

# **Effectiveness of Solifenacin Succinate in the Treatment of Mixed Urinary Incontinence: A Randomized Controlled Trial**



2025



## Affiliations to disclose:

**Associate Professor Soodabeh Darvish MD, OB&Gyn,FPMRS**

*(Gynecology, Urogynecology, Female Pelvic Medicine & Reconstructive Surgery)*

*- Lecturer at Shahid Beheshti University of Medical Sciences*

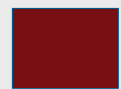
*- Consultant Obstetrician and Gynecologist at Taleghani Hospital*

[darvishsudabeh@gmail.com](mailto:darvishsudabeh@gmail.com)

**No conflict of interest to disclose**



## Funding for speaker to attend:



Self-funded



Institution (non-industry) funded



Sponsored by:

# THE TYPES OF URINARY INCONTINENCE



**STRESS**



**URGE**



**OVERACTIVE BLADDER**



**FUNCTIONAL**



**OVERFLOW**



**TRANSIENT**

Double-blind randomized controlled trial:

❑ Taleghani Hospital in Tehran

❑ 2022\_2024

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

# **A total of 200 women diagnosed with mixed urinary incontinence**

## **Inclusion Criteria**

- ☐ Be 18 years or older
- ☐ No treatment with any other medication
- ☐ Given a written informed consent to participate in the study

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

# Exclusion Criteria

1. Use of other antimuscarinic medications besides solifenacin
2. Failure to complete the full treatment course or irregular solifenacin use
3. Diagnosis of high Post-Void Residual (PVR) volume via ultrasound
4. Presence of Stage 3 or 4 pelvic organ prolapse
5. Urinary tract infection
6. Diabetes
7. History of urinary tract surgery

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

## Self-Report Questionnaires

### 1. Demographic and clinical data

**collection:** Includes variables such as age, BMI classification, Delivery history, physical activity classification, history of medication use (especially hormonal therapy ), and history of any diseases.

**2. Incontinence diagnosis :** Used self-report Questionnaire for Urinary Incontinence Diagnosis( QUID ) as standardized diagnostic tool.

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**



**200 patients  
were  
randomly  
divided  
equally into  
two groups  
as follows:**

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

### **Experimental Group:**

Received **oral administration** of Solifenacin Succinate (**VSOL5**) at a dose of **5** milligrams. The medication was taken in tablet form **after breakfast** for a period of **three months** in Tehran, Iran.



### **Control Group:**

Received a **placebo tablet** that was visually identical to Solifenacin Succinate but contained no active ingredient. This was also administered orally after breakfast for a period of **three months**.



The **severity of urinary incontinence** was assessed using the validated **QUID** (Questionnaire for Urinary Incontinence Diagnosis) at baseline, **1.5** months, and **3 months** post-treatment.

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

# What Is QUID?

**Dr. Soodabeh Darvish**  
**Associate Professor and**  
**Fellow in Female Pelvic Medicine and**  
**Reconstructive Surgery**

## The Questionnaire for female Urinary Incontinence Diagnosis (QUID)

	None of the time	Rarely	Once in a while	Often	Most of the time	All of the time
Do you leak urine (even small drops), wet yourself, or wet your pads or undergarments...						
1. when you <b>cough</b> or <b>sneeze</b> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. when you <b>bend down</b> or <b>lift something up</b> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. when you <b>walk quickly</b> , <b>jog</b> or <b>exercise</b> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. while you are <b>undressing</b> in order to use the <b>toilet</b> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Do you get such a <b>strong and uncomfortable need</b> to urinate that you leak urine (even small drops) or wet yourself before reaching the toilet?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Do you have to <b>rush to the bathroom</b> because you get a <b>sudden, strong need</b> to urinate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Scoring:

Each item scores 0 (None of the time), 1 (Rarely), 2 (Once in a while), 3 (Often), 4 (Most of the time) or 5 (All of the time). Responses to items 1, 2 and 3 are summed for the Stress score; and responses to items 4, 5, and 6 are summed for the Urge score.

- ❑ **Physical activity level** based on the questionnaire was  $3.59 \pm 1.96$  in the intervention group and  $3.56 \pm 2.00$  in the control group ( $p = 0.880$ ), **showing no significant difference**.
- ❑ **Age** : In the intervention group, the mean  $\pm$  standard deviation of age was  $52.80 \pm 13.78$ , while in the control group it was  $51.65 \pm 11.90$  ( $p = 0.653$ ), **indicating no significant difference**.
- ❑ **Body Mass Index (BMI)** in the intervention group was  $26.89 \pm 3.10$ , and in the control group it was  $26.95 \pm 2.99$  ( $p = 0.806$ ), **again showing no significant difference**.
- ❑ **Number of pregnancies** in the intervention group was  $3.01 \pm 1.79$  and in the control group it was  $2.98 \pm 1.74$  ( $p = 0.964$ ), which was **not statistically significant**.

