

# SIGNIFICANCE OF HAEMATURIA IN FOCAL AND SEGMENTAL GLOMERULOSCLEROSIS: CLINICAL AND HISTOLOGICAL CORRELATES

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## OBJECTIVES

- ✓ Focal and Segmental Glomerulosclerosis (FSGS) is a frequent cause of nephrotic syndrome, Spanish Registry of Glomerulonephritis showed that FSGS is the third cause of nephrotic syndrome between 2010-2013.
- ✓ Around half of the biopsied patients present haematuria at diagnosis.
- ✓ The objective of the present study was to establish if the presence of haematuria at diagnosis was associated with specific clinical and pathological findings and outcomes.

## METHODS

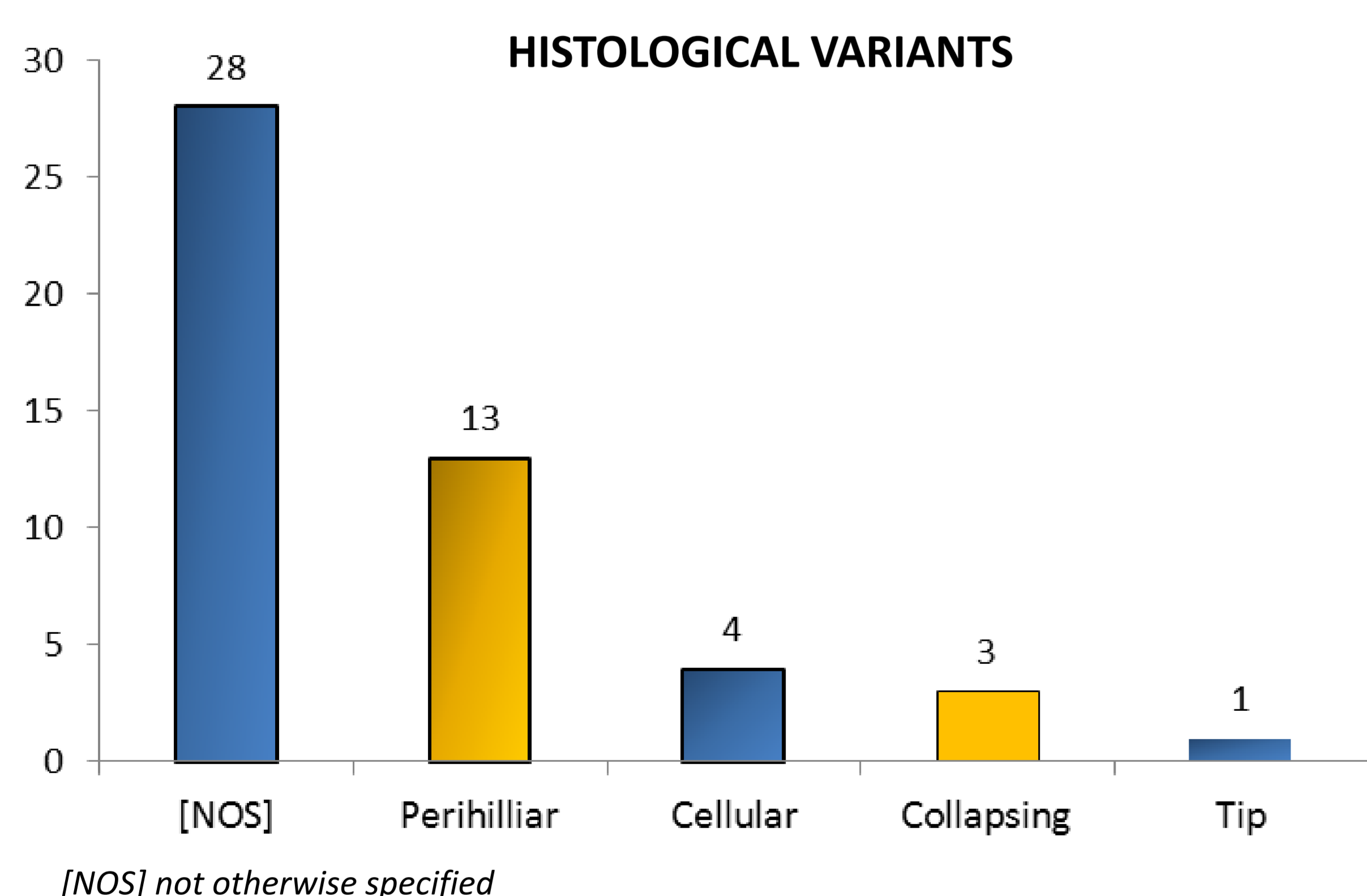
- ✓ Retrospective study including all cases with biopsy-proven FSGS between 2000-2016 at our institution.
- ✓ Clinical, demographical and histological data were recorded

