

Is Relief of Ureteral Obstruction Prior to Initiation of Neoadjuvant Chemotherapy Beneficial for Muscle-Invasive Bladder Cancer Patients Who Are Already Eligible for Cisplatin?

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Background

- Purpose:** To determine if cisplatin-eligible patients with muscle-invasive bladder cancer (MIBC) and ureteral obstruction have less risk of toxicity from neoadjuvant chemotherapy (NAC) if the obstruction is relieved.

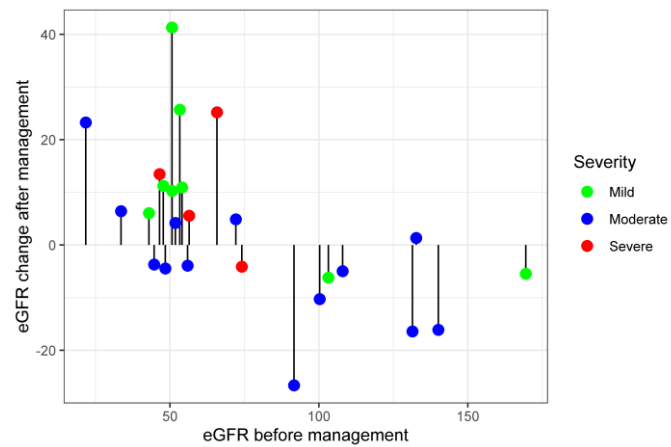
Methods

- Population:** Patients undergoing NAC for MIBC from Jan 2004 through Dec 2018 presenting with hydronephrosis at the time of diagnosis.
- Exclusion criteria:** Clinical stage M1 at presentation, or chemotherapy regimen other than GC or ddMVAC.
- Groups:** Patients with relieved obstruction (RO) vs patients with unrelieved obstruction (URO).
- Primary outcome:** Composite of grade ≥ 3 adverse events (AE), premature chemotherapy discontinuation, dose reduction, or interruption.
- Multivariable logistic regression adjusted for baseline hemoglobin, eGFR, and type of NAC.
- Sensitivity analysis:** Patients with "mild" hydronephrosis (sensitivity analysis 1) or an Anterior-Posterior Renal Pelvis Diameter (APD) $< 33^{\text{rd}}$ percentile of kidneys who had a device placed (analysis 2) were excluded.

Results cont.

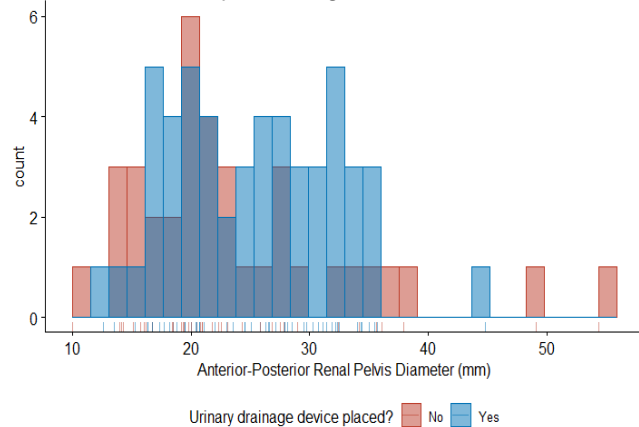
- There was **significant overlap in degree of hydronephrosis** in kidneys both with or without a drainage device placed (Figure 1).
- Device placement improved GFR by 10 mL/min overall**, and by 5 mL/min when including only patients with unilateral hydronephrosis (Figure 2).
- Primary Analysis: No difference** in NAC disruption or toxicity between groups on either **univariate or multivariate analysis (Table 1)**.
- Sensitivity Analyses: No difference** between groups when excluding URO patients with only mild hydronephrosis (38.5 vs 52.1%; $p=0.53$) or APD $< 33^{\text{rd}}$ percentile (50 vs 52.1%; $p = 1.0$).

Figure 2: Change in GFR after relieved obstruction in patients with unilateral hydronephrosis



Results

Figure 1: Histogram of APDs in patients with and without a urinary drainage device



Conclusions

Placement of a PCN or ureteral stent prior to initiation of NAC in patients with ureteral obstruction was not associated with a reduction of chemotherapy disruption or toxicity, independent of degree of hydronephrosis. Improvement of GFR after stent or PCN placement for unilateral obstruction in this preselected cohort that received NAC was minimal. Proceeding with NAC in eligible patients without relief of obstruction appears safe in the short term.

Table 1: Comparison of NAC toxicity in patients with relieved and unrelieved obstruction

	Univariate Analysis			Adjusted Analysis	
	Relieved (n=49)	Unrelieved (n=35)	P-val	Odds Ratio (URO/RO)	P-val
<i>NAC discontinuation</i>	11 (22)	9 (26)	0.8	1.39 (0.47-4.10)	0.48
<i>NAC grade 3 \geq AE's</i>	15 (31)	8 (23)	0.5	0.78 (0.28-2.19)	0.63
<i>NAC dose reduction</i>	1 (2)	2 (6)	0.6	-	-
<i>NAC interruption</i>	13 (27)	9 (26)	1	1.26 (0.43-3.71)	0.67
Composite outcome	24 (51)	18 (53)	1	1.39 (0.47 – 4.10)	0.6

Univariate analysis reported as n (%), adjusted analysis reported as odds ratio (95% confidence interval). Abbreviations: RO = Relieved obstruction; URO = Unrelieved Obstruction. NAC = Neoadjuvant chemotherapy. AE = Adverse Events;