

# INFLUENCE OF ARTERIAL STIFFNESS AND 24H-AMBULATORY BLOOD PRESSURE MONITORING ON RENAL LESIONS IN MORBIDLY OBESE PATIENTS WITH MILD OBESITY-RELATED GLOMERULOPATHY

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## INTRODUCTION

- The use of ambulatory blood pressure monitoring is recommended by current guidelines because it identifies white-coat reactors and correlates with target organ damage better than casual blood pressure measurements.
- Arterial stiffness is underused in the routine clinical practice although it is a strong predictor of cardiovascular disease. Special equipment and trained observers for its measurement are needed.
- Recently a new index for evaluation of arterial stiffness has been described: the ambulatory arterial stiffness index (AASI).

## AIM

-To evaluate the influence of 24-hour ambulatory blood pressure monitoring (24h- BPM) and arterial stiffness on renal lesion in 50 morbidly obese patients.

## SUBJECTS AND METHODS

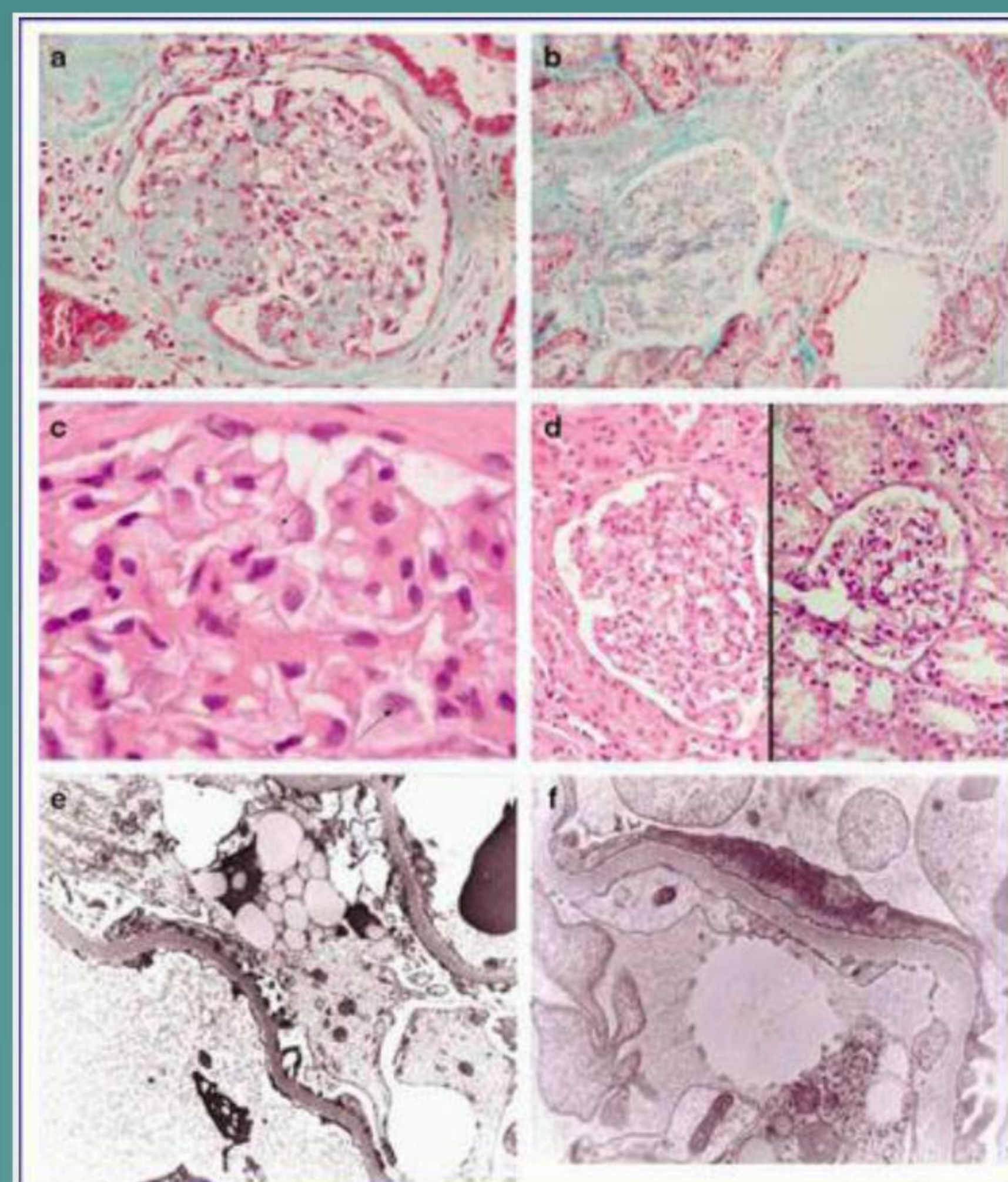
- 50 morbidly obese patients with normal renal function, biopsy proven early stages of obesity-related glomerulopathy. Renal lesions observed were: glomerulomegaly, glomerular lesions (mesangial matrix increase, podocyte hypertrophy and mesangial cell proliferation) and vascular lesions (renal arteriosclerosis and renal arteriolosclerosis).
- 24h-BPM was recorded before bariatric surgery.
- Control group: 51 healthy patients with normal weight or type 1 obesity.
- AASI was defined as 1 minus the regression slope of diastolic on systolic blood pressure during 24 h ambulatory monitoring.
- Arterial stiffness (AS) was defined as  $AASI \geq 0.5$ .

## RESULTS

### POPULATION CHARACTERISTICS

	MO patients	Control group	P value
Age (years)	39,98 ± 9,75	44,43 ± 15,69	NS
Sex (female)	30 (60%)	25 (49%)	NS
BMI (Kgm <sup>2</sup> )	52,68 ± 8,92	26,88 ± 4,03	< 0,0001
Non-dipper	30 (60%)	12 (23,5%)	< 0,0001
Dipper	15 (30%)	39 (76,5%)	< 0,0001
Riser (%)	3 (6%)	0	0,003
AASI	0,405 ± 0,202	0,311 ± 0,158	0,012
AS (AASI ≥ 0.5)	16 (32%)	5 (9,8)	0,006

### ASSOCIATION BETWEEN 24h-BPM and RENAL LESIONS



•MESANGIAL CELL PROLIFERATION → Diurnal blood pressure

OR = 0,50; IC 95% (1,609-34,9), p= 0,010

•GLOMERULOMEGALY

→ AASI

OR=4,408; IC 95%(1,204-16,14); p=0,025

•No association between diurnal and nocturnal diastolic BPM, nocturnal systolic BPM with renal lesions were found.

## CONCLUSIONS

- Morbidly obese patients had circadian pattern altered compared with control group.
- Percentage of non dipper and riser pattern were higher in morbidly obese patients when compared with the control group.
- Morbidly obese patients had higher AASI than control group.
- AASI could be a risk factor for glomerulomegaly.
- Diurnal systolic blood pressure monitoring could be a risk factor for mesangial cell proliferation.

