AUA 2024 MAY 3-6 San Antonio

Efficacy and safety of MED3000, a novel topical therapy for the treatment of erectile dysfunction

Presented by Wayne J.G. Hellstrom, MD, FACS

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Disclosures

I, Wayne Hellstrom, have financial interest/arrangement or affiliation with:

- Boston Scientific – Consultant or Advisor
- Coloplast – Consultant or Advisor
- Endo – Consultant or Advisor, Investigator, Lecturer
- Futura Medical – Advisory Board Member
- Gilead/Galapagos – Advisory Board Member
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Background

Oral phosphodiesterase type 5 (PDE5) inhibitors have changed the management of ED for many men but are not suitable for all[1]

Up to 50% of patients cease treatment within one year[1]

A relatively large group of men with ED symptoms remain either sub-optimally treated or not treated at all[2]

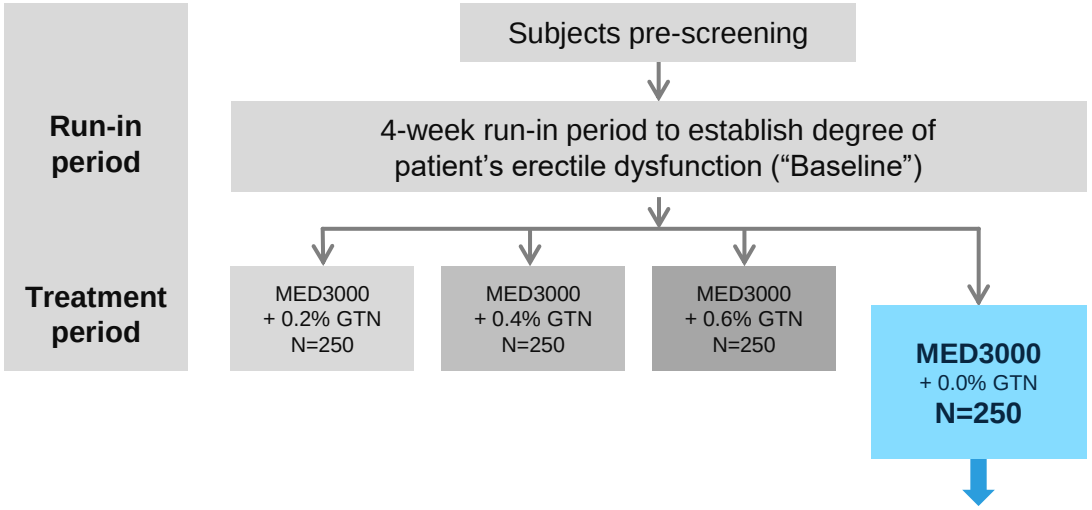
Unmet need remains for an alternative, effective ED treatment with an excellent safety profile[3]

MED3000 is a novel, topical, non-prescription gel treatment and has been evaluated in two clinical studies, FM57 and FM71

ED, erectile dysfunction; PDE5, phosphodiesterase type 5.

Discovery was serendipitous: Eroxon® contains no active components and is as efficacious as 0.2%–0.6% GTN

