Diabetes

R Keith Campbell

Giant strides have been made in the treatment of diabetes in the past 40 years. We have moved from having 2 classes of medication (insulin, sulfonylureas) to having 7 classes of drugs (insulin, sulfonylureas, biguanides, α-glucosidase inhibitors, glitazones, short-acting insulin sensitizers, incretins). The insulins are now made from recombinant technology, and designer insulin analogs are available that are free of impurities and provide a rapid action or a long basal effect. Combinations of the above classes of drugs are commonly prescribed, which allows healthcare providers to develop treatment protocols that meet the needs of each patient. New delivery devices, such as insulin pumps, have been developed, and their use is increasing. Insulin delivered via inhalation has been approved by the Food and Drug Administration, and an oral insulin spray is close to approval.

Target blood glucose, blood pressure, and blood lipid levels have been developed, as well as standards of diabetes care. The variety of medications available to assist patients in achieving target levels are many and require knowledgable pharmacists to identify, assess, and monitor them and to educate and refer patients. The fact that diabetes equals cardiovascular disease is now known, and diabetic patients are monitored to prevent cardiovascular problems. Major developments have led to better understanding the insulin resistant syndrome, as well as the biochemical pathways by which excess sustained hyperglycemia causes the microvascular complications of diabetes. Medications are in development to prevent complications. Other drugs have been developed to specifically treat or prevent kidney, nerve, and eye problems that are common in patients with diabetes.

Forty years ago, the diabetic patient was frustrated by being able to monitor glucose management only via urine tests, which were messy to use and did not tell one how high was high or how low was low. One of the first articles on diabetes in clinical pharmacy was published in July 1974 and provided a guide to glucose urine testing systems. One of the major breakthroughs that has revolutionized diabetes care is the ability of the patient to self-monitor blood glucose. Meters have become smaller, more accurate, and user friendly. The hemoglobin A1c test is another major development that assists patients and their healthcare providers in determining how well blood glucose has been managed for the previous 3–4 months. Many patients with diabetes, including myself, would tell you that a major improvement in diabetes care has been the development of smaller, sharper, less painful needles to inject insulin.

Yet another major change has been increased diabetes patient education. The American Association of Diabetes Educators was established and has grown to more than 20 000 members, with the fastest growing group being pharmacists. Forty years ago, there were about 5 pharmacists recognized for involvement in helping patients manage their diabetes. Now we have thousands of pharmacists who have had special training in diabetes and who are having a significant impact in diabetes patient care in retail, institutional, and specialized settings. There is tremendous pressure to develop treatment protocols in hospitals to ensure that these patients maintain normalized blood glucose levels, which has proven to improve outcomes of care.

Author information provided at the end of the text.

The future of diabetes care for both patients and pharmacists looks very positive. New medications are in development, and pharmacists are being recognized for their ability to improve outcomes of care in more cost-effective and clinically effective ways.

Pharmacists realize that diabetes is a disease state that affords them a great opportunity to apply their knowledge, and they have the ability to impact patient outcomes and the healthcare system in a significant and positive manner. As a person who has had diabetes for more than 56 years, I encourage you to keep up the good work and get even more involved. There is still so much to do.

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