

Risk of Acute Kidney Injury After Lower Urinary Tract Reconstruction with Early NSAID Therapy: A Propensity Matched Retrospective Analysis

Darren Ha^{ab}, Eliza D. Blanchette^c, Duncan T. Wilcox^{ab}, Vijaya M. Vemulakonda^{ab}, Daniel N. Wood^{ab}, Kyle O. Rove^{ab}

^a Pediatric Urology Research Enterprise (PURE), Department of Pediatric Urology, Children's Hospital Colorado, Aurora, CO, USA

^b Division of Urology, Department of Surgery, University of Colorado Denver Anschutz Medical Campus, Aurora, CO, USA

^c Department of Pediatrics, Division of Nephrology, Children's Hospital Colorado, Aurora, CO, USA

Background

The **opioid epidemic** led to increased use of postoperative, **non-opioid analgesia**.

Some pediatric urologists do not routinely use **NSAIDs** for fear of causing **acute kidney injury (AKI)**.

HYPOTHESIS

- There would be a difference in incidence of postoperative AKI between patients who did and did not receive NSAIDs after lower urinary tract reconstruction.

Methods

Retrospective chart review of **pediatric** patients 2-18 years of age at Children's Hospital Colorado.

Patients who underwent **lower urinary tract reconstruction** between 2009 and 2021 were eligible.

Patients who received NSAIDs were **propensity matched 2:1** with those who did not receive NSAIDs.

Results

No difference in incidence of postoperative AKI (18.6% no NSAID vs 15.3% NSAID, $p=0.71$).

Lower median postoperative opioid use in patients who received NSAIDs (0.30 vs 0.75 mg/kg MME, $p=0.02$).

No difference in **time to low urine output** by Kaplan-Meier analysis ($p=0.38$).

- Postoperative **NSAIDs** were an **unlikely source of AKI** and resulted in **lower opioid usage** after lower urinary tract reconstruction.
- **AKI remains a risk** following these surgeries, **regardless of NSAID use**, due to underlying disease, longer operations, and fluid shifts.



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darren.ha@cuanschutz.edu

	No NSAID	NSAID	P value
	59 patients	118 patients	
Acute kidney injury (any criteria)	11 (18.6%)	18 (15.3%)	0.706
Acute kidney injury (criteria 1)	7 (29.2%)	2 (9.1%)	—
Acute kidney injury (criteria 2)	4 (16.7%)	5 (20.8%)	—
Acute kidney injury (criteria 3)	4 (6.8%)	13 (11.0%)	0.523
Postop windows with low UOP	5.5 (3.3–6.6)	6.0 (2.0–6.3)	0.662
Duration with low UOP, hours	43.9 (35.0–46.2)	36.7 (20.0–44.8)	0.580
Median length of stay (IQR), days	4.4 (3.1–7.2)	4.4 (3.2–6.3)	0.829

Table 1. Incidence of postoperative AKI based on KDIGO criteria between NSAID and no NSAID cohorts.

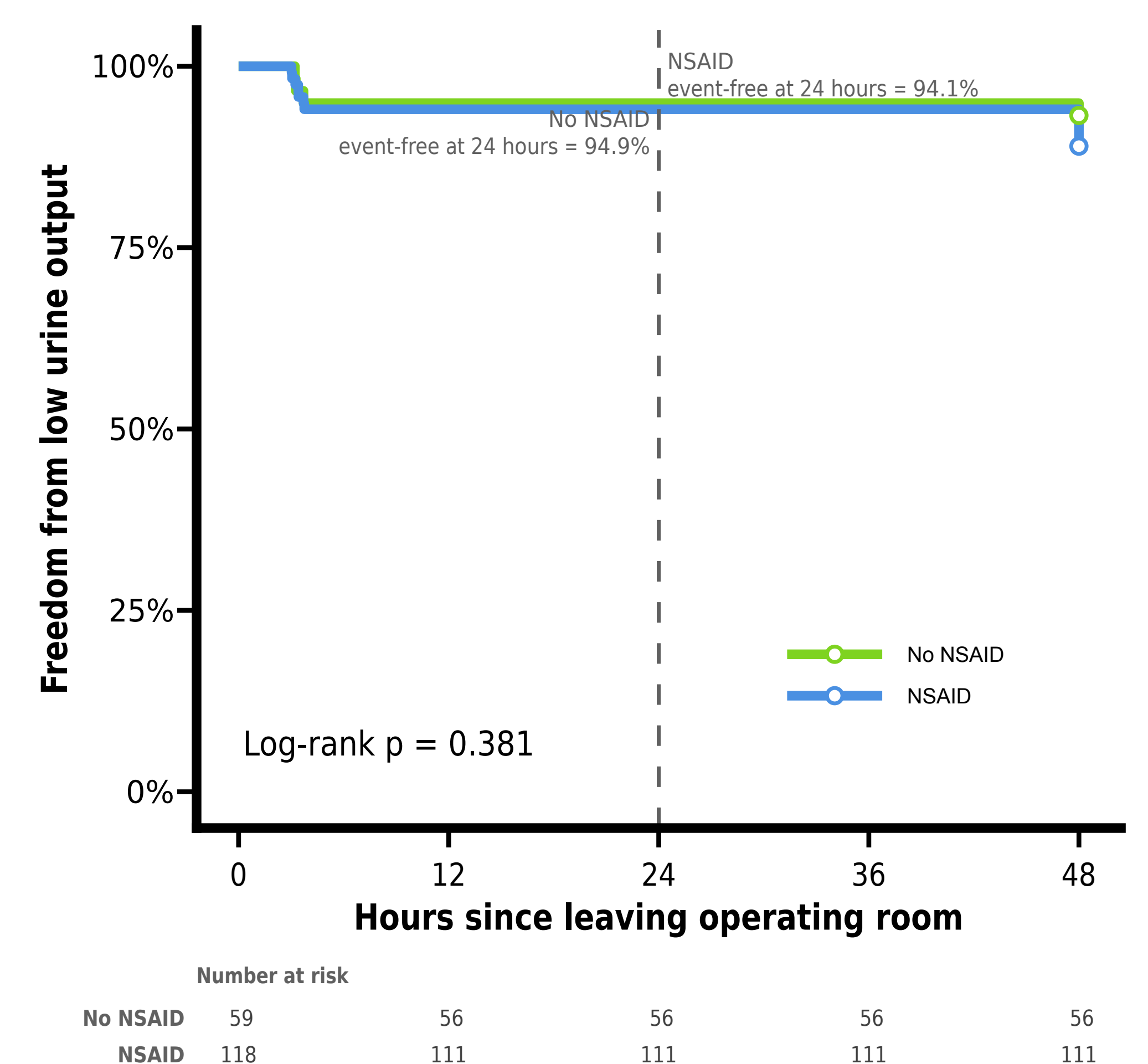


Figure 1. Kaplan-Meier analysis of time to low urine output between NSAID and no NSAID cohorts.