Phase 3 Study - FM57

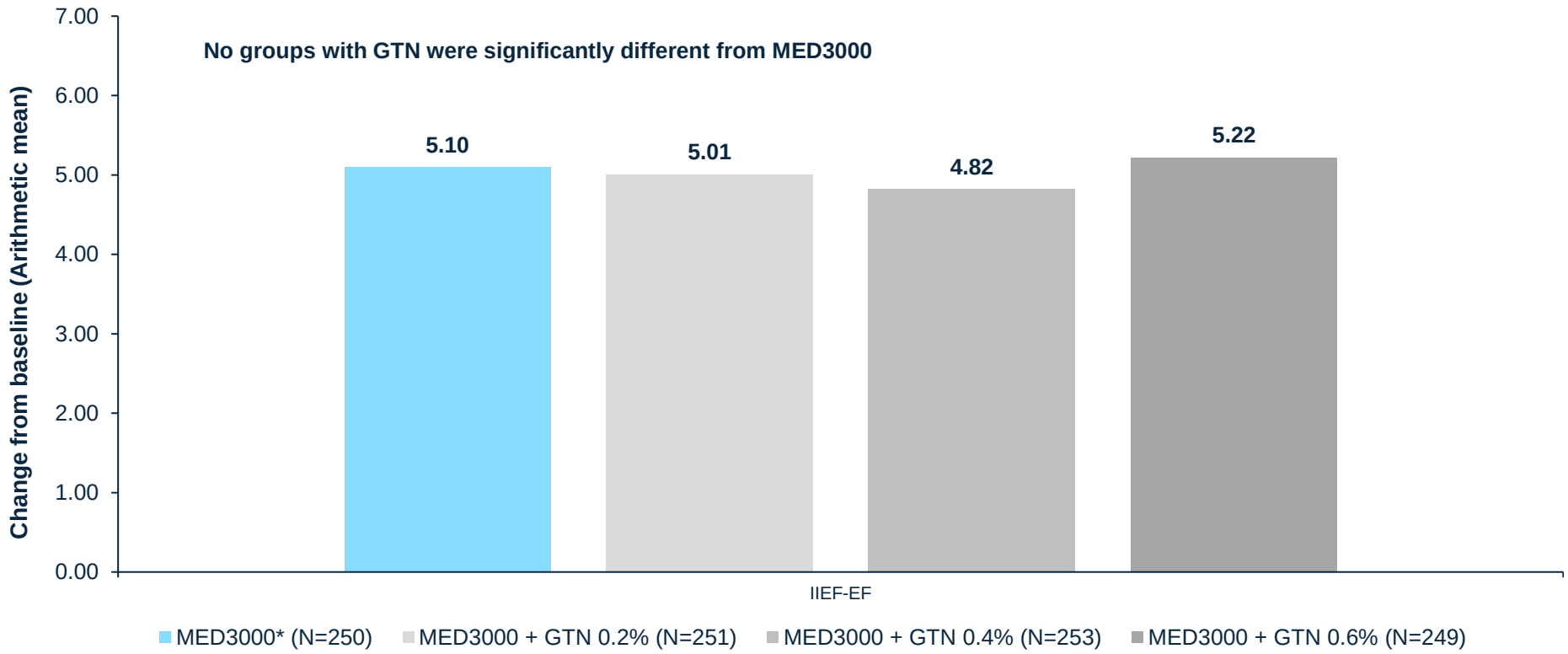


Unexpectedly **Eroxon®** (initially included as the control) was shown to be highly effective in treating ED vs baseline

- Study FM57 aimed to demonstrate efficacy of 0.2%–0.6% GTN versus control (0% GTN) in male patients
- **Primary outcome:** exceed minimal clinically important difference (MCID) in IIEF and SEP questions 2 and 3
- **Secondary outcome:** time to onset of action, safety, GAQ and SEAR

ED, erectile dysfunction; GAQ, Global Assessment Questionnaire; GTN, Glyceryl trinitrate; IIEF, International Index of Erectile Function; MCID, minimal clinically important difference; SEAR, Self-Esteem and Relationship questionnaire; SEP2, sexual encounter profile question 2; SEP3, sexual encounter profile question 3.

The FM57 Trial – Changes from baseline in IIEF-EF



***The control arm, MED3000 with 0.0% GTN, became the product now named Eroxon**

EF, erectile function; GTN, glyceryl trinitrate; IIEF, International Index for Erectile Function; SEP, Sexual Encounter Profile.

MED3000 clinical development history

Initial hypothesis – local delivery of nitric oxide via topical GTN could help to improve erectile function…

Phase 3 study - FM57

- A multi-center, randomized, double-blind, parallel-group study in 250 men with ED over 12-weeks
- **Comparing topical GTN vs drug-free control (MED3000)**

Drug-free control (MED3000) shown to be remarkably effective and very well tolerated

New hypothesis – drug-free control (MED3000) could help to improve erectile function in men with ED…

Phase 3 study – FM71

- A multi-center, randomized, open-label, parallel-group study in 96 men with ED over 24 weeks
- **Comparing drug-free control (MED3000) vs 5 mg oral tadalafil**
- **Study requested and designed in collaboration with the FDA**

In June 2023 MED3000 (Eroxon®) became the first over the counter topical gel for ED with FDA marketing authorisation

ED, erectile dysfunction; FDA, Food and Drug Administration; GTN, glyceryl trinitrate.

