



# Clinical Characteristics of Patients with Diabetes 2 Usually Treated in a Specialized Clinic, from the NEA/SAD Chapter

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## To cite this article:

Claudia Karina Koleff, Jorgelina Valeria Llense, Sandra Kremmer, Monica de la Cruz, Verónica de la Vega, Solis Gustavo, Ruiz Diaz Daniel, María Cielo Frisone, Maria Celia Diaz, Laura Martinez, Irene Ojeda Damico, Gabriela Alegre, Elizabeth Mendez, Elida Beatriz Romero, Teresita Sosa Cabral, Medeot Rech Maité. Clinical Characteristics of Patients with Diabetes 2 Usually Treated in a Specialized Clinic, from the NEA/SAD Chapter. *International Journal of Clinical and Experimental Medical Sciences*. Vol. 8, No. 2, 2022, pp. 24-31. doi: 10.11648/j.ijcems.20220802.12

**Received:** March 12, 2022; **Accepted:** April 6, 2022; **Published:** April 26, 2022

**Abstract:** Introduction: Diabetes is a public health problem. The need arises to know the clinical situation and pharmacological treatment of type 2 diabetic patients, in the Diabetes clinic of the different provinces that constitute the NEA/SAD chapter. Objectives: In patients with Diabetes 2, attended in NEA clinics, in: December 2019, January and February 2020: To know: - sex. - Average age – Evolution time and family history in first degree, of Diabetes. - Metabolic control by HbA1c (last 2). -Pharmacological treatment and self-monitoring. - Cancer frequency and location. - Presence of: Risk factors (Overweight / Obesity, hypertension, dyslipemia, hyperuricemia) and treatment. Chronic complications. Materials and Methods: Observational, descriptive, transversal and prospective study. Consecutive sample of patients with Diabetes 2, > 18 years. Criteria: Inclusion: More than one year of diagnosis and attendance at the clinic. Exclusion: Acute intercurrents. Data were loaded into a spreadsheet. Descriptive analysis of the variables was performed. Results: 888 patients. Average age 58 years. Female 465 (52%), Male 423 (48%). Years of diagnosis: <5: 248 (28%), 5 to 10: 338 (38%), > 10: 302 (34%). Family history: YES 445 (50%). HbA1c: <7% good: 317 (36%), 7.01 to 8% regular: 328 (37%), >8% bad: 243 (27%). Medication: Insulin: 142 (16%), Oral drugs plus insulin: 226 (25%), Oral drugs: 520 (59%); single drug: 214 (24%), combined: 306 (35%). Self-monitoring: NO: 165 (19%). Cancer: NO: 870 (98%). Normal weight: 256 (29%). Hypertension: YES: 641 (72.1%), treated yes: 558 (62.8%), no 83 (9.3%). Dyslipemias: YES: 475 (53%), treated yes: 342 (38.5%), no 133 (15%).

Hyperuricemia: NO: 784 (88.3%). Cardiovascular disease: NO: 667 (75%). Retinopathy: NO: 650 (73%). Peripheral neuropathy: NO: 667 (75.1%). Nephropathy: NO: 685 (77.1%). Conclusions: Of the patients evaluated, most are women, average age 58. More than 5 years of diagnosis, with family history. Good to regular metabolic control. Treated with oral drugs, they perform self-monitoring. With risk factors, mostly treated. More than 70% do not present cardiovascular disease or microangiopathic complications. Cancer in 2%, being of breast, more frequent.

**Keywords:** Type 2 Diabetes, Clinical Features, Chronic Complications, Risk Factors

## 1. Introduction

Diabetes is a chronic, frequent, growing and costly disease. A serious public health problem. According to the report of the latest national survey of risk factors, 2018, the self-reported prevalence of high blood glucose/diabetes is 12.7% [1]. Related to overweight, obesity, inadequate nutrition, sedentary lifestyle and population aging. One of the leading causes of illness and premature death from cardiovascular disease. Early detection and comprehensive treatment contribute to the reduction of complications. Although intensive control of blood glucose and other cardiovascular risk factors is not achieved in more than half of the patients. One of the barriers to adherence to treatment is the multi-medication used and its cost [2, 3]. The need arises to know the clinical situation and pharmacological treatment of patients with type 2 diabetes, who attend the Diabetes clinics of the different provinces that constitute the NEA/SAD chapter, during the months of December 2019, January, February and March of 2020. The following will be evaluated: the distribution by age and sex of the pathology; antiquity; Family history; cardiovascular risk factors; degree of metabolic control; chronic complications; treatment; presence of cancer. From this knowledge, it will be possible to establish measures that favor adherence to treatment (food plan, physical activity, medication, Glycemic self-monitoring, therapeutic education) and reduce chronic complications, improving quality of life.

