

antineutrophil cytoplasmic autoantibodies (ANCA) in assessing the prognosis of refractory severe lupus nephritis (LN).

Methods: Eighty-four cases of refractory severe LN were randomly divided into two groups of 42 cases each: CTX group and RTX group (CTX+RTX) during February 2010 to February 2014 in our hospital and First Affiliated Hospital of Zhengzhou University. Changes in serum levels of anti-C1q antibodies and ANCA in the two groups were examined, and efficacies of the drugs were compared.

Results: The total efficacy of RTX group was found to be 83.3 %, which was significantly higher than that of the CTX group, 57.1 % ($p < 0.05$). The serum anti-C1q antibodies and ANCA were decreased to 11.9% and 26.2 % in the RTX-treated group, which was significantly lower than those observed in the CTX-treated patients (21.4% and 69.0 % respectively) ($p < 0.05$). The clinical indices of LN were significantly improved in the two groups after the treatment. However, the urinary protein, albumin, complement C3, the percentage of CD19+ B cells, and SLEDAI scores in the RTX group were significantly lower than those in the CTX group ($p < 0.05$).

Conclusion: RTX plus CTX showed a better therapeutic efficacy compared to single CTX, and it significantly improved the prognosis of refractory and severe LN. Anti-C1q antibody and ANCA level may be valuable biomarkers for the prognosis of LN.

<http://dx.doi.org/10.1016/j.hkjin.2015.08.143>

0257

Low-dose Mycophenolate Mofetil in the Treatment of Lupus Nephritis

Ling An, Wenbo Hu

The Qinghai Provincial People's Hospital, Qinghai, China

Objective: To evaluate the efficacy of low-dose mycophenolate mofetil (MMF) combined with low-dose prednisone in the treatment of lupus nephritis.

Methods: Forty patients (5 males, 35 females) with lupus nephritis (10 in class III, 18 in class IV, 12 in class V+IV) were treated with low-dose MMF (1.0 g/d to 1.5 g/d) combined with prednisone 0.35 mg/(kg·d), course of 12 months, changes were observed before and after treatment in January, March, June, September, December liver and kidney function, blood uric acid, cholesterol, blood sugar, blood coagulation, urine, 24-hour urinary protein, serum antibody levels and other indicators.

Results: Complete remission in 28 patients (70%), partial remission in 8 patients (20%), and no relief in 4 patients (10), the total efficiency of 90%. Low-doses of MMF combined with low-dose prednisone treatment of lupus nephritis had no effect on liver function, creatinine, glucose, uric acid, white blood cells, platelets. Treatment 1–3 months, plasma protein increased, decreased 24-hour urinary protein, blood lipid levels decreased ($P < 0.05$), 6–12 months after treatment significantly increased serum albumin hemoglobin, and 24-hour urinary protein, blood lipid levels, serum antibody levels were significantly decreased ($P < 0.01$). Only 1 case of infection occurred in 40 patients discontinued.

Conclusion: Low-dose MMF in combination with low-dose prednisone is effective in treating lupus nephritis, has better treatment safety, and low incidence of infection.

<http://dx.doi.org/10.1016/j.hkjin.2015.08.144>

0259

Functional MRI Used to Evaluate Renal Hypoxia in Mice with Lupus Nephritis

Xiao Li¹, Yan Liu¹, Xueqin Xu², Simeng Liu¹, Nan Chen¹

¹Department of Nephrology, Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

²Department of Radiology, Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

Objectives: To investigate the utility of diffusion weighted imaging (DWI) and blood oxygen level-dependent (BOLD) MR imaging in the assessment of

renal hypoxia in an experimental model of mice with established lupus nephritis (LN).

Methods: Sixteen-week-old female MRL/lpr mice ($n = 13$) were studied and 14 week old male C57BL/6 mice ($n = 10$) served as controls. The mice underwent coronal echo-planar DWI and BOLD MR imaging of the kidneys. Hypoxypromote was administered intraperitoneally to the mice 1 hour before they were sacrificed. The distribution of HypoxypromoteTM-1, hypoxia-inducible factor 1 α (HIF-1 α) and heme oxygenase-1 (HO-1) in renal tissues were detected by immunohistochemical analyses and Western blot. The apparent diffusion coefficient (ADC) and R2* value of the kidneys was calculated with b values of 0 and 500 s/mm². The relation between the renal hypoxia parameters and the ADCs or R2* values were evaluated.

