RAS Inhibitors Improve Long Time Renal Survival in Malignant Hypertensive Nephrosclerosis

北京协和医院 PEKING UNION MEDICAL COLLEGE HOSPITAL

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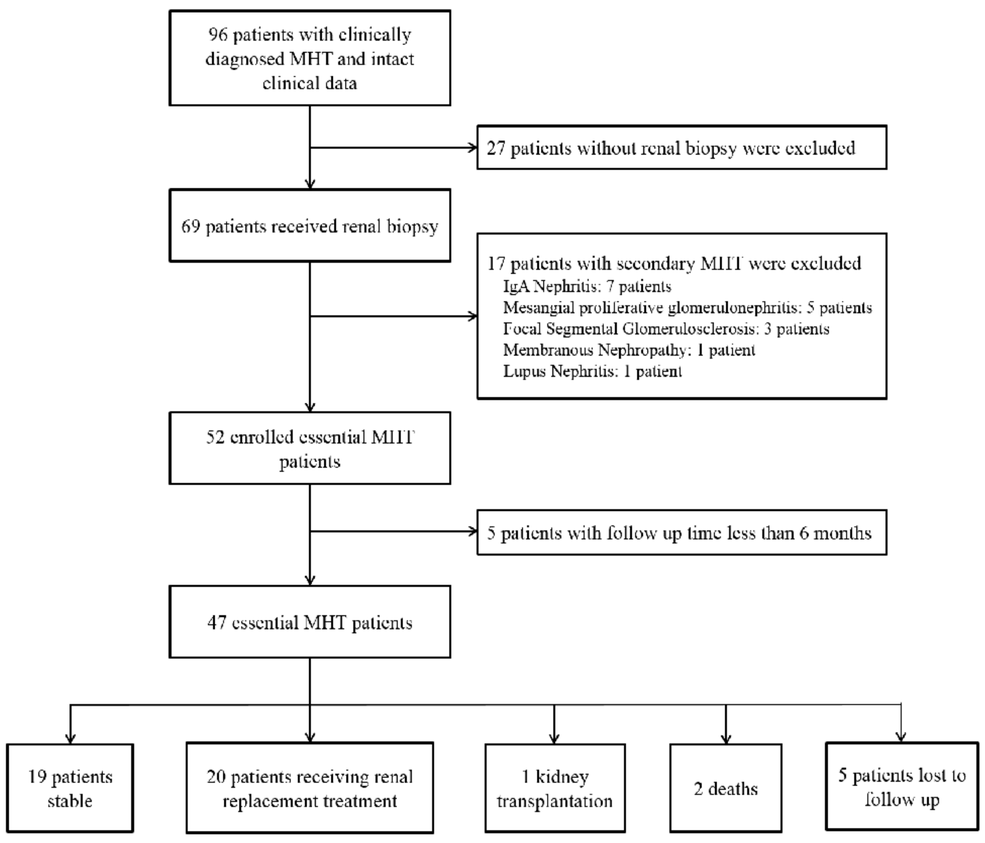
OBJECTIVES

This study aimed to investigate the correlations between kidney pathologic lesions and clinical data, Renin- Angiotensin System (RAS) activation, response to RAS inhibitors and long term prognosis of 52 malignant hypertensive nephrosclerosis (MHN) patients.

METHODS

A total of 96 hospitalized patients with hypertensive emergencies diagnosed at Peking Union Medical College Hospital between January 1st, 2003 and March 31st, 2012 were reviewed retrospectively. 52 patients were finally diagnosed with essential malignant nephrosclerosis based on the classic pathological lesions. The clinical records and follow-up data of the enrolled patients were carefully reviewed to retrieve the data. Pathologic lesions were evaluated by two pathologists independently. Renin was detected by IHC staining in renal biopsy sections of 35 patients.



RESULTS

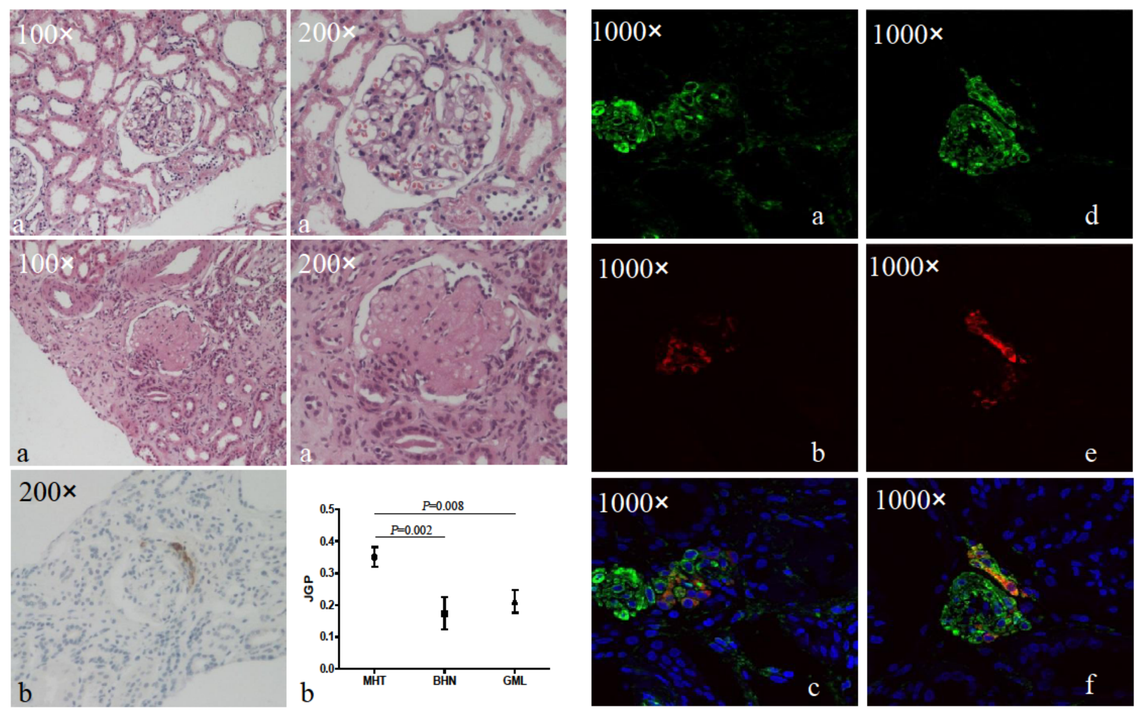
1. Clinical data of the 52 enrolled patients.

