

# The Role of Educational Level and Cognitive Status of Patients on Outcomes and Revision Rates of Artificial Urinary Sphincter in Men with Post-Prostatectomy Incontinence: The First Multi-Institutional Study in Turkish Men

Ahmet Keles<sup>1</sup>, Rahmi Onur<sup>2</sup>, Murat Dinçer<sup>3</sup>, Orhan Koca<sup>4</sup>, Burhan Coşkun<sup>5</sup>, Ahmet Karakeçi<sup>6</sup>, Asgar Garayev<sup>7</sup>

<sup>1</sup>Istanbul Esenyurt State Hospital, Urology Department, Istanbul, Turkey; <sup>2</sup>Marmara University School of Medicine, Urology Department, Istanbul, Turkey; <sup>3</sup>Bağcılar Research and Education Hospital, Urology Department, Istanbul, Turkey; <sup>4</sup>Haydarpaşa Numune Research and Education Hospital, Urology Department, Istanbul, Turkey; <sup>5</sup>Uludağ University School of Medicine, Urology Department, Bursa, Turkey; <sup>6</sup>Firat University School of Medicine, Urology Department, Elazığ, Turkey;



## INTRODUCTION

In this multi-institutional study, we aimed to examine the outcomes of Artificial Urinary Sphincter (AUS) implantation as well as the relationship between the education level and cognitive function of patients and the rate of device failure and/or re-operation (revision or replacement) rates in patients with post-prostatectomy incontinence.

## MATERIALS & METHODS

Between 2007 and 2017, the data of a total of 108 patients who received AUS (AMS 800, Minnetonka, USA) implantation were examined.

Pre and post operative incontinence was evaluated by validated questionnaire, International Consultation on Incontinence Questionnaire - short form (ICIQ-SF), whereas health related quality of life and subjective satisfaction of the patients was evaluated with the Patient Global Impression of Improvement (PGI-I) questionnaire.

We also examined the role of the education level and cognitive function of patients on the development of device failure and/or re-operation (revision or replacement) rates. The education level was assessed using the International Standard Classification of Education (ISCED 2011).

Cognitive function was examined by using the Mini Mental Status Examination (MMSE) test.

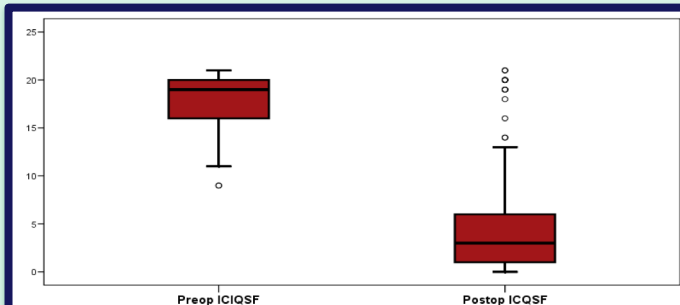
Failure was defined as start of leakage after a "dry or occasional leakage" period of at least 3 months and/or need for revision.

Urinary retention due to malfunction, urethral stone formation and difficulty on voiding due to erosion or mechanical failure, inability to locate part(s) of device was also considered failure and revision.

Table 1: Cohort Demographics

Parameter	Results
Patients, (n)	108
Median follow-up, mnt (IQR)	41 (3-133)
Median age, yr (IQR)	68 (49-84)
Median body mass index, kg/m <sup>2</sup> (IQR)	26.3 (24-30)
Median pad use before AUS placement, (n)	4.9 (3-10)
Median AUS cuff size, cm (IQR)	4.0 (3-4.5)
All cause of revision n (%)	
Erosion	15(13.9%)
Enfection	7(6.5%)
Mechanic Failure	11(10.2%)
PGI-I (mean,range)	2-(1-7)

AUS: Artificial urinary sphincter ; IQR: Interquartile range; PGI-I: Patient Global Impressions of Improvement



## RESULTS

There was no perioperative severe complication. Table 1 shows demographic data and intraoperative variables. The ICIQ-SF score improved from  $17.5 \pm 3.2$  to  $5 \pm 5.21$  ( $P < .001$ ) at the last follow-up. The median outcome on the PGI-I scale was "much better," and 62 (57.4%) patients subjectively reported improvement.

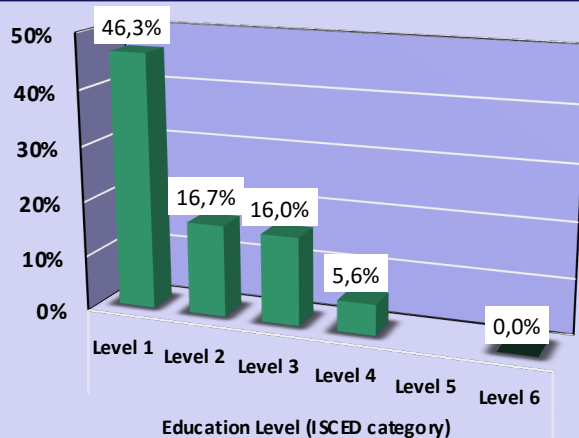


Table 2: Related Factors for AUS failure

Parameter	Failure (>1 pad/day) n-%	Total n-%
<b>BMI, kg/m<sup>2</sup></b>		
Normal (BMI <25)	5-11.4%	35-32.4%
Overweight (BMI 25-30)	10-14.5%	62-56.5%
Obese (BMI >30)	<b>8-66.6%*</b>	12-11.1%
<b>Age, yr</b>		
>65	16-34.1%	81-75%
≤65	7-22.2%	27-25%
<b>MMSE Score</b>		
Cognitive intact (MMSE >25)	3-15.8%	38-35.2%
Mild cognitive impairment (MMSE 21-24)	5-20.0%	25-23.1%
Moderate cognitive impairment (MMSE 10-20)	<b>15-33.3%*</b>	45-41.7%
<b>Operation Technic</b>		
Perineal, n(%)	7-19.4%	36-%33.3
Penoscrotal, n(%)	16-22.2%	72- %66.7
DM	2-18.2	11-%10.2
Previous radiation	3-13.6%	22-%20.4

\*p<0.05

## CONCLUSIONS

In this study, we reported the role of educational level and cognitive function of patients on the outcomes of the procedure. Our studies indicated that AUS implantation seems to be a safe and effective treatment option for cognitively intact, non-obese and moderate-to-well educated patients. However, additional trials and larger series with long-term follow-up are needed to determine the precise role of predictive factors for success