Results: Glomerular mesangial proliferation and basement membrane thickening, tubular epithelial cells damage, interstitial leukocytes infiltration, especially the large accumulation of inflammatory cells surrounding small vessels were observed in MRL/lpr mice. It was found that HypoxypromoteTM-1, HIF-1 α and HO-1 distributed widely in the renal tissues of MRL/lpr mice, and closely associated with the renal tubulointerstitial lesions. The mean ADC values of kidneys in MRL/lpr mice were $1.52 \pm 0.27 \times 10^{-3} \text{ mm}^2/\text{s}$, the mean R2* values of the renal cortex and medulla were $30.95 \pm 4.59/\text{sec}$ and $23.43 \pm 3.06/\text{sec}$ respectively, which were all significantly lower than that in C57BL/6 mice ($p = 0.037$, $p = 0.03$ and $p = 0.043$, respectively). The mean R2* values were negatively correlated with the degree of tubulointerstitial lesions and the expression of hypoxia parameters.

Conclusion: The results suggested that renal hypoxia is one of the key factors leading to renal tubulointerstitial lesion, and functional MRI may used to monitor renal hypoxia in LN.

*Funding was provided by the National Natural Science Foundation of China (81170671).

<http://dx.doi.org/10.1016/j.hkjin.2015.08.145>

0260

Monocyte Chemotactic Protein-1, Fractalkine and Receptor for Advanced Glycation End Products in Different Pathological Types of Lupus Nephritis and Their Value in Predicting Treatment Prognosis

L. Lan, F. Han, J. H. Chen

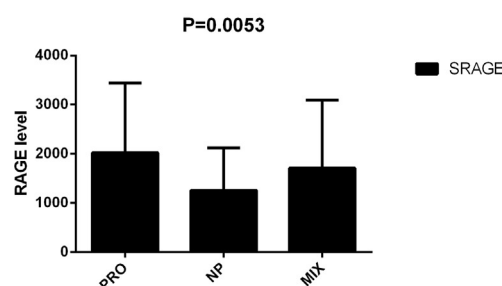
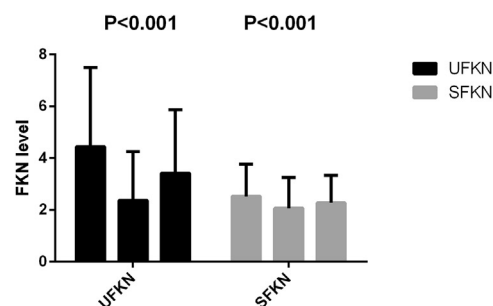
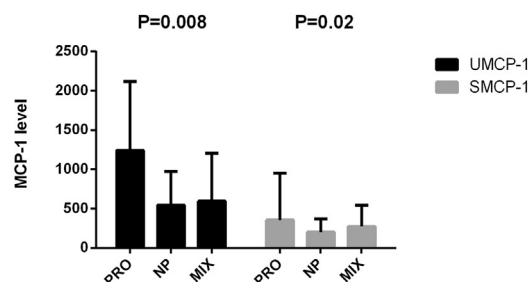
Kidney Disease Center, The First Affiliated Hospital, College of Medicine, Zhejiang University, Hangzhou, China

Objective: Early diagnosis is important for the outcome of lupus nephritis (LN). But the pathological type of LN is closely related to the clinical manifestations, and hence the treatment of LN depends on different pathological types. To assess the level of monocyte chemotactic protein (MCP-1), fractalkine (Fkn), and receptor for advanced glycation end product (RAGE) in different pathological types of lupus nephritis and to explore the value of these biomarkers in predicting the prognosis of lupus nephritis.

Methods: In the patients included in this study, through renal biopsy, class III and class IV were defined as proliferative group, class V as nonproliferative group, class V+III and class V+IV as mixed group. During the follow-up, 40 of the 178 enrolled patients were found to have poor response to standard immunosuppressant therapy. The level of markers in the different response groups was tested.

Results: The levels of urine and serum MCP-1, urine and serum Fkn, and serum RAGE were higher in the proliferative group, and lower in the nonproliferative group, and the difference was significant. The levels of urine and serum MCP-1 and serum RAGE were lower in the poor response group; the difference was also significant. The relationship between urine MCP-1, urine and serum Fkn with the Systemic Lupus Erythematosus Disease Activity Index was proved.

Conclusion: The concentration of cytokines MCP-1, Fkn, and RAGE may be correlated with the nuclear factor-kappaB pathway. The urine and serum MCP-1 and serum RAGE may help in predicting the prognosis before standard immunosuppressant therapy.



<http://dx.doi.org/10.1016/j.hkijn.2015.08.146>

0265

Successful Treatment for Lupus Podocytopathy with Prolonged Course of Corticosteroid

Elaine T. L. Ho¹, Tony K. F. Chau², Joseph S. Yeung¹

¹Department of Medicine, Tseung Kwan O Hospital, Hong Kong

²Department of Pathology, Tseung Kwan O Hospital, Hong Kong

Background: Lupus podocytopathy was recently recognized as a distinct entity of lupus nephritis apart from those described in ISN/RPS 2003 classification.

