

Elderly and Very Elderly Patients Admitted to the Medical Emergency Department of the University Hospital of Bouaké (Ivory Coast)

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Abstract

Background: The state of health of the elderly varies considerably depending on their age. Older people are characterized by a more marked functional decline, increasing frailty and a high prevalence of chronic pathologies. Hence the more frequent use of emergency services. **Objective:** The aim of this study was to examine the comorbidities and conditions of elderly people admitted to emergency departments, and to compare the very elderly with younger seniors. **Material and method:** This was a retrospective descriptive and analytical study carried out over a six-month period in the medical emergency department of the Bouaké University Hospital, on patients aged 65 and over. Young senior patients (aged 65 to 74) were compared with so-called elderly senior patients (aged 75). **Results:** We included a population of 374 patients, representing a prevalence of 12.1%, divided into 56.9% young seniors and 43.1% elderly seniors. The mean age of the patients was 74.2 years, and the overall sex ratio of the sample was 1.21. With regard to comorbidities, a significant association was observed between advanced age and the development of heart disease. Infections were observed in 55.6% of patients, but no link was established between advanced age and the occurrence of infections. Pleuropulmonary infections were the most frequent (40.4%). On the other hand, for non-infectious pathologies, a link was noted between advancing age and cardiovascular pathologies. Stroke and decompensated heart disease were the most common pathologies in both young and elderly patients. No correlation was observed between the age of patients and the duration of their observation. The mortality rate was 26.4%, and a significant relationship was observed between advanced age and the occurrence of death ($p = 0.04723$), with a higher

mortality rate in the elderly (31.6%) than in the young elderly (22.5%). **Conclusion:** Advancing age is associated with the onset and decompensation of cardiovascular pathologies. It is also associated with death. However, most comorbidities and acute emergencies remain similar in the two age groups.

Keywords

Morbidities, Elderly Patients, Medical Emergencies, Bouaké

1. Introduction

Ageing is a complex, multifactorial process, marked by biological, psychological and social transformations that unfold progressively over time. These changes lead to an alteration in physiological functions and, in many cases, increased vulnerability to disease [1]. The state of health of older people varies considerably depending on their age group. Younger seniors (aged 65 - 74) are generally more physically fit and independent than older seniors (aged 75 and over), which has a direct impact on their quality of life and healthcare needs [2]. These differences call for specific approaches to care, aimed in particular at preventing loss of autonomy and improving the quality of life of the elderly. Younger seniors (aged 65 - 74) are generally able to carry out their daily activities independently, and are less likely to experience mobility problems or major cognitive impairment. However, in older people (aged 75 and over), the risks of dependency, cognitive problems and functional limitations are more pronounced [2]. This age group is characterized by greater functional decline, increasing frailty and a high prevalence of chronic diseases [3]. Loss of independence, particularly in activities of daily living, becomes more frequent with advancing age, requiring increasingly sustained medical and social interventions. This puts increasing pressure on hospitals and emergency departments, given the complexity of the specific healthcare needs of this population [4]. Among the emergency services most frequently used by the elderly, general medical emergencies come out on top [5]. In sub-Saharan Africa, and more particularly in Côte d'Ivoire, where the population aged 65 and over will number 754,461 in 2021, representing 2.6% [6] of the total population, older people face multiple and complex health challenges. These include the high prevalence of chronic diseases such as hypertension, diabetes and cardiovascular disease. Access to quality healthcare remains a major problem, particularly in rural areas where infrastructure is inadequate. In addition, the elderly often find themselves in a precarious economic situation, due to the lack of a solid pension system. Many are dependent on their families to support them, which can lead to difficult living conditions [7]. Furthermore, although the elderly account for a growing proportion of hospital admissions, specific data on this population, and in particular on the very elderly, remains insufficient and poorly documented. The aim of this study was therefore to examine the comorbidities and conditions of elderly people admitted to emergency departments, and to compare the very elderly with

younger seniors.

