PREDICTORS OF FAILURE IN 90 URETERS REIMPLANTED USING ROBOT-ASSISTED LAPAROSCOPIC SURGERY
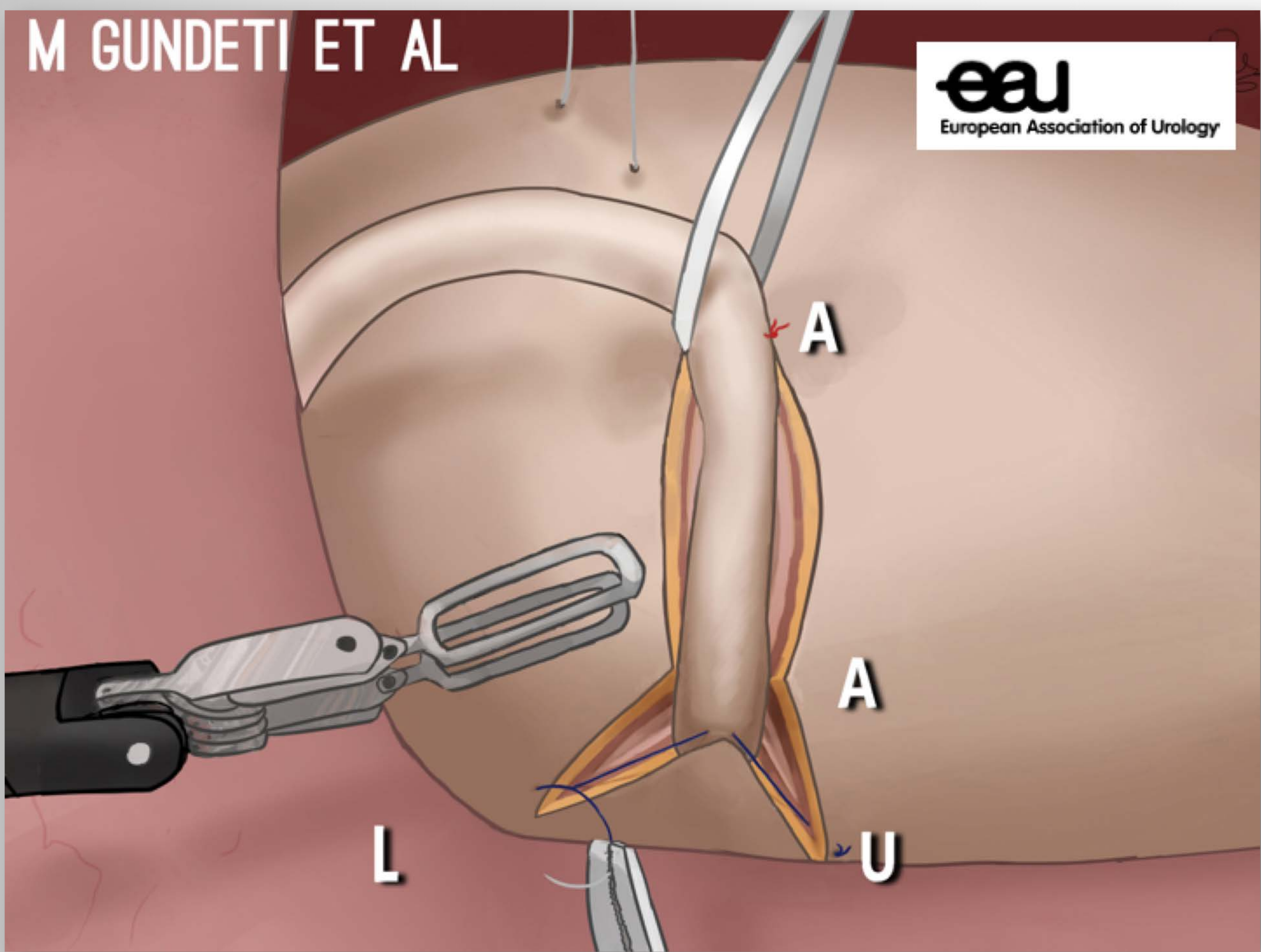
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I. Objectives

