

ANALYSIS OF THE PREVALENCE OF HIGH BLOOD PRESSURE AND DIABETES: RESULTS OF A STATISTICAL SURVEY IN THE WILAYA OF BEJAIA

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ABSTRACT:

In Algeria, high blood pressure and diabetes are among the main chronic diseases, contributing significantly to morbidity and mortality.

This study, carried out on a sample of 483 people aged 25 and over in the wilaya of Bejaïa, aims to estimate the prevalence of these pathologies and to analyze patients' knowledge about them. Data was collected over one year and analyzed using SPSS software.

The results demonstrate a general prevalence of hypertension of 77.23%, of which 67.8% of cases are associated with diabetes. Diseases are more common in men and increase significantly with age. Furthermore, factors such as physical inactivity (80.54%), obesity (55.6%), and family history (41.2%) were identified as major.

This study highlights gaps in patient awareness and care.

Keywords: High blood pressure, diabetes, chronic diseases, public health, Bejaia.

I. INTRODUCTION

The health transition in Algeria is accelerated. We distinguish three different transitions: epidemiological, with a spectacular decline in endemic diseases and a rise in chronic diseases; demographic, with the increase in life expectancy and the aging of the population; and socio-economic with a change in lifestyle and an increase in sedentary lifestyle.

According to a WHO report in 2024, chronic (non-communicable) diseases are responsible for 43 million deaths in 2021, globally, or 75%; 18 million people died from an

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NCD before the age of 70. More than 82% of these premature deaths occurred in low- and middle-income countries (WHO, Monitoring progress in combating noncommunicable diseases 2022). This number of deaths from chronic diseases is expected to reach 52 million in 2030, according to United Nations forecasts. (WHO, 2024)

In Algeria, chronic diseases are the cause of nearly 57% of deaths, 66% of which concern people aged between 30 and 69. (INSP, 2021)

Note that the most common non-contagious chronic diseases in the world (and also in Algeria) are hypertension and diabetes.

Algeria has undergone several changes. Firstly, the increase in life expectancy at birth from 42 years in 1950 to almost 77 years in 2022; then urbanization, increasing from 30% of the population in 1960 to more than 74% in 2022, according to the World Bank, with all its consequences on stress and the practice of sport; finally, the relative deterioration of food and lifestyle hygiene linked in particular to the consumption of alcohol and tobacco. (WHO, 2025)

Also, the functioning of the Algerian health system in terms of cost and personnel is evolving to adapt to new realities. It is forced to face significant care costs and adapt its healthcare offering to the new demand in terms of personnel and health structures.

Thus, the problem of financing the health system having been raised, the social security system must also adapt its offer to help resolve the constraints linked to the increase in health spending in order to ensure better access to care, knowing that it is called upon to face the dilemma of the decline in the active population and the increase in the population aged over 60.

As a reminder, the country's socio-economic transition recorded an increase in the Human Development Index (HDI) of 0.245 between 1980 and 2023. It went from 0.5 in 1980 to more than 0.745 in 2023, which explains the increase in health spending mentioned above. ([United Nations Development 2025](#))

This study, which involved a population of 483 patients, aims to estimate the prevalence of hypertension and diabetes in one of the regions of the country (Bejaia) and to assess the degree of information and knowledge of the population regarding these two diseases. We will then try to identify the factors influencing them (these two diseases).

II. THE EPIDEMIOLOGICAL TRANSITION:

The Algerian health system is characterized by two concomitant transitions: demographic transition and epidemiological transition.

The demographic transition is complex and results in rapid population growth coupled with significant aging, with a sharp increase in the number of people aged 60 and over. In Algeria,

the population aged 60 and over reached 813,000 in 1966. This figure quadrupled in 2015 to reach 3,484,000 people. It will be around 5 million in 2024¹.

Concerning the epidemiological transition, Algeria is faced with both the health priorities of developing countries and those of developed countries. The efforts made in this area have enabled a relative eradication of communicable diseases. However, there is a need to better manage the phenomenon of the emergence of chronic diseases which affect more than half of the population, according to the Ministry of Health, Population and Hospital Reform (MSPRH)².

