The long-term renal outcome in patients with ANCA-associated vasculitis: predictive value of kidney biopsy

Biriukova L.S.[1,3], Stolyarevich E.S.[1,2,3], Frolova N.F.[1], Artyukhina L.Yu.[1], Frolov A.V.[1], Fedorova N.D.[1], Zaydenov V.A. [1,2], Tomilina N.A.[1,2,3]

1 Moscow city nephrology center, city hospital 52, Moscow, RUSSIAN FEDERATION
2 Federal research center for Transplantology and Artificial Organs n.a V.I. Shumakov.
3 Moscow University of Medicine and Dentistry ,Chair of Nephrology.

OBJECTIVES

ANCA-associated vasculitis (AAV) is potentially life-threating disease with frequent and often severe kidney involvement. The renal outcome in patients with AAV seems to be unrelated to the type of ANCA and partly can be clinically predicted by renal function at presentation. It has been shown that that newly suggested histopathological classification, based on the dividing of the AA-glomerulonephritis (AA-GN) into four classes (focal, crescentic, sclerosing and mixed) could be more helpful in prognosis and guiding of immunosuppressive treatment (Berden A.E., et al, De Lind Van Wijngaarden R.A.F. et al).
The aim of the study was to estimate the long-term renal outcome AA-GN according to the proposed classification.

METHODS

The retrospective analysis was performed in 76 patients with histopathologically proved newly AA-GN (36 men, 40 women, aged 16 to 74, 21 > 60 years). All patients had proteinuria > 1,0 g/d and significant hematuria. The median of Scr was 580 (400;800) μmol/l, 27 (35%) patients required HD. The median of duration of AA-GN was 3,5 (2; 5) months. Renal biopsy was evaluated by light microscopy and immunofluorescence. The pulsed protocol of Cyc and corticosteroids were used for induction therapy, and MMF (rarely Cyc or Aza) was used for maintenance therapy. The follow-up was 41,9±37.4 months. Medians, 25 and 75 percentiles were calculated, statistical significant difference were determined using Mann-Witny method. Five -year's patients and renal survival rate was estimated according to Kaplan-Meyer.

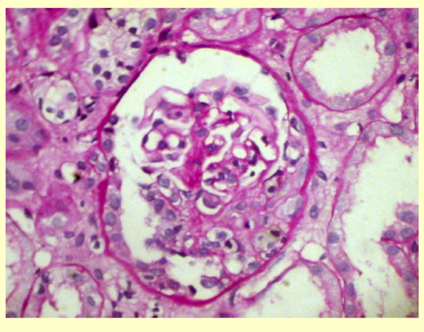


Fig 1. Focal class, PAS x 200

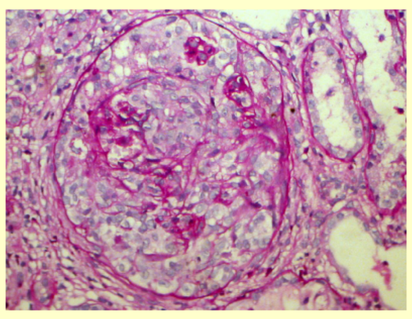


Fig 2. Crescentic class, PAS x 200

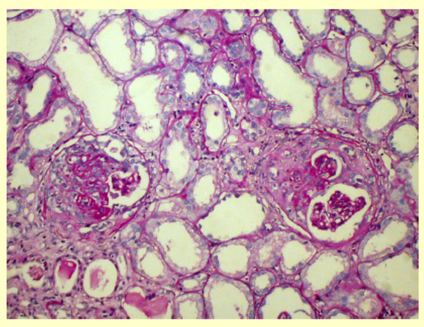


Fig 3. Mixed class, PAS x 100

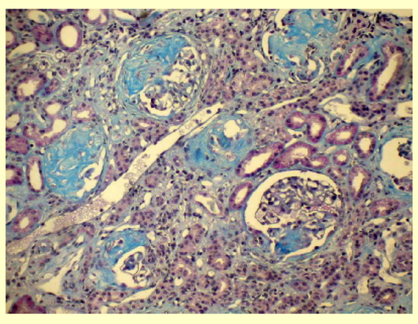
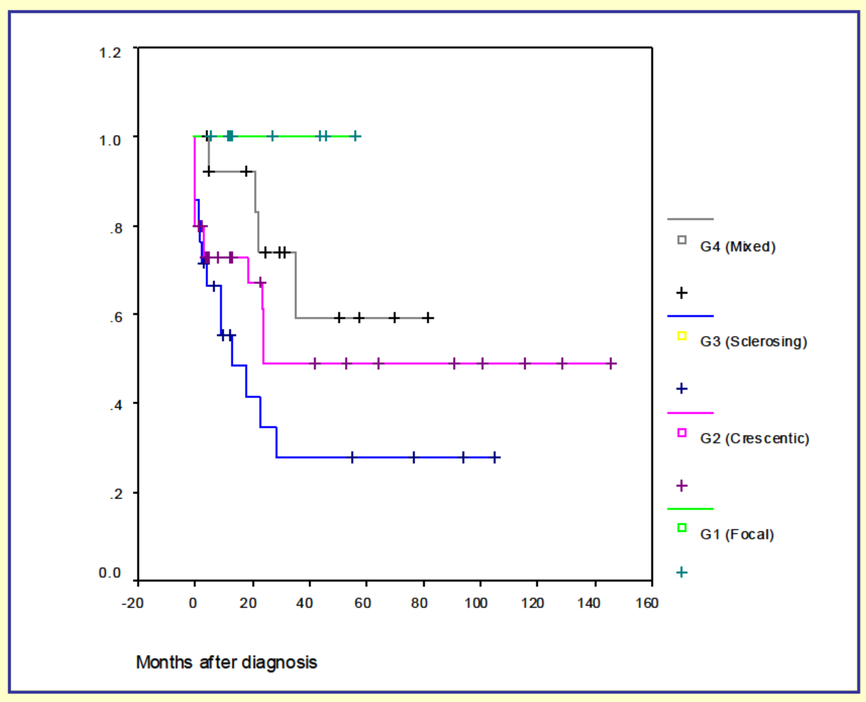


