



# Improved Survival after Cyto-reductive Nephrectomy for Metastatic RCC in the Contemporary Immunotherapy Era: A National Population-Based Analysis



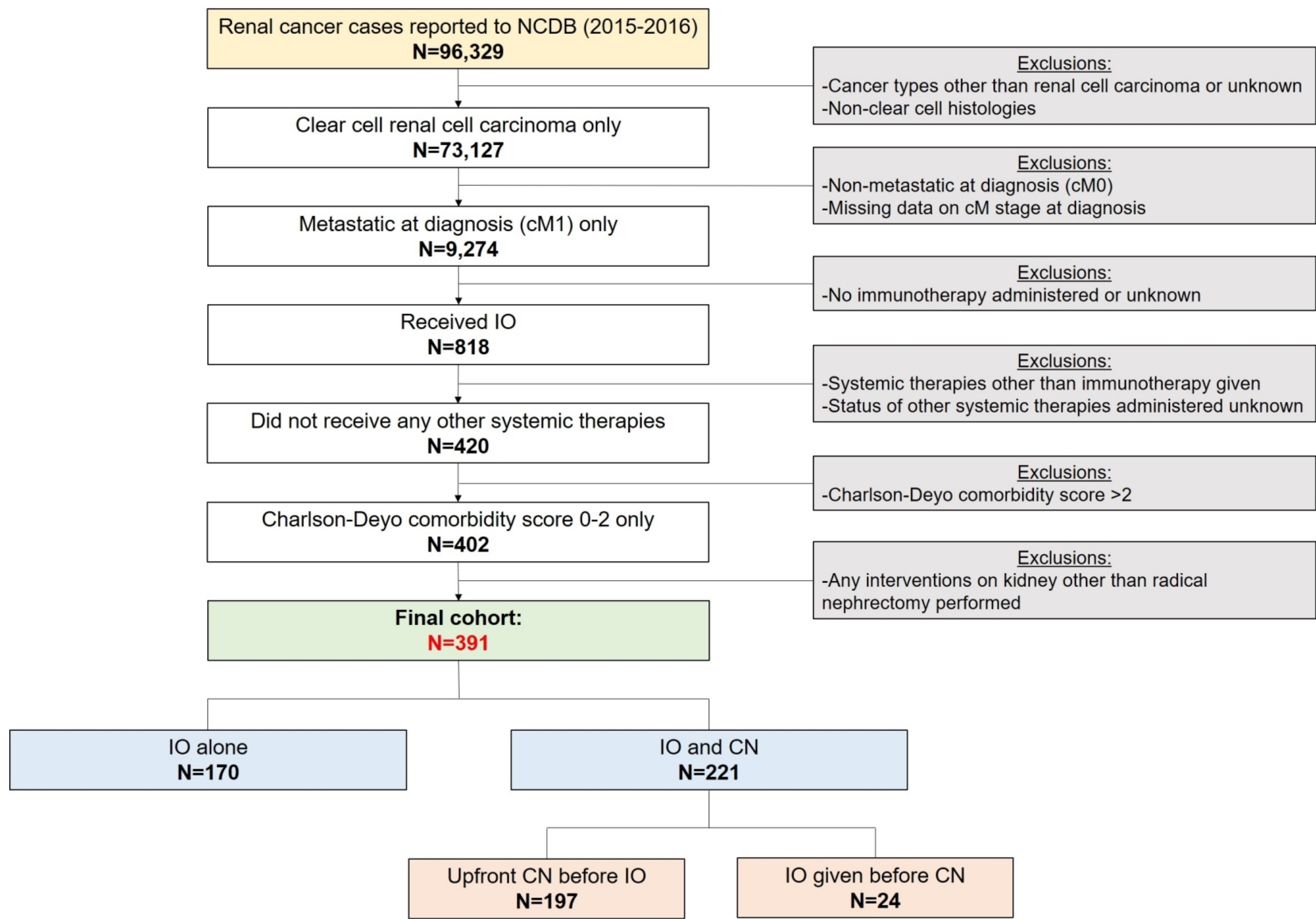
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## INTRODUCTION