In Algeria, the number of deaths from chronic diseases is increasing. Cardiovascular diseases alone have already caused around 40,000 deaths per year and complications of diabetes kill some 28,000 people per year since 2016³.

II.1. SURVEY RESULTS AND ANALYSIS:

The survey was carried out in an urban area (56.94%), and was conducted on a population aged 25 and over. The study involved 234 women (48.45%) and 249 men (51.55%). The average age was 59.5 years.

As expected, the population's knowledge regarding hypertension and diabetes was found to be proportional to education level. In the case of our survey, the majority of patients had no school education. More precisely, 258 people out of 483, a rate of 53.42%. Among the respondents, a total of 58 patients, or 12.01%, practiced an independent professional activity, mainly trade and agriculture. Another fringe made up of 225 patients (46.58%) was without professional activity, of which 14 patients (16%) benefited from a quarterly retirement pension.

Our survey focuses on common risk factors for non-communicable diseases. The World Health Organization has identified the following: tobacco, alcohol, eating behaviours, physical inactivity, obesity, high blood pressure, high blood sugar and dyslipidaemia. These factors, which have a major impact on mortality and morbidity due to chronic diseases, can be modified through efficient prevention.

Subjects aged 55 to 64 years accounted for 62.82%. The mean systolic BP of the population was 140 mmHg, and the mean diastolic BP was 80 mmHg. The overall prevalence of hypertension in the sample was 77.23%, and 22.77% in patients who were not known to be hypertensive. The prevalence of HBP increases with age and 70% of hypertensives are over 60 years old. Among all respondents presenting high blood pressure figures (SBP $\geq$ 140 mmHg and/or DBP $\geq$ 90mmHg), 10% were under treatment and balanced, 7% were under TRT and not balanced and 65.3% had a SBP $\geq$ 140 mmHg and/or DBP $\geq$ 90mmHg and with non-regular medication intake.

This study reveals a prevalence of diabetes in the general population (aged 25 and over) estimated at 22.77%, or the equivalent of 110 patients out of all 483 surveyed.

¹ <https://archives.ceped.org>

² <https://na.eventscloud.com>.

³ <https://www.santetropicale.com>

Analysis Of The Prevalence Of High Blood Pressure And Diabetes: Results Of A Statistical Survey In The Wilaya Of Bejaia

Regarding the overall prevalence of high blood pressure, the number of patients reached 373 cases out of 483, or 77.23%, of which 253 people were also diabetic, or 67.8% (253/373).

To determine these cases in this study, we adopted the 1999 WHO classification. Also, subjects were considered hypertensive when they had antihypertensive treatment or elevated blood pressure (BP) (140/90 mm Hg).

As a working basis required for a reliable analysis of the data, the need to provide us with information on the habits and state of health of the subjects in our population has become essential. This information concerns several main elements, namely: age, family history, tobacco consumption, sports practice, obesity or overweight, state of health, namely hypertension, etc., to which we can add marital status, income and level of education.

Firstly, as might be expected, it is either hypertension or diabetes that mainly affects the elderly. Among the 483 surveyed, 369 were over 55 years old, or 76.4%.

Secondly, the question of family history is a very interesting lead which must be looked at closely in future studies, given that we are studying the first aging population in Algeria. Knowing that 41.20% of patients, men and women combined, declared that they had a family history and 12.22% had no way of knowing for various reasons.

Thirdly, the prevalence of smoked tobacco consumption recorded among all respondents is 9.16%. Attempts to quit smoking during the last week preceding the survey represent 2/3 of smokers and among the smokers currently in the survey, 29 people, or 10.02%, declared having stopped smoking for more than a year and a half.

Fourth, regarding the practice of sport, nearly 80.54% of the population surveyed does not practice physical activity. 22 out of 234 women and 72 out of 249 men reported doing less than 150 minutes of moderate physical activity per week.

Fifthly, it should also be noted that half of the patients are obese or overweight due to the lack of physical activity. Nearly a quarter of people in the survey do not follow WHO recommendations. The overall prevalence of overweight and obesity ($BMI \geq 25$ Kg/m²) was 55.6% (men: 48.3%, women: 63.3%), or nearly one in two men and two in three women.

Finally, 41.2% of those questioned persons (43.72% of men and 56.28% of women) declared having a history of hypertension compared to 46.58% of healthy people. 12.22% were unaware of their cases.

II. 2. SAMPLING AND RESPONSE RATES :

The survey identified 500 people (aged 25 and over) in the urban area. But 483 of them ultimately agreed to respond to our request, representing a membership rate of 96.6%. The others did not participate in the investigation. However, 277 of the 483 respondents did not provide answers to all questions for various reasons. We mainly note the lack of necessary knowledge and the absence of freshness of memory, i.e. 57.34% (277/483). To fill these deficits, we took care to consult the files of these patients. Thus, we processed 277

questionnaires that were initially insufficient. Only 206 people overall responded to the entire questionnaire at the time of the survey, or 42.65% (206/483).

The time spent on the investigation was approximately one year. It took place between the beginning of January 2018 and the end of December 2018.

To know the different factors likely to influence the growth of chronic diseases, the socio-economic and demographic indicators used are: age, family history, tobacco consumption, sports practice, obesity or overweight, state of health, namely the presence of hypertension, etc., to which we can add marital status, income and level of education. The processing of the results and the formatting of the information were carried out with Excel (pivot table).

II. 3. COLLECTION OF INFORMATION:

The collection of information was carried out by ourselves with the kind assistance of doctors and nurses who were kind enough to provide us with the medical files of the patients involved in the investigation in order to supplement our files with useful data.

We opted for the directive interview method. The questions were carefully prepared, taking into account the sociology of the conditions for carrying out our survey. Face-to-face with the subject facilitates exchange and allows mutual understanding. It encourages back and forth, the search for details and the removal of ambiguities in the respondents' responses. An interview lasted on average 15 to 20 minutes. The survey was generally accepted and went well. In total, 483 files were completely filled.

II.4. SAMPLE CHARACTERISTICS:

The population sample studied is 483 people aged 25 and over; 48.45% are women and 51.55% are men whose average age was 63 years old, between 28 and 95 years old. It should be noted that the distribution of the sample according to demographic characteristics reflects the predominance of people aged between 55 and 64 years old with a proportion of 32%, of which 71% are male.

III. SOCIODEMOGRAPHIC CHARACTERISTICS OF THE SURVEYS:

We will present here the different tables concerning the two diseases together. We will then present the data concerning hypertension followed by those concerning diabetes.

III. 1. GENERAL DATA ON PATIENTS (HYPERTENSION AND DIABETES):

The data collection carried out at the Bejaia University Hospital concerned a total of 483 hypertensive and diabetic people of both sexes, aged 25 and over. The data were collected during 3 months of presence in the cardiology and endocrinology departments of the outpatient consultation block of the hospital.

III. 1.1. According to age:

The age structure for each sex shows a predominance of the female sex in ages 45 to 75 and over. According to the results of the data from this survey, the prevalence of hypertension is 73%. Among hypertensive people, 50% have diabetes, including 4% type I and 23% type II.

Table 1 shows that the percentage of patients increases with age. Thus, we go from 3.42% in the 25-34 age group to 62.82% in the 55-64 age group. Then, their rate decreases until reaching 45.73% between 85-94 years old. The same general trend is observed for men and women.

In total, men represent 51.45% and women 48.55% of patients (diabetics and hypertension).

Table 01 : Distribution of subjects by age groups

Age Range	25-34	35-44	45-54	55-64	65-74	75 et plus	Total
Number	7	33	74	148	114	107	483
%	3,42	14,1	31,62	62,82	48,72	45,73	100

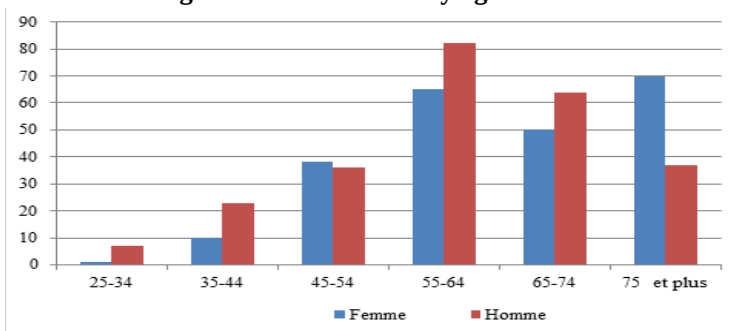
Source: Produced by us from our research data.

III. 1.2. According to gender:

Often, health care use among women is almost three times higher than that observed among men. This is explained by the fact that women consider themselves to be in poorer health compared to men. In addition, they generally have gynecological problems, especially during menopause.

As a result, they tend to feel more need for care and are therefore more likely to be ill. In our case, we do not find any significant difference according to sex.

Figure 01: Distribution by age and sex



Source: Produced by us from our research data.

According to the results of the survey, the distribution of these women and men is made according to certain socio-demographic characteristics, namely age, marital status, place of residence, region and level of education.

As expected, the proportion of women surveyed by age group increases regularly and rapidly with advancing age. From 0.43% at 25-34 years, the proportion of women increases by more than half to reach 4.27% at 35-44 years and increases by another half to reach 16.24% at 45-54 years. Among men, we see the same trend of regular increase in proportions, going from 2.99% at 25-34 years old to 35.04% at 55-64 years old.

III. 1.3. According to family history:

46.58% of respondents reported having no family history of hypertension. Conversely, 41.20% stated that they have a family history of the disease; in most cases it is the mother.

Table 02: Distribution according to hypertensive history

Total	Yes		No		Don't know	
	N	%	N	%	N	%
Women	112	47,86	101	43,89	21	08,97
Man	87	33,37	124	49,79	38	15,26
483	199	41,20	225	46,58	59	12,22

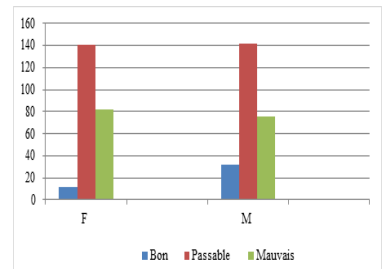
Source: Produced by us from our research data.

III. 1.4. Depending on the state of health

According to the results of the survey, 9.11% of patients declared themselves to be in good health. 58.39% consider their state of health average. 32.51% of patients say they are in poor health. With age, perception of health deteriorates. Women less often report being in good health than men.

Table 03: Distribution according to health status **Figure 2:** distribution of patients according to their state of health.

Health status	Woman		Man		Total	
	N	%	N	%	N	%
Good	12	5,13	32	12,85	44	9,11
Passable	140	59,83	142	57,03	282	58,39
bad	82	35,04	75	30,12	157	32,51
	34	100	49	100	83	100



Source: Produced by ourselves

III. 1.5. According to marital status:

Analysis Of The Prevalence Of High Blood Pressure And Diabetes: Results Of A Statistical Survey In The Wilaya Of Bejaia

The respondents are made up of 65.84% married couples, 27.12% widowers and 13% divorced people. Singles represent 4.35% of patients (Table 4).

Table 04: Distribution according to marital status of patients

Marital status	Woman		Man		Total	
	N	%	N	%	N	%
Bachelor	7	2,99	14	5,62	21	4,35
Divorce	3	1,28	10	4,02	33	2,69
Married	129	55,13	189	75,90	318	65,84
Widower	95	40,60	36	14,46	311	27,21
Grand total	234	100	249	100	483	100

Source: Produced by us from our research data.

III. 1.6. According to income:

Patients whose monthly income does not exceed 15,000 DA represent 28.72% of the sample (including 24.02% who have no source of income). 21.95% of patients have a main monthly income between 15,000 and 29,999 DA, 16.98% of them have a monthly income between 30,000 and 39,999 DA, while only 10.77% declared that their monthly income is greater than 40,000 DA. Note also that 3.93% refused to declare their income and 7.66% declared that they did not know.

Table 05: Distribution of patients according to income

Number of patients	Less than 15000	15000-29999	30000-49999	Plus de 40000	Don't know	refusal
Women	33	37	18	28	28	0
Man	44	69	64	24	9	19
Grand total	77	106	82	52	37	119

Source: Produced by us from our research data.

III. 1.7. According to the level of study:

For the level of education, we note that the number of patients is greater among people who have never studied (53.42%) or who have a primary level (19.67%).

The percentage is 19.25% among those with secondary education and is respectively 4.55% and 3.11% among those with professional training and those with university level. We can therefore conclude that the level of education of the person has no significant influence on the risk of being ill.

Table 06: Distribution according to level of study

Level of study	Patients	
	Total number	%
Vocational training	22	4,55
Never studied	258	53,42
Primary	95	19,67
Secondary	93	19,25
University	15	3,11
Grand total	483	100

Source: Produced by us from our research data.

III. 1.8. According to profession:

The most represented categories are housewives (44.31%) and public sector employees (29.81%). The self-employed represent 12.22% of those surveyed and private sector employees constitute 11.80% of all those surveyed.

Table 07: Distribution according to the patient's profession

The profession	The sick	
	Total number	%
Public sector employee	142	29,81
Private sector employee	57	11,80
Housewife	214	44,31
Independent	59	12,22
Grand total	483	100

Source: Produced by us from our research data.

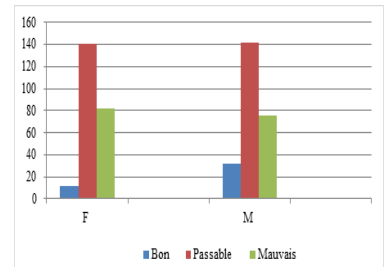
III. 1.9. According to physical activity:

There are many factors that can lead to the appearance of a disease. The presence of the disease is significantly different depending on lifestyle and level of physical activity. 58.80% of patients do not practice physical or sporting activity, compared to 41.20% of people who do.

Table 08: Distribution according to physical activity

Physical activity	Yes		No		Total	
	N	%	N	%	N	%
Woman	22	11,06	212	74,65	34	48,45
Man	177	88,94	72	25,35	49	51,55
Total	41,20	100	58,80	100	83	100

Source: Produced by us from our research data.



III. 1.10. According to smoking status:

The impact of smoking on population health no longer needs to be demonstrated. Tobacco consumption is strongly linked to cardiovascular diseases, cancers and obstructive pulmonary disease.

The following table presents the state of tobacco consumption among the patients surveyed. Among the patients surveyed, 9.11% answered yes (smokers at the time of the survey) and 90.89% answered no.

Table 09: Distribution according to smoking status

Tobacco	Yes		No		Total	
	N	%	N	%	N	%
Total	44	9,11	439	90,89	483	100

Source: Produced by us from our research data.

III. 1.11. Depending on the reason for seeking care:

Table 10 : Distribution according to reason for recourse and non-recourse to hospital

Reason for appeal	The number of patients	
	Total number	%
Private	231	47,83
Public	187	38,72
Both	62	12,84
Others	3	0,62

Source: Produced by us from our research data.

Out of the 187 patients who declared that they had the public sector as their first resort in the event of illness, 16.58% at least retained effectiveness as a criterion of choice.

- 54.01% retained the cost of consultations as a selection criterion.
- 3.21% chose the distance between home and the public sector as the criterion of choice.
- Only 3.74% said they took reception into account as a selection criterion.

Here, the distance was assessed through the duration of the journey between home and the nearest EPSP. Thus, respondents were asked to estimate the time taken to reach the nearest EPSP.

The average journey time was estimated at 15 minutes. The shortest time between EPSP and home is 5 minutes. The longest time is 45 minutes.

Patients who declared having a duration of access to the EPSP of less than 15 minutes represent 77.63% of the sample. The other patients, i.e. 22.37%, prefer to refer to

other remedies. We note that patients who declared having access to EPSPs of less than 15 minutes use the care offered by public health establishments much more than others.

III. 2. GENERAL DATA ON HYPERTENSIVES AND THEIR BLOOD PRESSURE:

Table 11: Distribution of hypertensives by age

Age group	25-34	35-44	45-54	55-64	65-74	75 and over	Total
Number	2	30	72	55	78	42	379
%	0,53	7,92	19,00	14,51	0,58	37,47	100

Source: Produced by us from our research data.

After the classification of hypertensives; 0.53% of the latter are aged between 25 and 34 years, 19% are aged between 35 and 44 years, 14.51% between 45 and 54 years, 20.58% between 55 and 64 years, 37.47% between 65 and 74 years and 37.47% for the other age groups.

Hypertensives represent 78.74% of patients (379 cases); women represent 49.34% of the total hypertensive patients compared to 50.66% for men.

The prevalence of hypertension disease is more than 78%, in populations where obesity, smoking, diabetes and chronic kidney disease (CKD) are present. Hypertension and other non-communicable diseases are increasingly present. Having masked hypertension increases the risk of having a high heart rate and higher blood pressure at night.

III. 2.1. The risks of the disease:

There are many risk factors for hypertension. Furthermore, a hypertensive patient has a high possibility of developing other diseases such as type II diabetes, heart failure and stroke. These diseases have a significant impact on the mortality and morbidity rate. Their chronic nature creates a high level of expenses that can be avoided or delayed through prevention.

According to the results of our survey, 12.14% of patients answered yes to the fact that they had a stroke. According to these results, 12% of patients had a heart attack, while 13.19% of patients have kidney failure.

The management of chronic diseases, such as hypertension, requires the patient to have good knowledge of their illness. The level of awareness of hypertension in hypertensive patients is generally insufficient. Thus, in the study, 58.84% of patients believe that they have more or less reliable knowledge about hypertension.

The measurement of blood pressure and the diagnosis of high blood pressure among all respondents in both sexes, reported by our survey, show that 41.16% of those questioned recognize or declare having never benefited from a blood pressure measurement before knowing their illness. 58.84% say they have benefited from having their blood pressure taken compared to 54.4% who say they have normal blood pressure.

14.8% report having high blood pressure. 133 people (27.54%) declared that they are informed and that they have been following their treatments for more than a year, while 17 people (3.52%) declared that they have been following their treatments for less than a month.

79.09% declared that they do not take several treatments at the same time compared to 20.91%. It should be noted that people with high blood pressure have a 50% increased risk of becoming diabetic.

Table No. 12. Distribution according to the number of years of consumption of the treatment

Year	<1 an	[1-5[	[5-10[	[10-15[	[15-20[	[20-25[	[25-30[	[30-35[	Total
N	25	210	81	72	52	19	13	11	483
%	5,18	43,48	16,77	14,91	10,77	3,93	2,69	2,28	100

Source: Produced by us from our research data.

The vast majority of patients declared that they had been under treatment for a year and a half, or 27.54%. It should be noted that the minimum duration is one month and the maximum duration is nine years of treatment.

III. 3. GENERAL DATA ON DIABETICS AND DIABETES DISPARITIES:

In 2017, one in two diabetics was not known (or diagnosed) while in 2003, for every known diabetic, two were not known. In addition, the prevalence of diabetes in 2004 was established on a smaller population than that of 2017, particularly with regard to the age group concerned which was smaller.

Diabetes is therefore on the rise in Algeria but screening is also making progress.

Among people with diabetes, 75.36% have hypertension 71.43%, 24.73% type II and 3.85% type I.

