



PERFORMANCE OF NEPHROLOGISTS IN PERCUTANEOUS RENAL BIOPSY

Bratti G., Flores N., Jakimczuk L., Almeida M.K., Sarabia C.Y., Luxardo R., Varela C.F., Greloni G., Rosa Diez G

Objective: The ideal biopsy technique is one that is completely safe without complications and also obtains adequate tissue. We proposed assesses differences in glomerular yield and procedure-related complications between radiology-performed (RY) and nephrology-performed (NY) percutaneous kidney biopsies at our institution during a 12-month period.

Materials and methods: From January to December 2016 data were collected prospectively for 378 percutaneous biopsies of native and transplanted kidneys using real-time ultrasound guidance and 16-gauge biopsy needles. Kidney samples were divided into two groups according to the procedure was radiology-performed (RY) or nephrology-performed (NY). Both specialties use the same technique and 16-gauge automated needle. We analyzed age, sex, estimated glomerular filtration rate (eGFR), yield glomerular, procedure-related complications: rate of major (defined by the need for a blood transfusion, surgery, or radiologic intervention) and minors complications (gross haematuria, arteriovenous fistula, perinephric hematoma sintomatic and asymptomatic). Renal biopsy was considered adequate if it had ≥ 5 glomeruli.

After the procedure, all patient remained at rest for at least 6-8 hs in supine position. Blood pressure was monitored frequently, and urine was checked to evaluate the presence of gross haematuria. All of them were hospitalized for at least 24 hours and hematocrit and ultrasound were performed.

Data were expressed as mean (standard deviation), median (interquartile range) or proportions, as appropriate. The Kolmogorov–Smirnov test was used to verify the normality of the study variables. Unpaired ‘T’ test was used for those normally distributed variables whereas the Fisher exact test was used for comparison of count variables. A chi square (X^2) statistic was used for categorical variables. The analysis was conducted with R 3.2.2, 2015 (R Development Core Team, Auckland).

TABLE I - PATIENT CHARACTERISTICS

Characteristic	Total Group (N=378)	Performed Kidney Biopsies		p Value
		Radiology-group (N=155)	Nephrology-group (N=224)	
Age (y)				
Mean	46 ± 15,8	47,5 ± 16,7	45,8 ± 15,6	0,6
Gender (no.)				
Men	187	75 (48,4%)	112 (50,2%)	0,7
Women	191	80 (51,6%)	111 (48,9%)	0,7
Biopsies				
Trasplanted	216	83 (38,4%)	133 (61,57%)	0,2
Native	162	72 (44,4%)	90 (55,5%)	0,2
eGFR*	41,28 ± 34,7	40,3 ± 32,4	42 ± 36,3	0,62

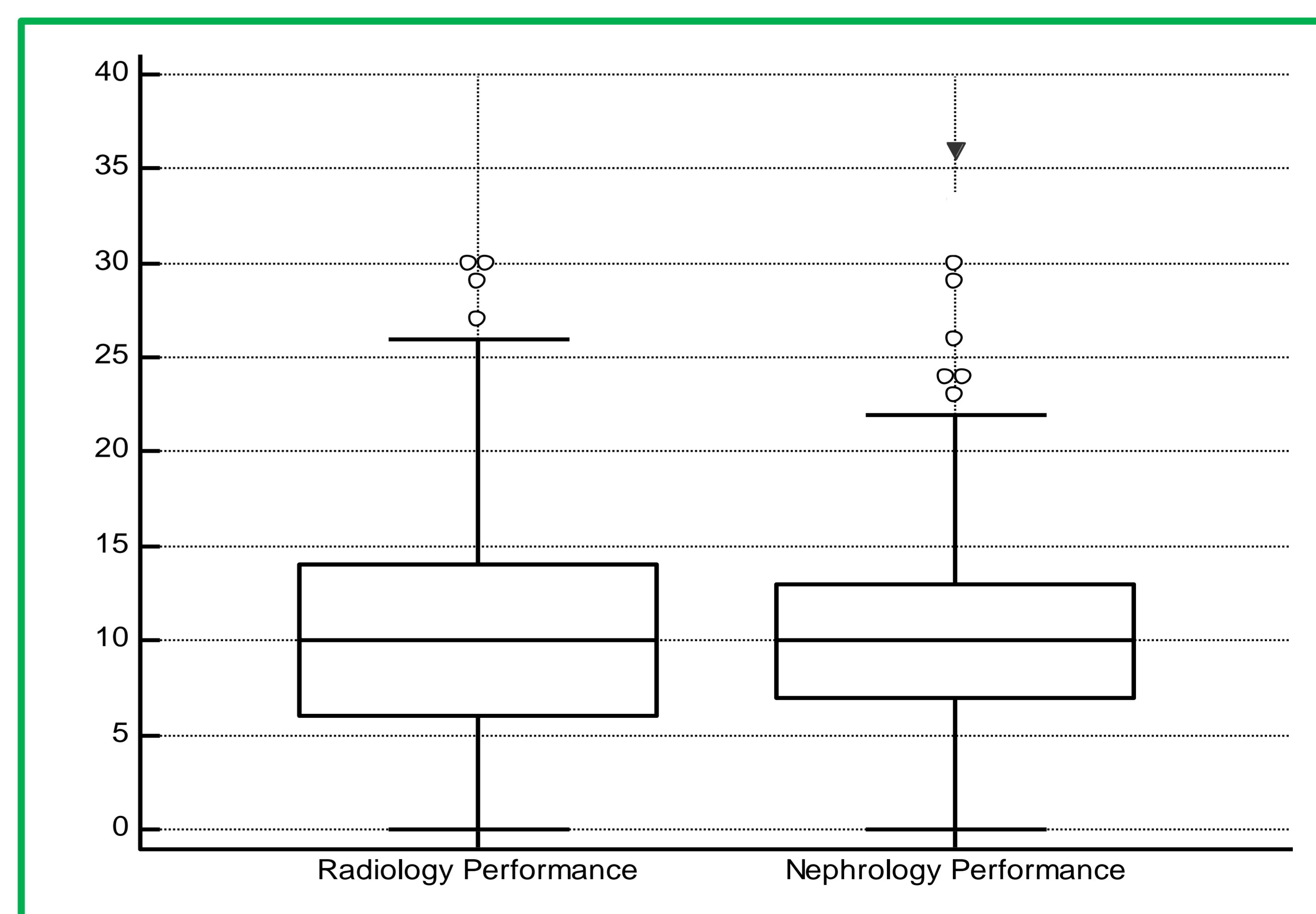
*eGFR= estimated glomerular filtration rate

Results:

Adequate tissue sample size was obtained in 88% of biopsies (NY 87.4 - RY 88.8 p=ns) .The mean glomerular count for RY biopsies was 10.8 +/- 6.4 and for NY 10.6 +/- 5.7 (p=ns).

Mean complication were similar in both groups. The rate of minor complications was 0.19 for RY and 0.15 NY (p: 0.5) only two of them gross haematuria.

There was only one major complication (pseudoaneurims) required angiography and embolization in the RY.



Conclusion: These results show no statistically significant differences in glomerular yield or overall complication in both groups. Nephrologists perform kidney percutaneous biopsies with the same safety and complications rate as radiologists.

