Computerized interstitial fibrosis quantification is the most powerful histological predictor of renal outcome in ANCA-associated vasculitis


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Introduction. Renal involvement in ANCA-associated vasculitis (AAV) is characterized by necrotizing crescentic glomerulonephritis (GN). Although a new glomerular-based histological classification has been proposed, its prognostic value is still debated. The aim of this study was to evaluate the prognostic value of computerized color image analysis of renal biopsies in AAV.

Patients. We included 65 patients with AAV and biopsy-proven renal involvement. All renal biopsies were centrally classified according to the recently defined classification and divided in focal GN (fGN 50% normal glomeruli), crescentic GN (cGN ≥ 50% crescent), mixed GN (mGN) or sclerotic GN (SGN ≥ 50% globally sclerotic). Computerized interstitial fibrosis (IF) was analyzed with a specific software, using a colour segmentation imaging technique. The IF score was expressed as the ratio of fibrotic tissue area/total renal tissue area.

Results. Renal function was defined by a mean serum creatinine of 433 ± 265 μmol/L. ANCA specificity was mostly anti-MPO (65%). Pathological classification showed fGN in 40%, cGN in 30%, mGN in 25%, and SGN in 3% of patients. Mean IF score was 29 ± 11.6%. IF score was statistically associated with a former history of diabetes or hypertension, with anti-MPO, with arteriosclerotic lesions on the renal biopsy. There was no correlation between IF score and glomerular classification. Renal prognosis was defined as the proportion of patients with CKD stage 4/5 at 12 months. This endpoint was reached by 19% of patients. We found that the presence of SGN is associated with a poorer outcome, but we did not observe significant differences between the other categories. On the contrary, the IF was statistically associated with renal prognosis: the IF score was 35 ± 10% among patients with subsequent CKD 4/5, vs. 25 ± 10% (p < 0.01).

Conclusion. Our study failed to correlate the glomerular classification with renal outcome. We show that quantification of IF on the renal biopsy, with a computed method, can predict 1-year kidney function in AAV.

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Long-term outcome in patients with both ANCA and GBM positivity

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Introduction. Anti-GBM disease is now considered a form of vasculitis [1]. The co-existence of anti-GBM and ANCA antibodies is rare. There are few data regarding long-term outcomes of these patients [2]. We assessed the long-term outcome of “double positive” patients in our centre.

Patients. Double positive patients with a minimum of 2 years follow-up at our centre, were identified. Electronic and paper records were reviewed and outcome data collated. A comparison was made with...
Discussion.— This cohort of patients with “double positivity” experienced better overall patient and renal outcomes at one year than previously reported cohorts. They were generally treated as per local protocols for anti-GBM disease with 82% undergoing plasma-exchange. There was significantly reduced renal survival compared with AAV patients.


References


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ANCA-associated vasculitis in Hispanics: An unrecognized severity

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Introduction.— ANCA-associated vasculitis (AAV) is now increasingly recognized in diverse ethnic populations. However, little is known about AAV and its severity among minorities in particular the Hispanic population in the United States. This study aims to describe the clinical severity and disease outcome in a group of Hispanic patients with AAV compared to a cohort of Caucasians living in the same geographical area.