MO294

COMPARISON OF TIP AND CELLULAR VARIANT OF PRIMARY FOCAL SEGMENTAL GLOMERULOSCLEROSIS

Nikola Zagorec[1], Ivica Horvatić[1,2], Dino Kasumović[1], Petar Šenjug[3], Matija Horaček[2], Marko Pražetina[4], Marko Lucijanić[5], Danica Galešić Ljubanović[2,3], Kresimir Galesic[1,2]

[1]Dubrava University Hospital, Department of Nephrology and Dialysis, Zagreb, Croatia, [2]University of Zagreb, School of Medicine, Zagreb, Croatia, [3]Dubrava University Hospital, Department of Pathology, Unit for Nephropathology and Electron Microscopy, Zagreb, Croatia, [4]Dubrava University Hospital, Department of Anesthesiology, Zagreb, Croatia and [5]Dubrava University Hospital, Department of Hematology, Zagreb, Croatia

BACKGROUND AND AIMS: After membranous nephropathy, focal segmental glomerulosclerosis (FSGS) is the most common cause of nephrotic syndrome in European population. According to Columbia classification, there are five histological variants of FSGS defined on light microscopy (tip, cellular, perihilar, collapsing and not otherwise specified - NOS) and this classification has a prognostic significance. The aim is to compare features and outcomes of tip and cellular variant of primary FSGS.
METHOD: All patients with FSGS were identified by a retrospective review of the Registry of kidney biopsies at the Department of Nephrology and Dialysis, Dubrava University Hospital, Zagreb, from 2003 until 2020. Each kidney specimen was analyzed by light, immunofluorescent and electron microscopy and Columbia classification was applied by experienced nephropathologist. Patients with primary FSGS met following criteria: full nephrotic syndrome and diffuse podocyte foot process effacement in absence of secondary causes of FSGS. Laboratory findings were obtained for every patient at the time of biopsy and following outpatient visits. Complete remission was defined as proteinuria < 0.3 g/day with normal kidney function and partial remission as proteinuria 0.3 - 3.5 g/day. Variables are expressed as median $\pm$ IQR (interquartile range) and frequencies. Statistical comparison between groups of patients with tip and cellular variant of primary FSGS and disease outcome analysis were done.
RESULTS: Out of 200 patients with FSGS, 59 (29.5 %) had primary form of disease. Tip variant was the most common form of primary FSGS (22 patients, 37 %) followed by NOS (20, 34 %), cellular (13, 22 %), perihilar (2, 3.5 %) and collapsing (2, 3.5 %) variant. Demographic and clinical features with initial laboratory findings are shown in Table 1. There were no significant differences between two groups in all analyzed variables in Figure 1. All patients were treated by anti-RAAS agents and steroids. Median follow-up was 55 months (range 1 – 196 months), and followup data were unavailable for three patients. Figure 2 shows treatment regimens in both patient grouos with treatment outcomes. Remission rate was significantly higher in tip variant (90 % vs. 41 %, p = 0.002). There was no difference in relapse rate between the two groups (p = 0.717).
CONCLUSION: There were no significant differences in clinical features and laboratory findings at the time of clinical presentation between tip and cellular variant of primary FSGS. Patients with tip variant had significantly higher remission rate than patients with cellular variant.

FSGS variant	Tip	Cellular	P value
No. of patients	22	13	-
Male (%)	9 (41)	7 (54)	0.458
Age (years)	52 (20 - 74)	51 (20 - 77)	0.945
Arterial hypertension (%)	18 (82)	9 (69)	0.668
Diabetes mellitus (%)	1 (7.5)	2 (15)	0.541
Systolic BP (mmHg)	140 (130 - 153)	140 (120 - 150)	0.796
Diastolic BP (mmHg)	90 (80 - 94)	80 (80 - 90)	0.433
Serum creatinine (μmol/L)	91.5 (63 - 132)	93 (87 - 169)	0.412
24-hour proteinuria (g/day)	12.2 (7.9 - 17.8)	12.67 (9.5 - 23.28)	0.141
Massive proteinuria (%)	14 (64)	9 (69)	0.560
Serum albumin (g/L)	20 (19 - 26)	26 (20 - 29)	0.238
Total cholesterol (mmol/L)	9.63 (7.11 - 1.2)	10 (8.1 - 13)	0.550
Triglycerides (mmol/L)	2.3 (1.8 - 3.62)	3.25 (2.8 - 4.1)	0.177
IgG (g/L)	4.75 (3.63 - 5.73)	5.1 (4.69 - 6.53)	0.869
Hemoglobin (g/L)	124 (118 - 141)	131 (120 - 142)	0.513
Hematuria (%)	15 (68)	7 (53)	0,480
C3 (g/L)*	1.23 (1.09 - 1.40)	1.37 (1.33 - 1.67)	0.060

Treatment regimen	Tip (22)	Cellular (13)
Steroids alone*	7 (32 %)	2 (15 %)
Steroids + cyclosporine*	11 (50 %)	10 (77 %)
Steroids + cyclophosphamide*	4 (18 %)	1 (8 %)
Mycophenolate (sec. line of therapy)	1 (4,5 %)	4 (31 %)
Cyclophosphamide (sec. line of therapy)	3 (14 %)	0
Three or more lines of therapy	1 (4,5 %)	0
Median follow-up in months (IQR)	57 (18 - 114)	42 (31 - 74)
Remission on last follow-up**	18 (90 %)	4 (33 %)
Complete/partial remission***	9/9	4/1
Relapsing disease	7 (37 %)	5 (42 %)

*first line of therapy; ** **p = 0,002;** ***p = 0,007**