

Management of Acute Coronary Syndromes in the Cardiology Department of the National Ignace Deen Teaching Hospital in Conakry

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Abstract

Acute coronary syndrome (SCA) is the clinical manifestation of myocardial suffering due to ischemia. Through this study, we aim to describe the management of acute coronary syndromes in the cardiology department of the National Ignace Deen Teaching Hospital in Conakry. We conducted a prospective, descriptive study, conducted from November 1, 2023, to May 31, 2024, on patients hospitalized for SCA. The hospital prevalence of acute coronary syndrome in our study was 22.9%. Male patients were the most represented (74.1%) with a sex ratio of 2.9. The age group of 60 - 65 predominates (47%) with an average age of 63 ± 15 . Killip stage I was the most common on admission in 58%. In our series, 12 (%) were thrombolized by streptokinase, and 8 were successful. Angioplasty was performed in 6 patients, including 2 primary ones. The evolution was good in 65% of our patients.

Keywords

SCA, Angioplasty, University Hospital in Guinea

1. Introduction

Acute coronary syndrome (SCA) is the clinical manifestation of myocardial suffering due to ischemia [1]. It includes ST-segment elevation myocardial infarction

or STEMI, non-ST-segment elevation myocardial infarction or NSTEMI, and unstable angina. These entities represent a continuum on the pathogenic level differing only by the severity of the initial clinical presentation and subsequently by the appearance or absence of markers of myocardial suffering [2]. STEMI requires urgent arterial reperfusion and NSTEMI justifies aggressive medical therapy, depending on ischemia risk stratification [3].

This is currently a major health problem everywhere. In Africa, acute coronary syndrome (SCA) is currently an emerging disease. It constituted 11% of the reasons for cardiological admission in Senegal with a lethality of 38% and 4.7% in Burkina Faso in specialized cardiological settings [4] [5].

The objective of this study was to describe the management of acute coronary syndromes.

2. Materials and Method

Study design: This was a prospective, descriptive study, conducted from November 2023 to May 2024, in the Cardiology Department of the Ignace Deen National Hospital.

Study population: All patients admitted for chest pain, with inclusion of cases of SCA defined by chest pain accompanied by electrocardiographic changes and/or elevation of troponins. Patients with chest pain without ECG abnormalities or normal serum enzymes were excluded.

Data collection: Socio-epidemiological, clinical, paraclinical and therapeutic data were collected via a dedicated form. The analysis was carried out using SPSS 26 software, with frequencies for qualitative variables and means for quantitative ones.

Ethical considerations: The data was collected anonymously, ensuring confidentiality.

3. Results

During this 6-month period, we received a number of 302 patients in the department, 83 of whom presented with ACS, representing a prevalence of 22.9%.

The analysis of the basic characteristics of the patients grouped in **Table 1** revealed that male patients were the most represented (74.1%) with a sex ratio of 2.9. The age group of 60 - 65 predominates (47%) with an average age of 63 ± 15 . Patients with an educational level below the Baccalaureate were the most represented in 68%. 76% of patients had a low socio-economic level. The most predominant risk factor was high blood pressure in 74% followed by smoking in 20% of cases. Unstable angina was the most common antecedent in 35%.

The patients identified were distributed as follows: STEMI 77%, NSTEMI 6%, Chronic ACS 17%. Among STEMI, 27 (%) were admitted before the first 12 hours. The average pain-admission time was 36 h 50 min with the personal car (70%) as the most used means of transport.

On admission, the clinic was dominated by chest pain, occurring in 60% of cases

at rest, retrosternal in 80% of cases, basithoracic and epigastric in 10% and 5% of cases, respectively. Accompanied by vomiting and anxiety in 60% and 40% of cases. Killip stage I was the most common at admission in 58%, also the maximum predominant stage (75%) found throughout hospitalization.

The electrical topography of the lesions was dominated by the extended anterior territory in 70% of cases, inferior in 58%, extension to the right ventricle in 20%. The different territories are illustrated in **Table 2**.