2. Patients and Method

2.1. Patients

This was a cross-sectional and retrospective study with descriptive and analytical aims, carried out from 1 January 2017 to 30 June 2017 in the Medical Emergency Department, *i.e.*, over a period of six months, in the Medical Emergency Department of the Bouaké University Hospital. The study population consisted of the records of patients of both sexes, aged 65 years and over, admitted to this department during the study period, regardless of the reason for their admission and who were managed in the emergency department. Patients under the age of 65 were excluded from the study, as were incomplete records, such as those of patients who had died on arrival or those for whom the reason for admission was not mentioned. During the study period, a total of 3104 patients were admitted to medical emergencies, 403 of whom were aged 65 or over. Of these, 29 did not meet the selection criteria and were not included. Finally, 374 patient records were retained for analysis (**Figure 1**).

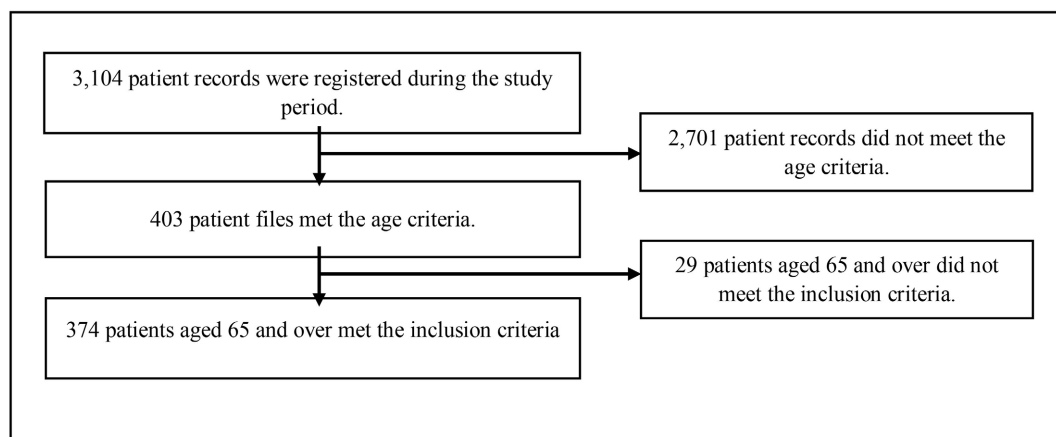


Figure 1. Selection process for the study.

2.2. Methods

Data was collected using a questionnaire drawn up from information extracted from each patient's medical records. The questionnaire consisted of several sections designed to collect information on the patient's age and sex, medical history such as alcohol consumption and smoking, as well as cardiac pathology, hypertension, diabetes, HIV infection and chronic renal failure. This information was confirmed by questioning, medication and/or biological results. The questionnaire also included information about the diagnosis made in the emergency department and the patient's clinical course during hospitalization, after treatment.

Infectious diseases were diagnosed using a systematic approach, incorporating clinical, biological, imaging and, in some cases, microbiological elements. Clinical criteria included various signs and symptoms pointing to the diagnosis, such as

fever, localized pain, symptoms of general malaise, signs of infection at the site or organ concerned, and altered consciousness or cognitive impairment. Biological criteria included leukocytosis or leukopenia on white blood cell count, elevated levels of C-reactive protein (CRP) and/or procalcitonin (PCT), elevated serum lactate, or PCR testing to identify specific pathogens. The blood was also tested for plasmodium. To locate the infection, imaging tests were carried out, including chest X-rays to diagnose lung infections, computed tomography (CT) scans to explore abdominal, pelvic or brain infections not detected clinically, and ultrasound scans to locate abscesses in soft tissue, the abdomen or other body regions. Microbiological examinations to identify the infectious agent included culture of blood, urine, cerebrospinal fluid, pus, sputum or swabs, to isolate and confirm the presence of the causative pathogen.

