Promises, Promises

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In the early 1970s, we were told that islet cell transplantation was about to become a reality and that diabetes would be cured. In 1980, I remember being told that islet cell transplantation would be performed routinely and safely in human type 1 diabetes by 1985. Needless to say, those promises led to much disappointment, despite the fact that there is now great reason for optimism in this area.[1]

There have been other promises unfulfilled through the years. Noninvasive glucose sensors, closed-loop insulin pumps, and safe and effective antiobesity drugs remain unattained goals. Likewise, drugs to specifically treat diabetes-related complications have not been successful. Both the aldose reductase inhibitors and advanced glycosylation end product inhibitors have failed to retard complications as initially hoped.

One key problem well appreciated today is that results of studies employing animal models do not necessarily translate to human diabetes. As the late Julio Santiago, a well-known researcher and teacher, once said, "You can almost look at a rat and prevent islet cell rejection." Would that the same were true in human diabetes.

Anyone who follows accomplishments in the world of diabetes is quite familiar with disappointment. As noted previously,[2] when the thiazolidinedione troglitazone (Rezulin) was introduced, it was expected to revolutionize the treatment of type 2 diabetes. Similar thoughts were expressed with dexfenfluramine (Redux) for the treatment of obesity. Both drugs have since been removed from the market because of serious adverse reactions.

And the disappointments continue. Many patients in my clinic are now anxiously awaiting the introduction of insulin glargine (Lantus), a peakless insulin with a 24-h duration of action that mimics a basal rate.[3] But we are now being told there will be further delays in bringing this product to market despite the fact it was approved by the Food and Drug Administration last year. There have also been recent delays in the development of "Gluco Watch,"[4] another eagerly awaited new minimally invasive technology for glucose monitoring. No doubt both providers and patients will continue to be disappointed as new product launch dates are delayed, the efficacy of new products falls below expectations, new side effects are described, and pharmaceutical company technical service centers are unable to handle the volume of questions and complaints they receive.

It is during these times of frustration and disappointment, however, that I realize how much we need to keep things in perspective. How long ago was it that we still could not measure blood glucose levels at home or HbA_{1c} levels in our offices? Less than 10 years ago, we were still debating whether glycemic control had any impact on diabetes-related complications in type 1 diabetes. (For type 2 diabetes, this issue was resolved only a little more than 2 years ago!) The impact of aggressively treating hypertension (especially with angiotensin-converting enzyme inhibitors) and hypercholesterolemia is also new information. We have only recently learned how powerful a small dose of aspirin can be for inhibiting platelet aggregation. And the explosion of new drugs to assist our patients in managing their diabetes truly has been revolutionary.

Feeling even more guilty about my current frustrations, I remember that not so long ago, before the discovery of insulin, the diagnosis of type 1 diabetes meant certain death within a few months. Taking the big picture into consideration, I ask myself, "What will a few extra months matter for the release of a new insulin or even an improved tool for home glucose monitoring?" The answer: not much at all.

I anticipate that there will be many more times of frustration with slower-than-hoped-for progress on new drugs and technologies. However, we must always remember how far we have come and the time it has taken us to get here. I believe that the worst is behind us and that, by and large, our therapies for diabetes have all improved over the decades.

So the next time you feel frustrated when a new drug or technology that you believe will be most helpful to your patients is delayed on its way to market, please recall the history of diabetes treatments and remember that there have never been any easy solutions. Real progress in diabetes therapy takes time—often more time than we think we have. And let us not forget that as soon as the new tools we await become available, we will likely begin waiting for even newer tools, and our frustration will recycle.

If your patients become upset because of apparent stalls in progress on new drugs or technologies, remind them how far we have come and how fortunate we are to be living in a time when we can take advantage of a wealth of basic science and clinical research to improve the lives of people with diabetes. Consider that the life expectancy for a newly diagnosed patient with type 1 diabetes in some

parts of Africa may still be as short as 1 year[5] because insulin is simply too expensive a luxury to purchase.

With this in mind, I think we should all feel very lucky to have the therapies already available to us—even when the new tools that have been promised to us seem a long time in coming.

REFERENCES

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