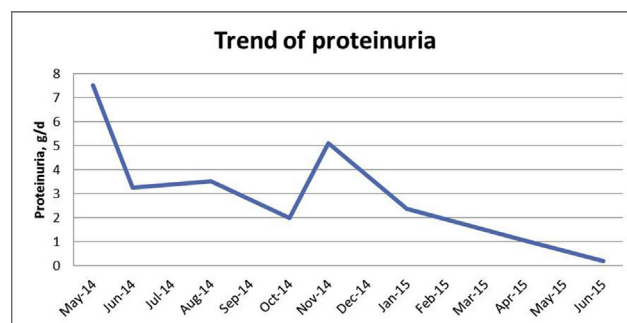
Case Summary: We report a 16-year-old girl who presented with bilateral lower limb edema and peri-orbital puffiness for 2 weeks. She had no skin rash, joint pain nor hematuria. She did not take any over-the-counter medications. Her younger sister had biopsy proven lupus nephritis 3 years prior and was treated with steroid. Laboratory investigations showed proteinuria 7.52 g/d, serum albumin 15.3 g/L, creatinine 51 μ mol/L, total cholesterol 14.36 mmol/L, ANA titre 1:160, presence of anti-ENA antibody and anti-Ro antibody, anti-dsDNA >300 IU/ml and C3 0.25 g/L. Renal biopsy showed diffuse global mesangial hypercellularity with increased mesangial matrix. There was no endocapillary proliferation and the glomerular basement membrane was normal. Direct immunofluorescence study showed diffuse

global mesangial staining for IgG, IgA, IgM, C3 and C1q. Electron microscopy revealed near-complete effacement of podocytic foot processes with microvillous hyperplasia. There were diffuse medium to large mesangial and paramesangial immune complex deposits, while only focal scattered small immune complex deposits were noted in the subendothelial and subepithelial compartment. The diagnosis was class II lupus nephritis with podocytopathy. She was treated with high dose prednisolone (1 mg/kg/d) for 4 weeks and then tapered down slowly. Azathioprine was added in the 5th month as steroid-sparing agent. She had gradual serological improvement and the proteinuria nearly subsided with normal serum albumin at 14 months.

Conclusion: This case illustrates that lupus podocytopathy can be managed by prolonged course of corticosteroid. However, further study is required to investigate the optimal treatment strategy and duration for the condition.

A

B



<http://dx.doi.org/10.1016/j.hkijn.2015.08.147>

C

0308

Persistence of Low Serum C3 Level is Associated with Higher Relapse Rate and Influences Prognosis in Lupus Nephritis

S. Y. Wang, Y. Zhang, Y. Xu, J. H. Chen

Kidney Disease Center, The First Affiliated Hospital, College of Medicine, Zhejiang University, Hangzhou, China

Objective: To investigate the influence of persistent hypocomplementemia on lupus nephritis (LN) activity and prognosis.

Methods: This retrospective study included 39 patients with renal biopsy-proven active LN [2 of class II, 5 of class III, 17 of class IV, 7 of class V, 2 of class V+III, and 4 of class V+IV; 2 male, 37 female; median age 36.46 \pm 11.72 (range 16–68) years, average follow-up 60.18 \pm 33.48 (range 24–142) months], and persistent low serum C3 lasting for more than 2 years. At the initial stage, 17 of 39 (43.59%) had nephrotic proteinuria (>3.5 g/day), and 2 of 39 (5.13%) had acute kidney injury. In addition, serum C4 level was 7.75 \pm 5.92 (range 4–29) mg/L, ANA titer was 194.36 \pm 130.50, and eGFR was 91.64 \pm 29.09 (range 24.3–137) ml/min/1.73 m². 18 cases (46.15%) had positive anti-dsDNA. Student's paired t-test analysis was used for statistical evaluation.

Results: The serum C3 levels were below normal (35.78 \pm 14.06; range 17.5–63.8 mg/L) at baseline and continued to last (51.02 \pm 12.99; range 15.0–70.8 mg/L), though the last C3 levels were higher than the baseline ($P = 0.001$). In the 6th month, 26 cases (66.67%) had achieved complete remission, 9 cases (23.08%) had partial remission, and 4 cases had no response. During the 9–113th month, 19 cases (48.72%) had nephritis relapse, and 9 cases (23.08%) had decreased eGFR dropping from 86.11 \pm 27.75 (range 49.3–116.5) ml/min/1.73 m² to 35.92 \pm 24.1 (range 8.47–74.9) ml/min/1.73 m² ($P = 0.001$).

Conclusion: Persistence of low serum C3 level is associated with higher relapse rate and influences prognosis in lupus.

<http://dx.doi.org/10.1016/j.hkijn.2015.08.148>