- ❖ Immune checkpoint inhibitors (ICI) were approved for metastatic renal cell carcinoma (mRCC) in 2015
- ❖ Current clinical use of cyto-reductive nephrectomy (CN) is guided by extrapolation from studies using other classes of systemic therapy in mRCC
- ❖ **Objective:** To evaluate survival outcomes, timing, and safety of combining CN with modern immunotherapy (IO) approaches for mRCC

## METHODS

- ❖ **Inclusion (NCDB):** Surgical candidates ( $CCI \leq 2$ ) Dx with clear cell mRCC between 2015-2016 who were Tx with IO $\pm$ CN and no other systemic therapies:



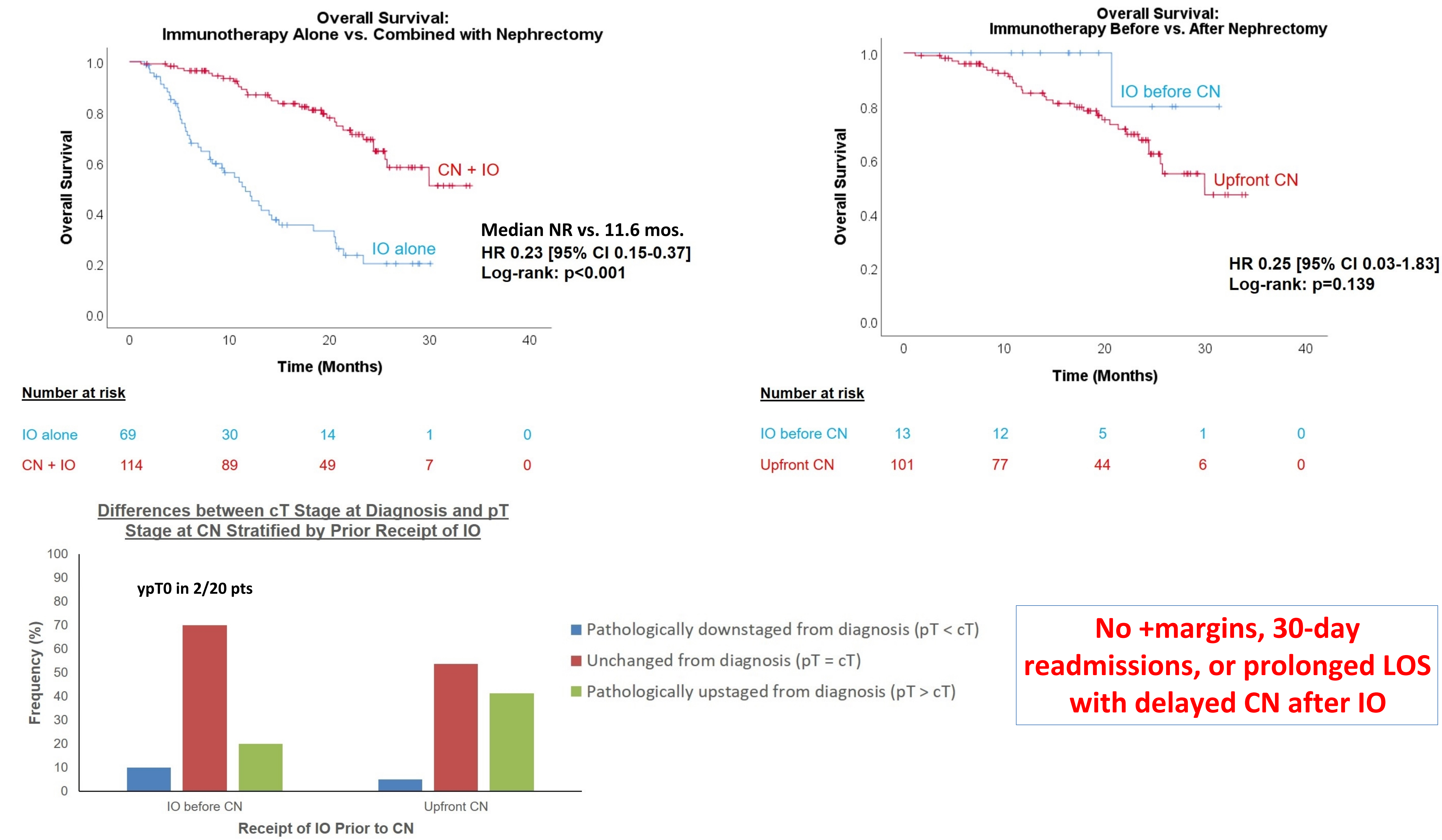
- ❖ **Primary outcome:** OS stratified by performance of CN (CN+IO vs. IO alone)
- ❖ **Secondary outcomes:** whether timing of IO (vs. CN) impacts OS, pathologic findings, and periop outcomes