The troponin measured in 90% of patients was below the normal value in 7 patients. Dyslipidemia was found in 45% of cases. The biological results are summarized in **Table 3**. **Table 4** shows that results of echocardiography or an alteration of LVEF were found in 65% of cases with a kinetics disorder in 95%.

Table 1. Distribution of patients according to sociodemographic characteristics.

Variables	N = 83	%
Sex (sex ratio 2.9)		
Male	62	74.7
Female	21	25.3
Age (years)		
30 - 39	3	3.6
40 - 49	9	10.8
50 - 59	12	14.5
60 - 69	39	47
Plus 70	21	25.3
Background		
Unstable angina	22	26.5
AVC	6	7.2
Risk factor		
HTA	62	74
Diabète	5	6
Smoking	17	20
Overweight and obesity	7	8.4
Ménopause	12	14.5
Dyslipidemia	10	12

Table 2. Distribution of patients according to clinical and paraclinical characteristics.

Variables	N = 83	%
Admission deadline		
>12 h	27	32.5
<12 h	56	67.5
Symptomatology		
Chest pain	70	
Retrosternal	62	74.7
Basithoracic	5	6
Epigastric	3	3.6
Kilip		
>_2	48	57.8
<2	35	42.2
Electrocardiogram		
Extended anterior	58	70
Inferior	48	58
Lateral	12	15
Extension to the RV	16	20
Diagnosis		
STEMI	64	77
STEMI Troponin +	2	2.4
NSTEMI Troponin -	3	3.6
CCS	14	17
Echocardiography		
Kinetics		
Hypokinesia	60	72.3
Akinesia	15	18.1
Normal	8	9.6
LVejection fraction		
Moderate alteration	54	65
Severe alteration	25	30.1
Normal	4	4.8

Table 3. Distribution of patients according to troponin results.

Biology	N = 83	%
Troponin		
STEMI	52	62.6
Elevated	35	42.2
Normal	17	20.48
NSTEMI	5	6
Elevated	2	2.4
Normal	3	3.6

Table 4. Distribution of patients according to treatment.

Treatments	N = 83	%
Medical treatment		
LMWH	45	45
Aspirin	83	83
Statin	83	83
Beta blockers	75	80
ACE inhibitors	57	75
A2RA	10	10
VKA	7	7
Loop diuretics	45	31

Table 5. Distribution of patients according to evolution.

Evolution	N = 83	%
Favorable	49	59
Unfavorable		
Heart failure including shock	25	30
Rhythm disorders/conduction	12	14.4
Death	9	10.8

Among the patients received on time, 12 (%) were thrombolized with streptokinase, 8 of which were successful. All patients received medical treatment during hospitalization and upon discharge. Angioplasty was performed in 6 patients,

including 2 primary ones. 65% of patients had good progress throughout the hospitalization. Complications such as heart failure including shock in 30% of cases. One patient had a complete BAV type conduction disorder requiring the insertion of a pacemaker. Hospital mortality was 10.8%. **Table 5** summarizes the treatment and progress of the patients.

4. Discussion

This was a descriptive and prospective study carried out between November 2023 and May 2024, focusing on patients hospitalized for chest pain, including cases of SCA at the Ignace Deen University Hospital.

The study highlights the local reality of the management of acute coronary syndromes at the Ignace Deen National Hospital, by examining risk factors, admission times, patient characteristics, therapeutic limits and rate mortality, while contextualizing the results in relation to other international studies. However, prolonged treatment times, limited access to modern techniques, the absence of in-depth socio-economic analysis and problems with drug availability constitute our main limitations. Indeed, the hospital prevalence of ACS in our study (22.9%) exceeds that observed by Sekkali *et al.* in 2010 [6]. This result could be explained by the constant growth in the prevalence of coronary artery disease in recent years, becoming the group of cardiovascular pathologies most encountered in our regions [6].