Parameters	n=52
Age (years)	34.0 ± 8.2
Gender (M/F)	48/4
Known Hypertension	27 (51.9%)
Smokers (%)	30 (57.7%)
SBP (mmHg)	230.4 ± 25.0
DBP (mmHg)	156.4 ± 20.6
Scr (mg/dL)	5.30 ± 4.25
eGFR (ml/min/1.73m²)	23.9 ± 18.3
Proteinuria (g/d)[1]	1.87 ± 1.50

2. Systemic and kidney RAS activation

More than 80% tested patients (n=17) showed aberrant elevation of either PRA, AT-II or aldosterone.

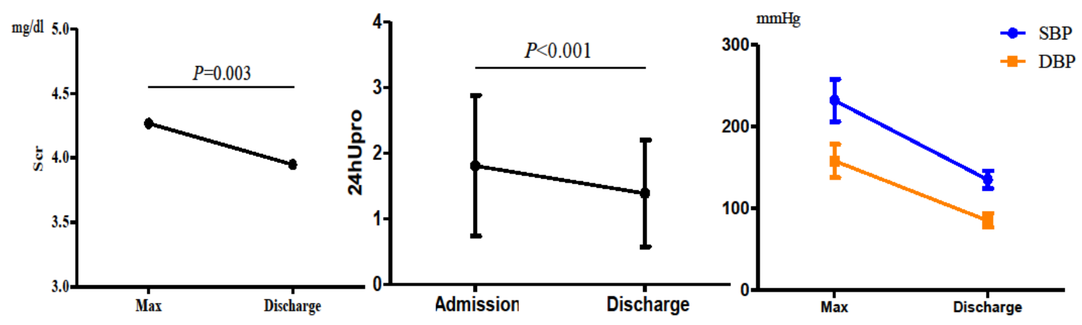
The enlargement of JGA renin activation in MHT patients



Renin producing cell recruitment in both small arterial wall and JGA area

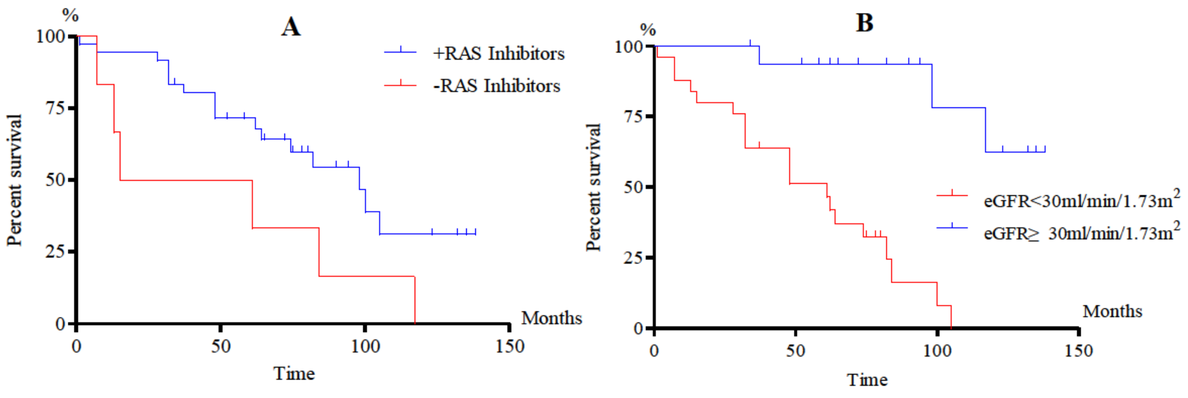
3. RAS inhibitors treatment improve prognosis

88.5% patients received RAS inhibitors therapy, which were associated with better BP control (78.3% vs 66.7%, *P*<0.001).



Follow-up 60.1±36.2 m (25th to 75th percentile: 32-82months). 1-year and 5-year cumulative renal survival rates were 89.0% and 60.0%, respectively.

RAS inhibitors, good BP control and eGFR upon discharge over 30ml/min per 1.73m² were associated with longer renal survival by Kaplan-Meier analysis.



88.7±8.0 vs 49.5±18.4months, χ2=5.396, P=0.020

(122.2±8.1 vs 56.8±6.6months, χ2=19.073, P<0.001).

Cox proportional hazard model identified CKD stages upon discharge as an independent risk factor for renal outcome (*RR*=3.37, 95%CI (1.55, 7.33), *P*=0.002).

CONCLUSIONS

Among Essential MHN patients:

1. RAS activation were prevalent and renin-secreting cell recruitment might contributed.

2. RAS inhibitors benefited patients in both BP control and eGFR improvements.

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