## RESULTS

- ❖ Baseline clinicopathologic characteristics of entire IO cohort, stratified by receipt of CN:

	IO only	CN + IO	p-value
Number of patients	170	221	-
Median age (IQR), yrs.	64 (57-72)	57 (51-64)	<0.001
Male sex (%)	70.6	75.6	0.299
Charlson-Deyo comorbidity score (%)			0.302
-0	74.1	80.5	
-1	20.6	14.9	
-2	5.3	4.5	
Presence of sarcomatoid features (%)	6.5	5.0	0.659
Median primary tumor size (IQR), cm	8.0 (5.8-11.0)	9.7 (7.4-12.0)	<0.001
cN stage (%)			0.015
-cN0	52.9	67.0	
-cN1	31.7	24.4	
-cNx	12.9	8.6	
Presence of bone, liver, or brain metastases (%)			0.008
-Yes	52.9	42.1	
-No	36.5	52.5	
-Unknown	10.6	5.4	
Median time to receipt of IO from diagnosis (IQR), days	51 (32-82)	91 (59-119)	<0.001

- ❖ **OS outcomes (available for 2015 diagnoses only):** median f/u **14.7 months**:



- ❖ **Multivariable Cox regression for predictors of worse OS (2015 diagnoses only):**

	UVA		"Contingent" MVA		"A priori" MVA
	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)
CN performed	0.23 (0.15-0.37)	<0.001	0.24 (0.14-0.41)	<0.001	0.22 (0.11-0.42)
Age	1.02 (1.00-1.04)	0.097			1.00 (0.97-1.04)
Male sex	0.99 (0.60-1.62)	0.955			
Race					
-White	Ref.	Ref.			
-Black	1.05 (0.38-2.90)	0.925			
-Hispanic	1.15 (0.53-2.51)	0.731			
-Asian/Other	0.69 (0.17-2.82)	0.605			
Charlson-Deyo comorbidity score					
-0	Ref.	Ref.			
-1	1.62 (0.94-2.79)	0.082			
-2	0.54 (0.13-2.22)	0.393			
Sarcomatoid features	0.71 (0.18-2.91)	0.637			
Primary tumor size	1.00 (0.99-1.00)	0.199			
Locally advanced cT stage (cT3-4)	0.92 (0.54-1.57)	0.760			0.86 (0.43-1.71)
cN1 stage	1.23 (0.73-2.06)	0.432			1.17 (0.60-2.28)
Presence of bone, liver, or brain metastases	2.01 (1.14-3.52)	0.015	1.62 (0.91-2.87)	0.098	1.20 (0.60-2.38)
Number of known metastatic sites					
-1	1.16 (0.35-3.84)	0.813			
-2	2.54 (0.76-8.47)	0.129			
-3	1.70 (0.38-7.60)	0.489			
-4	7.94 (0.81-77.88)	0.075			
-No bone, brain, liver, or lung involvement	Ref.	Ref.			

## CONCLUSIONS

- ❖ In a large, national, population-based database of mRCC, patients who received CN with modern IO had better OS than those treated with IO alone – interpreted in the context of limitations inherent to the NCDB
- ❖ Performing CN after prior IO appears safe with pathologically favorable tumor characteristics
- ❖ Our results support the role for CN in the modern IO era and call for prospective validation