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

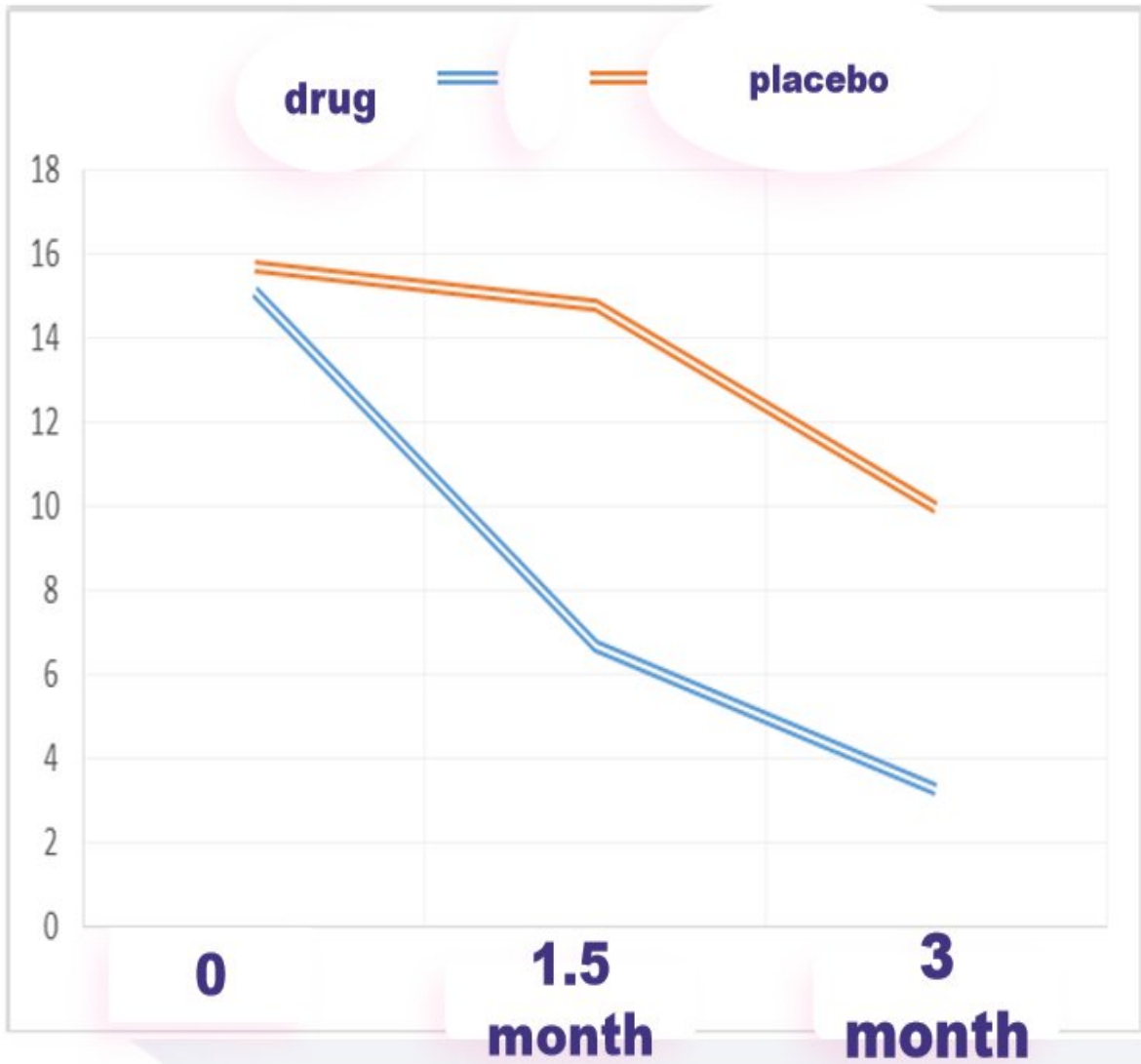
# Results

- ❑ Participants in the **solifenacin group** demonstrated a statistically **significant reduction** in QUID scores at both follow-up points compared to the placebo
- ❑ At **1.5 months**, the mean QUID score was  $6.65 \pm 1.08$  in the intervention group versus  $14.80 \pm 2.52$  in the control group ( $p < 0.001$ )
- ❑ **At 3 months**, scores were  $3.25 \pm 1.11$  vs.  $9.98 \pm 4.34$  ( $p < 0.001$ )

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

**Dr. Soodabeh Darvish**  
**Associate Professor and**  
**Fellow in Female Pelvic Medicine and**  
**Reconstructive Surgery**



The **magnitude of reduction** from baseline was **significantly greater** in the **solifenacin group** (−8.47 and −11.87 at 1.5 and 3 months, respectively) than in the control group (−0.88 and −5.70, respectively) with  $p < 0.001$  for all comparisons.

