Introduction

• Following radical prostatectomy, a significant proportion of men experience erectile dysfunction (ED). More than one half of men with bilateral, nerve-sparing radical prostatectomy report ED 18 months later.2
• Currently, first-line treatments for ED include oral therapy with phosphodiesterase type 5 (PDE5) inhibitors that work by increasing blood flow to the penis. Most of these must be administered 60-120 minutes prior to sexual activity.4,5
• Avanafil is a highly selective PDE5 inhibitor with distinct pharmacokinetic properties, including rapid absorption and a short plasma half-life, under investigation for the treatment of ED.

Objectives

• To evaluate the safety and efficacy of avanafil for treatment of mild to severe ED following bilateral, nerve-sparing radical prostatectomy.

Methods

Study Design

• This double-blind, placebo-controlled Phase 3 trial evaluated avanafil in men with mild to severe ED following bilateral, nerve-sparing radical prostatectomy.5
• Men with ED following radical prostatectomy, performed by an experienced surgeon, were recruited from approximately 10 study sites in the United States and were randomized to receive placebo, avanafil 100 mg, or avanafil 200 mg for 12 weeks after a 4-week, non-treatment, run-in period.
• Key criteria for study entry included:
  - Aged 18-70 years.
  - Men with ED following radical prostatectomy, performed by an experienced surgeon.
  - Change in percentage of sexual attempts between baseline and end of treatment at least 4 intercourse attempts per month.
  - International Index of Erectile Function-Erectile Function (IIEF-EF) domain score between 5 and 25, inclusive.
  - Prostate cancer staging ≤pT2 and Gleason score ≤7 [4+3].
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Results

Baseline Demographics

• Out of the subjects randomized (n=208), 84.6% (n=252) completed the study.
• A greater proportion of subjects discontinued or withdrew consent in the placebo arm compared with either the avanafil treatment arms.
• Baseline demographics were similar in each treatment group (Table 1).
• Seventy-two percent of the subjects had severe ED at baseline.

Efficacy Endpoints

• Treatment with both doses of avanafil was associated with significant improvements in all 3 coprimary endpoints (P<.001), including:
  - Change in percentage of sexual attempts between baseline and end of treatment (Figure 1).

Figure 1. Successful Vaginal Penetration (SEP 2; ITT).

Figure 2. Successful Intercourse Attempts (SEP 3; ITT).

Figure 3. IIEF-EF Domain Score (ITT-LOCF).

Successful intercourse by Postdose Time Interval

• In total, 82.4% of sexual attempts studywide were made within 60 minutes or less. One third to one half of intercourse attempts were successful at ≤15 minutes and ≤30 minutes in each of the avanafil dose groups (Figure 4).

Conclusions

• Avanafil 100 mg and 200 mg were effective and well tolerated in a post-prostatectomy population with a rapid onset of action.

Safety Summary

• Discontinuations or interruptions of study drug due to adverse events (AEs) were 3%, 3%, and 2% for placebo, 100 mg, and 200 mg, respectively (Table 2).
• There were no serious AEs and no deaths during the study.

Table 1. Patient Baseline Demographics (Intent to Treat [ITT]).

Table 2. Summary of Adverse Events (Safety Population).

Table 3. Treatment-Related Adverse Events (Safety Population).