BACKGROUND AND AIMS: After the start of the vaccination campaign against the SARS-CoV-2 pandemic, it is possible that the number of cases of de novo and relapsing glomerulopathies will increase. So far, most of the publications related to post-vaccination minimal change disease (also associated with other vaccines against influenza virus, hepatitis B, pneumococcus, etc.) and IgA nephropathy. However, post-vaccination cases of membranous nephropathy, ANCA vasculitis or anti-glomerular basement membrane glomerulonephritis are anecdotal. Likewise, there are no cases of segmental and focal glomerulonephritis published in the literature.

We present the cases that have appeared in our centre in order to support the theory of a more than probably causal relationship. We highlight two cases of focal glomerulonephritis, making this publication the first to report this pathology post-vaccination.

METHOD: We present a total of 8 cases reported in our centre since the start of the vaccination campaign. We only considered cases that started with symptoms within 1 month after the first or second dose of the SARS Cov-2 vaccine. Histological diagnosis was obtained in four patients with de novo glomerulopathy. In the other four patients with a flare of their baseline disease, renal biopsy was not performed. In these patients, the diagnosis of recurrence was made on the basis of laboratory and clinical data.

RESULTS: Five patients of the total that appeared in our centre developed minimal change disease (4 of them were recurrences and 1 de novo), 2 cases of de novo focal and segmental glomerulonephritis and 1 case of de novo IgA nephropathy.

Nephrotic range proteinuria and macroscopic haematuria were the most frequent symptoms in our patients and completely reversed after immunosuppressive treatment or, in some cases, with supportive care.

All of them received mRNA-based vaccines (six patients with Pfizer and two with Moderna). The mean time to onset of symptoms after vaccination was 13 days. There was no difference in sex and the mean age was 40 years.

CONCLUSION: The development of vaccines has been a key factor in the control of the SARS Cov-2 pandemic. The cases reported so far are minimal, compared with the millions of doses administered, so the benefits exceed the risks. However, according to the literature, we recommend closer follow-up in patients with already existing data on the association between extended TI damage and worse renal outcome. In the kidney biopsies, N = 21 (72%) patients had a high expression of CD138+ plasma cells. No significant difference was observed in PR3 and MPO serotypes in the group of patients with high CD138+ cell expression (43% versus 57%, P = .79). In addition, no significant difference was seen in the changes in kidney function, the incidence of renal relapses (RR), and end-stage renal disease (ESRD) were analyzed.

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Our data indicate a significant proportion of CD138+ PCs in kidney specimens of patients with AA. Despite the lack of association between this cell population and our cohort's renal outcome, these results provide additional insights on the renal B-cell clusters in patients with AAV. In addition, our findings go along with already existing data on the association between extended TI damage and worse renal outcome.

METHOD: We retrospectively assessed the antibody responses to SARS-CoV-2 after the primary doses and the needed repeated therapeutic regimens. The level of proteinuria (g/24h) and the need for repeated therapy were prognostic factors of CKD progression at the end of the follow-up (HR 1.22, P = .04 and HR 2.90, P = .04 respectively). In age-adjusted multivariable analysis only the need for repeated therapy remained statistically significant. The patients who needed repeated treatment had a 4.45-fold risk for CKD progression compared with patients of the same age, who did not need repeated therapy (HR 4.45, P = .02).

CONCLUSION: High grade proteinuria and mainly the need for repeated treatment are poor prognostic factors of CKD progression during the long-term follow up of patients with IgA nephropathy.

METHOD: Forty AAV patients with glomerulonephritis, diagnosed between 2014 and 2018 at the Division of Nephrology of the Medical University of Graz were included and followed for 36 months. Histological assessments using the kidney allograft Banff classification were performed to describe the tubulointerstitial (TI) damages. Immunohistochemistry analysis was performed in 29 patients to assess the renal interstitial CD138+ cell expression. More than ten CD138+ cells per high power field were stated as high expression (excluding CD138 staining of renal tubular epithelial cells). Changes in kidney function, the incidence of renal relapses (RR), and end-stage renal disease (ESRD) were analyzed.

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after completion of the primary vaccination series (two doses of Pfizer or AstraZeneca vaccines) and 15–30 days after the third booster dose (Pfizer, given 3–6 months after the second dose).

RESULTS: We included 20 patients with vasculitis [AAV, n = 16 (80%), IgAN, n = 4 (20%)] and renal involvement. All patients received immunosuppressives, including RTX (80%), MMF/AZA (15%), cyclophosphamide (5%), while half of patients were on glucocorticoids. The seroconversion rate after the primary two doses (Pfizer n = 8/16, Astra-Zeneca n = 1/1) was 53%, which increased to 67% after the third booster dose (Pfizer, n = 12/18). Similarly, the median antibody titers increased from 451 U/mL [interquartile range (IQR) 81–10.845] after the second dose to 1016 U/mL (IQR: 64–37.568) after the booster dose. Regarding patients treated with RTX, the respective response rates after the second and third dose were 58% and 62%. Seropositive patients after the third dose tended to have lower previous cumulative exposure to RTX compared with seronegative ones (4.55 versus 5.5 g, P = .62, respectively). No vaccine side effects or disease relapses were noted after the three vaccine doses.

