

NOVO NORDISK AS • BEST DIABETES PIPELINE

Novo Nordisk recently announced plans to expand its diabetes-care field force in the United States, from almost 1,200 to about 1,900 people. The expansion, which will take place during the first half of 2007, is designed to strengthen Novo Nordisk's position in the U.S. insulin market and to increase the company's share of voice in the competitive market for diabetes products.

The U.S. insulin market is a key growth market for Novo Nordisk, which claims more than 40% of this market. The obvious significance of the disease area in the company's business plan, and its portfolio of diabetes-related development products, helped earn Novo Nordisk recognition as possessing the industry's best diabetes pipeline, according to *Med Ad News* editors.

"So many people with diabetes are still not in acceptable glycemic control," says Martin Soeters, president of Novo Nordisk (novonordisk.com). "That is why we are very pleased to announce the significant field-force expansion in the U.S. market, which will support our complete portfolio of insulin analogues as well

as our leading insulin injection device, FlexPen. The expansion will prepare our organization for future launches of additional innovative diabetes products that we currently have in clinical development."

For the first nine months of 2006, the company reported Dkr20.29 billion (\$3.38 billion) in sales in its diabetes-care segment, 17% more than in the same period in 2005. Executives say North America and international operations were the main growth drivers, with sales in North America growing 41%. Sales in this region were boosted by the performance of the insulin analogues NovoLog and NovoLog Mix 70/30, and the launch of Levemir, a long-acting insulin analog. Sales of insulin analogues, human insulin, and insulin-related products grew 17% to Dkr18.81 billion (\$3.14 billion) in the first nine months of 2006. Novo Nordisk executives say the company continues to be the global leader within the insulin segment, with 52% of the total insulin market and 38% of the insulin analogue segment as measured by volume.

At a recent R&D day, Novo Nordisk provided information on its plans to ensure a leadership

position within next-generation modern insulin products that are in Phase I clinical trials. Additionally, representatives discussed the ongoing global liraglutide Phase III program and additional data from two completed liraglutide Phase II studies.

Liraglutide, an investigational drug for type 2 diabetes, improved the ability of pancreatic beta cells to secrete insulin in people with type 2 diabetes, according to findings from one study. The findings, part of a larger, double-blind, placebo-controlled, randomized trial conducted over 14 weeks, specifically showed that liraglutide increased the maximum capacity of beta cells to secrete insulin. In addition, insulin secretion was increased in the so-called "first phase" insulin response, which is typically diminished in patients with type 2 diabetes.

The larger trial showed that liraglutide reduced levels of A1C, the primary endpoint and a measure of a person's average blood-glucose level over the past two to three months. Additionally, participants on the highest dose of liraglutide lost significantly more weight than did those on placebo by the end of the 14-week study.

"The prevalence of type 2 diabetes continues to increase, and we need to research and develop new therapies for this condition," says Sten Madsbad, M.D., a study investigator. "We are excited by these results as they demonstrate that liraglutide monotherapy significantly improves blood-glucose control without risk of major or minor hypoglycemia, is well tolerated, lowers body weight, and may help improve the body's ability to produce insulin."

Although the company's largest focus is on diabetes care, Novo Nordisk also has a biopharmaceuticals segment that develops and markets coagulation factors, growth hormone therapy, and other products. This segment generated sales of Dkr7.97 billion (\$1.33 billion) in the first nine months of 2006, 13% more than in the same period in 2005. More than half of those sales were generated by NovoSeven, which had sales of Dkr4.17 billion (\$694.7 million) during the 2006 period.

The company recently received FDA approval for a new indication for NovoSeven Coagulation factor VIIa, making the drug the first and only recombinant therapy approved for the treatment of acquired hemophilia, a rare and potentially fatal bleeding disorder. As a recombinant therapy, NovoSeven is not plasma-derived and poses no risk of human viral transmission through its use.

FDA approved NovoSeven for treatment of bleeding episodes in patients with acquired hemophilia, and in the prevention of bleeding in surgical interventions or invasive procedures in patients with acquired hemophilia. "Novo Nordisk is proud of our dedication to hemostasis research and development, especially for rare bleeding disorders," Mr. Soeters says. "This acquired hemophilia indication is in line with our core commitment to provide innovative therapies to people who need them."

