

Control of vascular and renal risk factors in diabetic patients

Results of the Barbanza Diabetes Educational Programme

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The prevention of vascular and renal disease in diabetics requires a multifactor approach including not only close control of glucose metabolism but also changes in lifestyle, such as no smoking, weight control, compliance with dietary advice and regular physical exercise, and intervention against risk factors, such as arterial hypertension (HT), dyslipaemia or platelet aggregation.^{1,3} Epidemiological studies of the Spanish diabetic population evidence a significant rift between established guidelines and actual clinical practice as regards both diabetics in general and the subpopulation with prior cardiovascular or kidney disease.^{4,5} This finding suggests the need to carry out intervention programmes for the reduction of diabetic complications and to motivate primary healthcare professionals by involving them directly in both the monitoring of patients and the design of such programmes.

We present here the results of the Barbanza Diabetes Educational Programme, an intervention initiative pursued in a sample of diabetic patients who were visited

by a team of primary care physicians sharing a common consensus, pursuing therapeutic objectives in line with the clinical guidelines, by pharmacological means (particularly by blocking the renin-angiotensin-aldosterone system, RAAS) and by lifestyle modifications. The 32 participating primary care physicians recruited 1436 diabetic patients (mean age 66 years, 48% men); 1419 were evaluated three times during one year (17 died). The clinical data recorded were age, sex, weight, height and body mass index (BMI); whether the patient currently smoked (and if not, whether he or she had ever been a smoker); whether he or she had ever received a diagnosis of HT, hyperlipaemia or diabetes mellitus, distinguishing between type 1 and type 2, or had a history of vascular pathology (myocardial infarct and/or angina, heart failure, atrial fibrillation, stroke or lower-limb arteriopathy); heart rate and systolic and diastolic blood pressure; and the classes of drugs being taken. Upon recruitment and in the end-of-year visit the following analytical data were determined from blood and urine samples: fasting plasma lipids (total cholesterol, low- and high-density lipoprotein cholesterol and triglycerides), fasting plasma glucose, glycosylated plasma haemoglobin, and in a total of 1134 patients albumin in 24-hour urine (30 to 300 mg was deemed to indicate microalbuminuria and >300 mg proteinuria).

Table 1 lists the numbers of patients complying with the therapeutic objectives at the beginning and end of the study. There was a significant increase in the prescription of antiaggregants, statins, certain antihypertensives (especially angiotensin II receptor antagonists, in line with one of the objectives of the programme) and metformin among the antidiabetic drugs.

These results illustrate the benefits of close cooperation between primary care physicians and specialists in the design of intervention strategies that implement management guidelines in everyday clinical practice. In this case, therapeutic objectives in line with the then current

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Table 1. Changes in compliance with therapeutic objectives.

Parameter	Initial compliance number (%)	Final compliance number (%)	P
	n=1436	n=1419	
SBP/DBP <130/85	555 (39)	745 (52)	<0.0001
TC <200	479 (33)	679 (47)	<0.0001
LDL-C <100	178 (12)	292 (20)	<0.0001
TG <150	987 (69)	918 (64)	0.01
HbA _{1c} <7.2	841 (59)	944 (66)	0.0001
UAE <30 mg/24 h*	692 (61)*	748 (66)*	0.001
BMI <25	155 (11)	139 (10)	ns
Smokers	176 (12)	140 (10)	ns
RAAS blockade		410 (29)	ns
-ACE inhibitors	416 (29)	567 (40)	<0.0001
-ARBs	330 (23)		

* UAE was obtained in 1134 patients.

SBP=systolic blood pressure, DBP=diastolic blood pressure, TC=total cholesterol, LDL-C=low density lipoprotein cholesterol, TG=triglycerides, HbA_{1c}=glycosylated plasma haemoglobin, UAE=albumin in 24-hour urine, BMI=body mass index, RAAS=renin-angiotensin-aldosterone system, ACE=angiotensin-converting enzyme, ARB=angiotensin II receptor antagonists.

management guidelines, which differ in some respects from the latest recommendations,^{6,9} were agreed on by physicians in the course of a seminar on diabetes and cardiovascular disease, and were pursued by pharmacological and behavioural means over a one-year period during which the study group was monitored. As far as we know, this is the first Spanish study of this kind to have involved a patient sample large enough to allow clinically relevant conclusions to be drawn.

It must be stressed that in the Barbanza Diabetes Educational Programme, the participating primary care physicians were all volunteers and were involved in all stages of the study including, in particular, the setting of therapeutic objectives in the course of the initial seminar on diabetes and its cardiovascular complications. Although we believe that the comprehensive involvement of these professionals contributed significantly to the success of the programme and in spite of the size of the patient sample, the non-random selection of physicians and consequently of patients means that as a characterisation of the Spanish diabetic population the data obtained must be treated with some caution. ■

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