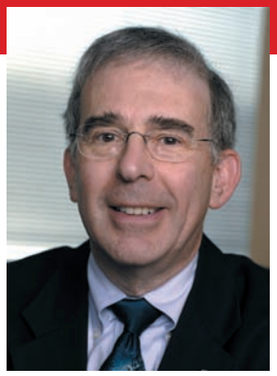

While we know we can take steps to prevent diabetes, it's not clear yet from clinical data that we have all of the tools to tackle disease progression.

Novo Nordisk's **DR. ALAN MOSES**

Talks About His Dedication to the Diabetes Market

Drawing on a long and distinguished career in diabetes research, as a researcher and specialist, Dr. Alan Moses, VP and Chief Medical Officer Worldwide at Novo Nordisk, is working to bring a patient-centric approach to the treatment of diabetes and to encourage all stakeholders — healthcare officials, government officials, doctors, and patients — to work together to lessen the global effects of the diabetes epidemic.

CAREER Highlights

Alan C. Moses, M.D., is VP, Chief Medical Officer Worldwide, Novo Nordisk Inc. He has a broad and in-depth background in diabetes research and specialization. Previously, Dr. Moses was Senior VP and Chief Medical Officer at the Joslin Diabetes Center and joined Novo Nordisk in April 2004 as Associate VP of Medical Affairs and since then has also assumed responsibility for clinical research in diabetes. Before joining Novo Nordisk, Dr. Moses spent 23 years at Harvard Medical School-affiliated institutions where he rose to the rank of Professor of Medicine.

Having written more than 100 peer-reviewed articles on the treatment of diabetes and with decades of experience in the field, Dr. Moses is widely recognized for his research around diabetes and growth factors.

AN AGE OF ENLIGHTENMENT

Can you discuss your work in diabetes research and what excites and motivates you about this field?

MOSES: My research began with looking into cellular mechanisms of hormone action and then progressed into trying to understand the mechanisms underlying insulin resistance and its treatment. I also was heavily involved in early studies on alternative routes of insulin administration. I've had the opportunity of conducting both basic and clinical research as well as practicing as a diabetes specialist, where I saw a spectrum of patients with diabetes, from young adults with Type I diabetes to older adults with Type I and Type 2 diabetes. I've had the tremendous advantage of growing up in an age where we began to recognize both the structure and function of hormone receptors: peptide hormone receptors and the signal transduction pathways that result in activation of cells in response to insulin or IGF1 or other hormones. It's been a real opportunity and sometimes a challenge to figure out how to use new scientific information and apply it to more effective treatments for patients. Over the past 25 years, we've witnessed how insulin binds to the receptor, how that activates intracellular signal transduction pathways to elicit a response, increases glucose transport, decreases catabolic rate, facilitates amino acid transport, and alters lipids. The goal has been to try to circumvent insulin resistance through the development of new therapeutic classes of drugs, ameliorate insulin resistance, or as we've done more recently, to improve the actual function of the beta cell.

ADJUSTING TO A SHIFTING MARKET

How has the diabetes market shifted with regard to disease progression, prevention, and treatment in recent years?

MOSES: There's no question the market has shifted with the literal explosion in prevelance of Type 2 diabetes as well as an increase in Type I. The number of patients who need to be treated has increased enormously in my clinical experience over the past 30 years. Added to this is the problem of healthcare access. Unfortunately, in the United States, the underprivileged and underserved are often those most susceptible to diabetes. And because of a lack of access to healthcare, whether because patients have no insurance or they literally have no access to healthcare, they are at greater risk of complications. The third challenge is that diabetes has become both somewhat easier and in a way more complicated to treat. On the one hand, we have better drugs to treat diabetes — new classes of oral agents, better insulins, better delivery devices, such as insulin pumps for Type I diabetes, and better glucose monitoring systems. The dichotomy comes from the fact that the number of choices makes it more complicated for the prescriber, particularly the nonspecialist, who has to match the right therapy with the right disease. That's why we're working to develop better insulins to work for everybody.

RESEARCHING NEW DIRECTIONS

In which direction do you believe research will, and should, head with regard to managing the growing diabetes epidemic?

MOSES: There are a couple of issues involved with this question. One, there's research in terms of drug development and research. Then there's healthcare reform, to ensure patients who know they are at risk for diabetes can access early intervention, and those who have the disease can be diagnosed and treated earlier in the course of the disease. It's about prevention and disease modification. While we know we can take steps to prevent diabetes, it's not clear yet from clinical data that we have all of the tools to tackle disease progression.

DISEASE MANAGEMENT

What are the biggest concerns with regard to how diabetes is currently being managed?

MOSES: There's a broad misunderstanding about what diabetes is. Type 2 diabetes, for sure, is not a disease but a syndrome with multiple underlying etiologies impacted by environmental factors — activity levels, obesity, food intake — interplaying with largely unknown genetic factors. Clinicians, therefore, must figure out two things: one, what's the primary defect in that particular patient; and two, how to adjust the treatment so the patient not only improves on the right drug at the right time with the right therapeutic approach, but adheres to his or her treatment. It's about keeping the patient at the center of our understanding of the science and the social situation for that patient and then trying to match the therapy to that particular patient. That's a huge challenge in terms of handling diabetes as an epidemic; the prevalence of diabetes is such that it cannot be handled by specialists alone. We need to do a better job of training generalists in recognizing and aggressively treating diabetes to prevent the complications. Intervention, despite the fact that it's costly, provides cost savings in the long run because the complications of diabetes not only adversely affect the lives of individuals and their family members, but they also have direct and indirect costs: dialysis, amputations, heart attacks, blindness — all of which not only impact patients' earning capacity but the earning potential of family members who have to stay at home to care for individuals. There's a huge amount of public-health efforts that need to be expended toward early diagnosis and prevention, both of diabetes and its complications. Data from the Centers for Disease Control from a couple of years ago suggest that a female child born in 2000 of Latino origin has a 50% chance of developing diabetes. That's a wake up call. What's required is a public health message that combines a social responsibility message and a medical message. Do we need better drugs? Yes we do. But there already are tools available; we need to learn how to apply them more effectively to improve individual outcomes and population outcomes. ✦

PharmaVOICE welcomes comments about this article. E-mail us at feedback@pharmavoice.com.