The diagnostic criteria for non-infectious diseases, which are varied and multiple, are based on a multidisciplinary approach. This included a clinical assessment based on the patient's medical history and suggestive clinical signs, as well as additional tests such as imaging, electrocardiograms and specific biological tests, guided by the clinical picture. Biopsies for histopathological examination were also taken and, depending on the suspected case, additional diagnostic criteria were considered.

Young senior' patients were those aged between 65 and 74, while "old senior" patients were those aged over 75 [8]. Older senior' patients were compared with "younger senior" patients. The data were entered into an Excel database and analyzed using Epi Info 7 software. Univariate and multivariate analyses were performed. Quantitative variables were described by means and standard deviation (\pm standard deviation). The Chi2 (X2) test was used to compare qualitative variables. The association between variables and mortality was assessed using the odds ratio (OR). A statistical significance threshold of $p < 0.05$ was used. Finally, all the administrative authorizations required for this study were duly requested and obtained.

3. Results

During the study period, we recorded a total of 3,104 patients admitted to medical emergencies, 374 of whom were aged 65 and over, representing a prevalence of 12.1%. Of these 374 patients, 213 were young seniors (56.9%) and 161 were elderly seniors (43.1%). The average age of the patients was 74.2 years, ranging from 65 to 107 years. The young seniors had an average age of 69.1 years (with extremes of 65 and 74 years), while the seniors had an average age of 81.5 years (ranging from 75 to 107 years). The overall sex ratio of the sample was 1.21, with a ratio of 1.17 in the young seniors and 1.26 in the older seniors, indicating a male predominance in both groups. No statistically significant relationship was observed between longevity and gender ($p = 0.713$) (**Table 1**). With regard to antecedents and co-morbidities, various pathologies were reported, but no association was found between advancing age and the presence of co-morbidities. Similarly, no link was

found between age and factors such as alcoholism, smoking, stroke, chronic renal failure (CRF), undernutrition, high blood pressure (hypertension) or diabetes. On the other hand, a link has been observed between advanced age and the onset of heart disease (**Table 1**). Finally, the majority of patients came to an emergency on their own initiative, representing 71.4% of the total, with a notable difference. The reasons for admission were dominated by neurological signs (37.5%) and pulmonary signs (19.8%), in both elderly and non-elderly patients (**Table 2**). Infections were present in 55.6% of patients; however, there was no link between the onset of old age and infections. Infection was present in 25.1% of elderly patients compared with 30.5% of young elderly patients (**Table 3**). Pleuropulmonary infections were the most frequent (40.4%). The same proportions of both age groups were affected by lung disease. This was followed by digestive disorders (16.9%) and malaria (13.9%). There was no link between infectious diseases of various organs and advancing age. There was a link between advancing age and the occurrence of cardiovascular pathologies (**Table 4**). On the other hand, we found no link between advancing age and other non-infectious pathologies, notably digestive, pulmonary, haematological and osteoarticular. Stroke and decompensated heart disease were the pathologies most frequently encountered in both young and elderly patients. Anemia was equally common in both age groups (**Table 5**). The average hospital stay for all patients was 2.2 days, with extremes ranging from 1 to 10 days. No correlation was observed between patient age and length of observation, either for elderly patients or for young seniors. Specifically for elderly patients, the average observation time was also 2.2 days, with extremes ranging from 1 to 7 days, whereas the average observation time for young elderly patients was 2.3 days, with extremes ranging from 1 to 10 days. More than a quarter of patients (26.4%) died, and there was a link between advancing age and the occurrence of death ($p = 0.047$) (**Table 6**). Among the elderly, 51 deaths were recorded out of a population of 161 patients, giving a mortality rate of 31.6%, while among the young elderly, 48 deaths were recorded out of a population of 213 patients, giving a mortality rate of 22.5%.

Table 1. Epidemiological aspects and comorbidities.