Mechanism of action

MED3000

1

Application of gel

A pea-sized amount of the gel is massaged on to the head of the penis, with a partner as part of foreplay and sexual stimulation

2

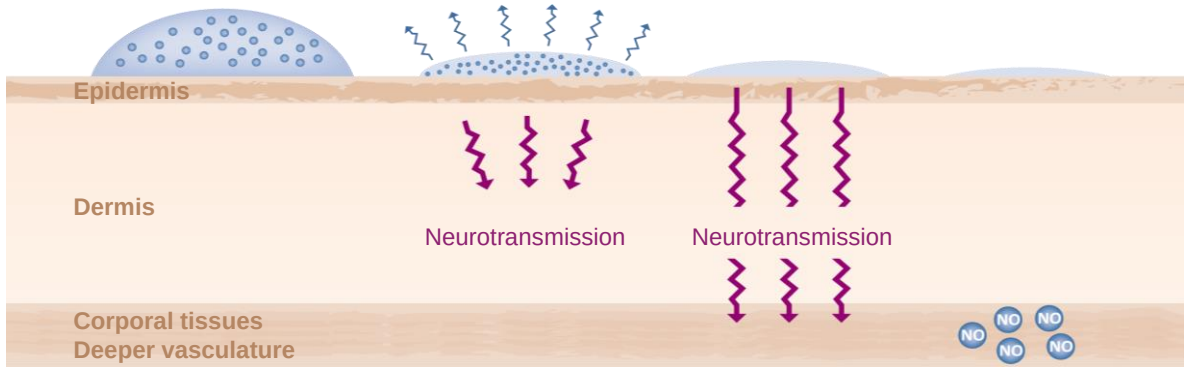
Seconds later

The application and rapid evaporation of the gel stimulate nerve endings on the surface of the penis that are highly responsive to very subtle changes in temperature and pressure[4–7]

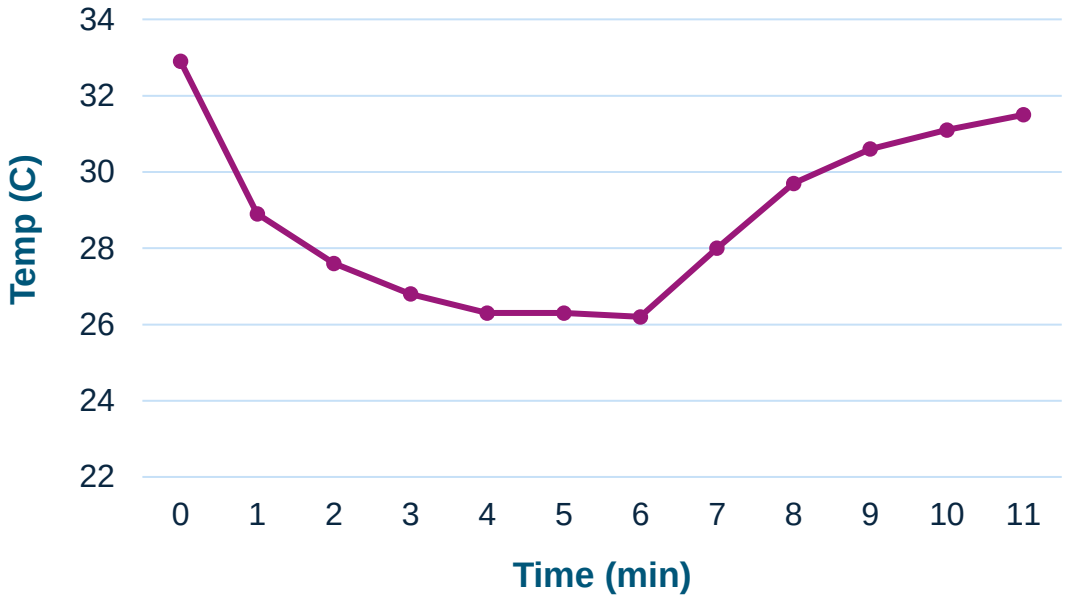
3

Minutes later

This triggers the release of nitric oxide, leading to vasodilation and increased blood flow in the penis to help achieve and maintain an erection[8]



Temperature change when 300mg MED3000 gel is applied to porcine muscle block – a surrogate for glans penis tissue[9]



Methods

The FM57 study – A multi-center, randomized, double-blind, parallel-group* study of MED3000 in 250 men with ED over 12-weeks

The FM71 study – A multi-center, randomized, open-label, parallel-group study where MED3000 was compared with 5 mg oral tadalafil over 24 weeks in 96 men with ED

Efficacy assessments included:

- Responder analyses of patients meeting or exceeding the minimal clinically important difference (MCID, 4 points) in the International Index of Erectile Function Erectile Function (IIEF-EF) domain
- The percent of patients achieving erections in ≤10 minutes after treatment

ED, erectile dysfunction; GTN, glyceryl trinitrate; IIEF-EF, International Index of Erectile Function Erectile Function; MCID, minimal clinically important difference.
*The study contained 3 other experimental arms, MED3000 with 0.2%/0.4%/0.6% GTN respectively (no significant differences shown in efficacy data to the MED3000 without GTN arm so not shown here).