## 2. Objectives

General Objective: To analyze the clinical characteristics of patients with Diabetes 2 who attend a Diabetes clinic, in the provinces of Chaco, Formosa, Corrientes and Misiones, during the months of December 2019, January, February and March 2020. Objectives Specific: Determine the distribution of the pathology studied by age and sex. Know the seniority and family history in the first degree, of Diabetes. Evaluate the presence of risk factors (obesity, hypertension, dyslipidemia, hyperuricemia) and their treatment. Verify the degree of metabolic control through HbA1c. Confirm the presence of chronic complications. Evaluate the type of pharmacological treatment and self-monitoring. Know the frequency of Cancer and its location.

## 3. Materials and Methods

Descriptive cross-sectional study, consecutive sample of type 2 diabetic patients, aged between 18 and 80 years, who

are treated at the Diabetes clinic, in the provinces of Chaco, Formosa, Corrientes and Misiones, during the month of December 2019, January, February and March 2020. Inclusion criteria: Patients with Type 2 Diabetes, according to the criteria of the American Diabetes Association, with at least one year of diagnosis, and who have not required insulin therapy during that first year. With more than one year of attendance at the health center. Exclusion criteria: Patients with type 2 Diabetes, who present acute complications (infections, acute myocardial infarction, stroke, treatment with corticosteroids) at the time of data collection. Data processing and analysis. The questionnaire data will be loaded into an Excel spreadsheet prepared for this purpose.

- 1) Patient identification.
- 2) Age in years.
- 3) Sex; Female. Male. Through ID and interrogation.
- 4) Antiquity of diabetes, through questioning (< 5 years. Between 5 and 10 years. More than 10 years).
- 5) Family history of Diabetes in the first degree, questioning (YES, NO, Don't know).
- 6) Last two glycosylated hemoglobins, results reading (HbA1c < or = 7% good metabolic control, HbA1c between 7.01 and 8% regular metabolic control, HbA1c greater than 8% poor metabolic control).
- 7) Associated risk factors:
  - 1) Altered nutritional status: Overweight, obesity (BMI: between 25 and 30 overweight, > 30 obesity).
  - 2) Arterial hypertension (BP > 130/80 mmHg).
  - 3) Dyslipidemia (Triglycerides > 150 mg/dl, HDL < or = 35 mg% in men and 40 mg% in women, LDL > 100 mg/dl, Total Cholesterol > 200 mg/dl).
  - 4) Hyperuricemia: > 7 mg/dl for men or > 6 mg/dl for women. Based on clinical and laboratory history of the last 6 months. (YES. Treatment YES, NO. NO)
- 8) Cardiovascular disease: acute myocardial infarction, cerebrovascular accident, diabetic foot (Wagner classification, clarify amputations Table 1) YES, NO.
- 9) Microangiopathic complications:
  - 1) Diabetic retinopathy (YES proliferative, non-proliferative, diabetic macular edema, NO)
  - 2) Peripheral diabetic neuropathy (diagnostic method Table 2) YES, NO)
  - 3) Diabetic nephropathy; YES, Incipient (presence of microalbuminuria [albuminuria 30-300 mg/day] with glomerular filtration rate > 60 ml/min); Established (albuminuria >300 mg/day or overt proteinuria associated with impaired glomerular filtration rate

<60 mL/min); Advanced (need for kidney function replacement: hemodialysis, peritoneal dialysis, kidney transplant), NO.

10) Cancer, YES location NO

11) Medication: oral antidiabetics (single drug or combined), oral antidiabetics plus insulin, insulin alone.