We analyzed perioperative outcomes in children undergoing RALUR-EV; using our recent technique modifications to identify predictors of surgical failure.
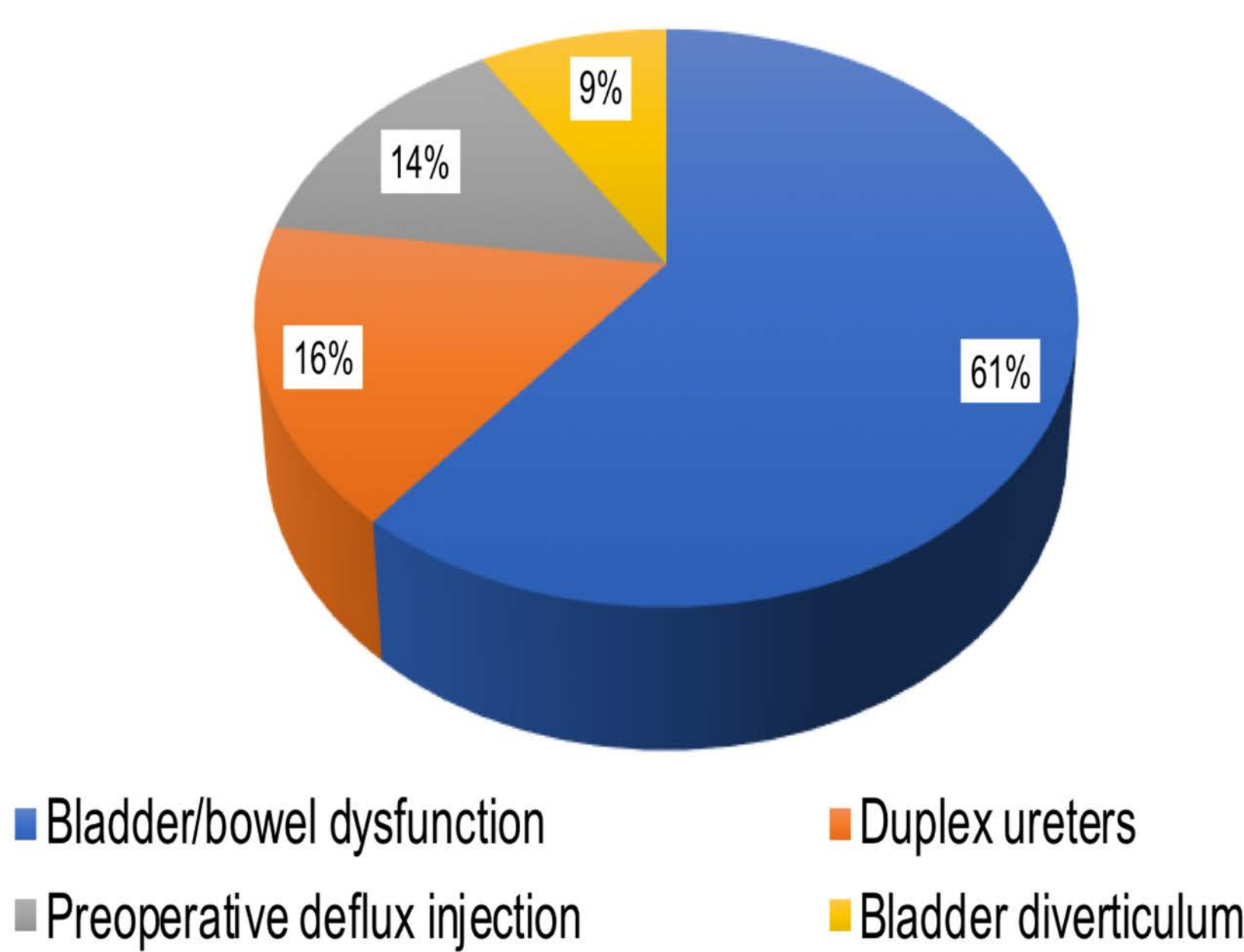
II. Methods

- A single-institution study was performed (2010-2017).
- Only patients with high-grade VUR, urinary tract infections, or renal scarring underwent surgical correction.
- Patients with ureterovesical junction obstruction were excluded.
- Our cohort included patients with urologic complex function/anatomy.
- All children in this series received the **LUAA technique**—length of detrusor tunnel **(L)**, U stitch **(U)**, ureteral alignment suture **(A)**, and inclusion of ureteral adventitia **(A)**.

Preoperative complex urologic function and anatomy features

- Bladder/bowel dysfunction 61%
- Duplex ureters 16%
- Preoperative deflux injection 14%
- Bladder diverticulum 9%

Preoperative VUR grade (%) by VUR radiographic resolution rate (%)

Grade	VUR resolution rate	Preoperative VUR grade
V	69.24	13.33
IV	61.54	31.11
III	92.31	42.22
II	76.93	8.89
I	100	4.44

