

CLINICOPATHOLOGICAL AGGRESSIVENESS OF RENAL CELL CARCINOMA IN YOUNG PATIENTS: OVER TEN YEARS OF EXPERIENCE AT SKMCH, PAKISTAN

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OBJECTIVE

- RCC is traditionally a disease of older adults, but its incidence and aggressiveness are rising in young adults.
- Data are limited globally and particularly scarce in Pakistan.
- We evaluated clinicopathological features, recurrence and survival of RCC in patients aged 18–40 years.

METHODS

Retrospective review of patients aged 18–40 years with histologically confirmed RCC after nephrectomy at SKMCH, 2009–2020.

Clinical, radiological, pathological data and recurrence were reviewed.

Aggressive RCC (aRCC): pathological T3+, high grade (G3/G4), node-positive, metastatic, aggressive variant, or recurrence within 1 year.

Non-aggressive RCC (naRCC): all other tumours.

Survival: recurrence-free survival (RFS) and overall survival (OS) by Kaplan-Meier curves.

Univariate and multivariate analyses to identify predictors of survival.

RESULTS

Overall: 132 patients (of 1,150 nephrectomies); 63 (47.7%) aRCC and 69 (52.3%) naRCC.

aRCC features: larger tumours (median 8.0 cm, IQR 6–10; $p<0.001$) and more often symptomatic ($p=0.001$).

Histology: clear cell most frequent (70.5%); papillary and Xp11.2 translocation RCC classified as aggressive.

Recurrence: 16 patients (12.1%), mainly aRCC (12/16, 75%; $p=0.020$); distant recurrence in 83.3%.

RFS: significantly shorter in aRCC (median 116 months; $p=0.020$).

OS: trend toward shorter OS in aRCC (139 vs 183 months; 44-month difference; $p=0.06$).

Multivariate: positive margin status independently predicted RFS; older age marginally associated with reduced OS ($p=0.07$).

Key finding: aggressive RCC in young patients means larger tumours, earlier recurrence and shorter survival.

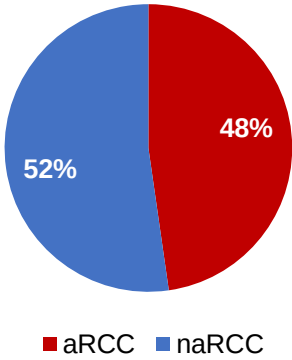
RESULTS SUMMARY

Parameter	aRCC	naRCC	p
Patients	63 (47.7%)	69 (52.3%)	–
Recurrence (n=16)	12 (75%)	4 (25%)*	0.020
Median OS	139 mo	183 mo	0.06

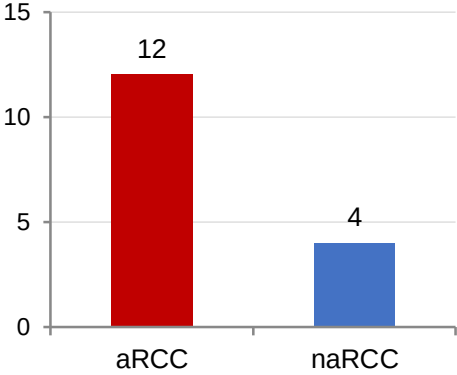
*Derived: 16 total recurrences minus 12 in aRCC.

RESULTS

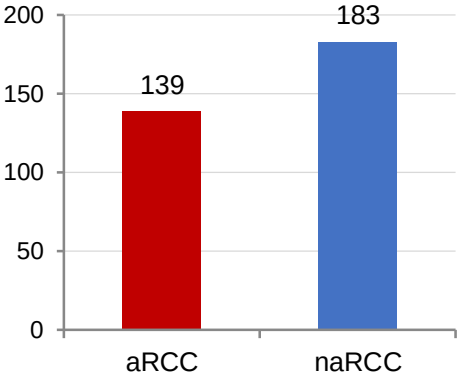
Tumour Aggressiveness (n=132)



Recurrences by Group (n=16)



Median Overall Survival (months)



CONCLUSION

Aggressive RCC in young patients is associated with larger tumours, earlier recurrence and shorter survival.

Surgical margins are the key predictor of recurrence.

Complete resection and close follow-up are essential, particularly in resource-limited LMICs like Pakistan.