12) Glycemic self-monitoring: YES daily frequency or three times a week, NO. A descriptive analysis of the

variables under study will be carried out. The following summary measures will be calculated: frequency distribution, measures of central tendency according to the variables. They will be presented in bar and pie charts. These results will be compared with international registries, which will position the clinical situation of diabetic patients 2. The conclusions will be promoters of measures aimed at modifying the situation.

**Table 1.** Wagner classification.

Classification of foot injuries according to Wagner.

Grade 0: risk foot. There is no ulcer but there is callus, prominent metatarsal heads, claw toes, or other deformities.

Grade 1: superficial ulcer (does not exceed the skin and subcutaneous cellular tissue).

Grade 2: deep ulcer (reaches the tendons and there is infection).

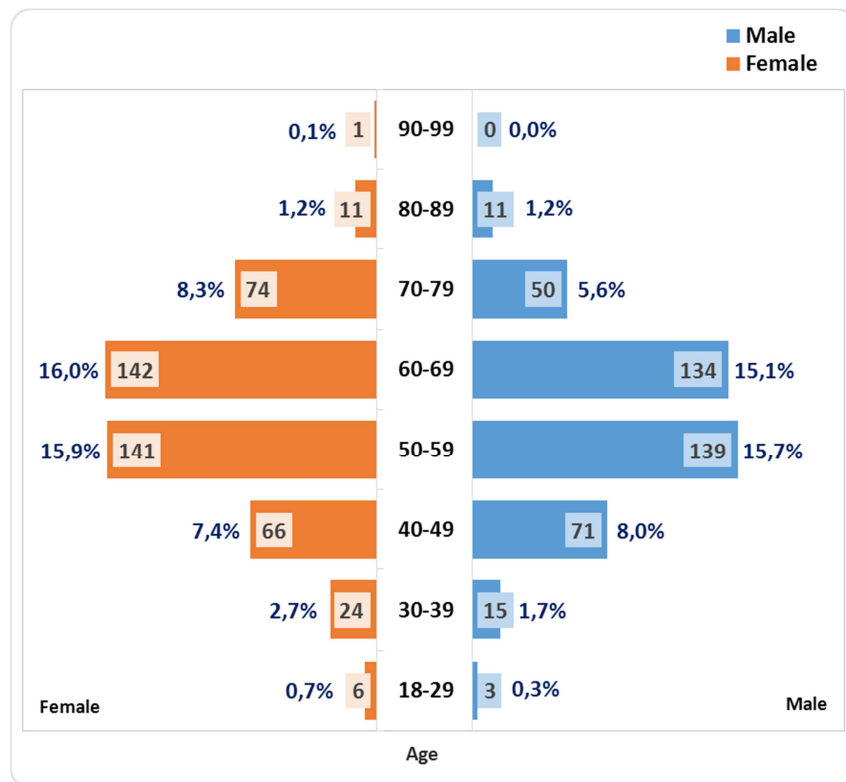
Grade 3: deep infection with cellulitis, or deep abscess, often with osteomyelitis.

Grade 4: localized gangrene (a toe or a small area of the heel). Grade 5: Extensive gangrene of the foot.

**Table 2.** Complete neurological clinical examination proposed by the Michigan group (each member provides a separate score).

		Scores			
		0	1	2	3
Alteration of the sensitivity	Vibration perception	P	D	A	
	Perception of applied monofilament. 10 times	>8	1 / 7	N	
	Pin perception	Pa		Np	
Evaluation of the loss of strength muscular.	Fanning of the fingers.				
	Big toe extension.	N	M	S	A
	Foot dorsiflexion				
Reflexes.	Bicipital				
	Triceps	P	Pwe	A	
	Quadriceps				
	Aquilian				

P: Present. D: Diminished. A: absent. N: None. Pa: painful. Np: not painful. N: normal. M: mild to moderate. S: severe. A: Absent. Pwe: present with effort. A diagnosis of peripheral neuropathy is considered if the score is 7/46 (sensitivity 80% specificity 100%).



**Figure 1.** Distribution by gender and age.

## 4. Ethical Considerations

Being a descriptive study, written informed consent was not considered necessary. The patient was verbally invited to voluntarily participate in the study. The information was processed confidentially.