## RESULTS

- ✓ Fifty patients with biopsy-proven FSGS were included, the most common etiology of FSGS in our sample were secondary FSGS due to obesity +/-hypertension (60%)
- ✓ At diagnosis, in hematuric patients, AKI was significant higher compared with non-hematuric patients (68,2% vs 10,7%), serum creatinine ( $2,8 \pm 0,7$  mg/dl vs  $0,8 \pm 0,6$  mg/dl,  $p < 0,01$ ) and 24-h urinary protein was significant higher in hematuric patients ( $7863,8 \pm 213,6$  mg/24h vs  $3973,5 \pm 643$  mg/24g,  $p < 0,05$ ).
- ✓ According to urine sediment, patients were classified as "moderate haematuria" (<20 RBCs\*HPF) or "severe haematuria" (>20 RBCs\*HPF). Patients with severe haematuria at diagnosis, showed significant thinning of the glomerular basement membrane (GMB) ( $270.1 \pm 18$  nm, vs  $366.2 \pm 26$ ,  $p = 0.015$ ) with electron microscopy.

CLINICAL CHARACTERISTICS (n=50) (n, %)	
Age (years)	53,3 ± 14,6
Sex (M/W)	33 (66%) VS 17 (34%)
FSGS Type	
• Primary	20 (40%)
• Secondary	30 (69%)
Clinical Manifestations	
Non-nephrotic proteinuria	18 (36%)
Nephrotic syndrome	10 (20%)
Nephrotic proteinuria	10 (20%)
AKI	18 (36%)
Hematuria	22 (44%)

AKI: Acute Kidney Injury



## DIFERENCES BETWEEN HEMATURIA AND NON-HEMATURIA PATIENTS

(n, %)	HAEMATURIA (n= 22)	NO HAEMATURIA (n= 28)	p
Age (years)	53,1±13,6	53,5±15,6	0,7
Sex	12(54,5%), 10 (45,5%)	21 (75%); 7 (25%)	0,1
Etiology			
Primary	9 (40,9%)	11 (39%)	0,56
Secondary	13 (59,1%)	17 (60,7%)	
Clinical manifestations	8 (44,4%) non-nephrotic proteinuria	10 (55,6%) non-nephrotic proteonuria	0,65
AKI	15 (68,2%)	3 (10,7%)	<0,01
24-hour urine protein (mg/24h)	7863,8±213,6	3973,5±643	<0,05
GBM thickness (nm)	318,3±30,7	338,2±18,1	0,07

	MODERATE HEMATURIA	SEVERE HEMATURIA	p
GMB Thinning (nm)	270,1±18	366,2 ±26	<0,05

GMB; glomerular membrane basement

## CONCLUSIONS

- ✓ In FSGS patients, hematuria at diagnosis is related with poor renal outcomes; hematuric patients showed AKI and greater amounts of proteinuria in 24 hours urine.
- ✓ Patients with severe hematuria (>20 RBCs\*HPF) showed thinning of the GMB compared with patients with moderate hematuria (<20 RBCs\*HPF)

## REFERENCES

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