IV. Conclusions

- The LUAA technique has shown to improve operative outcomes in children undergoing RALUR for high-grade and complex VUR.
- We could not identify predictors of surgical failure, but gender showed an association with surgical success.
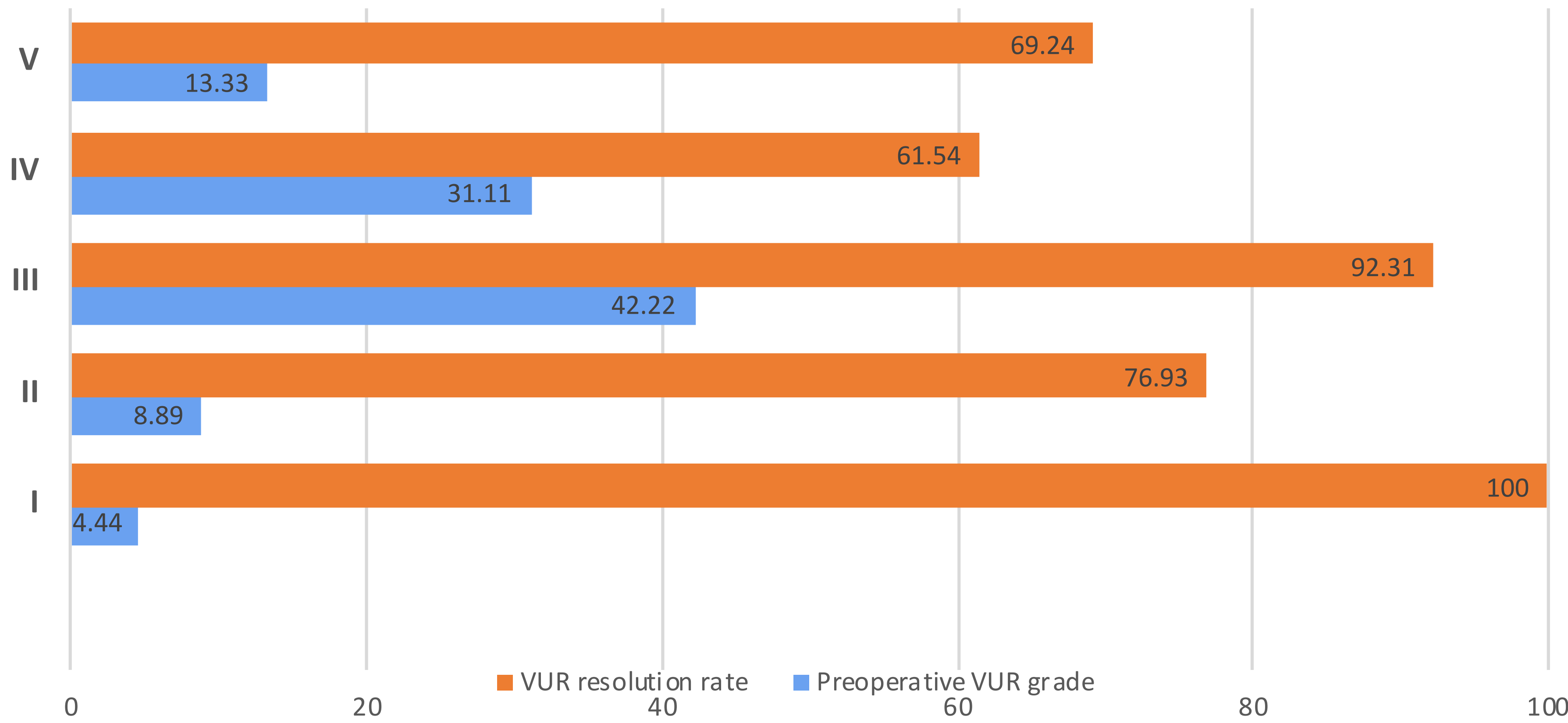
III. Results

- Sixty-four patients (90 ureters) underwent RALUR-EV,
- 75% were female with a mean age of 67.95 ± 38.52 months.
- VUR resolution rate at 4-months: **85.56%**
- The mean follow-up was 15.44 months (SD=14.75), 10 patients (15.67%) presented with Clavien II complications and 1 (1.56%) with grade I.
- On univariate analysis, female gender (OR 0.2, p=0.03) was associated with decreased odds of radiographic failure. After adjusting for age and preoperative VUR, gender remained a significant predictor after RALUR (OR 0.16, p=0.02).

Predictors of surgical failure	OR (95% CI)	p-Value
Univariate logistic regression		
Age	0.96 (0.75-1.22)	0.72
Weight	1.07 (0.98-1.08)	0.28
Gender (Ref. Female)	0.20 (0.05-0.87)	0.03
Preoperative high-grade VUR	3.34 (0.94-11.80)	0.06
Bowel dysfunction	1.33 (0.30-5.89)	0.71
Double collecting system	0.89 (0.18-4.52)	0.89
Prior Deflux injection	1.96 (0.34-11.39)	0.45
Bilateral surgery	1.03 (0.32-3.34)	0.96
Operative time	1.00 (0.99-1.02)	0.67
Length of hospital stay	1.35 (0.41-4.44)	0.93
Multivariate logistic regression		
Age	0.89 (0.68-1.18)	0.41
Gender	0.16 (0.03-0.79)	0.02
Preoperative VUR grade	0.89 (0.40-1.99)	0.79

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