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

# Discussion

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

[www.ics-  
eus.org/2025/abstract/](http://www.ics-eus.org/2025/abstract/)

#375

DOI: 10.1111/luts.12476

ORIGINAL ARTICLE

WILEY

## TOT in combination with solifenacin or intravaginal prasterone in postmenopausal women with mixed urinary incontinence: A retrospective analysis in 112 patients

Federica Sala<sup>1,2</sup> | Melania Loggia<sup>1,2</sup> | Giorgia Cardella<sup>1,2</sup> |  
Claudia Morgani<sup>1,2</sup> | Giovanni Grossi<sup>2</sup> | Marzio Angelo Zullo<sup>3</sup> |  
Herbert Carmelo Carlo Valensise<sup>1</sup> | Pier Luigi Palazzetti<sup>2</sup> | Michele Carlo Schiavi<sup>2</sup>

Original Article

HEALTH SCIENCES  
MEDICINE

DOI: 10.32322/jhsm.1106031

J Health Sci Med 2022; 5(5): 1207-1214

## Comparison of tolterodine, trospium chloride, solifenacin treatments and its side effects on patients with pure urinary and mixed incontinence

Izzet Özgürlük<sup>1</sup>, Eylem Ünlübilgin<sup>2</sup>, İsmail Dölen<sup>2</sup>

<sup>1</sup>University of Health Sciences, Ankara City Hospital, Department of Gynecology and Obstetrics, Ankara, Turkey

<sup>2</sup>University of Health Sciences, Ankara İhtik Zübeyde Hanım Gynecology Training and Research Hospital, Department of Gynecology and Obstetrics, Ankara, Turkey

Cite this article as: Özgürlük İ, Ünlübilgin E, Dölen İ. Comparison of tolterodine, trospium chloride, solifenacin treatments and its side effects on patients with pure urinary and mixed incontinence. J Health Sci Med 2022; 5(5): 1207-1214.

The results of  
these study are  
consistent



# Explanation of the mechanism behind this effectiveness



► Pharmaceuticals (Basel). 2024 Jan 16;17(1):116. doi: [10.3390/ph17010116](https://doi.org/10.3390/ph17010116)

## Regular and Irregular Use and Reasons for Discontinuation of Solifenacin Therapy in Patients with Overactive Bladder Managed by Urologists

[Mateusz Małkowski](#)<sup>1</sup>, [Agnieszka Almgren-Rachtan](#)<sup>2,\*</sup>, [Magdalena Olszanecka-Glinianowicz](#)<sup>3</sup>, [Jerzy Chudek](#)<sup>4,\*</sup>,  
[Piotr Chłosta](#)<sup>5</sup>

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

**Treatment of bladder dysfunction with solifenacin: is there a risk of dementia or cognitive impairment?**

[LP Dantas](#)<sup>1,2</sup>, [ARCC Forte](#)<sup>1</sup>, [BC Lima](#)<sup>1</sup>, [CNS Sousa](#)<sup>1</sup>, [EC Vasconcelos](#)<sup>1</sup>, [PHC Lessa](#)<sup>3</sup>, [RF Vieira](#)<sup>3</sup>, [MCA Patrocínio](#)<sup>4,5</sup>,  
[SMM Vasconcelos](#)<sup>1</sup>

► Author information ► Article notes ► Copyright and License information

Studies have shown that prolonged use of certain muscarinic antagonists—especially those with high lipophilicity—**can increase the risk of cognitive decline**. These substances have different pharmacological properties, including the **ability to cross the blood-brain barrier**, and affect central nervous system regions such as the hippocampus and cerebral cortex. As a result, they may cause adverse effects on memory and cognition.

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

# Due to the limited sample size

- ❑ Cannot be generalized to all patients with the same condition.
- ❑ In addition to this, the presence of various confounding factors and the complexity of the situation make it difficult to draw definitive conclusions from these results.
- ❑ It is clearly evident that the observed effect was present in this particular study, and the findings are acceptable and justifiable within the context of the research. Broader and more extensive studies across larger populations are needed to confirm these results.

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

# Conclusion

- ❑ Solifenacin succinate represents a **promising pharmacologic option for treating mixed urinary incontinence** in women.
- ❑ Its efficacy and tolerability suggest it could be an effective **first-line or adjunctive treatment**, particularly in cases where **behavioral therapies alone are insufficient**.

**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**

# Women's Health

Your Health at Every Age



**Dr. Soodabeh Darvish**

**Associate Professor and  
Fellow in Female Pelvic Medicine and  
Reconstructive Surgery**