	Seniors (n = 161) n (%)	Young seniors (n = 213) n (%)	Total (n = 374) n (%)	p value
Gender				0.713
Female sex	71 (19)	98 (26.2)	169 (45.2)	
Male sex	90 (24.1)	115 (30.7)	205 (54.8)	
lifestyle and co-morbidities				
Alcoholism	24 (06.4)	21 (05.6)	45 (12)	0.137
Smoking	24 (06.4)	23 (06.1)	47 (12.5)	0.235
Heart disease	34 (09.1)	26 (06.9)	60 (16)	0.020
Stroke	10 (02.7)	16 (04.3)	26 (07)	0.624

Continued

CKD	08 (02.1)	18 (04.8)	26 (06.9)	0.189
Malnutrition	05 (01.3)	10 (02.7)	15 (04)	0.437
HIV	04 (01.1)	07 (01.8)	11 (02.9)	0.649
Hypertension	70 (18.7)	103 (27.5)	173 (46.2)	0.348
Diabetes	32 (08.6)	57 (15.2)	89 (23.8)	0.121
Polypathology				0.988
Less than 3 comorbidities	139 (37.2)	184 (49.2)	323 (86.4)	
3 or more co-morbidities	22 (05.9)	29 (07.7)	51 (13.6)	

CKD: chronic kidney disease; HIV: human immunodeficiency virus.

Table 2. Mode and reasons for admission.

	Seniors (n = 161) n (%)	Young seniors (n = 213) n (%)	Total (n = 374) n (%)
Admission procedure			
Referral from a Bouaké centre	07 (01.9)	20 (05.3)	27 (07.2)
Referral from a centre outside Bouaké	42 (11.2)	38 (10.2)	80 (21.4)
Coming of its own accord	112 (30)	155 (41.4)	267 (71.4)
Reasons for admission			
General signs	28 (07.5)	38 (10.2)	66 (17.7)
Pulmonary signs	34 (09.1)	40 (10.7)	74 (19.8)
Neurological signs	65 (17.4)	75 (20)	140 (37.5)
Digestive signs	18 (04.8)	35 (09.4)	53 (14.2)
Osteoarticular signs	03 (00.8)	07 (01.9)	10 (02.7)
Mucocutaneous signs	09 (02.4)	11 (02.9)	20 (05.3)
Other signs	04 (01)	07 (01.9)	11 (03)

Table 3. Diagnostics.

Type of diagnosis	Seniors (n = 161) n (%)	Young seniors (n = 213) n (%)	Total (n = 374) n (%)	p value
Infection	94 (25.1)	114 (30.5)	208 (55.6)	0.348
No infection	67 (17.9)	99 (26.5)	166 (44.4)	

Table 4. Infectious diseases.

infection type	Seniors (n = 161) n (%)	Young seniors (n = 213) n (%)	Total (n = 374) n (%)	p value
Pneumonia	42 (20.2)	42 (20.2)	84 (40.4)	0.251
common germ pneumonia	41 (19.7)	40 (19.2)	81 (38.9)	
Pleuropulmonary tuberculosis	01 (00.5)	02 (01)	03 (01.5)	

Continued

Digestive infections	12 (05.8)	23 (11.1)	35 (16.9)	0.237
Gastroenteritis	12 (05.8)	19 (09.1)	31 (14.9)	
Oral candidiasis	00 (00)	04 (01.9)	04 (01.9)	
Malaria	14 (06.7)	15 (07.2)	29 (13.9)	0.719
Simple malaria	10 (04.8)	13 (06.3)	23 (11.1)	
Severe malaria	04 (01.9)	02 (01)	06 (02.9)	
Meningo-encephalic disorders	08 (03.8)	16 (07.7)	24 (11.5)	0.923
Meningitis	01 (00.5)	02 (01)	03 (01.5)	
Meningoencephalitis	03 (01.4)	09 (04.3)	12 (05.7)	
Encephalitis	04 (01.9)	05 (02.4)	09 (04.3)	
Skin lesions	09 (04.3)	13 (06.3)	22 (10.6)	0.669
Urogenital infections	08 (03.8)	07 (03.4)	15 (07.2)	0.708
Urinary tract infection	06 (02.9)	06 (02.9)	12 (05.8)	
Genital infection	02 (01)	01 (00.5)	03 (01.5)	
Undetermined infection	19 (09.1)	11 (05.3)	30 (14.4)	0.050
Others diagnostics	03 (01.5)	05 (02.4)	08 (03.9)	