## 5. Results

Total 888 patients. Age between 18 and 90 years, average age 58 years, median 59, mode 56. Sex: female 465 (52%), male 423 (48%). Figure 1 Years of diagnosis: <5 years 248 (28%), between 5 and 10: 338 (38%), more than 10 years: 302 (34%). Figure 2. Family history of Diabetes: YES 445 (50%), NO 247 (28%), don't know 196 (22%). Figure 3. HbA1c: <7% good: 317 (36%), between 7.01 and 8% regular: 328 (37%), >8% bad: 243 (27%). Figure 4. Associated risk factors: Figure 5 Changes in nutritional status: NO: 256 (29%), overweight: 303 (34%), under treatment: 142 (16%), without treatment 161 (18.1%), obesity: 329 (37.1%), under treatment: 188 (21.2%), without treatment: 141 (15.9%). Hypertension: NO: 247 (27.8%), YES: 641 (72.1%), under treatment 558 (62.8%), without treatment 83 (9.3%). Dyslipidemia: NO: 413 (47%). YES: 475 (53%), under treatment 342 (38.5%), without treatment 133 (15%). Hyperuricemia: NO: 784 (88.3%). YES: 104 (12%), under treatment 75 (8.4%), without treatment 29 (3.3%). Cardiovascular disease: No: 667 (75%). AMI 90 (10%), stroke 30 (3%), diabetic foot 107 (12%): grade 0: 87 (81%), 1: 5 (5%), 2: 4 (4%), 3: 4 (4%), 5: 1 (1%), amputation: 6 (5%). Figure 6 Microangiopathic complications: Figure 7 Diabetic retinopathy: NO: 650 (73%). SI: 238 (27%), non-proliferative: 132 (15%), proliferative: 81 (9%), macular edema: 25 (3%). Peripheral diabetic neuropathy:

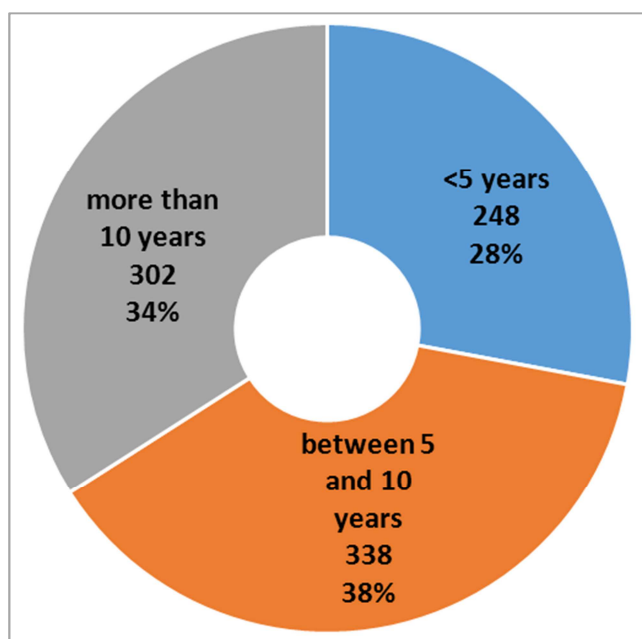


Figure 2. Age of Diabetes.

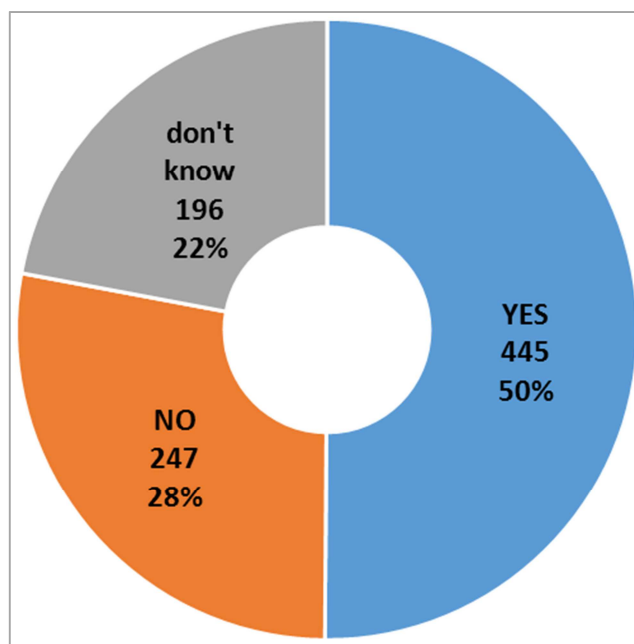


Figure 3. Family history of Diabetes.

