

## Influence of pharmaceutical intervention in patients at cardiovascular risk

### Influencia de la intervención farmacéutica en pacientes con riesgo cardiovascular

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#### 1. Background information

Cardiovascular disease (CVD) is the leading cause of death in the world. Despite this, many people with CV risk factors (CVRF) who are at risk for these diseases often do not achieve the desired therapeutic goals with their treatments.

#### 2. Aims

To evaluate the effectiveness of a complex intervention based on pharmacotherapeutic follow up (PTF) and therapeutic education (TE) in patients with cardiovascular risk (CVR), from the community pharmacy.

#### 3. Methods

A clinical trial was designed in which 85 randomly selected patients were divided equally and randomly into two groups, control (CG) and intervention (IG). The following parameters were determined: systolic blood pressure (SBP), diastolic blood pressure (DBP), total cholesterol (TC), low molecular weight cholesterol (c-LDL), high molecular weight cholesterol (c-HDL), triglycerides (TG), body mass index (BMI), cardiovascular risk (CVR) and sedentary lifestyle, at the beginning of the follow-up period (t0) and after 6 months (t6). Throughout these 6 months, the IG patients attended periodic consultations in which the pharmacist applied the PTF and ET protocols, while those belonging to the CG received the usual pharmacy care.

#### 4. Results

The analysis of the initial mean values (t0) of the sample in both groups, CG and IG, showed that there were no statistically significant differences, which confirms the adequate randomization in the distribution of the participants. When studying the evolution of the patients over the 6 months, a statistically significant reduction in CVR (p=0.003) and SBP (p=0.038) was observed in the IG with respect to the evolution presented by the CG patients. The number of sedentary patients is highly reduced throughout the study in the IG, obtaining a statistically significant result with respect to this same data in the CG (p<0.001). It is also note worthy that at t0, 52.3 % of the IG patients had their SBP levels under control, and after the pharmaceutical intervention this figure rose to 79.5 %. There was also a 12.4 % increase in the number of patients who were able to achieve target TG values.

#### 5. Conclusions

Thanks to the ET protocols and the PTF carried out by the community pharmacy, the patients managed to improve important parameters such as SBP, TG and CVR, reaching the ideal target figures established by the European Guidelines, demonstrating the important role that the community pharmacist can play with this type of patient.



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## 1 INTRODUCTION

Cardiovascular disease (CVD) is the leading cause of death in the world. Despite this, many people with CV risk factors (CVRF) who are at risk for these diseases often do not achieve the desired therapeutic goals with their treatments.

## 2 AIMS

To evaluate the effectiveness of a complex intervention based on pharmacotherapeutic follow up (PTF) and therapeutic education (TE) in patients with cardiovascular risk (CVR), from the community pharmacy.

## 3 METHODS

A clinical trial was designed in which 85 randomly selected patients were divided equally and randomly into two groups, control (CG) and intervention (IG). The following parameters were determined: systolic blood pressure (SBP), diastolic blood pressure (DBP), total cholesterol (TC), low molecular weight cholesterol (c-LDL), high molecular weight cholesterol (c-HDL), triglycerides (TG), body mass index (BMI), cardiovascular risk (CVR) and sedentary lifestyle, at the beginning of the follow-up period ( $t_0$ ) and its completion after 6 months ( $t_6$ ).

Throughout these 6 months, the IG patients attended periodic consultations in which the pharmacist applied the PTF and TE protocols, while those belonging to the CG received the usual pharmacy care.

## 4 RESULTS

The analysis of the initial mean values ( $t_0$ ) of the sample in both groups, CG and IG, showed that there were no statistically significant differences, which confirms the adequate randomization in the distribution of the participants.



	t0		t6		P. valor
	CG	IG	CG	IG	
PAS	133± 16,6	139± 19,6	130± 16,8	130±15,5	0,038
PAD	78,2± 9,69	81,6± 11,7	78,2±9,83	80,9±21,3	0,818
CT	167± 39,2	169± 40,1	181± 37,5	171± 34,6	0,109
c-HDL	49,4± 15,7	51,3± 14,7	51,6± 14,1	51,5± 14,2	0,314
c-LDL	85,5± 30,7	84,1± 31,2	93,9± 34,4	87,6± 30,0	0,366
TG	173± 67,0	170± 88,7	177± 70,5	159± 87,2	0,487
HbA1c1	6,76± 1,05	6,75± 0,79	7,03± 0,98	6,65± 0,96	0,222
HbA1c2	5,65± 0,49	5,67± 0,51	5,64± 0,46	5,65± 0,96	0,777
IMC	32,3± 6,03	31,0± 5,19	32,1± 6,30	30,8± 5,25	0,980
RCV	1,69± 1,07	2,56± 2,18	1,69± 1,00	1,91± 1,42	0,003



When studying the evolution of the patients over the 6 months, a statistically significant reduction in **CVR ( $p<0.005$ )** and **SBP ( $p<0.05$ )** was observed in the IG with respect to the evolution presented by the CG patients.

There was also a 12.4% increase in the number of patients who were able to achieve target TG values.



The number of **sedentary patients is highly reduced** throughout the study in the IG, obtaining a statistically significant result with respect to this same data in the CG ( $p<0.001$ ).

	t0			t6			N
	CG	IG	p. valor	CG	IG	p. valor	
Sedentarism	21 (52,5%)	24 (54,5%)	1.000	26 (65,0%)	7 (15,9%)	<0,001	84



It is also noteworthy that at  $t_0$ , **52.3% of the IG patients had their SBP levels under control**, and after the pharmaceutical intervention this figure rose to 79.5%.

## 5 CONCLUSIONS

Thanks to the TE protocols and the PTF carried out by the community pharmacy, the patients managed to improve important parameters such as SBP, TG and CVR, reaching the ideal target figures established by the European Guidelines, demonstrating the important role that the community pharmacist can play with this type of patient.

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