

Request for Expedited Grant 0389-EX-ST-2007

Introduction

EnteroMedics Inc. presently is authorized to test its Maestro™ Obesity Management System under call sign WE2XFB in ten states. The authorized transmitter is used in close conjunction with a surgically implanted medical device for the treatment of obesity.

In light of the anticipated health and life saving benefits of the system, EnteroMedics seeks to conduct tests at three additional locations.

We request an expedited grant to expand the clinical trial of a treatment for a leading cause of preventable death.

Precedent

The Commission processed the application for the underlying license WE2XFB in an expedited basis. We ask that it process this modification on the same basis.

The application requests 65 microwatts in an ISM band. It does not present a realistic threat of interference to any user.

Obesity as a Serious Medical Issue

The following facts about obesity help to place the problem in perspective:

- Published estimates of deaths related to obesity in the United States range from 112,000 to 400,000 per year, making obesity one of the leading causes of preventable death.¹
- Two-thirds of adults in the U.S. (65.7%) are either obese (BMI ≥ 30.0 kg/m²) or overweight (BMI 25.0-29.9). One in twenty people in the U.S. is categorized as extremely obese (BMI ≥ 40).²
- Recent studies document the morbidity and mortality associated with BMI over 35, as well as the potential benefits accruing to the metabolism once significant weight loss is achieved.^{3,4}
- The prevalence of children and adolescents who are overweight has increased more than two-fold since 1976.⁵
- There is a well-established association between obesity and clinically significant diseases, *e.g.*, type 2 diabetes, hypertension and, osteoarthritis – three leading causes of morbidity and mortality in industrialized countries.⁶
- Patients who are obese incur 37% more health care costs than people with normal weight, and spending on obese patients accounted for 27% of the growth in inflation-adjusted per capita health care spending between 1987 and 2001.⁷
- The public health and therapeutic challenges posed by obesity continue to be the focus of treatment guidelines.^{8,9}
- *The currently available treatment options do not meet the needs of many obese patients.*¹⁰

Finding a successful obesity treatment continues to challenge both health care providers and patients. Diet and exercise programs may result in short-term weight loss but are associated with slow, inexorable regain of body weight for most people.¹¹

Drug therapy has also resulted in only limited success and modest weight loss for the obese patient population. An analysis of published data shows that drug therapy results in between 2.8 and 3.6 kg (6 lbs to 8 lbs) of weight loss after 1 year.¹² Death or other serious adverse events have been reported with drug therapy. In cases such as “fen-phen” (fenfluramine-phentermine) and “PPA” (phenylpropanolamine), adverse events resulted in removal from the market.

Bariatric surgery has been performed since the 1960s. In 2003, the number of bariatric surgeries had reached 103,000, and 144,000 such procedures were projected by the end of 2004.^{13,14,15} Gastric bypass surgery is the most common procedure in the U.S. It results in substantial and sustained weight loss, but is also associated with significant morbidity and mortality, with 30-day mortality rates reported to range from below 1.0% to 1.9% or more depending on the experience of the surgeon and the annual number of procedures performed at the hospital.^{16,17,18} Gastric banding, which is done more commonly outside the U.S., is also effective but results in significantly less weight loss, both short- and long-term, than the gastric bypass operation.¹⁹ Patients may require frequent adjustments of their gastric bands. Furthermore, a number of patients regain weight following gastric banding because they adapt to the gastric constriction.

Clinical results on 31 subjects with 6 months of Maestro therapy

EnteroMedics has conducted an initial study outside the U.S. on 31 subjects implanted with the Maestro System and followed for a 6-month treatment period. The subjects were patients who had not responded to other weight-management measures, including dietary counseling and drug therapy. The three investigational sites were:

- Department of Surgery Instituto Nacional de la Nutrición Salvador Zubiran (INNSZ), Mexico City, Mexico,
- Adelaide Bariatric Center, Flinder’s Private Hospital, Adelaide, Australia,
- National Center for Advanced Laparoscopic Surgery, St. Olav’s University Hospital, Trondheim, Norway.

The clinical trial was conducted according to all local laws and regulations. The conduct of the study was closely monitored. An independent Safety Monitoring Board (SMB) was established prior to the initiation of the trial and met regularly to assess the ongoing safety information collected during the trial.

On average, patients had lost more than 13 lbs after 6 months of Maestro therapy. The SMB reviewed and adjudicated all serious adverse events. No deaths, no unanticipated adverse device effects, and no serious adverse events related to device therapy were reported during the study.

The efficacy results and safety profile of this initial clinical trial support the conduct of a larger clinical trial in patients with obesity who have not responded to standard medical management.

Conclusion

A modest expansion of the current experimental license is prerequisite to extending U.S. clinical trials needed for FDA approval. An early grant of the license will contribute directly to bringing the benefits of the therapy to the U.S. population as quickly as possible.

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