

Screening for Cardiovascular Risk Factors in The Internal Medicine Department of Chu-Point G

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Summary

Objective: The aim of the study was to screen for cardiovascular risk factors in patients admitted to the internal medicine department of the Point G University Hospital.

Methodology: This was a descriptive study from December 1, 2021 to May 31, 2022, involving all patients hospitalized in the internal medicine department during the study period. The Framingham score, the SCORE2 tool, and the 2-OP score tool (elderly) were used to assess overall cardiovascular risk.

Results: Our sample consisted of 140 patients out of 231, or 60.61%, with a sex ratio of 1.1. The age group of 50 to 60 years represented 34.30% of cases. The cardiovascular risk factors of the patients were diabetes (58.6%); high blood pressure (44.3%), smoking (19.3%) and obesity (8.5%); Patients practiced regular physical activity in 22.1% of cases. According to the Framingham score, 42.9% of patients had a very high cardiovascular risk; 38.6% had a high cardiovascular risk.

Conclusion: Cardiovascular risk factors constitute a major public health problem. Early detection measures for cardiovascular risk could reduce morbidity and mortality linked to cardiovascular diseases.

Keywords: Cardiovascular Risk/ Internal Medicine/ CHU Point G

1. Introduction

Risk factors are any exposure factor that can modify the risk of a disease, i.e., modify its probability of occurrence. A risk factor is therefore a variable that is statistically linked to a disease and has a causal link with it [1]. In the world in 2008 they represented 63% of the population, 83% of deaths in Europe. In Nigeria, non-communicable diseases including high blood pressure, obesity and their complications were responsible for 27% of deaths in 2008 [2]. Non-communicable diseases are a group of pathologies that are not due to specific pathogens, are not transmissible, but have chemical, physical, dietary and social factors as etiological factors. They mainly include: cardiovascular diseases, cancers, chronic lung diseases, diabetes and

their associated consequences such as coronary artery disease, stroke, bronchitis and obesity. They share four risk factors: tobacco consumption, physical inactivity, excessive alcohol consumption and poor diet [2]. The STEPS survey conducted in the Democratic Republic of Congo shows that the proportion of daily smokers is 10.2% among men against 0.6 among women, the rate of alcohol consumption was 62% [3]. The STEPS survey conducted in Mali in 2008 found overweight in 19.76% of whom 13.56% were obese. The prevalence of hypertension was 9.56% and 70.36% of the sample had low physical activity [4]. Assessing an individual's overall cardiovascular risk is based on counting their risk factors or using risk calculation formulas. Screening for cardiovascular risk factors is a challenge in combating their

spread. Given the increase in cardiovascular risk factors due to the change in lifestyle called epidemiological transition within the population, we initiated this study with the aim of screening for cardiovascular risk factors in patients admitted to the internal medicine department of the Point G University Hospital.

2. Methodology

This was a cross-sectional study with prospective data collection from December 1, 2021 to May 31, 2022. It involved all patients hospitalized in the internal medicine department during the study period. All patients with at least one cardiovascular risk factor and willing to be part of the study were included. Sociodemographic characteristics, clinical variables (Body Mass Index, Weight, Height, Blood Pressure) and paraclinical variables (Blood Glucose, Triglycerides, Total Cholesterol Assay, HDL Cholesterol Assay, LDL Cholesterol Assay, CRP, Creatinemia, HIV Serology, Uric Acid) were studied. The collected data were recorded on an individual survey form. These data were processed using SPSS software version 22.00 for statistical

analyses. The data were collected after informed verbal consent from the patients; this was after explanations on the usefulness of biological tests in order to determine metabolic abnormalities. The data thus collected were used solely for scientific purposes and confidentiality was required.

3. Results

We recorded 140 patients out of 231 or 60.61%. The sex ratio was 1.1. The age group of 50 to 60 years represented 34.30% of cases with a mean age of 50.46 ± 14.27 years and extremes of 20 years and 92 years. Housewives represented 35.0% of the population. Personal history was dominated by diabetes (58.3%) and hypertension (44.3%). Patients practiced regular physical activity in 22.1% of cases. The cardiovascular risk factors identified were multiple and varied with among others: age in 68.1% of men and 41.6% of women; diabetic 58.6%; high blood pressure 44.3%, obesity 8.5%; sedentary lifestyle 77.9%; smoking 19.3% (Table I). According to the Framingham score, 42.9% of patients had a very high cardiovascular risk.