Fig 4. Sclerosing class, Masson x 100

a



b

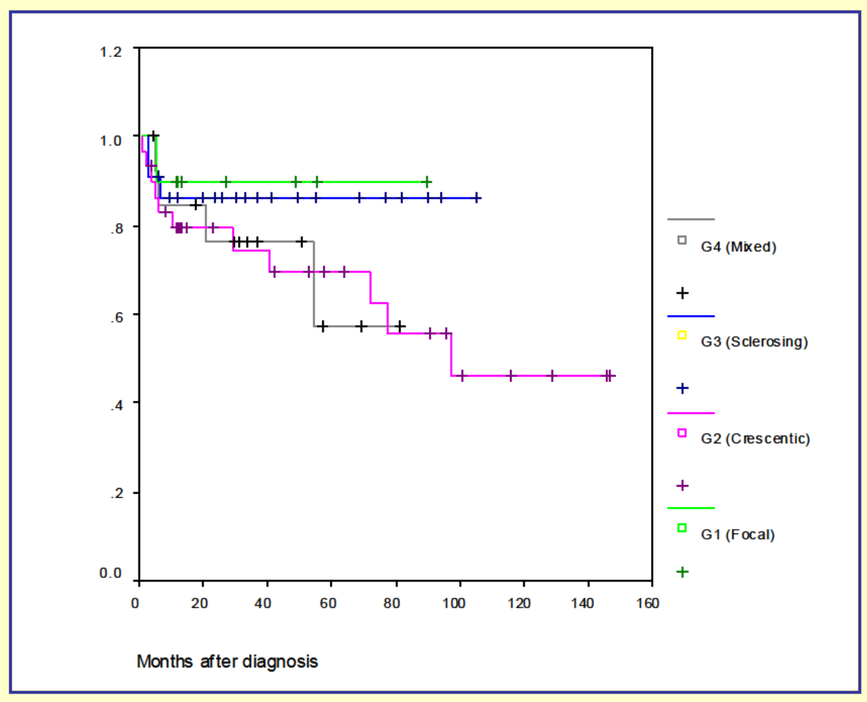


Figure 5. 3-years estimated renal (a) and patients (b) survival in different classes of ANCA-associated glomerulonephritis

RESULTS

According to the patterns of renal injury, the patients were divided into 4 groups:
Group 1 – focal AA-GN(10 pts),
Group 2 – crescentic AA-GN (29 pts),
Group 3 – sclerosing AA-GN (23 pts),
Group 4 – mixed AA-GN (14 pts) (Fig 1-4).

Serum creatinine levels proved to be maximal in G3 ($p<0.018$ vs G1 and G4) but did not differ significantly between other groups (Tabl 1.)
There was no statistical difference between patients survival rate according to the class AA-GN. But the 10-years renal survival rate differed between groups highly significantly, being the worst (26%) in G3 and the best in G1 ($p<0.01$)(Fig 5).

Group	Group 1 N=10	Group 2 N=29	Group 3 N=23	Group 4 N=14
Serum creatinine (μmol/l)	455 (247;635)	590 (400;1060)	770* (547;855)	465.0 (305;552)

Table 1. Initial serum creatinine in different classes of ANCA-associated glomerulonephritis

REFERENCES:

1. A.E.Berden, F.Ferrario, E.Ch Hagen et al. Histopathological Classification of ANCA Associated Glomerulonephritis J Am Soc Nephrol 2010; 21:1628-1636
2. R.A.F.de Lind van Wijngaarden, H.A.Hauer, R.Wolterbeek et al. Clinical and Histologic Determinants of Renal Outcome in ANCA-Associated Vasculitis : a prospective analysis of 100 patients with severe renal involvement J. Am. Sos. Nephrol 2006 17. 2264- 2274

CONCLUSIONS

Our data confirm that newly proposed histopathological classification of AA-GN is more helpful in predicting of renal outcome in compare with renal function in patients with AAV.

DOI: 10.3252/pso.eu.52era.2015