LOW LEVELS OF IGF-1 IN OBESITY NEPHROPATHY, A NEW RISK FACTOR?

Ioana Bancu[1], Maru Navarro[1], Assumpta Serra[1], Maria Granada[2], Dolores Lopez[3], Ramon Romero[1], Josep Bonet[1],
[1]Hospital Universitari Germans Trias i Pujol, Nephrology, Badalona, SPAIN, [2]Hospital Universitari Germans Trias i Pujol, Biochemistry, Badalona, SPAIN, [3]Hospital Universitari Germans Trias i Pujol, Pathology, Badalona, SPAIN.

OBJECTIVES

➤ To determine serum concentrations of IGF-1 in morbidly obese patients with normal renal function but with different types of early obesity related glomerular lesions.

➤ To evaluate the possible relationship between IGF-1 and the presence of renal lesions.

METHODS

80 morbidly obese patients with renal biopsy
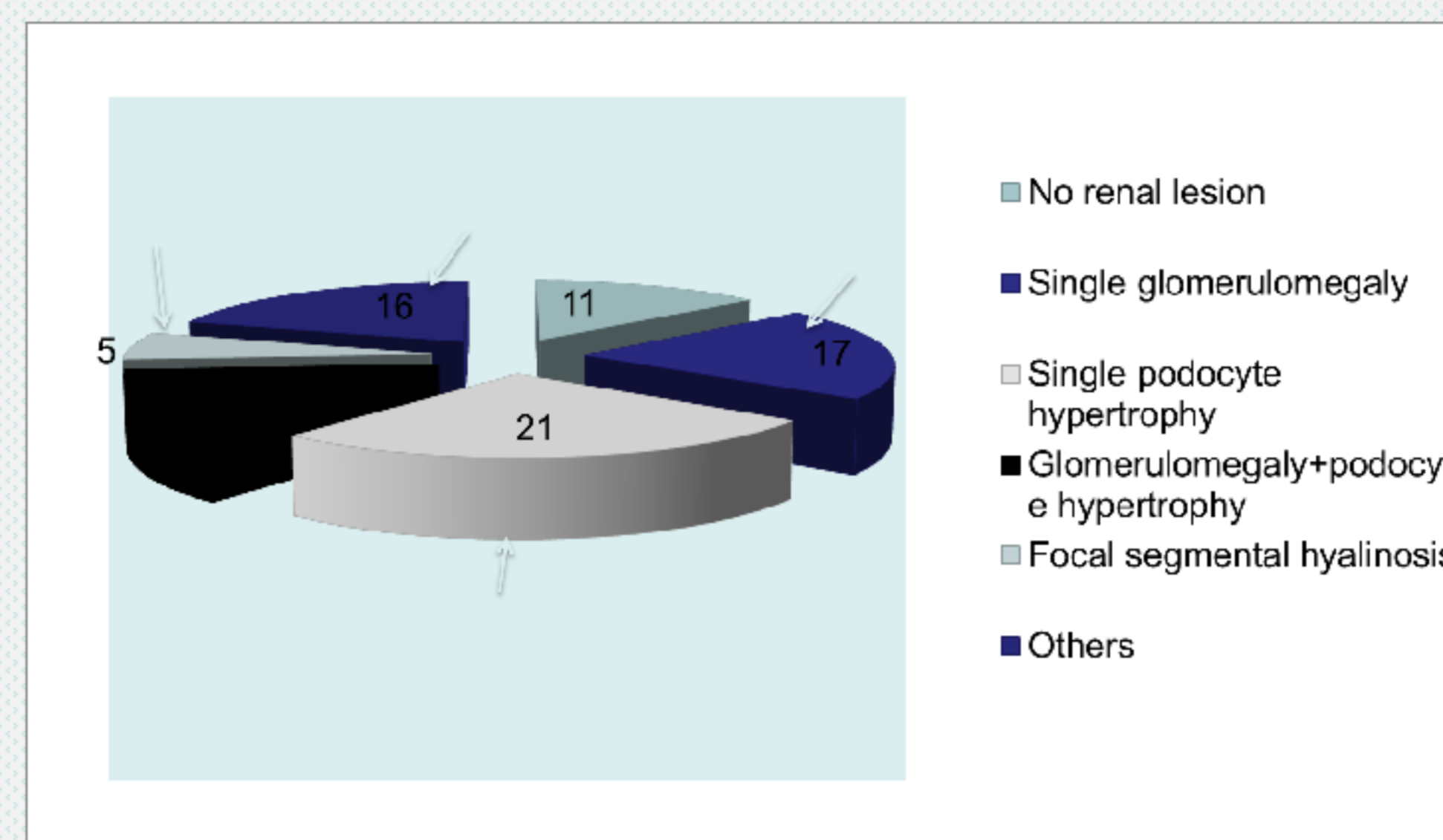
All patients were determined the IGF-1 and standard deviation for age (SDS-IGF-1) was calculated.

RESULTS

Statistically significant differences were seen between serum levels of IGF-1 and between the levels of SDS-IGF-1 by comparing the group without glomerular lesion with the group formed by patients with glomerular injury of any kind.

In the multivariate analysis, only SDS-IGF-1 is associated with glomerular injury, low levels of IGF-1 SDS being a risk factor for kidney injury.

Age (years)	42,40± 9,45
Gender (F)	62,5%
BMI (Kg/m2)	52,63 ± 8,71
SBP	139,85 ± 17,30
DBP	81,86 ± 12,90
Glucose (mmol/l)	5,90 (4,92-6,60)
Creatinine (umol/l)	81,11 ± 12,36
Creat Clearence (ml/min)	135,96 ±40,95

Table 1   Clinical, anthropometric and biochemical data

Urine microalbumin (mg/24h)	25,65(8,10-88,35)
HOMA	5,19 ± 3,38
PCR (mg/l)	9,84(5,32-17,20)
Adiponectin(ng/ml)	5,72 ± 3,05
Insulin (mU/L)	19,43 ± 9,97
IGF-1 (ng/ml)	134,15 ±64,97
SDS IGF-1	0,0006 (-1,52-0,77)
IGFBP3 (mg/L)	4,05 ± 1,32

Table 2   Clinical, anthropometric and biochemical data

Figure 1 : Comparison of the levels IGF-1 according to the presence /absence of renal lesion

	No lesion	Single GM	Single PH	GM+HP	Others
IGF-1	190,17 ±72,46	122,3 ±50,05	119,81 ±60,34	122,94 ±52,08	117,73 ± 63,87
SDS-IGF-1	0,49 (0,25-1,46)	-0,05 (-1,54-0,85)	-1,32 (-2,28-0,416)	-0,21 (-1,99-0,59)	-0,822 (-1,88-0,24)

Table 3 Comparison of the levels of IGF-1 according to the type of renal injury

CONCLUSIONS

IGF-1 levels are associated with age, with insulin and with cleareance creatinine.

SDS-IGF-1 is associated with glomerular injury, with low levels of IGF-1 SDS- a risk factor for kidney injury.

Our study showes that low IGF-1 serum levels are associated with renal lesion in morbidly obese patients without overt clinical renal manifestations.