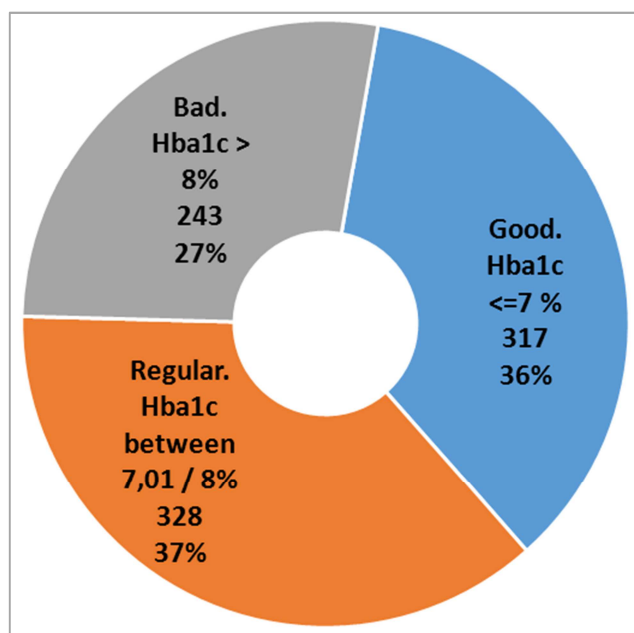


Figure 4. Control Metabolic.

NO: 667 (75.1%). YES: 221 (24.9%). Diabetic nephropathy: NO: 685 (77.1%). YES: 203 (22.9%), Incipient; 131 (15%), established; 58 (6%), advanced; 14 (2%). Cancer: NO: 870 (98%). YES: 18 (2%), Lung; 3 (17%), Larynx; 1 (6%), Pancreas; 1 (6%), Liver; 1 (6%), Kidney; 3 (17%), Colon; 2 (11%), Breast; 5 (28%), Uterus; 2 (11%). Figure 8. Medication: Insulin alone: 142 (16%), Oral drugs plus insulin: 226 (25%), Oral drugs: 520 (59%); single drug; 214 (24%), combined; 306 (59%). Figure 9 Glycemic self-monitoring: NO: 165 (19%). YES: 723 (81%), daily; 341 (47%), 3 times a week; 382 (53%). Figure 10.

