Abstract ID: 20-7396: Predictors of postoperative complications after robotic and open radical cystectomy: An analysis from the RAZOR trial

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Introduction: Robotic surgery was predicted to reduce complications after radical cystectomy (RC). We compared postoperative complication rates and evaluated predictors of complications up to 90-days following RC in patients from the RAZOR trial; a multicenter, open-label non-inferiority phase III randomized trial comparing RARC to open cystectomy (OC).

Methods: The per-protocol population of the RAZOR trial was used. Complications up to 90-days postoperatively were graded using the Clavien-Dindo system.

Frailty was evaluated by the validated simplified frailty index (sFI) (ECOG≥2, history of diabetes mellitus, chronic obstructive pulmonary disease, congestive cardiac failure, and hypertension requiring treatment).

Multivariable logistic regression analysis was conducted to identify factors predicting major complications (Clavien-Dindo grade 3 and above) up to 90-days postoperatively.

Table 1 – 90-day complication rates for RARC and OC

	Group						
	All		Robotic		Open		
	N	%	N	%	N	%	P
Any complication							
None	101	33.4	52	34.7	49	32.2	0.997
Grade I	33	10.9	16	10.7	17	11.2	
Grade II	103	34.1	50	33.3	53	34.9	
Grade III	53	17.5	26	17.3	27	17.8	
Grade IV	4	1.3	2	1.3	2	1.3	
Grade V	8	2.6	4	2.7	4	2.6	
Grades III-V	65	21.5	32	21.3	33	21.7	0.936
Grades 0-II	237	78.5	118	78.7	119	78.3	

Table 2 – Predictors of Grade ≥ 3 complications at 90-days after RC

Variable	Contrast	OR (95% CI)	P
Arm	Robotic vs Open	1.01 (0.72, 1.43)	0.934
UD type	NCUD vs CUD	1.02 (0.48, 2.16)	0.960
Lymphadenectomy	Extended vs Standard	1.05 (0.59, 1.86)	0.875
Neoadjuvant Chemo	Yes vs No	0.99 (0.57, 1.72)	0.963
Adjuvant Chemo	Yes vs No	0.56 (0.21, 1.49)	0.245
Tstage	T3-T4 vs Ta,Tis, T1-T2	1.26 (0.47, 3.40)	0.641
pNstage	N1, N2, N3 vs N0, NX, missing	1.05 (0.42, 2.66)	0.914
Age	>65 vs ≤65	1.46 (0.99, 2.15)	0.055
Sex	Women vs Men	1.84 (1.08, 3.15)	**0.026**
BMI	25-29.9 vs <25	1.21 (0.63, 2.32)	0.566
	>=30 vs <25	1.77 (0.62, 5.10)	0.288
Simplified Frailty index sFI) [a]	1 vs 0	1.18 (0.67, 2.09)	0.565
	2 vs 0	1.52 (0.77, 2.99)	0.223
	3-4 vs 0	5.90 (2.65, 13.14)	**<.0001**

OR (95% CI): odds ratio and 95% confidence interval. P: p-value.

Results: There was no significant difference in overall and major complication rates between RARC and OC (Table 1). Gastrointestinal (predominantly ileus) and urinary tract infections were the most common complications in both groups.

Female sex (OR 1.84, 1.08-3.16, p=0.026) and **sFI ≥ 3** (OR 5.90, 2.65-13.14, p<0.0001) were significant predictors of major complications at 90-days. Surgical approach (RARC or OC), diversion type, chemotherapy, lymphadenectomy extent, age, T or N stage, and BMI were not predictive (Table 2).

Conclusions: Postoperative complication rates do not differ between RARC and OC in this analysis from the RAZOR trial. Women and frail patients had a significantly higher rate of major complications. Surgical approach, chemotherapy and extent of lymphadenectomy were not significant predictors. This data suggests that inherent patient factors like frailty contribute significantly to recovery from a major procedure like RC.

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