NovoSeven was first introduced in 1999 and is already indicated for use in treatment of bleeding episodes in hemophilia A or hemophilia B patients with inhibitors to factor VIII or factor IX and for treatment of bleeding episodes in patients with congenital factor VII deficiency. NovoSeven is also indicated for the prevention of bleeding in surgical interventions or invasive procedures in hemophilia A or hemophilia B patients with inhibitors to

NOVO NORDISK'S PIPELINE

AWAITING APPROVAL

NovoLog Mix 30/70
(insulin aspart)
Type 1 and type 2 diabetes

NovoLog Mix 50/50
(insulin aspart)
Type 1 and type 2 diabetes

NovoMix 50 (insulin aspart)
Type 1 and type 2 diabetes

NovoMix 70 (insulin aspart)
Type 1 and type 2 diabetes

PHASE III CLINICAL TRIALS

AERx iDMS (human insulin)
Type 1 diabetes

Liraglutide (liraglutide)
Type 2 diabetes

Norditropin (somatropin)
Hormone replacement therapy in the treatment of adult patient in chronic dialysis

NovoSeven
(coagulation factor VIIa)
Bleeding in trauma and intracerebral hemorrhage, and the treatment of intracerebral hemorrhage

Vagifem Low-Dose (estradiol)
Relief of symptoms associated with vaginal dryness, such as painful intercourse, itching, burning, and soreness

COMPLETED PHASE II CLINICAL TRIALS

AERx iDMS (human insulin)
Type 2 diabetes

PHASE IIa CLINICAL TRIALS

E14.N.T.
Type 1 and type 2 diabetes

PHASE II CLINICAL TRIALS

Liraglutide
(liraglutide)
Obesity in non-diabetic people

NovoSeven
(coagulation factor VIIa)
Variceal bleedings as upper gastrointestinal bleeding in cirrhotic patients; the treatment of bleeding in connection with cardiac surgery; the treatment of traumatic brain injury; and the treatment of critical bleeding in spinal surgery

rFactor XIII
Haemostasis management

PHASE I CLINICAL TRIALS

NN0506
Type 2 diabetes

NN344
(insulin)
Type 1 and type 2 diabetes

NN5401
Type 1 and type 2 diabetes

NN9101
Type 2 diabetes

rFactor VIIa Analog
Haemostasis management

rFactor XIII
(coagulation factor XIII)
Patients undergoing cardiac surgery

factor VIII or factor IX, and in patients with congenital factor VII deficiency.

"The approval of NovoSeven for use in patients with acquired hemophilia offers an effective choice for treating this life-threatening disorder," says Craig M. Kessler, M.D., professor of medicine and pathology, Georgetown University Medical Center. "Its use will help physicians to meet the main objective in treating the disorder — stopping the bleeding episode."

Neose Technologies Inc. received a research milestone payment from Novo Nordisk under a license agreement for the use of Neose's GlycoPEGylation technology to develop next-generation versions of factors VIII and IX. Neose is also working with Novo Nordisk to develop a next-generation version of factor VIIa.

"We are pleased with the overall success of our collaboration with Novo Nordisk," says George J. Vergis, Ph.D., president and CEO, Neose (neose.com). "Novo Nordisk continues to be an ideal partner for Neose, providing significant clinical-development expertise and a strong commitment to broadening their haemostasis product portfolio that should prove invaluable in the success of long-acting factors VIIa, VIII, and IX."

Factor VIII products are used in the treatment of hemophilia A. People with hemophilia A, often called classic hemophilia, do not produce adequate amounts of factor VIII, which is necessary for the blood to clot effectively. According to the National Hemophilia Foundation, hemophilia A is the most common type of hemophilia, occurring in one in 5,000 to 10,000 male births. The worldwide market for recombinant factor VIII products was about \$2 billion in 2005. Factor IX products are used in the treatment of hemophilia B. Hemophilia B, also known as Christmas disease, is caused by a deficiency of a blood-plasma protein called factor IX that affects the clotting property of blood. According to the National Hemophilia Foundation, hemophilia B is the second-most common type of hemophilia, occurring in about one in 25,000 male births. The worldwide market for recombinant Factor IX was about \$350 million in 2005.



MARTIN SOETERS: "We are very pleased to announce the significant field-force expansion in the U.S. market, which will support our complete portfolio of insulin analogues as well as our leading insulin injection device, FlexPen. The expansion will prepare our organization for future launches of additional innovative diabetes products that we currently have in clinical development."