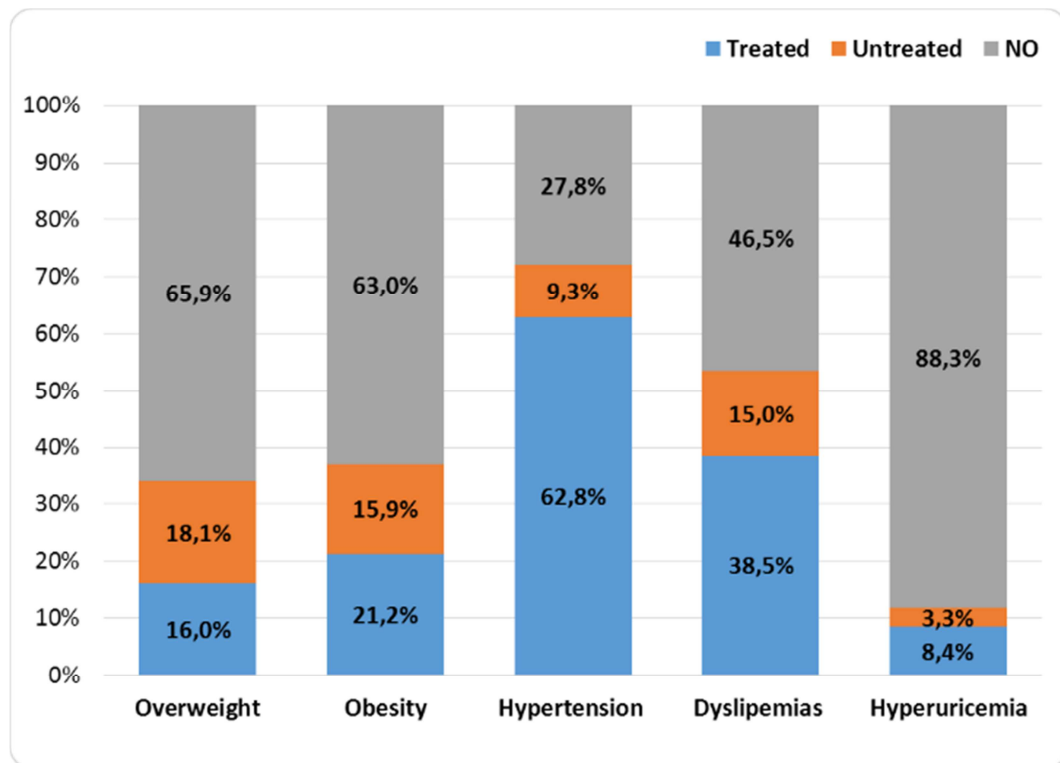


Figure 5. Associated risk factors.

## 6. Conclusion

The clinical characteristics of the patients evaluated are: majority women (52%), with an average of 58 years of age.

More than 5 years of diagnosis, with family history in the first degree 50%. Good to regulate metabolic control. Treated with oral drugs, they perform self-monitoring. With risk factors, mostly treated. More than 70% do not have cardiovascular disease or microangiopathic complications.

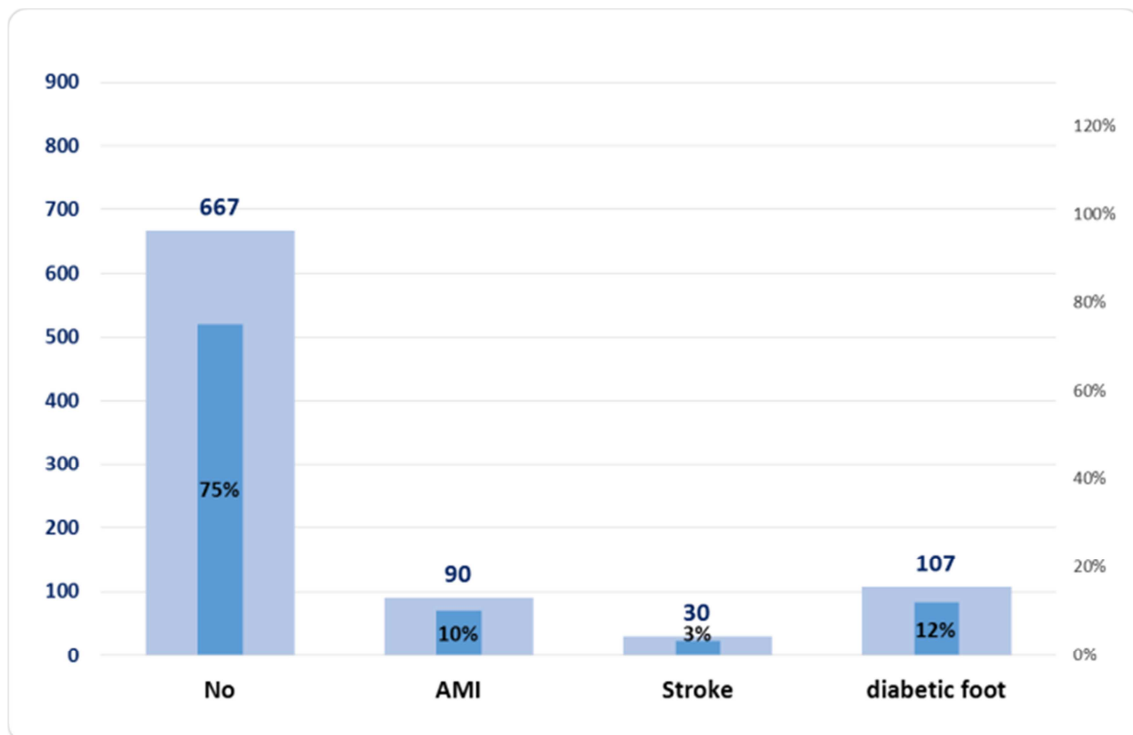


Figure 6. Cardiovascular disease.