The male predominance in our study is in symbiosis with the data from large registries that have studied the disparities in coronary artery disease between the sexes, where men rarely represent less than 60% of the workforce [7]. MANGA in Senegal and the ACCES INVESTIGATORS study in South Africa found 78.9% and 76% men respectively. This “male-female” difference observed in coronary heart disease is explained by the protective role of endogenous estrogens which makes the occurrence of coronary accidents in women with normal genital activity exceptional, and by less marked exposure to cardiovascular risk factors, in women. This trend reverses after menopause, the rate of cardiovascular diseases increases, catches up and exceeds those of men from the age of 65 [8] [9]. The growing magnitude of cardiovascular risk factors in our regions explains the increase in the incidence of coronary heart disease. In our series, the majority of our patients (83.3%) had 2 to 3 associated risk factors. This progression, largely influenced by socio-economic development, can be explained by excessive urbanization which is often poorly controlled. This leads to a change in the way of life of populations, now exposed to risk factors with which they were previously only rarely confronted [10].

The use of a personal car (75%) constitutes the means of admission most used by our patients. This method of admission is different from that found in developed countries, where acute chest pain is managed by the SAMU before admission to the cardiological intensive care unit [11]. Our average pain-admission times of 36.6 hours, 14 hours, and 4 hours were found in Guinea in our study, Senegal, and

Tunisia, respectively, which are far from the times of 10 minutes recommended by the latest ESC recommendations. Chest pain in 89% of cases dominated the functional symptoms of our patients similar to those reported by N'GUETTA at the ICA of Abidjan (73.2%) [12]

In practice, the STEMI (77%) found in our study is similar to that of Bahiru E in Nairobi (57%). This presentation remains the most commonly encountered [13].

The relatively high cost of percutaneous angioplasty explains its low percentage in our context (7.2%). Almost all patients benefited from medical treatment (anti-thrombotic, anticoagulant, etc.) our result is similar to that of Coulibaly. The predominance of anterior localization observed in the study is consistent with the rest of the literature [13]-[15].

From the echo cardiographic point of view, kinetic disorders predominantly predominate at the anterior wall with 65% having a left ventricular ejection fraction of less than 50%, a result close to that of Mboup (54%) [16]

Streptokinase, despite being the most widely used fibrinolytic agent in the world given its relatively low cost and good effectiveness, remains in our context less used (14.5%) lower than the rate of thrombolysis found in the ACCESS registry (36%) [17]. These relatively low figures could be explained by late admission to cardiological settings and the very frequent inaccessibility of this molecule in pharmacies.

The GISSI 1 study demonstrated that administration of streptokinase within the first twelve hours of the onset of symptoms reduced 21-day mortality by 18% [18].

5. Conclusion

This study shows a significant hospital prevalence of ACS with a male predominance at Ignace Deen University Hospital, aggravated by prolonged treatment times, poor access to modern techniques and socio-economic obstacles. Streptokinase, despite being the most widely used fibrinolytic agent in the world, remains less used in our context. To improve the situation, it is imperative to raise awareness, optimize healthcare structures, increase accessibility to advanced treatments and promote regional collaboration.

Contribution of the Authors

Diallo Hassatou, Camara OM, Keita FB, contributed to the design of the study and the discussion of the results.

Camara Ousmane Mamadama and Keita Fatoumata Binta contributed to the collection of data and the analysis of the statistical data of the study.

Abdoulaye Fodé TOURE actively participated in writing the manuscript and revising the article, ensuring the precision and clarity of the information presented.

Kaba Abdoul Karim actively participated in the translation of the manuscript

into English.

Conflicts of Interest

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

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List of Abbreviations

ACE inhibitors	Angiotensin converting enzyme inhibitors
A2RA	Angiotensin 2 receptor antagonists
ACS	Acute coronary syndrome
CCS	Chronic coronary syndrome
HBP	High blood pressure
LMWH	Low molecular weight heparin
LV	Left ventricle
RV	Right ventricle
STEMI	ST elevated myocardial infarction
NSTEMI	Non ST elevated myocardial infarction
VKA	Vitamin K antagonists