Patient characteristics

	FM57 study*	FM71 study	
	MED3000 (N=250)	**MED3000 (N=48)**	**Tadalafil 5 mg (N=48)**
Countries	Poland, Czech Republic, Slovakia, Hungary, Georgia, Bulgaria, Latvia, Russia, Ukraine	United States, Bulgaria, Poland, Georgia	
Age (years), mean (SD)	46.8 (12.5)	46.1 (13.5)	41.5 (11.5)
Race			
Asian	1 (0.4)	-	-
White/Caucasian	249 (99.6)	44 (91.7)	43 (89.6)
Black/African-American	-	4 (8.3)	5 (10.4)
BMI (kg/m^2), mean (SD)	27.5 (3.6)	27.6 (4.3)	27.5 (4.4)
Duration of ED (months), mean (SD)	27.5 (36.5)	28.9 (32.3)	27.3 (24.8)
ED Severity, number (%)			
Mild	148 (59.2)	19 (39.6)	19 (39.6)
Moderate	70 (28.0)	17 (35.4)	17 (35.4)
Severe	32 (12.8)	12 (25.0)	12 (25.0)
Baseline IIEF-EF, mean (SD)	16.6 (4.7)	14.8 (5.4)	14.5 (4.8)

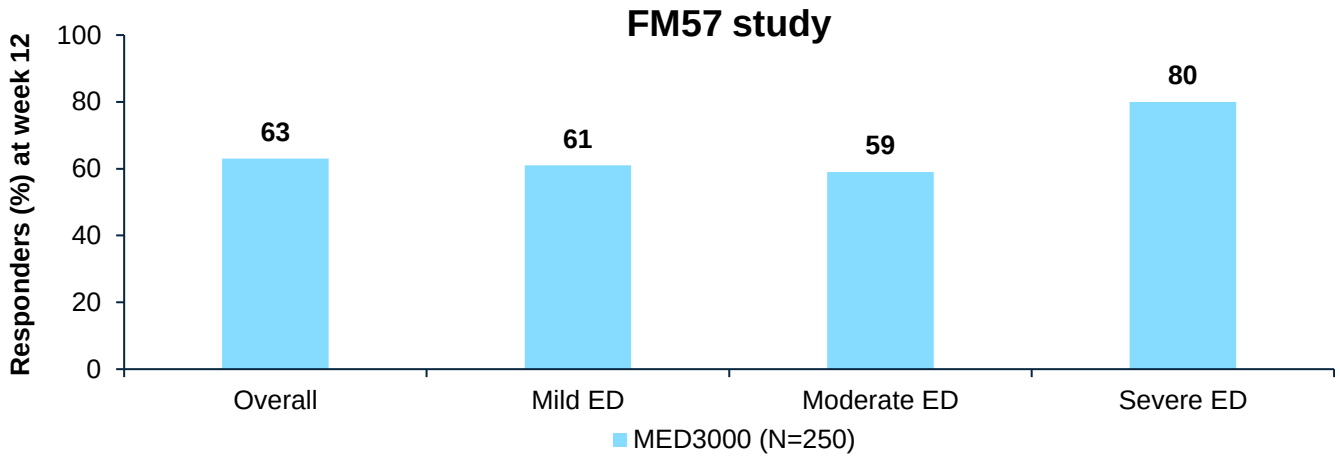
ED, erectile dysfunction; GTN, glyceryl trinitrate; IIEF-EF, International Index of Erectile Function Erectile Function; SD, standard deviation.
*The study contained 3 other experimental arms, MED3000 with 0.2%/0.4%/0.6% GTN respectively (no significant differences shown in efficacy data to the MED3000 without GTN arm so not shown here).

