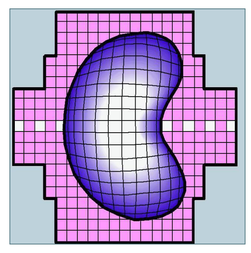
THE OUTCOME IN PATIENTS WITH A MEMBRANOPROLIFERATIVE PATTERN



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Introduction

- membranoproliferative glomerulonephritis (MPGN) is a pattern of glomerular lesion described by light microscopy
- incidence is estimated at 6-12% of biopsies performed for glomerular diseases
- variability in incidence rate depends on the prevalence of secondary causes
- we aimed to evaluate the clinical presentation and outcome of MPGN patients admitted in our referral center.

Methods

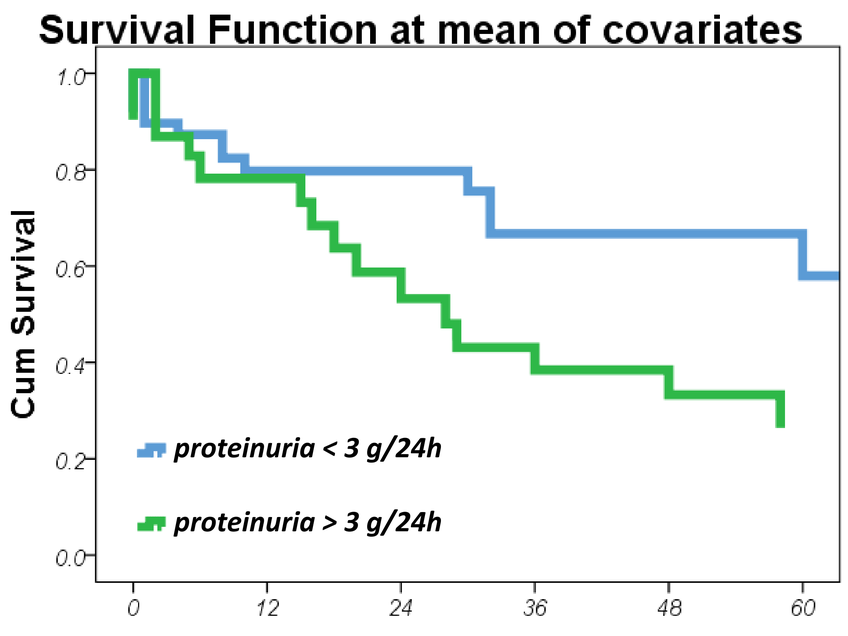
- unicentric longitudinal retrospective study on a group of 146 patients diagnosed with MPGN between 1st January 1995-31st December 2016
- including criteria:
  1. membrano-proliferative pattern in light microscopy
  2. clinical, laboratory and outcome data available since diagnosis
- the endpoints were doubling serum creatinine from baseline, renal replacement therapy (RRT) and the composite of two
- complete data were available only in 69 patients, which were included in analysis
- statistical analysis was performed using statistical software SPSS 20.0 (IBM SPSS, Chicago, IL) and Analyse IT (Analyse-it Software, Ltd., Leeds, UK)

Results

- primary MPGN was present in 14.5%, while 85.5% had secondary MPGN: 63.77% lupus nephritis, 11.59% cryoglobulinemia, 5.8% infections and 4.35% C3 glomerulopathy
- at presentation, 17.4% had full nephrotic syndrome, 20.3% had nephritic syndrome, 39.1% had nephrotic-nephritic syndrome, while 23.2% had asymptomatic urinary abnormalities
- median time of follow-up was 50 months [26.5; 90.5]
- in multivariable Cox regression analysis, the significant determinants for
  1. doubling serum creatinine: proteinuria (HR=2.04, 95% CI: 1.01-4.08) and serum creatinine (HR=10.27, 95% CI: 3-35.08)
  2. RRT initiation: presence of crescentic GN (HR=0.46, 95% CI: 0.19-1.14) and serum creatinine (HR=24.78, 95% CI: 6.57-93.52)
  3. composite endpoint: proteinuria (HR=1.97, 95% CI: 1.01-3.86) and serum creatinine (HR=10.57, 95% CI: 3.25-34.35).

Parameter	Total	Doubling Serum Creatinine			Renal Replacement			Composite		
		No	Yes	p	No	Yes	p	No	Yes	p
Age	44 [32;57]	41 [32;56]	46 [32.3;60]	0.46	40 [32;55.7]	46.5 [36.7;61.1]	0.21	40 [32;56]	47 [33.7;60]	0.24
Male	33.3% (N=23)	20% (N=8)	52% (N=15)	**<0.01**	23% (N=11)	55% (N=12)	**<0.05**	18% (N=7)	52% (N=16)	**<0.01**
Creatinine (mg/dL)	1.4 [1.03;2.46]	1.39 [1.02;1.83]	1.5 [0.96;3.86]	0.36	1.29 [1;1.8]	2.91 [1.16;4.34]	**<0.05**	1.39 [1;1.83]	1.5 [1.02;3.92]	0.22
Proteinuria (g/24h)	2.4 [1.42;5.1]	2 [0.92;4.17]	3.3 [2.25;5.4]	**<0.01**	2.1 [1.5;4.25]	3.2 [1.94;5.4]	**<0.05**	2 [0.88;4.02]	3.3 [2;5.4]	**<0.01**
Interstitial fibrosis	37.7% (N=26)	33% (N=13)	45% (N=13)	0.29	34% (N=16)	45% (N=10)	0.36	29% (N=11)	48% (N=15)	0.09
Crescents	24.6% (N=17)	17% (N=7)	34% (N=10)	0.1	17% (N=8)	40% (N=9)	**<0.05**	15% (N=6)	35% (N=11)	0.59

Table I. Cohort characteristics and their correlation with the outcome
Data are presented as median with interquartile range and percent.



Conclusions

1. in this cohort with a membranoproliferative pattern in light microscopy, higher proteinuria (>3g/day), elevated serum creatinine at presentation and crescent formation, but not interstitial fibrosis, were associated with the adverse outcome
2. the heterogeneity of diseases covered by this pattern, dominated in our series by lupus nephritis, and the relatively short period of observation hamper a more accurate evaluation of the prognostic markers

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