

## Introduction

Stress urinary incontinence (SUI) is a common disease amongst women. It is considered a stigma and has a major impact on quality of life. Midurethral sling surgery is still the gold standard in the treatment of SUI.

Simultaneously, synthetic polypropylene mesh has been discredited in the last decades, due to its morbid adverse events in its widespread utilization for pelvic organ prolapse repair. Consequently, this development put midurethral slings under suspicion.

The current investigation evaluates the performance of retropubic midurethral slings (MUS) in the treatment of female stress urinary incontinence (SUI) in a real-world setting and identifies risk factors for sling failure, e.g. for the first time the use of partially absorbable slings.

## Methods and Materials

- Design: single-center cohort study
- Inclusion criteria: Women who underwent retropubic MUS procedure for SUI between 2012 and 2019 in a certified continence center
- Follow-up: 12 months.
- Primary endpoint: Cure of SUI assessed by the validated questionnaire ICIQ-UI-SF
- Cure was the absence of UI defined by an ICIQ sum score of 0 at follow-up.
- Improvement was defined by a decrease in the sum score such that the severity decreased at least one level of classification
- Severity classification was defined according to the sum score as no SUI (0), slight UI (1–5), moderate UI (6–12), severe UI (13–18), and very severe UI (19–21)) according to Klovning et al. 2009

## Results

- A total of 662 women with a median age of 65 (IQR 19) were included
- 79.0% of women presented with complicated SUI.
- Cure was reported by 32.2% of the patients
- Postoperative urge symptoms, defined by question 4 of the ICIQ-SF, were reported by 312 (47.1%) patients. Adjusted for patients without urge symptoms, cure were reported by 209/350 (60.1%).**

### The Odds for cure was decreased by

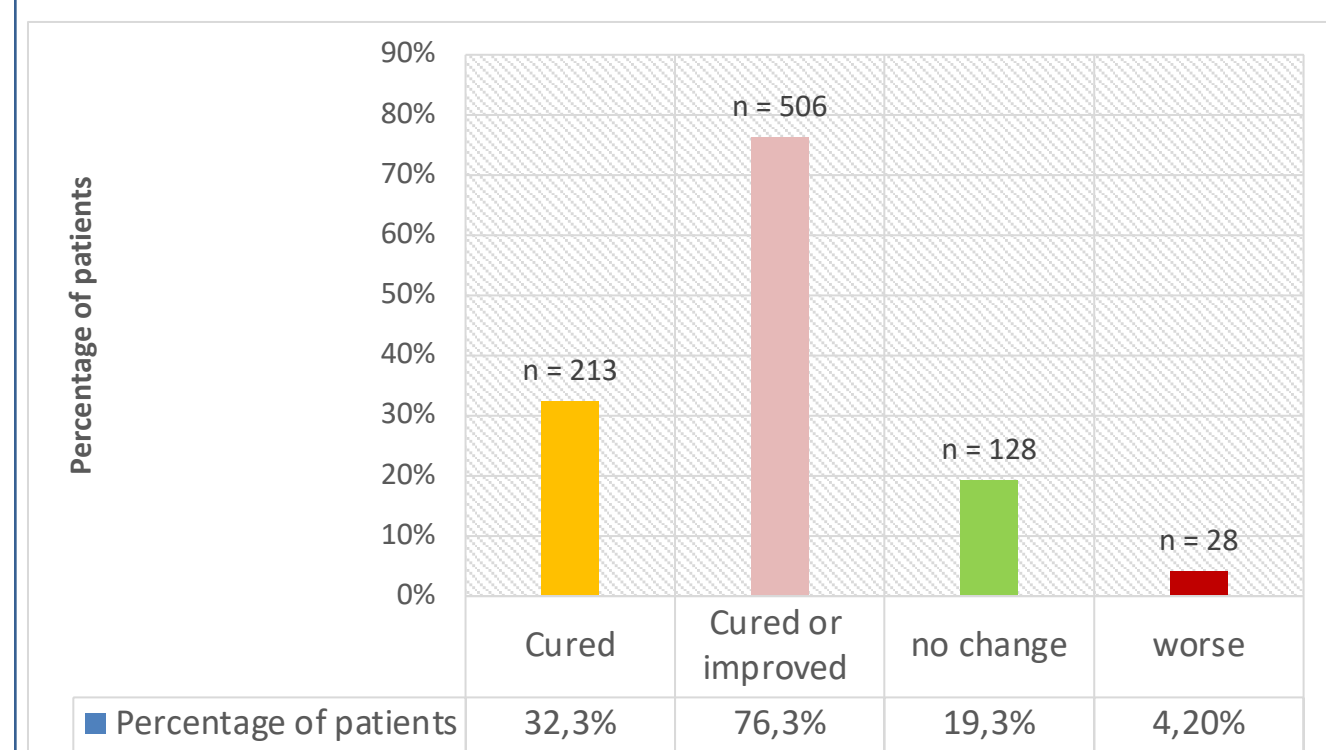
- **-56% using partially absorbable mesh** (p<0.001, OR 0.44, CI 0.27-0.71)
- **-64% taking pharmacotherapy for OAB** (p<0.001, OR 0.36, CI 0.210.63)
- **-30% in women with obesity** (p=0.013, OR 0.70, CI 0.53 – 0.93)
- **-49% in women with nycturia** (p<0.001, OR 0.51, CI 0.36 – 0.74)
- **-43% in women requiring adjuvant sling adjustment** (p=0.023, OR 0.57, CI 0.35 – 0.93)