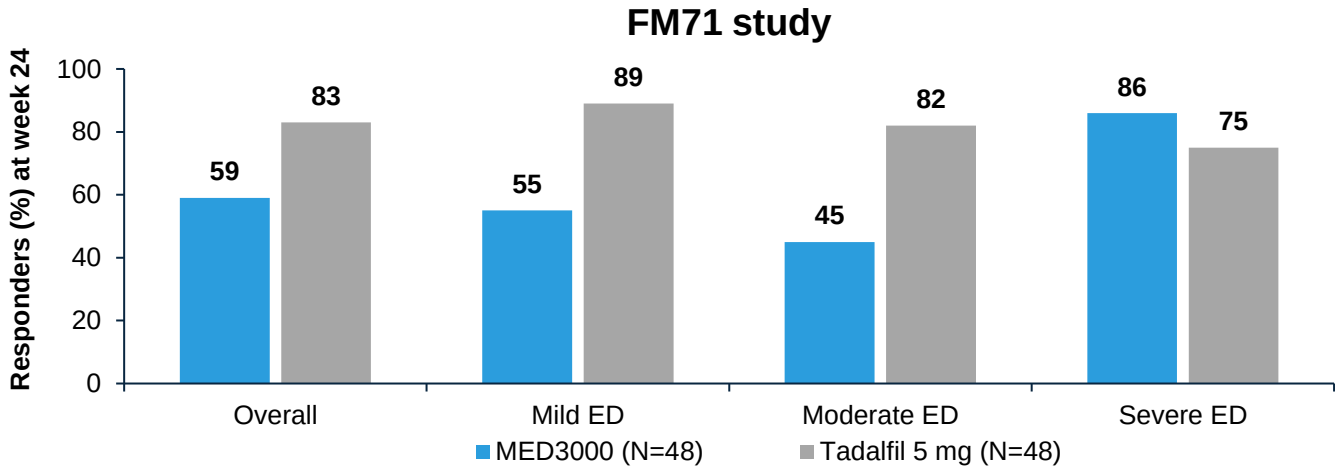
Efficacy

Responder analysis

Responder analysis demonstrating the proportion of patients reporting a meaningful improvement from baseline for IIEF-EF by ED based on the criteria from Rosen et al*[10]

- At week 12 for FM57
- At week 24 for FM71





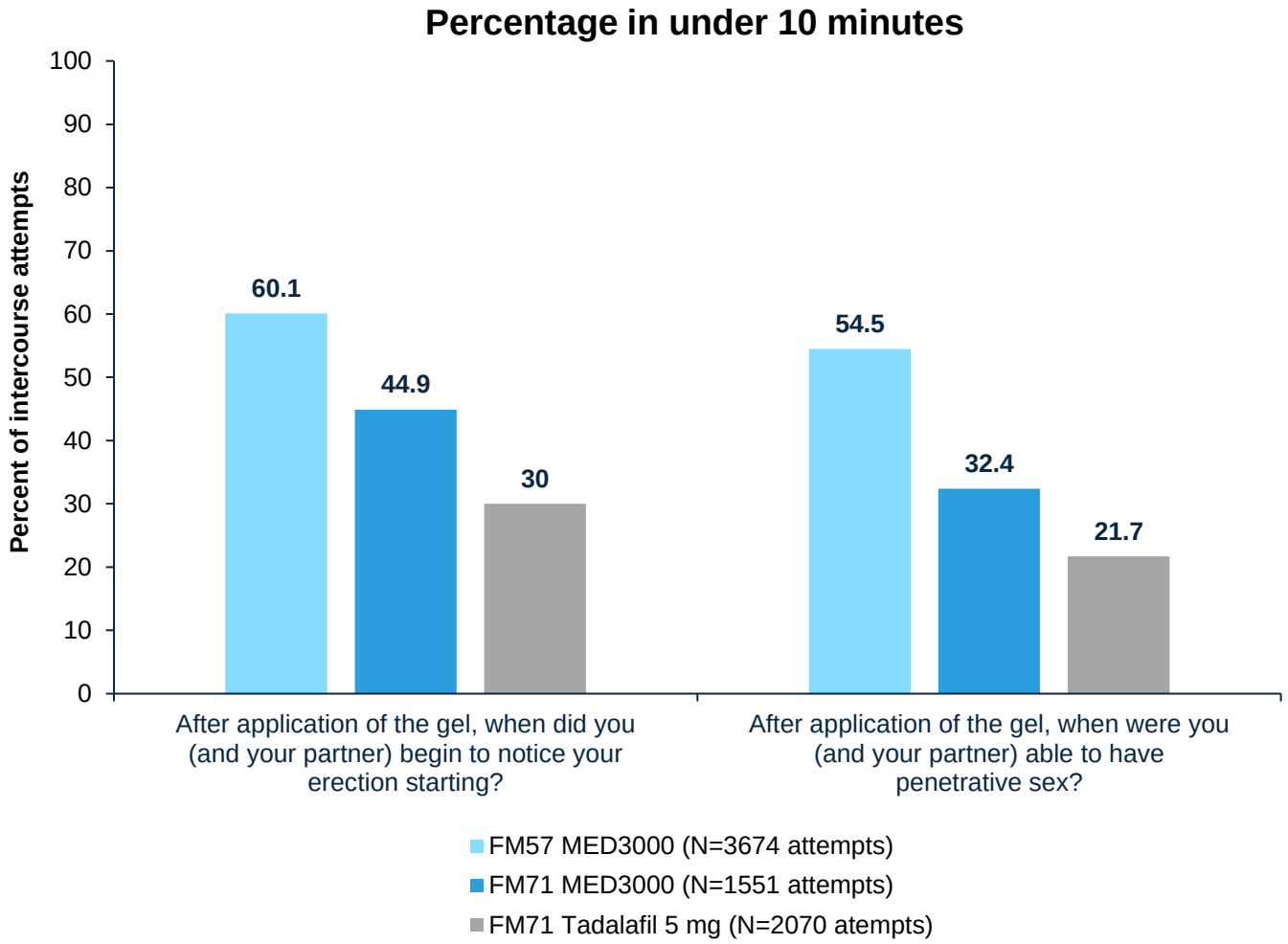
ED, erectile dysfunction; IIEF-EF, International Index of Erectile Function Erectile Function
*Responders defined as having an increase of IIEF ≥ 4 from baseline ED (overall), and ≥ 2, ≥ 5 and ≥ 7 from baseline for the mild, moderate and severe subjects, respectively (Minimal Clinically Important Difference [MCID] according to Rosen et al 2011)