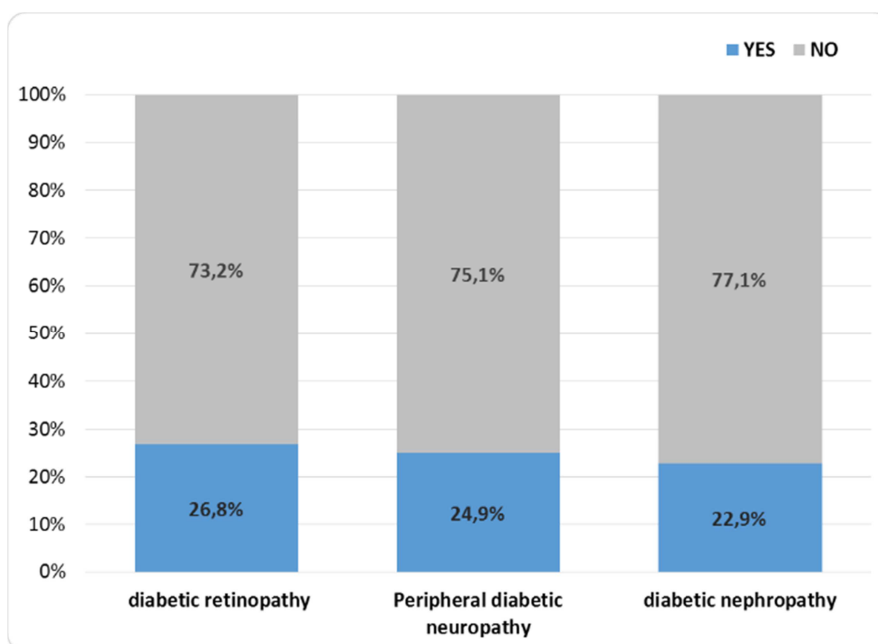


Figure 7. Microangiopathic complications.

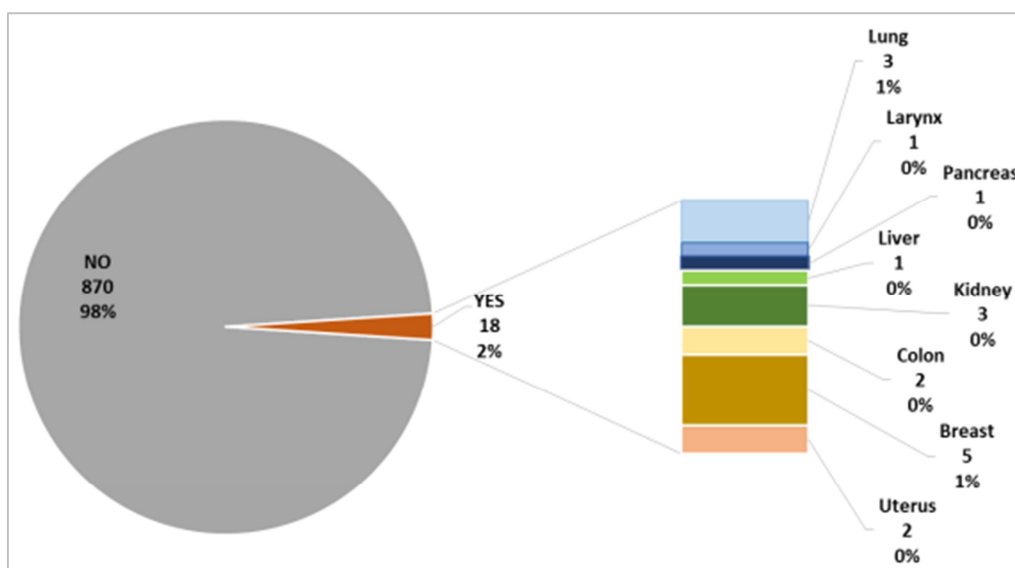


Figure 8. Cancer.