Table 5. Non-infectious diseases.

Diagnostic	Seniors (n = 161) n (%)	Young seniors (n = 213) n (%)	Total (n = 374) n (%)	p value
Haematological disorders	42 (13.1)	50 (15.6)	92 (28.7)	0.203
Anemia	42 (45.7)	45 (48.9)	87 (94.6)	
Undetermined haemopathy	00 (00)	04 (04.3)	04 (04.3)	
Chronic myeloid leukaemia	00 (00)	01 (01.1)	01 (01.1)	
Bone and joint disorders	08 (02.5)	06 (01.9)	14 (04.4)	0.246
Lumbar arthrosis	05 (35.7)	04 (28.6)	09 (64.3)	
Pathological fracture	02 (14.3)	02 (14.3)	04 (28.6)	
Knee arthritis	01 (07.1)	00 (00)	01 (07.1)	
Tumour	04 (01.2)	10 (03.1)	14 (04.3)	0.152
Malignant tumour	03 (21.4)	06 (42.9)	09 (64.3)	
Benign tumour	01 (07.1)	04 (28.6)	05 (35.7)	
Cardiovascular disease	35 (10.9)	33 (10.3)	68 (21.2)	0.032
Decompensated heart disease	30 (44.1)	23 (33.8)	53 (77.9)	
Hypertensive crisis	05 (07.4)	09 (13.2)	14 (20.6)	
Iatrogenic hypotension	00 (00)	01 (01.5)	01 (01.5)	
Neurological disorders	42 (13.1)	53 (16.5)	95 (29.6)	0.682
Stroke	39 (41.1)	46 (48.4)	85 (89.5)	
Vascular epilepsy	01 (01.1)	02 (02.1)	03 (03.2)	

Continued

Spinal cord compression	00 (00)	02 (02.1)	02 (02.1)	
Confusion	00 (00)	01 (01.1)	01 (01.1)	
Meningeal haemorrhage	00 (00)	01 (01.1)	01 (01.1)	
Parkinson's disease	01 (01.1)	00 (00)	01 (01.1)	
Vertigo	01 (01.1)	00 (00)	01 (01.1)	
Non-infectious lung diseases	01 (00.3)	05 (01.6)	06 (01.9)	0.435
COPD	01 (16.7)	01 (16.7)	02 (33.3)	
Asthma attacks	00 (00)	02 (33.3)	02 (33.3)	
Pulmonary hypertension	00 (00)	01 (16.7)	01 (16.7)	
Hydro-pneumothorax	00 (00)	01 (16.7)	01 (16.7)	
Hepato-digestive disorders	13 (04)	23 (07.2)	36 (11.2)	0.199
Decompensated cirrhosis	04 (11.1)	12 (33.3)	16 (44.4)	
Digestive haemorrhage	04 (11.1)	03 (08.3)	07 (19.4)	
Hepatic cytolysis	02 (05.6)	03 (08.3)	05 (13.9)	
Peptic ulcer	02 (05.6)	03 (08.3)	05 (13.9)	
Abdominal pain	00 (00)	01 (02.8)	01 (02.8)	
Chest pain	01 (02.8)	00 (00)	01 (02.8)	
Pyloric stenosis	00 (00)	01 (02.8)	01 (02.8)	
Metabolic disorders	54 (16.8)	99 (30.8)	153 (47.6)	-
Glycaemic imbalance	23 (15.1)	48 (31.3)	71 (46.4)	
CKD	09 (05.9)	21 (13.7)	30 (19.6)	
Malnutrition	05 (03.3)	10 (06.5)	15 (09.8)	
Hyponatremia	06 (03.9)	08 (05.2)	14 (09.1)	
Hypokalaemia	05 (03.3)	03 (02)	08 (05.3)	
Hyperkalaemia	01 (00.7)	04 (02.6)	05 (03.3)	
Severe dehydration	03 (02)	03 (02)	06 (03.9)	
Hypoglycaemia	07 (04.6)	10 (06.5)	17 (11.1)	
Acute alcohol intoxication	00 (00)	01 (00.7)	01 (00.7)	