Efficacy

Onset of action

Time to erection and penetrative sex

- Effectiveness analysis showing the proportion of patients who achieved an erection and/or felt able to have penetrative sex within 10 minutes of therapy from the two separate studies (FM57 and FM71)



Safety

Adverse events (Men)	Pooled results from FM57 and FM71 studies	FM71 study
	MED3000 patients (N=297)	Tadalafil patients (N=47)
Headache	9 (3.0%)	9 (19.1%)
Penile burning	3 (1.0%)	0 (0)
Nausea	2 (0.7%)	0 (0)
Back pain	0 (0)	2 (4.3%)
Non cardiac chest pain	0 (0)	2 (4.3%)

Partner involvement in MED3000 application

FM57 *post hoc* analysis

- Information regarding partner involvement in MED3000 application in FM57 was available for 211 patients

Clinical endpoint at Week 12	Partner involved in MED3000 application (n=109)	Partner not involved in MED3000 application (n=102)	% improvement with partner involvement	*P*-value
IIEF-EF, % of responders	66.1%	52.0%	27.1%	0.0373
SEP Question 2, % of responders*	41.9%	33.0%	27.0%	0.1882
SEP Question 3, % of responders†	70.5%	52.0%	35.5%	0.0060
Patients who first noticed an erection within 10 minutes	61.2%	50.4%	21.4%	0.0725

*SEP Q2, "Were you able to insert your penis into your partner's vagina"; †SEP Q3, "Did you erection last long enough for you to have successful intercourse"
ED, erectile dysfunction; IIEF-EF, International Index of Erectile Function Erectile Function; SEP, Sexual Encounter Profile.

Conclusions

1. Clinically proven – Safety and efficacy demonstrated in two phase 3 clinical trials in Europe and the United States
2. Fast acting – A topical gel that gets to work within 10 minutes
3. Well tolerated – Excellent safety profile with no known drug interactions
4. Inclusive of the partner – Partner application as part of foreplay significantly improves outcomes
5. Available OTC – In June 2023 MED3000 became the first OTC topical gel for ED to be granted marketing authorization by the FDA

ED, erectile dysfunction; FDA, Food and Drug Administration; OTC, over-the-counter.

Clinical implications

The availability OTC of MED3000 will improve access to well-tolerated and effective therapy for an otherwise undertreated population

Where could MED3000 fit in the ED treatment landscape?

- There is a significant number of men not treating their ED and suffering in silence. This product could be considered as a first-line treatment for men who are non-treaters or have mild-moderate ED
- For men looking for a non-invasive treatment with an ease of administration and a fast onset of action
  - The "local" application and subsequent "local" effect is possibly something more patients can easily understand when compared to systemic therapy
- As an alternative to PDE5 inhibitors for those men where PDE5 inhibitors are not suitable (contra-indicated or side effects)

ED, erectile dysfunction; OTC, over-the-counter; PDE5, phosphodiesterase type 5.

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