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LENALIDOMIDE PLUS DEXAMETHASONE FOR PROLIFERATIVE GLOMERULONEPHRITIS WITH MONOCLONAL IG DEPOSITS

Houan Zhou[1], Manna Li[1], Xia Wang[1], Caihong Zeng[1], Xianghua Huang[1], Zhaohong Chen[1], Zhen Cheng[1]

[1]*National Clinical Research Center of Kidney Diseases, Jinling Hospital Research Institute of Nephrology, Nanjing University, School of Medicine, department of kidney, Nanjing, P.R. China*

Background and Aims: To evaluate the efficacy and safety of lenalidomide plus dexamethasone (LD) in patients with proliferative glomerulonephritis with monoclonal Ig deposits (PGNMID).

Method: Retrospectively analyzed the clinicopathological data of 6 PGNMID patients who treated with LD protocol from January 2010 to October 2019.

Results: All of the patients received LD treatment for ≥3 months after renal biopsy. 3 patients achieved renal remission. The renal remission rate was 50%. Light microscopy showed membranoproliferative glomerulonephritis and immunofluorescence showed single kappa type IgG3 was deposited in the mesangial region and the vascular loop. Before taking LD scheme, the median urinary protein were 7.76 (1.27,14.57) g/24h, the median serum creatinine 1.34 (0.8,3.27) mg/dL, the median albumin 34.5 (22.4,37.5) g/L. In 5 patients the concentration of serum free kappa and lambda light chain increased, but no patients with abnormal serum free light chain ratio. Complement C3 deteriorated in 2 patients, 2 cases of patients with monoclonal plasma cells, 0.7% and 0.5%, respectively. Immunofixation electrophoresis suggested that 1 patient had positive serum M protein for kappa type IgG3. At the last follow-up, median urine protein was 3.33 (0.33,11.23) g/24h, median serum creatinine was 1.23 (0.91,1.82) mg/dL, and median albumin was 35.9 (24.5,45.6) g/L. The concentration of 4 patients with elevated serum free light chain was lower than that before taking the drug. Two patients with decreased complement C3 increased to normal concentration at the last follow-up. However, the other two patients had a slight decrease in complement C3. The M spike did not turn negative during the follow-up in one patients. Adverse events included anemia, neutropenia, limb numbness, upper respiratory tract infection.

Conclusion: This study reported that lenalidomide plus dexamethasone may be effective in treating proliferative glomerulonephritis with monoclonal Ig deposits for the first time. More attention needs to be paid to the hematological adverse events during lenalidomide treatment.

Table SEQ * ARABIC 1 General information of 6 patients with PGNMID

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Gender	male	male	male	male	female	female
Age	40	62	51	61	48	38
Immunofluorescence	IgG3-κ	IgG3-κ	IgG3-κ	IgG3-κ	IgG3-κ	IgG3-κ
Scr (mg/dL)	1.73	1.23	1.46	3.27	1.22	0.8
ALB (g/L)	36.4	37.3	32.7	27.1	22.4	37.5
eGFR (mL/(min·1.73 m^2))	49	63	65	19	62	93
Urine protein (g/24h)	4.31	2.44	14.57	11.22	14.46	1.27
Serum C3 (g/L)	0.881	0.765	1.07	0.5	0.993	0.894
Serum C4 (g/L)	0.129	0.264	0.215	0.242	0.187	0.219
Serum free κ (mg/L)	14.1	25.4	20.1	66.2	23.8	21.8
Serum free λ (mg/L)	13.5	36.2	32.5	74	48.2	39.8
Serum free κ/λ ratio	1.04	0.7	0.62	0.89	0.49	0.55
M protein	-	-	-	-	-	Ig G-κ
Monoclonal plasma cells%	0.7	-	0.005	-	-	-

Table 2 Changes of baseline and last follow-up indexes in 6 patients with PGNMID

		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Follow-up/month		12	13	6	16	19	8
SCr (mg/dL)	baseline	1.73	1.23	1.46	3.27	1.22	0.8
	last follow-up	1.39	1.05	1.07	1.79	0.91	1.82
ALB (g/L)	baseline	36.4	37.3	32.7	27.1	22.4	37.5
	last follow-up	45.6	36.7	35.1	34.6	42.5	24.5
Urine protein (g/24h)	baseline	4.31	2.44	14.57	11.22	14.46	1.27
	last follow-up	0.42	0.33	5.44	1.22	8.05	11.23
Serum C3 (g/L)	baseline	0.881	0.765	1.070	0.500	0.993	0.894
	last follow-up	0.774	0.982	0.903	0.829	N	0.786
Serum C4 (g/L)	baseline	0.129	0.264	0.215	0.242	0.187	0.219
	last follow-up	0.216	0.290	0.225	0.194	N	0.320
Serum free κ (mg/L)	baseline	14.1	25.4	20.1	66.2	23.8	21.8
	last follow-up	12.2	16.6	21.7	28.0	10.7	35.3
Serum free λ (mg/L)	baseline	13.5	36.2	32.5	74.0	48.2	39.8
	last follow-up	16.0	20.4	22.0	43.1	25.0	46.9
Serum free κ/λratio	baseline	1.04	0.70	0.62	0.89	0.49	0.55
	last follow-up	0.94	0.81	0.99	0.65	0.43	0.75

Figure: