Metabolic Syndrome in the Internal Medicine Department of Chu Point G

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Abstract

Introduction: The metabolic syndrome according to the IDF (International Diabetes Federation) is at the origin of the double global epidemic of type 2 diabetes and cardiovascular diseases. This work aims to study the metabolic syndrome in the internal medicine department of CHU Point G. **Methodology:** This was a descriptive study of patients who presented a metabolic syndrome according to the definition of the IDF definition, hospitalized in the internal medicine department of the CHU du point G for the period from January 1 2010 to December 31, 2019. **Results:** During the study period, 4189 patients were hospitalized, including 60 with metabolic syndrome, representing a hospital frequency of 1.43%. The sex ratio was 0.36. The age group of 50 and 60 years accounted for 28.3%. Forty-six point six percent (46.6%) of our patients were diabetic, 45% obese, 60% hypertensive, 70% sedentary and 10% smokers. Our patients had in 53.3% of cases a blood pressure figure ≥ 130/85 mmHg, abdominal obesity in 100%, hypertriglyceridemia in 33.3%, HDL-C less than 0.40 g/l in 62.5% of men and less than 0.50 g/l in 77.27% of men, blood sugar ≥ 1 g/l in 88.3%. **Conclusion:** The metabolic syndrome, in view of the entities that compose it, is a real cardiovascular risk factor and therefore a major public health issue.

Keywords

Metabolic Syndrome, CHU Point G, Internal Medicine

1. Introduction

Metabolic syndrome includes in its definition the presence of several associated metabolic abnormalities (abdominal obesity, hypertriglyceridemia, low HDL cholesterol, glucose intolerance or type 2 diabetes, arterial hypertension). This entity is relatively common with a prevalence that increases with the age of individuals. The metabolic syndrome predisposes both to the occurrence of type 2 diabetes and cardiovascular complications [1]. Several definitions of the metabolic syndrome have been proposed, in particular that of the WHO, the IDF, and the NCEP ATP III. According to the International Diabetes Federation (IDF), the metabolic syndrome is defined by the presence of abdominal obesity with a waist circumference ≥ 94 cm in men and ≥ 80 cm in women associated with at least two of the following four criteria:

- Fasting blood sugar ≥ 1.00 g/l or proven type 2 diabetes;
- Blood pressure ≥130/85 mm Hg;
- Elevated triglycerides ≥ 1.5 g/l or specific treatment for the lipid abnormality;
- Low HDL cholesterol < 0.40 g/l in men and 0.5 g/l in women or specific treatment for the lipid abnormality [2].

According to the IDF, this syndrome is at the origin of the double global epidemic of type 2 diabetes and cardiovascular disease [3]. It therefore constitutes a real public health problem.

The prevalence of the metabolic syndrome varies according to the year of the study, the geographical region, the ethnicity, the culture, the gender (male/female), the physical activity, the age and the definition used [4] [5].

This work aims to study the metabolic syndrome in the Internal Medicine department of the University Hospital Center (CHU) of Point G in Bamako, Mali.

2. Materials and Methods

This was a descriptive study with retrospective collection from January 1, 2010 to July 31, 2019 and prospective from August 1 to December 31, 2019, covering all patients hospitalized during this study period in the medical department, hospital at Point G University Hospital. Included were patients who had presented a metabolic syndrome according to the definition of the International Diabetes Federation and who had a usable file.

Any person with abdominal obesity with a waist circumference ≥ 94 cm in men and ≥ 80 cm in women associated with two of the following criteria was considered to have the metabolic syndrome: fasting blood sugar ≥ 1 g/l or proven type 2 diabetes; blood pressure ≥ 130/85 mmHg; an increase in triglycerides ≥ 1.5 g/l or specific treatment for the lipid abnormality; HDL cholesterol < 0.40 g/l in men and < 0.5 g/l in women.

The variables studied were clinical (waist circumference, blood pressure, lifestyle) and paraclinical (glycaemia, triglyceride, HDL cholesterol).

The data collected during the retrospective phase were collected through the patient's hospital file, and for the prospective phase, informed verbal consent from the patients was retained, then an interview and a clinical examination

were carried out.

The data collected was reported on an individual survey sheet. These data were processed using Excel software and then imported into SPSS version 22.00 for statistical analysis.

3. Results

During this study, 4189 patients were hospitalized in the internal medicine department, 60 patients met our criteria, either a hospital frequency of 1.43%.

The age group of 50 to 60 years accounted for 28.3% (Figure 1), and the sex ratio was 0.36. The majority of our patients came from Bamako (75%). Housewives represented 48.3% of our study population.

Forty-six point six percent (46.6%) of our patients were diabetic, 45% obese, 60% hypertensive, 70% sedentary and 10% smokers. The reason for consultation was a polyuro-polydipsic syndrome in 38.35% (Table 1).

Our patients had in 53.3% of cases a blood pressure figure ≥ 130/85 mmHg; high blood sugar levels (≥1.26 g/l) in 68.3%; a higher triglyceride level > 1.5 g/l in 33.3% (Table 2).

They also had HDL-C levels below 0.40 g/l in 62.5% of men and 77.27% of women (Figure 2).

4. Discussion

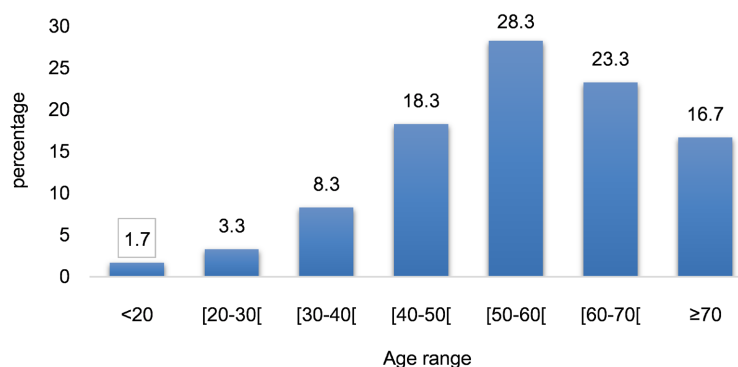We encountered several difficulties during the study, including:

Figure 1. Breakdown by age group.

Table 1. Distribution according to cardiovascular risk factors.

Cardiovascular risk factors	Effective (n = 60)	Percentage
Sedentary lifestyle	42	70
Tobacco	6	10
Diabetes	28	46.67
Hypertension	36	60
Obesity	27	45

Table 2. Distribution according to the elements of the metabolic syndrome.

Elements of the metabolic syndrome	Effective (n = 60)	Percentage
Blood pressure figure ≥ 130/85 mmHg	32	53.3
Blood sugar (≥1.26 g/l)	41	68.3
Blood sugar (1.00 - 1.25 g/l)	12	20
Diabetes	28	46.67
Triglyceride > 1.5 g/l	20	33.3
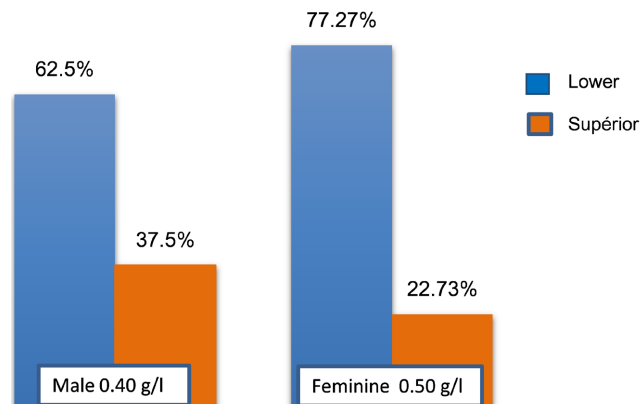
Figure 2. Distribution by HDL-C value.

The non-performance of certain additional examinations by all patients, The absence of certain clinical parameters, in particular the abdominal circumference, in certain files led to their exclusion.

At the end of our study, we recorded a hospital frequency of metabolic syndrome of 1.43%. This rate is lower than that found by Coste [6] who obtained 20.9%, because of the use of the definition of metabolic syndrome according to the NCEP-ATP III criteria. We found a higher frequency of patients residing in urban areas (75%). This result is similar to that of Smaili [7] who found 80% in his study. This could be explained by the impact of the lifestyle in an urban environment. La tranche d'âge 50 à 60 ans avait une fréquence supérieure aux autres tranches d'âge. Même constat fait par d'Alexander [8].

The majority of our patients (53.3%) had blood pressure ≥ 130/85 mmHg, this result is lower than that of Traore [9] who found 86.7% of patients who had blood pressure ≥ 130/85 mmHg. La glycémie à jeun supérieure à 1g/l était observer chez 88.3%.

The low HDL-C level concerned 62.5% of men and 77.27% of women. These results are similar to those found by Al-Nozha [10] which were 74.8% in men and 81.8% in women. These results could be explained by physical inactivity and a sedentary lifestyle.

Thirty-three point three percent (33.3%) of our patients had triglyceride levels above 1.5 g/l. Our result is close to those of Traore [9] who found 26.7% of patients who had a triglyceride level above 1.5 g/l.

5. Conclusion

The metabolic syndrome is a real cardiovascular risk factor and therefore a major public health issue.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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