After having made a distribution according to the type of diabetes, it would be interesting to do that which consists of distinguishing between male and female sex in order to highlight the proportion of each sex. The frequency of diabetics is 21.53%. It is a little higher among men than among women (50.55% vs 49.50%).

Out of the 483 patients surveyed, 364 people were treated for diabetes, or 75.36% of patients. Studies confirm disparities linked to age, gender, social conditions, as well as geographic disparities.

Through the results of the survey, we see the significant gap between the three types of diabetes, where type II is by far in first position with a rate of 92.23%, followed by type 1 with a rate of 7.25%, or 14 cases. Gestational diabetes is not common and occupies last place, recording only 1 case, or a rate of 0.52%.

We obtained a prevalence of diabetes of 50.57% among women and 49.43% among men. The percentage of type II diabetes is 96.15%, it is complicated in 71.43% of patients (those suffering from hypertension and other diseases).

Type I diabetes affects approximately 3.85% of diabetic people, mainly women with a percentage of 98.33%. Monitoring of diabetes and its complications has proven to be very insufficient.

The main risk factors for frequency and severity of retinopathy found are the duration of progression of diabetes, insulin therapy and the existence of arterial hypertension.

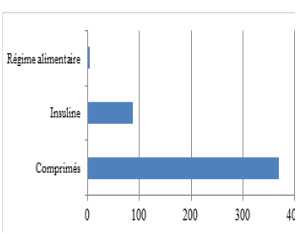
The main risk factors for frequency and severity of retinopathy found are the duration of progression of diabetes, insulin therapy and the existence of arterial hypertension.

On average, people with diabetes are 66 years old and have known about their diabetes for eleven years. More than half (50.57%) of type II diabetics are women and 90% of them benefit from 100% care (diabetic homes).

Table 13: Distribution according to treatment

Treatment	The number of patients	
	N	%
Tablets	370	79,91
Insulin	88	19,01
Diet	5	1,08
Grand total	463	100

Figure 3: Treatment of patients



Source: Produced by us from our research data.

III. 4. ACCORDING TO DIABETIC HYPERTENSIVES:

In hypertensive diabetics, if there is type II diabetes, it is recommended to prescribe an antihypertensive medication when the usual blood pressure is greater than or equal to 140 mmHg systolic or greater than or equal to 90 mmHg diastolic.

Usual blood pressure is estimated from at least 3 measurements spread over at least 3 consultations. This relatively low intervention threshold takes into account the fact that type II diabetes increases the cardiovascular risk linked to high blood pressure. It remains valid with the new definition of type II diabetes. The accumulation of several risk factors is usually observed when fasting blood glucose exceeds 1.10 g/L (6.1 mmol/L).

In a hypertensive type II diabetic, the goal of antihypertensive treatment is a blood pressure usually < 130 mmHg for systolic and 85 mmHg for diastolic. According to the results of this survey, 53.83% of hypertensives are diabetic.

IV. CONCLUSION:

Chronic disease poses a major public health problem through its medical and socio-economic repercussions. The recommendations may initially concern pathologies which present a high cost and affect a large part of the population such as chronic diseases and tumors.

Among the major public health problems, due to their high and constantly increasing prevalence, their still insufficient screening and control and the impact of their association on increased cardiovascular and renal risk, arterial hypertension and type II diabetes are real medical, social and medico-economic concerns.

The appearance of hypertension in diabetic patients suggests the establishment of central vascular alterations making it more difficult to control blood pressure and increasing the cardiovascular, cerebrovascular and renal risk due to the underlying damage to the target organs. Most often, the hypertensive diabetic patient immediately places himself at high risk.

The emphasis is therefore placed on the importance of early, multifactorial and intensive intervention, medicinal and non-pharmacological, in the management of these patients, keeping in mind that the delay in initiating treatments reduces the benefit of such treatment and that the intensification of antihypertensive or diabetic treatment may even present an additional risk in terms of coronary morbidity and mortality and all-cause mortality, particularly in frail, elderly patients or those with other diseases.

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