COPD: Chronic obstructive pulmonary disease; CKD: chronic kidney disease.

Table 6. Length of observation period and evolution.

	Seniors (n = 161) n (%)	Young seniors (n = 213) n (%)	Total (n = 374) n (%)	p value
Time limit for admission to hospital				
Up to 48 hours	112 (29.9)	152 (40.7)	264 (70.6)	0.731
More than 48 hours	49 (13.1)	61 (16.3)	110 (29.4)	
Evolution				
deceased patients	51 (13.6)	48 (12.9)	99 (26.5)	0.047
Living patients	110 (29.4)	165 (44.1)	275 (73.5)	

4. Discussion

The aim of this cross-sectional, retrospective study, which is both descriptive and analytical, is to examine the comorbidities and pathologies of elderly people admitted to emergency departments, comparing the very elderly with younger seniors, in the medical emergency department of the University Hospital Centre in Bouaké. It is based on information extracted from the medical records of the patients received. However, certain biases need to be taken into account, notably the relatively small sample size and the difficulties in making accurate diagnoses due to the limited technical resources in the emergency department. In addition, factors such as patients' level of education and socio-economic status were not considered, although they may influence the results, but are not mentioned in the medical records. As a result, the results of the study cannot be generalized to the whole country. Despite these methodological limitations, this study has provided comparative data on the pathologies of the elderly compared with the very elderly in Côte d'Ivoire, and could be enriched by further studies. However, this study opens up several avenues for discussion.

The socio-economic status of older people plays a crucial role in their quality of life, access to healthcare and well-being. Public policies aimed at reducing socio-economic inequalities and improving their living conditions can have a significant impact on their health and well-being. In developed countries, pension systems and social support policies offer a degree of security, whereas in developing countries, many older people face vulnerability, with limited access to the necessary resources [9]. In Africa, this vulnerability is exacerbated by a lack of financial resources, supportive infrastructure and access to healthcare, as well as dependence on traditional family structures. In Côte d'Ivoire, as in many African countries, this lack of universal social protection systems and limited access to healthcare are major challenges for older people, particularly those living in rural areas [10]. As a result, more inclusive social protection policies, as well as investment in infrastructure and health services, are needed to improve their situation.

What's more, Côte d'Ivoire's age pyramid remains typical of developing countries, with a broad base that gradually narrows towards the top. In 2021, the population aged 65 and over will represent just 2.6% of the total population [6]. However, demographic ageing, like that observed worldwide, is accelerating significantly compared with previous decades. This phenomenon is particularly pronounced in Europe and Western countries, where the proportion of people aged over 65 is constantly increasing [11]. According to projections by the World Health Organization (WHO), by 2050, 80% of older people will live in low- or middle-income countries. Faced with this major demographic transformation, all countries will face considerable challenges in adapting their healthcare and social protection systems to the demands imposed by these changes [11]. The increase in the number of elderly people is giving rise to growing concerns, particularly in terms of hospital use [12]. The elderly, whose health needs are often more complex due to factors such as frailty, co-morbidities, polypharmacy and acute events,