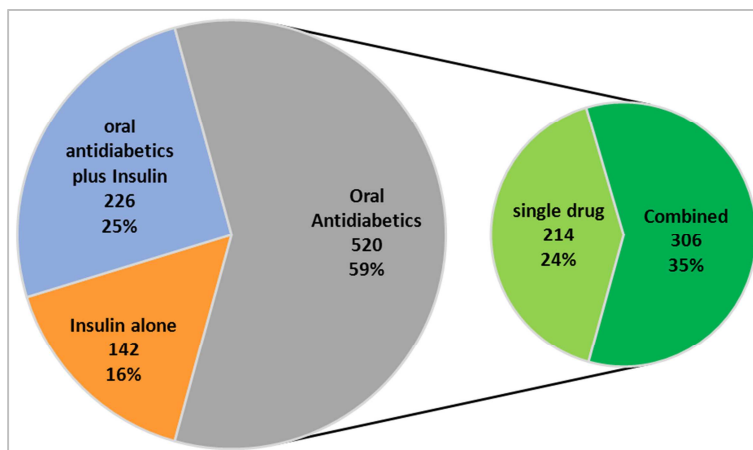


Figure 9. Pharmacological Treatment.

Cancer in 2%, with breast cancer being the most frequent. Majority women, could be due to the fact that by attending more to the medical consultation, there is more opportunity for diagnosis. It is important to teach that family members can prevent the disease by following a plan of daily physical activity and healthy eating [1]. The practice of physical activity was not evaluated in this study. Chronic complications may already be present at diagnosis of the disease, so early diagnosis is important [4]. The age of 60 years is an independent risk factor for chronic complications, after good control of cardiovascular risk factors [1, 5]. Glycemic self-control is carried out by 81%. It allows evaluating the response to treatment, adjusting therapeutic

measures, based on the information obtained. One of the barriers to its realization is the cost [6-9]. A high percentage of patients have at least one cardiovascular risk factor [6, 10].

Controlling these prevents and/or delays the development of cardiovascular disease [11-13]. 71% are overweight or obese, a chronic disease, which is associated with other cardiovascular risk factors and cancer [14-19]. Despite the existence of the obesity law, the coverage of its treatment has many drawbacks. Type 2 diabetes is associated with carcinoma of the colon, pancreas, and breast in postmenopause [20]. Most do not present cardiovascular disease or microangiopathic complications, related to metabolic control and satisfactory management of risk factors [21-26].

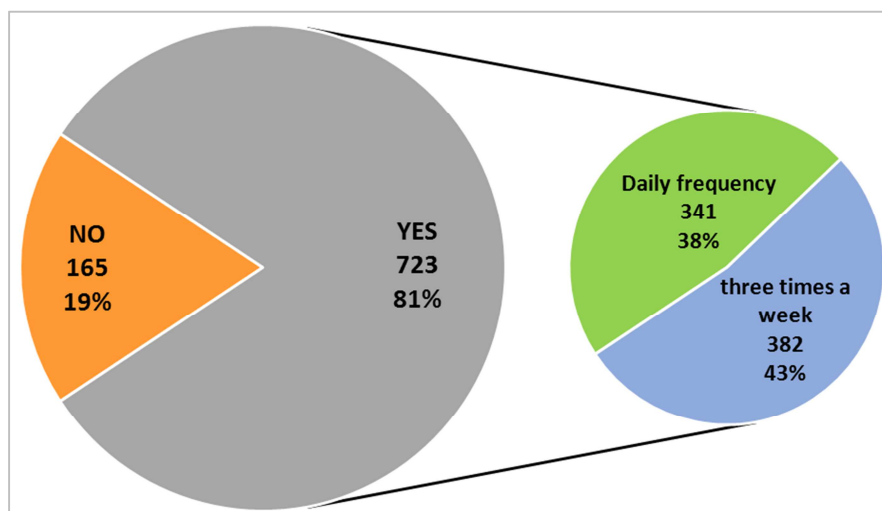


Figure 10. Glicemic self-monitoring.

## Acknowledgements

To Veronica Koleff for her help with the calculations.

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