FDR-CV		Staff	Percentage
Age	Man	49	68.1
	Women	25	41.6
Sex		51	36.4
Sedentary lifestyle		109	77.9
Overweight		33	23.6
Obesity		12	8.5
Diabetes		82	58.6
HTA		62	44.3
Tobacco		27	19.3
Ethylism		9	6.4
Chronic inflammatory diseases		17	12.1
Adverse socioeconomic conditions		101	72.1
End-stage renal failure		9	6.6
Hypercholesterolemia		25	33.8
Hypertriglyceridemia		28	36.4
Hypo HDLemia	Man	9	28.1
	Women	6	15.4
Hyper LDLemia		37	46.8
High CRP		115	82.1
Hyperuricemia	Man	20	71.4
	Women	29	90.6

Table I: Distribution of Patients According to Cardiovascular Risk Factors

4. Discussion

Out of a total of 231 patients admitted to the department, 140 had cardiovascular risk factors, representing a frequency of 60.61%. This rate is different from that of Simmons [5] who found 18% of cases. These high rates of cardiovascular risk factors in our context could be explained by the location of the study which took place in an internal medicine department. A predominance of the 50-60 age group was

noted with 34.30% of cases. Several studies have shown that cardiovascular risk increases at the age of 60, and that it increases particularly between 60-65 years with stability at older ages [5-7]. The male sex was predominant in 51.40% of cases with a sex ratio of 1.1. According to the literature, the risk of cardiovascular diseases is 2 to 5 times more frequent in men than in women [6, 8].

A history of diabetes was found in 58.6% of patients and high blood pressure in 44.3%. A study conducted in Senegal shows that in sub-Saharan Africa, high blood pressure (HBP) is the main cardiovascular risk factor associated with diabetes [9]. Obesity was found in 8.5% of patients; overweight in 23.6%. Pessinaba [10] found 23% of cases of obesity. Benyaich [11] shows that lower adherence to the Mediterranean diet is associated with a high prevalence of one or more cardiovascular risk factors, such as high blood pressure, diabetes, and hypercholesterolemia. Only 22.1% of patients practiced regular physical activity. Physical activity could play an important role in preventing cardiovascular risks. Tobacco use was found in 19.3% of cases. Pessinaba [10] found 5.8% of cases of smoking. Regarding alcohol consumption, it was found in 6.4% of our patients.

Dyslipidemias are major determinants of cardiovascular diseases: 70% of patients had performed triglyceridemia among them 36.4% had an abnormal triglyceridemia level ($\geq 1.5\text{g/l}$). This result is different from that of Benyaich [12] who reported a mean level of $0.76 \pm 0.32\text{ g/l}$ of triglyceridemia. Sow [25] noted an abnormality of triglycerides ($> 1.5\text{g/L}$) in 11.27% of cases. Total cholesterol measured in 74 patients; 33.8% had an abnormal level ($> 2\text{g/l}$). This result is different from that of Benyaich [30] and Lindbohm [6] who found respectively a mean level of 1.68 g/L (± 0.27) and $6.5 \pm 1.1\text{mmol/L}$. Sow [9] found a rate $> 2\text{g/L}$ in 55.62% and Pessinaba [10] in 36.3%. Among women, 39 patients had HDL cholesterol measured; 15.4% had abnormal HDL cholesterol ($< 0.5\text{ g/l}$). Sow D [9] reported an abnormal HDL cholesterol $< 0.4\text{g/L}$ in 33.22% of cases.

In men, 32 patients had HDL cholesterol measured, among them 28.1% had an abnormal level ($< 0.4\text{ g/l}$). This result is close to that of Sow [9] who found an anomaly in 22.55%. As for cardiovascular events: stroke was reported in 16.43% of our patients followed by acute coronary syndrome with 7.14% of cases. This high rate could be explained by the increase in risk factors including diabetes, smoking and hypertension. The Framingham global cardiovascular risk assessment showed a very high cardiovascular risk in 42.9% of patients. Pessinaba [10] found a high overall risk according to Framingham in 24.9%.

5. Conclusion

At the end of our study, it appears that cardiovascular risk factors have a heterogeneous distribution affecting both men and women of all ages. As a result, they constitute a major public health problem.

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