are leading to a significant increase in emergency room visits [1] [3] [12]. A study carried out in the United States found that the elderly accounted for between 15% and 20% of all emergency room visits [13]. In Germany, the percentage is slightly lower, at around 12% [14], while in France it is higher: people aged 75 and over account for almost 20% of emergency admissions [12]. In the UK, the figure varies between 13% and 15% for people aged over 75, illustrating a similar trend in several European countries. Use of emergency departments by the elderly increases with age, reaching around one visit per year for people aged 65 to 74 and 1.5 visits per year for those aged 75 and over [13]. In Africa, rates of emergency department use by the elderly vary according to region, health system and study. In Nigeria, for example, the elderly account for around 10% - 12% of emergency room visits in the main urban hospitals [14], while in South Africa the figure is around 9% [15], and in Senegal almost 8% [16]. However, despite the fact that their health is generally poorer than that of younger people, it has been found that older people in sub-Saharan Africa use healthcare services far less frequently than their younger counterparts [17]. This situation highlights the urgent need for developing countries, particularly in Africa, to anticipate and adapt to this demographic change in order to ensure adequate care for an ageing population, while reducing inequalities in access to care and modernizing healthcare infrastructures.

According to the literature, the morbidity of older people (aged 75 and over) and younger people (aged 60 - 74) differs significantly as a result of physiological ageing processes, as well as social and environmental factors. Younger seniors generally enjoy better health than older seniors, but are beginning to experience the first signs of ageing, which may lead to the emergence of chronic diseases or functional limitations [18]. On the other hand, older people are often faced with an increased number of co-morbidities, which affect both their quality of life and their independence. Among the most common pathologies are cardiovascular diseases, such as hypertension, heart disease and stroke, the incidence of which increases significantly with age. According to studies, the prevalence of cardiovascular disease increases markedly after the age of 75 [18]. However, our study found no significant association between hypertension, stroke, diabetes and advancing age, as is the case for cardiovascular disease. These results underline the importance of adapting prevention strategies and improving the management of co-morbidities in the elderly, in order to better target care.

Alcoholism and smoking among the elderly is a health problem that is often downplayed, even though the consequences for this population are considerable [19]. With advancing age, tolerance to alcohol diminishes, making the harmful effects of its consumption more pronounced, particularly because of co-morbidities or frequent drug treatments. Alcohol abuse among the elderly can aggravate conditions such as cardiovascular disease and interfere with the treatment of chronic diseases such as hypertension and diabetes [19]. What's more, excessive alcohol consumption can increase cardiovascular and neurological risks, thereby increasing general morbidity. As for smoking, it contributes to the worsening of

many age-related pathologies, such as cardiovascular disease, chronic respiratory ailments and certain cancers [20].

In terms of mode of admission, the majority of patients (71.4%) arrived at A&E without prior referral, particularly young seniors (41.4%). Direct admission to the emergency department is common in acute situations, but it is essential that it be accompanied by rapid triage, prioritizing the most serious cases, in order to avoid any deterioration in the patient's condition while waiting for appropriate care [21]. Patients admitted without referral frequently present for a variety of reasons, ranging from acute emergencies and pathologies requiring immediate care, to mild symptoms. This lack of referral may be due to factors such as ignorance of administrative procedures, difficulties in accessing primary care, or inadequate initial assessment by healthcare providers. Many studies also suggest that admission without referral may be linked to a lack of confidence in primary care structures or the perception that certain emergencies require rapid intervention [22].

The prevalence of infectious diseases among the elderly in Africa remains high, due to various factors such as poor sanitary conditions, limited access to healthcare and the co-morbidities associated with ageing [17]. Indeed, the elderly are particularly vulnerable to infections due to immunosenescence, which refers to the decline in the immune system, the frequent presence of co-morbidities (such as hypertension, diabetes and cardiovascular disease), and sub-optimal conditions of poverty and hygiene [17]. A study conducted in Abidjan, Côte d'Ivoire, found that infections were the main cause of admission to medical emergency departments, accounting for 33.7% of cases [23]. Our study reports similar results. However, although infections affect a significant number of elderly people, their frequency does not increase significantly with age. In fact, a lower prevalence of infections was observed among the oldest seniors. This could be linked to a better quality of ageing, characterized by the preservation of physical health. Conversely, pathological ageing, marked by the presence of chronic diseases and functional deficiencies, could explain greater vulnerability to infections [24].

