

URINE PROTEIN-TO-CREATININE RATIO CORRELATES WITH 24-H URINE TOTAL PROTEIN EXCRETION BUT POORLY IN NEPHROTIC RANGE PROTEINURIA

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INTRODUCTION

- Measurement of the protein content of a timed 24 hour urine collection is the definitive method of establishing the presence of abnormal proteinuria, however, the urine collection is cumbersome.
- The spot urine protein to creatinine (P/C) ratio seems to be a reliable diagnostic tool for urine protein measurement.

AIM

- To evaluate the spot urine P/C ratio compared to 24-h urine total protein excretion in different proteinuria ranges

METHODS

- Observational, cross-sectional study
- 1179 consecutive paired determinations of 24-h urine total protein excretion and the spot urine p/c ratio in renal patients.
- The strength of the correlation was determined by calculating:
 - Intraclass correlation coefficient (ICC)
 - Spearman correlation coefficient (SCC)

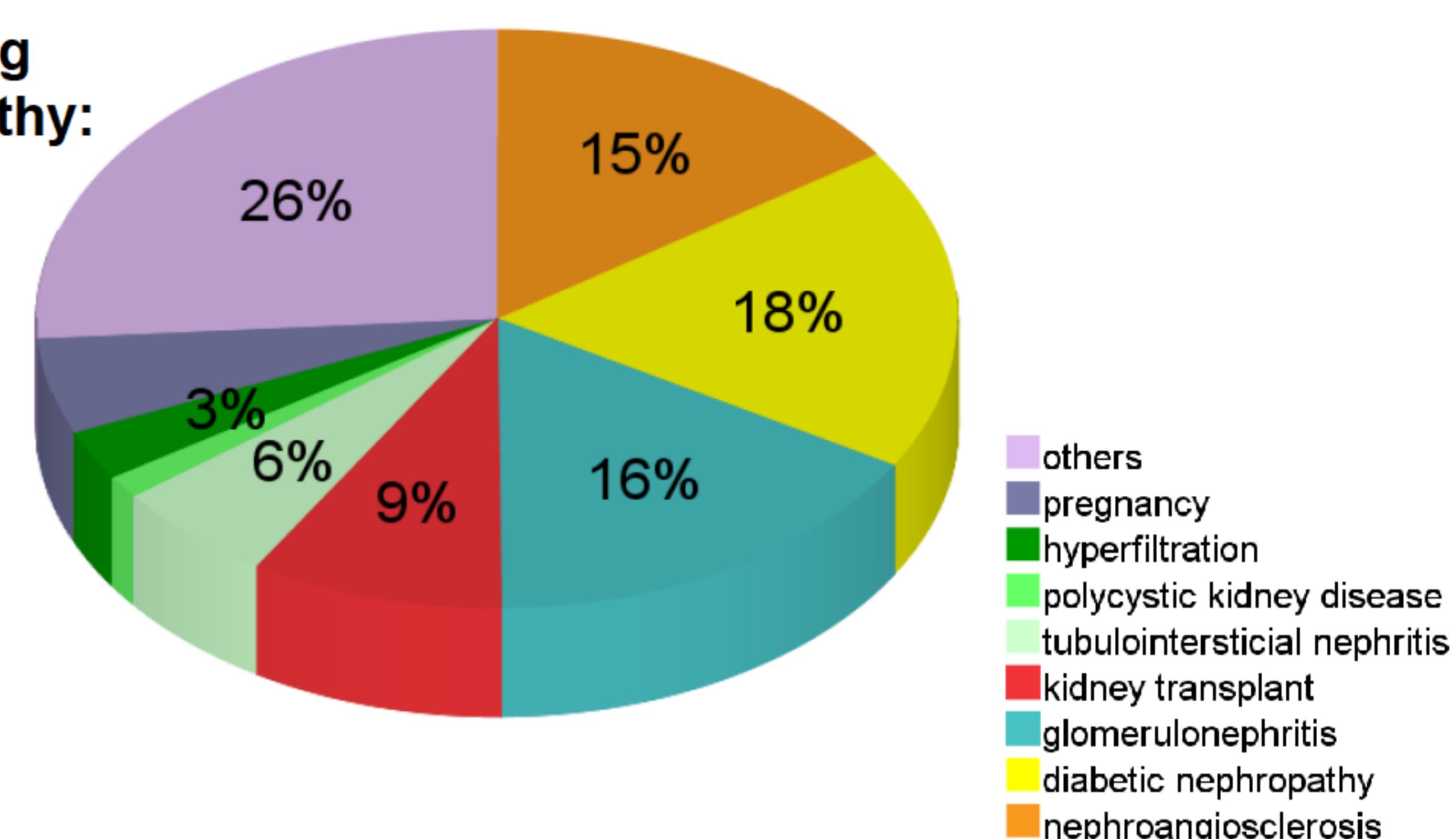
RESULTS

PATIENT CHARACTERISTICS

Proteinuria 24h (mg)	All	< 300	300-3499	≥3500
Number	1179	387	680	112
Age*	59,9 (+/-16.25)	57.9 (+/-16)	59.4 (+/-16.2)	58.9 (+/-14.54)
Gender (♂/♀)	640/539	178/209	393/287	69/43
Creatinine (mg/dl)*	1.91 (+/-1.55)	1.61 (+/-1.4)	2.04 (+/- 1.66)	2.15 (+/- 1.23)

