phone and posted it on Facebook. The story went viral and the police department was overwhelmed with calls from people across the country who offered food, clothing, and money. A second police dispatcher was brought in to handle the volume of calls. The police soon delivered two loads of food to Helen Johnson’s apartment, signed her grandchildren up for the annual toy drive, and are coordinating the offers of food and clothing that have poured in.

Special delivery

While riding on a train in Philadelphia on Christmas day, a young woman went into labor. Daniel Caban and Darrell James, two policemen in the city’s transit system, were the first to respond and helped deliver a healthy baby boy who was wrapped in his father’s sweater. The mother and baby were taken to the hospital and the following morning were visited by the policemen who participated in the delivery of the baby, now fittingly named Chris. The police brought gifts for the baby that included a stuffed train car.

This situation and the preceding one are also encouraging because the individuals involved were of different ethnic

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backgrounds. At a time when racial tensions are so prominent in the news, most do not give even a thought to the race, or religion, politics, or any other factor, of individuals with whom life circumstances bring them in contact. Rather, individuals responded immediately when they recognized that others needed help.

The case for God

I am a Christian and have a strong faith. I believe that there is a God who created the universe and life within it. Personally, it requires less faith for me to believe that there is a supremely intelligent being that designed and created the universe and life, than would be needed for me to believe that these events occurred as a consequence of a huge number of specific factors intersecting with perfect detail, sequence, and timing. Science and scientists are usually considered the strongest advocates for evolution and the rejection of creation, and these subjects are often the basis for stimulating discussion with faculty colleagues. In my opinion, creation and evolution are not mutually exclusive, and that there are components of each concept that are compatible.

The title for a commentary in the December 26, 2014 issue of *The Wall Street Journal* (page A11) captured my attention – “Science Increasingly Makes the Case for God.” It is written by Eric Metaxas whose books on Dietrich Bonhoeffer and

the abolitionist William Wilberforce have been widely acclaimed. The following are among the observations included in his *Wall Street Journal* commentary:

“Today there are more than 200 known parameters necessary for a planet to support life—every single one of which must be perfectly met, or the whole thing falls apart. Without a massive planet like Jupiter nearby, whose gravity will draw away asteroids, a thousand times as many would hit Earth’s surface. The odds against life in the universe are simply astonishing.”

“Can every one of those many parameters have been perfect by accident? At what point is it fair to admit that science suggests that we cannot be the result of random forces? Doesn’t assuming that an intelligence created these perfect conditions require far less faith than believing that a life-sustaining Earth just happened to beat the inconceivable odds to come into being?”

Eric Metaxas’ latest book is *Miracles: What They Are, Why They Happen, and How They Can Change Your Life*. I have just read the first section and can’t wait to get back to it. Pharmacy’s problems will have to wait for another month. I am looking forward to 2015 with optimism!

Daniel A. Hussar

Appreciation

With this issue we mark the completion of the ninth year of publication of *The Pharmacist Activist*. The index for this volume is on page 4 and all issues are available on the website, www.pharmacistactivist.com. I wish to express my appreciation to Jeff Zajac and Patrick Polli for their expertise in preparing the issues.

I also wish to express my deep appreciation to my friend and former student, Dr. Linda Corvari. Linda is the Founder and President of p-value communications (www.pvaluecomm.com) and has provided financial support for *The Pharmacist Activist* because of her commitment to advance the profession of pharmacy through stimulation of discussion/debate on important issues and challenges,

and the publication of objective evaluations of new drugs. This support makes it possible to continue to make *The Pharmacist Activist* available free-of-charge via email to any interested pharmacist or student pharmacist.

The numerous thoughtful and informative communications from readers provides the motivation to continue with this initiative to address the issues that are of the greatest importance for the profession of pharmacy. The best way to contact me is via email at d.hussar@uscience.edu.

Best wishes for a blessed, healthy, and productive new year!

Daniel A. Hussar

New Drug Review

Dulaglutide (Trulicity – Lilly)

Antidiabetic Agent

**New Drug Comparison
Rating (NDCR) = 4**
*(significant advantages
in a scale of 1 to 5 with 5
being the highest rating)*

Indication:

Administered subcutaneously as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus.

Comparable drugs:

Exenatide (Byetta), exenatide extended-release (Bydureon), liraglutide (Victoza), albiglutide (Tanzeum).

Advantages:

- Less frequent administration (once a week; compared with liraglutide [once a day] and exenatide [twice a day]; exenatide extended-release and albiglutide are also administered once a week);
- Available in a solution formulation (whereas exenatide extended-release and albiglutide formulations have to be mixed/reconstituted);
- Less likely to cause injection site reactions (compared with albiglutide);
- May cause more weight loss (compared with albiglutide and exenatide).

Disadvantages:

- May be more likely to cause gastrointestinal adverse events.

Most important risks/adverse events:

Thyroid C-cell tumors have been reported in rodents (boxed warning; contraindicated in patients with a personal or family history of medullary thyroid carcinoma and in patients with Multiple Endocrine Neoplasia syndrome type 2); pancreatitis (treatment should be discontinued if pancreatitis is suspected; other antidiabetic therapies should be considered in patients with a history of pancreatitis); hypersensitivity reactions; hypoglycemia (when used concomitantly with insulin or an insulin secretagogue [e.g., a sulfonylurea]); risk in patients with severe gastrointestinal disease including severe gastroparesis (use is not recommended in patients with pre-existing severe GI disease; renal function should be monitored in patients with renal impairment experiencing severe GI adverse events); slows gastric emptying and may alter absorption of concomitantly administered oral medications.

Most common adverse events

(and the incidence with the higher dosage of 1.5 mg once a week):

Nausea (21%), vomiting (13%), diarrhea (13%), abdominal pain (10%); decreased appetite (9%).

Usual dosage:

Administered subcutaneously in the abdomen, thigh, or upper arm; 0.75 mg once a week at any time of day; dosage may be increased to 1.5 mg once a week for additional glycemic control; if a dose is missed, it should be administered as soon as possible if there are at least 3 days until the next scheduled dose.

Products:

Single-dose pens and single-dose prefilled syringes – 0.75 mg/0.5 mL and 1.5 mg/0.5 mL (should be stored in a refrigerator).

Comments:

Dulaglutide is the fourth glucagon-like peptide-1 (GLP-1) receptor agonist, joining exenatide (marketed initially in an immediate-release formulation and subsequently in an additional extended-release formulation), liraglutide, and albiglutide. The new drug is a fusion protein that consists of two identical, disulfide-linked chains, each containing an N-terminal GLP-1 analog sequence that is 90% homologous to endogenous human GLP-1. Structural modifications have been made to confer resistance to dipeptidyl peptidase 4 mediated proteolysis.

The effectiveness of dulaglutide was demonstrated in 6 clinical trials that included more than 3,300 patients with type 2 diabetes. It has been studied as a stand-alone therapy, as well as in combination with other antidiabetic agents including metformin, glimepiride, pioglitazone, and prandial (mealtime) insulin, but not in combination with basal insulin. The use of dulaglutide resulted in a lowering of HbA1c (hemoglobin A1c) concentrations and improvement in blood glucose control. In studies in which dulaglutide was compared with sitagliptin (Januvia) and exenatide (Byetta; twice a day), the new drug provided greater reductions in HbA1c and fasting plasma glucose concentrations than the latter agents.

Daniel A. Hussar

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