### The Odds for cure was increased by

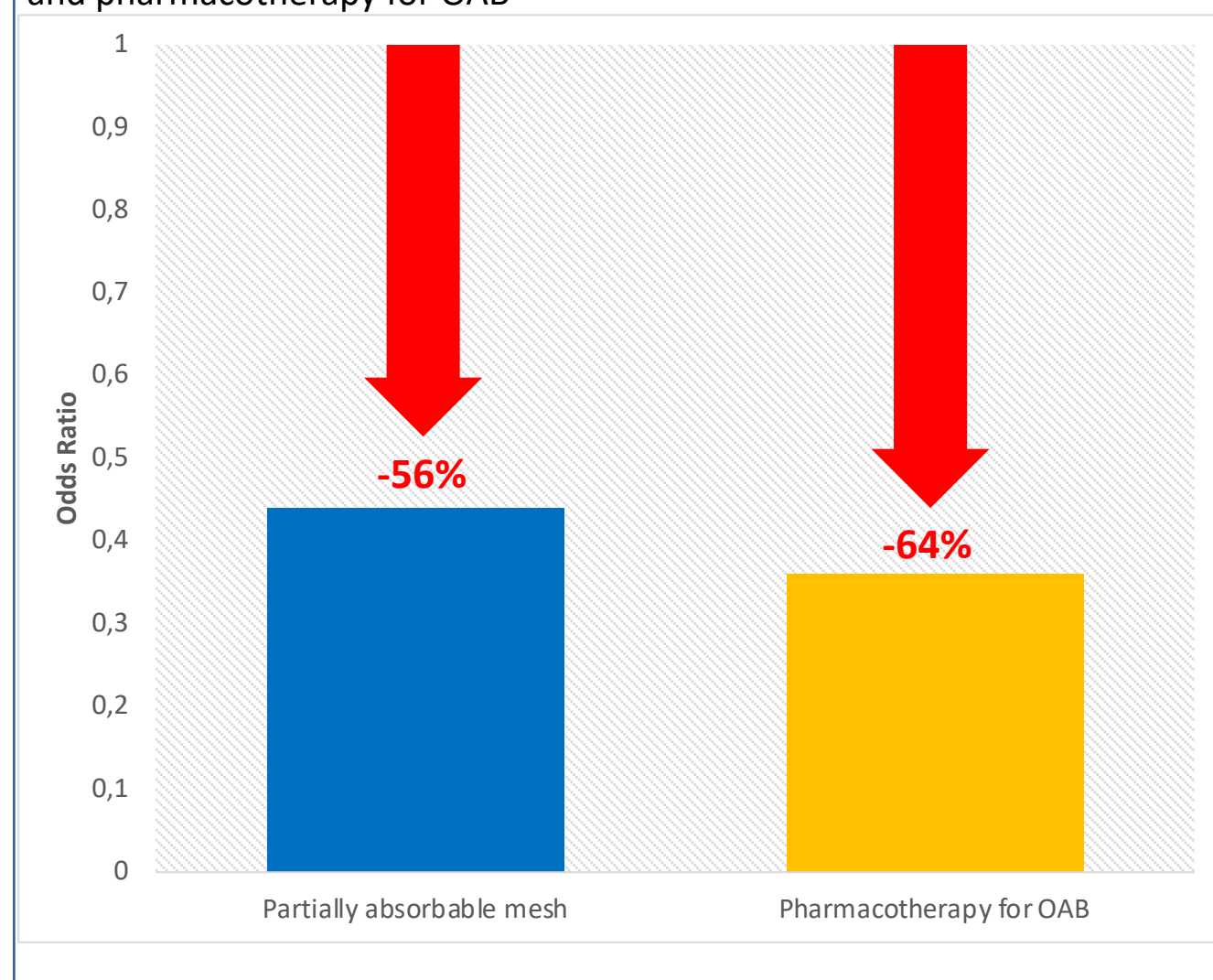
- **1.73-times in primary surgery** (p=0.041, OR 1.73, CI 1.02 – 2.93)

## Results

**Figure 1** Success rates after sling surgery for SUI



**Figure 2** Independent risk factors for sling failure : Partially absorbable mesh and pharmacotherapy for OAB



## Discussion

The current investigation emphasizes the impact of the patient heterogeneity in clinical daily practice on the outcome success of midurethral sling procedure.

Amongst several risk factors for failure, partially absorbable mesh and pharmacotherapy of overactive bladder were identified.

Furthermore, surgeons should be aware that besides the pharmacotherapy for OAB, women with mixed urinary incontinence may remain significantly affected by decreased effectiveness of the treatment.

Likewise, partially absorbable mesh appears to be the rational solution to reduce foreign material and hereby reduce mesh-related complications. However, the current results question the effectiveness of these slings in clinical practice.

## Conclusions

- Certified continence centers have a high heterogeneity in patient population, which decreases significantly the odds for cure.
- Particularly women taking medication for OAB should be informed about the possible reduced risk for cure.
- Furthermore, this investigation firstly identified decreased cure rates in the utilisation of partially absorbable slings in the treatment for female SUI.
- The role of partially absorbable mesh for SUI treatment should be evaluated in further prospective trials.

## References