Clinical and Epidemiological Characteristics of Patients with Ischemic Stroke Associated with Atrial Fibrillation at Ibn Rochd University Hospital: A Study about 60 Cases

Abstract

This study aims to describe the clinical and epidemiological characteristics of patients presenting with ischemic stroke associated with atrial fibrillation at Ibn Rochd University Hospital. We studied 60 patients admitted to the emergency department with a diagnosis of ischemic stroke and confirmed atrial fibrillation. All patients had confirmed cerebral infarction through brain imaging, primarily located in the middle cerebral artery territory (60%). The observed comorbidity and mortality rates (25%) align with other studies, although the rate of administered thrombolysis (16.7%) remains lower than some international standards due to delays in arrival at the emergency department. These results underscore the importance of prevention, early recognition of symptoms, and optimization of therapeutic strategies to reduce mortality and complications associated with ischemic stroke in Morocco.

Keywords

Ischemic stroke, middle cerebral artery territory, brain imaging, atrial fibrillation

Introduction

Ischemic stroke (IS) is a major medical emergency contributing to high morbidity and mortality rates. Atrial fibrillation (AF) is a critical risk factor for IS as it promotes thrombus formation in the cardiac chambers, which can subsequently migrate to the brain. This study aims to describe the clinical and epidemiological characteristics of patients presenting with ischemic stroke associated with atrial fibrillation at Ibn Rochd University Hospital by analyzing 60 cases from the emergency department.

Case Presentation

This study was conducted on 60 patients admitted to the emergency department of Ibn Rochd University Hospital with diagnoses of ischemic stroke and confirmed atrial fibrillation. Patients included in the study were over 18 years old with clinical and radiological confirmation of ischemic stroke and atrial fibrillation established by electrocardiogram (ECG). The average age of the patients was 70 years (range: 52 to 89 years). The study population included 35 men (58.3%) and 25 women (41.7%). Among the patients, 42 (70%) had hypertension, 30 (50%) were diabetic, 25 (41.7%) had dyslipidemia, 18 (30%) had a history of stroke or transient ischemic attack (TIA), and 20 (33.3%) were on antithrombotic treatment before admission. Initial symptoms included hemiplegia in 45 patients (75%), aphasia in 30 patients (50%), and consciousness disorders in 20 patients (33.3%). The average Glasgow score on admission was 12/15 with an average time to arrival at the emergency department of 4 hours (range: 1-12 hours). All patients had confirmed cerebral infarction through brain imaging, primarily located in the middle cerebral artery territory (60%). Atrial fibrillation was confirmed by ECG in all patients. Echocardiography revealed left ventricular hypertrophy in 30 patients (50%) and left

atrial dilation in 25 patients (41.7%). The treatments administered included intravenous thrombolysis for 10 patients (16.7%) and anticoagulation (oral or injection) for 45 patients (75%). Complications included intracranial hemorrhage in 3 patients (5%) and nosocomial infections in 10 patients (16.7%). The 30-day mortality rate was 25% (15 patients).

Discussion

The findings of this study underscore atrial fibrillation as a major risk factor for ischemic stroke. The patients were primarily elderly and had significant comorbidities such as hypertension and diabetes, consistent with existing literature (1, 4). The observed comorbidity and mortality rates align with other studies, although the rate of thrombolysis administered remains lower than some international standards likely due to delays in arrival at the emergency department (3). In the Moroccan context, where access to medical care can be delayed, these findings highlight the need for improved rapid response systems and increased awareness to enhance stroke outcomes. Proactive management of pre-existing conditions and rapid recognition of stroke symptoms are essential to improve prognosis. Despite the risk of complications, anticoagulation remains a cornerstone of management to reduce the risk of recurrence (2). Optimizing therapeutic strategies is crucial to minimize complications and mortality associated with ischemic stroke in patients with atrial fibrillation.

Several studies corroborate these findings. Chugh et al. highlighted the global burden of atrial fibrillation and its contribution to ischemic stroke, emphasizing the importance of addressing AF in stroke prevention strategies (1). Kirchhof et al. provided guidelines for managing AF, underscoring anticoagulation's role in reducing stroke risk (4). Connolly et al. demonstrated the effectiveness of anticoagulants like dabigatran over warfarin in preventing strokes among AF patients, suggesting a paradigm shift in therapeutic approaches (2). Emberson et al. analyzed the impact of treatment delays on stroke outcomes, stressing the necessity for timely intervention to enhance recovery and reduce mortality (3). Kunt et al. examined clinical and radiological characteristics of stroke patients, reinforcing the critical need for comprehensive stroke management strategies (6). Park et al. focused on the clinical characteristics of patients admitted for coronary angiography, which are relevant to understanding comorbid conditions in stroke patients (7). Mahanta et al. studied the clinico-epidemiological profile of stroke patients in a tertiary care hospital, offering insights into the broader epidemiological patterns (8). Meza et al. analyzed the epidemiology of ischemic stroke in young adults, highlighting the need for targeted interventions in different age groups (5). These studies collectively reinforce the critical need for early intervention and comprehensive management strategies to improve outcomes for patients with ischemic stroke associated with atrial fibrillation.

Conclusion

This descriptive study on patients with ischemic stroke and atrial fibrillation at Ibn Rochd University Hospital highlights the predominance of cardiovascular risk factors and the necessity for rapid and appropriate management. The results underscore the importance of prevention, early recognition of symptoms, and optimization of therapeutic strategies to reduce mortality and complications associated with ischemic stroke in Morocco. It is essential to strengthen rapid response systems and awareness to improve stroke outcomes in this context.

Ethical Approval:

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

Consent

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

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Details of the AI usage are given below:

1.

2.

3.

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