* mean +/- SD

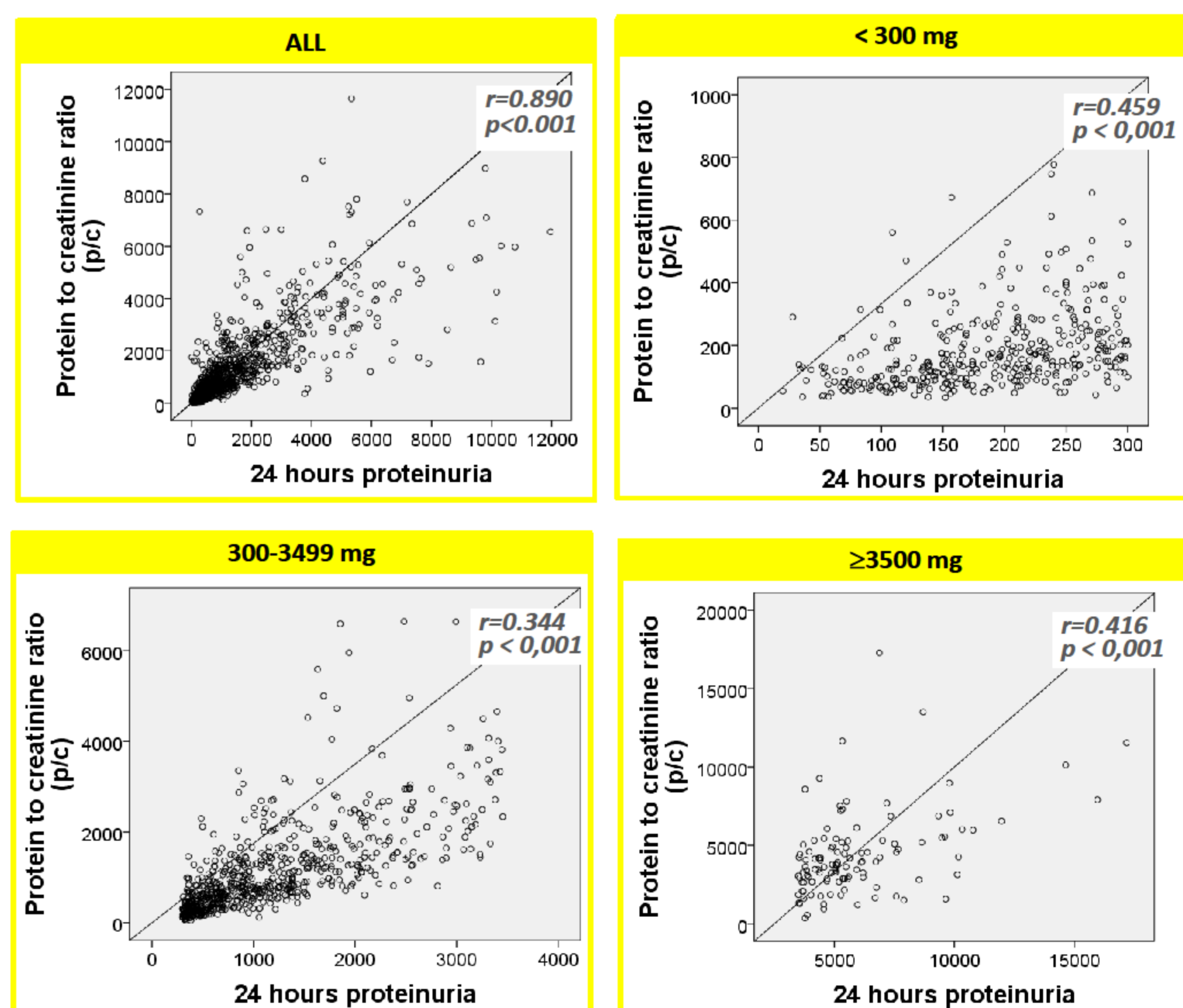
Underlying nephropathy:



ICC and SCC BETWEEN 24-H URINE TOTAL PROTEIN EXCRETION AND THE SPOT URINE P/C RATIO

Proteinuria 24h (mg)	All	< 300	300-3499	≥3500
Intraclass correlation coefficient (Confidence interval 95%)	0.749 (0.660-0.809)	0.493 (0.378-0.592)	0.344 (0.199-0.462)	0.090 (0.032-0.231)
Spearman correlation coefficient (r)	0.890	0.459	0.784	0.416
p	<0.001	<0.001	<0.001	<0.001

* mean +/- SD



Correlation between 24-h urine total protein excretion and the spot urine P/C..

CONCLUSIONS

- A strong correlation is observed between spot urine P/C ratio and 24-h urine total protein excretion when the level of proteinuria is lower than 3500 mg/day.
- In our experience, the correlation between spot urine P/C ratio and 24-h urine total protein excretion is very limited in nephrotic-range proteinuria