In general, we observed several infectious infections, but no significant association was observed between the site of infection and advanced age. Pleuropulmonary infections were the most common, accounting for 40.4% of cases, with a similar distribution of pulmonary infections in the two age groups. This high prevalence of lung disease in the elderly has also been confirmed by other studies [25]. This suggests that although lung infections are frequent in the elderly, age per se does not seem to determine the location of infections, but the severity of these infections could be amplified by co-morbidities in this population [26]. Digestive tract infections and malaria have also been frequently observed in several studies carried out in emergency departments. Digestive tract infections, which accounted for 16.9% of cases, were also observed in several studies conducted in emergency departments. A rate of 16.3% was reported in India, 22.7% in Karachi, Pakistan [27] and 16.7% in Tibet [28]. This underlines the fact that digestive tract infections are a major health problem and require greater attention in prevention

and treatment strategies for the elderly. Malaria, which was present in 13.9% of patients, remains an endemic disease in the WHO African Region. In 2023, around 94% of malaria cases and 95% of deaths associated with the disease were recorded in this geographical area [29].

Non-infectious diseases, now identified as the leading cause of morbidity and mortality worldwide, also affect a significant proportion of young seniors (44.4%) as well as older seniors. This trend is part of the early epidemiological transition in sub-Saharan Africa, where we are seeing a rise in non-communicable diseases [30]. Several risk factors, such as a Western-style diet, tobacco consumption, a sedentary lifestyle, and the high prevalence of associated diseases such as obesity and hypertension, are contributing to this development. These factors, which are often closely linked, are contributing to the increase in non-communicable diseases in developing countries, a phenomenon largely fuelled by globalization [30]. Our study also reveals a significant correlation between advanced age and the onset of cardiovascular disease. Indeed, according to some research, people aged over 75 run a 2 to 5 times greater risk of acute coronary syndrome and a 3 to 5 times greater risk of stroke than younger individuals [31]. Stroke is a major public health issue worldwide. They are the second leading cause of death, both globally and in developing countries, after cardiovascular disease. In Europe, stroke is responsible for 130,000 new cases each year, leading to severe disability in 30,000 patients and causing around 40,000 deaths. In Africa, research into stroke in the elderly remains limited [32]. However, a 2015 study of stroke in Abidjan, Côte d'Ivoire, found that 46% of strokes involved elderly subjects [33].

The mortality rate observed in this study was 26.4%, with a statistically significant association between advanced age and death ($p = 0.0472$). This difference clearly underlines the fact that advanced age is a major risk factor for mortality, which should influence the medical management of the elderly. In fact, the mortality rate was particularly high among elderly patients, reaching 31.7%, compared with 22.5% among younger seniors. These results are consistent with those of a study conducted in India, which also revealed increased mortality among the elderly [34]. This trend may be explained by the increase in frailty, a condition that develops with age and increases people's vulnerability, as well as their risk of disability, morbidity and mortality [35].

5. Conclusion

This study shows that advancing age is associated with the onset and decompensation of cardiovascular disease. However, it has no significant impact on the onset of other comorbidities, whether infectious or non-infectious. Among infections, lung disease was the most frequently encountered, while stroke and decompensated heart disease were among the most common non-infectious conditions. However, most comorbidities and acute emergencies remained similar in the two age groups. In addition, the mortality rate was 26.4%, and a significant relationship was observed between advanced age and death, with a higher mortality rate

in older seniors than in younger seniors.

Conflicts of Interest

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

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