

Prevalence of chronic kidney disease in patients with type 2 diabetes in Spain. PERCEDIME2 study

Sara ARTOLA-MENENDEZ; Antonio RODRIGUEZ-PONCELAS; Javier MEDIAVILLA-BRAVO; Irene RUIZ-TAMAYO; Josep FRANCH-NADAL; José Manuel MILLARUELO-TRILLO; on behalf redGDPS

Aims

The objective of this study was to determinate the prevalence of chronic kidney disease (CKD), stages of CKD, and variables associated with the presence of CKD in patients with type 2 diabetes mellitus (DM2) treated in primary care consults in Spain.

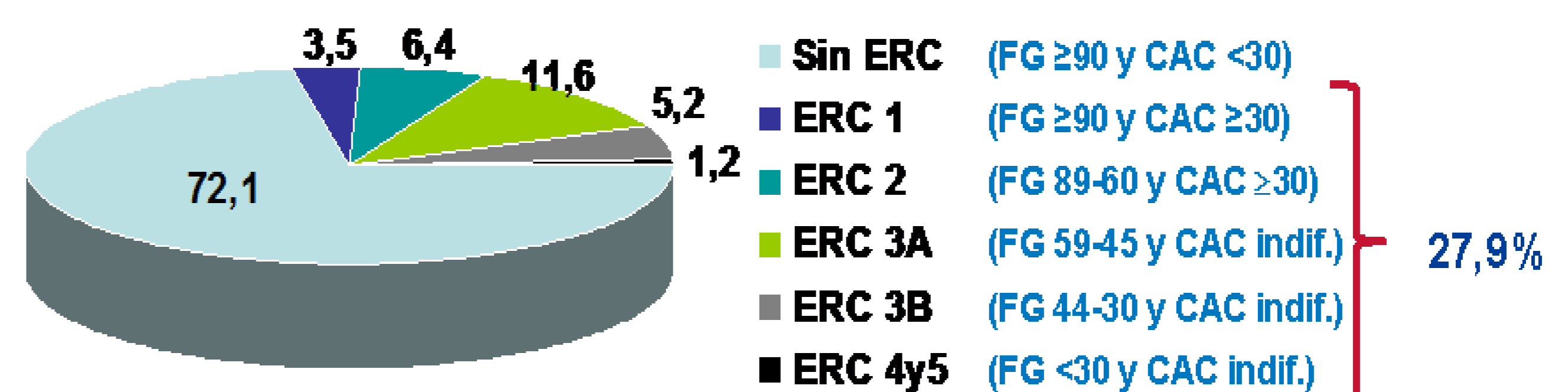
Design & Methods

The present study was an observational and multicentric study with a cohort of 1145 patients treated in primary care consults. The following data were collected: demographic and anthropometric information; list of present cardiovascular risk factors (CVRFs); previous macrovascular and microvascular disease history; and physical examination and analytical data from the previous 12 months, including the AER and GFR to evaluate renal function.

N(%)	Total 1.145	Men 689 (60.2%)	Women 456 (39.8)	p
Age (years)	66.8 ± 11.3	66.3 ± 11.4	67.4 ± 10.9	0.089
Duration DM (years)	9.1 ± 6.7	8.8 ± 6.5	9.4 ± 6.9	0.250
BMI (Kg/m ²)	30.3 ± 5.2	29.6 ± 4.5	31.1 ± 6.0	0.001
Obesity, n (%)	533 (46.5)	297 (43.1)	236 (51.8)	0.004
Abdominal waist circumf (cm)	100.0 ± 17.1	103.5 ± 12.1	100.2 ± 13.6	0.001
Smoking (n %)				0.001
Yes	158 (13.8)	123 (17.9)	35 (7.7)	
Ex-smoker	345 (30.1)	312 (45.2)	33 (7.2)	
Never	642 (56.1)	254 (36.9)	388 (85.1)	
HbA1c (%)	7.3 ± 1.3	7.2 ± 1.2	7.3 ± 1.3	0.089
Hypertension (n %)	860 (75.1)	514 (74.6)	346 (75.9)	0.625
Systolic BP (mmHg)	134.5 ± 13.2	134.3 ± 12.6	134.8 ± 14.0	0.984
Diastolic BP (mm hg)	77.0 ± 9.1	77.1 ± 8.9	76.8 ± 9.3	0.477
Total Cholesterol (mmol /L)	4.70 ± 0.93	4.63 ± 0.99	4.89 ± 0.90	0.001
LDL-col (mg/dl)	2.79 ± 0.83	2.74 ± 0.86	2.84 ± 0.78	0.021
Non-HDL-col (mg/dl)	3.49 ± 0.91	3.46 ± 0.96	3.55 ± 0.90	0.086
HDL-col (mg/dl)	1.29 ± 0.35	1.17 ± 0.31	1.33 ± 0.37	0.001
Triglycerides (mg/dl)	1.69 ± 0.96	1.70 ± 1.04	1.68 ± 0.87	0.450
Plasmatic creatinine (mg/dl)	0.93 ± 0.3	1.01 ± 0.3	0.8 ± 0.2	0.001
GFR ml/min/1.73 m ²	79.9 ± 23.5	80.4 ± 22.4	78.6 ± 23.6	0.142
Albumin/creat ratio (mg/g)	39.2 ± 144.3	46.3 ± 169.5	28.4 ± 93.4	0.979
Coronary heart disease (n %)	177 (15.4)	137 (19.9)	34 (7.5)	0.001
Heart failure (n %)	91 (7.9)	49 (7.1)	42 (9.2)	0.199
Peripheral vascular disease (n %)	98(8.5)	85 (12.3)	13 (2.9)	0.001
Stroke (n %)	79 (6.9)	57 (8.3)	22 (4.8)	0.024

Results

With regard to the patients, 27.9% presented some degree of CKD as follows: 3.5% with stage 1; 6.4% with stage 2; 16.8% with stage 3 (11.6% with stage 3A and 5.2% with stage 3B); and 1.2% with stages 4 and 5. The prevalence of patients with AER ≥ 30 mg/g was 15.4% (13% microalbuminuria and 2.4% macroalbuminuria). The following variables were significantly associated with CKD: age; sex (women); systolic arterial pressure (SAP) ≥ 150 mmHg; and a previous history of cardiovascular disease.



	OR (95% CI)
Age (years)	
<50	1
50-59	2.02 (0.83-4.41)
60-69	1.75 (0.82-3.76)
70-79	3.24 (1.53-6.86)
>80	7.84 (3.50-17.54)
Gender	
Men	1
Women	1.36 (1.01-1.84)
Systolic BP(mm Hg)	
< 130	1
130-139	0.85 (0.60-1.22)
140-149	1.01 (0.87-1.51)
≥ 150	1.61 (1.03-2.53)
Duration of DM2 (years)	1.02 (1.01-1.04)
Coronary heart disease	1.54 (1.04-2.28)
Heart failure	2.69 (1.64-4.40)
Peripheral vascular disease	2.71 (1.69-4.35)

Conclusions

The results showed that the prevalence for CKD was 27.9%. A systematic determination of AER and GFR may contribute to an early diagnosis, thus allowing intervention during the initial stages of the disease when treatment is more efficient.