

# Histopathological classification and renal outcome in 186 Chinese patients with antineutrophil cytoplasmic antibodies associated glomerulonephritis

Yong-Xi Chen, Jing Xu, Xiao-Xia Pan, Wen Zhang, Jing Xu, Xiao-Xia Pan, and Nan Chen

Department of Nephrology, Shanghai Ruijin Hospital  
Affiliated to Shanghai Jiaotong University, School of Medicine, Shanghai, P.R. China, 200025

## Background

Antineutrophil cytoplasmic antibodies (ANCA) associated glomerulonephritis (AGN) is one of the most common manifestation of ANCA associated vasculitis (AAV) and renal histology is a key predictor of renal outcome. A new histopathologic classification of AGN was proposed and validated but the results are still debated. We carried out a retrospective analysis to validate the histopathologic classification.

## Methods

We performed a retrospective, observational cohort study to analyze newly diagnosed AAV patients with renal involvement who underwent renal biopsy at department of Ruijin hospital, Shanghai Jiaotong University School of medicine between 1997 and 2014.

## Results

We enrolled 186 ANCA associated glomerulonephritis patients, including 154 MPA, 10 GPA, 4 EGPA and 18 RLV patients. Mean age at presentation was 56.9 yrs. In our study, 46 biopsy specimens (24.7%) were classified as focal; 36 (19.4%) as crescentic; 36 (19.4%) as sclerotic and 68 (36.6%) as mixed pattern of glomerular injury. No significant differences were found among different groups with regards to gender and age at disease presentation. Lung and upper respiratory tract involvement was the most common manifestation of the patients at diagnosis (131/186, 70.4%) and its occurrence was significantly different among different groups ( $p < 0.05$ ). No significant differences were seen regarding other extra-renal manifestations among the patients.

Significant difference was found in regards to tubulointerstitial injury among different classification groups ( $p < 0.01$ ). Patients in focal group had the least tubulointerstitial injury while patients in sclerotic group had the most severe injury. Furthermore, patients in focal group presented with the highest percentage of normal glomeruli and lowest percentage of cellular crescents.

During follow-up, 2 (4.3%) patients with focal, 12 (33.3%) with crescent, 16 (44.4%) with sclerotic and 19 (27.9%) with mixed group developed ESRD. The 1- and 2-yr renal survival were both 97.8% for focal group, 72.2% and 68.9% for crescentic group, 69.3% and 52.1% for sclerotic group, 85.3% and 80.5% for mixed group. Patients with focal presented with the best renal outcome in comparison with that in other groups ( $p < 0.01$ ).

In all, 28 patients died during follow up. The cumulative survival of the patients in different groups were mixed, sclerotic, focal and crescentic in descending order.

## Conclusion

Our study demonstrates clinical utility of the histopathologic classification in determining renal outcome in patients with AGN. Patients with minor glomerular injury or active vasculitic damage had better outcome.