CONCLUSION: In our patient cohort with systemic vasculitis and renal involvement treated mainly with RTX, a third booster vaccine dose increased the seropositivity rate from 53% to 67%. Nevertheless, one-third of patients did not achieve seroconversion. Whether a fourth booster dose could benefit these patients is still unknown.

A PAST MEDICAL HISTORY OF AUTOIMMUNE DISEASE PREDICTS A FUTURE WITH FEWER RELAPSES IN PATIENTS WITH ANCA VASCULITIS

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BACKGROUND AND AIMS: To explore the frequency and impact of an autoimmune disease past-medical history (PMH) in the clinical picture and outcomes of patients with ANCA-associated vasculitis (AAV).

METHOD: This is a retrospective study of patients with biopsy-proven AAV, >16 years old, with detailed information about their PMH. Outcomes of interest included remission, treatment resistance, relapse, end-stage kidney disease (ESKD), and death.

RESULTS: 215 patients with biopsy-proven AAV and available information regarding their PMH were studied. A total of 65 (30.2%) of them had a history of autoimmune disease prior to IVY diagnosis. The mean age overall was 53.9 years. One hundred and five patients (48.8%) were positive for PR3-ANCA, 101(47.2%) for MPO-ANCA, and 9(4.2%) were negative ANCA. Granulomatosis with polyangiitis was diagnosed in 79 (36.7%), microscopic polyangiitis in 101(47.0%) and renal-limited vasculitis in 35 (16.3%) individuals. Remission rate was similar among patients with and without a PMH of autoimmune disease. Time-to-event analysis indicated that the relapse-free survival was significantly longer in patients with PMH of autoimmune disease (148.2 versus 52.8 months, P-value < .001). After adjusting for covariates, autoimmune disease history was associated with significantly lower risk of relapse [HR 0.31, [95% confidence interval (CI) 0.14–0.69]], which remained significant in males, patients ≥ 60 years old and those with C/PR3-ANCA, kidney and lung involvement.

CONCLUSION: Patients with a PMH of autoimmune disease, prior to AAV diagnosis, experienced significantly fewer relapses after achievement of remission, compared with patients without such a history, underlining the importance of individualization of maintenance immunosuppressive therapy, given the different etiopathogenetic settings the disease was developed.

IS REMISSION OF HEMATURIA ASSOCIATED WITH KIDNEY OUTCOME IN BIOPSY-PROVEN PRIMARY IGA NEPHROPATHY?

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BACKGROUND AND AIMS: Microscopic hematuria, associated with variable proteinuria, is the most common clinical feature of IgA nephropathy (IgAN). However, its role in the disease progression is still controversial. This study aims to assess whether remission of hematuria is associated with kidney outcome in adults with primary IgAN.

METHOD: This retrospective, longitudinal study enrolled 62 adults, out of 214 with biopsy-proven IgAN between 1 January 2008 and 31 December 2017 [age 41 [95% confidence interval (CI) 37–46] years, 73% males, eGFR 41.3 (95% CI 33.1–51) mL/min and proteinuria 1.1 (95% CI 0.9–1.6) g/g] who had at least three assessment visits 3 months apart until 31 May 2018. The median follow-up period was 68 (95% CI 58.6–77.3) months. Demographic (age, gender), comorbidities, clinical and laboratory data (proteinuria, hematuria and blood pressure) at the time of kidney biopsy and during the follow-up period were retrieved from medical records. Information about therapy was also recorded. The study endpoint was kidney death defined as doubling of serum creatinine or renal replacement therapy (RRT) initiation. Kidney survival was evaluated by Kaplan–Meier method and variables related to kidney outcome by multivariate Cox proportional hazard modeling. Remission of hematuria was defined as ≤ 5 red blood cells/high power field in at least two samples taken no less than 3 months apart. Subjects were grouped as remission of hematuria (n = 24) and persistent hematuria (n = 38).

RESULTS: There were no differences between the two groups regarding demographic characteristics, comorbidities, kidney function, proteinuria, hematuria or inflammation markers at time of kidney biopsy. During the follow-up period, remission of proteinuria (defined as a > 50% decrease in urinary protein-to-creatinine ratio from baseline) was found in more than half of the group with remission of hematuria but in less than a quarter of group with persistent hematuria (57.1% versus 24.2%; P = .02). However, systolic blood pressure was well controlled (<130 mmHg) in similar proportions (63.6 versus 57.9%, P = .7) and a comparable reduction in mean arterial blood pressure from the baseline was observed [ΔMAP = 7.8 (95% confidence interval (CI) = -2.1 to -1.45) versus -2.8 (95% CI = -9.7 to 4.9) mmHg; P = .2] in both groups. A high proportion of patients were treated with renin-angiotensin inhibitors (71 versus 61%; P = .5) and almost a third received immunosuppressive therapy (38 versus 34%; P = .8), similarly in the two groups. During the follow-up, a lower proportion of patients with remission of hematuria reached the composite kidney endpoint (16.7 versus 42.1%, P = .03). In the univariate time-dependent analysis, the kidney survival was numerically better in patients with remission of hematuria ([71.4 (95% CI 64.5–78.2) versus 66.02 (95% CI 54.7–77.2) months; log rank P = .06; Fig. 1A].