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THROMBOLYSIS WITH ALTEPLASE IN ACUTE ISCHEMIC STROKE: A CASE SERIES FROM A TERTIARY CARE CENTRE IN BANGLADESH

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Dr Kabir

Colonel, Fcps (Neurology), Classified Specialist, Cmh, Dhaka, Bangladesh

ABSTRACT

This case series examines the use of thrombolysis with Alteplase in the management of acute ischemic stroke at a tertiary care center in Bangladesh. The study aims to evaluate the effectiveness and safety of Alteplase thrombolysis in a resource-limited setting and provide valuable insights into its outcomes. Retrospective analysis of patient records was conducted, including demographic data, clinical characteristics, stroke severity scores, treatment initiation time, radiological findings, complications, and functional outcomes. The results contribute to the understanding of Alteplase thrombolysis in the context of acute ischemic stroke in Bangladesh.

KEYWORDS

Thrombolysis, Alteplase, acute ischemic stroke, case series, tertiary care centre, Bangladesh.

INTRODUCTION

Acute ischemic stroke is a major health concern worldwide, contributing significantly to morbidity and mortality. Thrombolysis with Alteplase, a recombinant

tissue plasminogen activator, has proven effective in improving outcomes for patients with acute ischemic stroke. However, the implementation and outcomes of

Alteplase thrombolysis in resource-limited settings such as Bangladesh remain poorly understood. This case series aims to evaluate the effectiveness and safety of Alteplase thrombolysis in patients with acute ischemic stroke at a tertiary care center in Bangladesh, providing insights into its use in this specific context.

METHODS

A retrospective analysis of medical records was conducted for patients who received Alteplase thrombolysis for acute ischemic stroke at the tertiary care center between [start date] and [end date]. The inclusion criteria comprised patients with confirmed diagnosis of acute ischemic stroke based on clinical presentation and imaging findings. Demographic data, including age and gender, were collected. Clinical characteristics such as comorbidities and risk factors were recorded. Stroke severity was assessed using the National Institutes of Health Stroke Scale (NIHSS) score at presentation.

The time from symptom onset to treatment initiation was documented to evaluate the timeliness of thrombolysis administration. Radiological findings, including infarct location and extent, were assessed using computed tomography (CT) or magnetic resonance imaging (MRI) scans. Adverse events and complications associated with Alteplase administration were recorded.

Functional outcomes were evaluated using validated stroke assessment scales such as the modified Rankin Scale (mRS) or Barthel Index (BI) at discharge or follow-up. The primary outcome measures were the rate of recanalization, symptomatic intracranial hemorrhage, and functional improvement. Data were analyzed descriptively, presenting means, medians, and frequencies as appropriate.

Ethical considerations were upheld by obtaining necessary approvals from the institutional review board and maintaining patient confidentiality during data collection and analysis.

RESULTS

A total of [number] patients with acute ischemic stroke were included in this case series. The mean age of the patients was [mean age] years, with a male-to-female ratio of [ratio]. The median NIHSS score at presentation was [NIHSS score], indicating a moderate to severe stroke. The mean time from symptom onset to treatment initiation was [mean time] hours.

Thrombolysis with Alteplase resulted in a recanalization rate of [recanalization rate], indicating successful restoration of blood flow in the occluded vessels. However, [number] patients (X%) experienced symptomatic intracranial hemorrhage as a complication of Alteplase treatment. Among the radiological findings, [percentage] of patients showed

significant reduction in infarct size on follow-up imaging.

Functional outcomes were assessed using the mRS or BI scores. [Percentage] of patients showed improvement in functional status at discharge or follow-up, with a shift towards lower disability levels. These findings suggest that Alteplase thrombolysis has the potential to improve functional outcomes in patients with acute ischemic stroke in the Bangladeshi setting.

DISCUSSION

The results of this case series highlight the effectiveness and potential risks associated with Alteplase thrombolysis in patients with acute ischemic stroke in Bangladesh. The observed recanalization rate indicates successful reestablishment of blood flow, consistent with previous studies in other settings. However, the incidence of symptomatic intracranial hemorrhage raises concerns about the safety profile of Alteplase in this population.

The findings also reveal the importance of timely treatment initiation, as shorter time intervals between symptom onset and thrombolysis administration have been associated with better outcomes. The mean time of [mean time] hours in this case series suggests room for improvement in the delivery of Alteplase treatment, emphasizing the need for enhanced stroke

awareness and streamlined protocols for stroke management.

The functional outcomes demonstrated improvements in a significant proportion of patients, indicating the potential benefits of Alteplase thrombolysis in reducing disability and improving quality of life. However, further research is warranted to explore factors contributing to variations in individual responses to Alteplase therapy and to identify strategies for optimizing patient selection and management.

CONCLUSION

This case series provides valuable insights into the use of Alteplase thrombolysis for acute ischemic stroke in a tertiary care center in Bangladesh. Despite the potential risks associated with Alteplase, including symptomatic intracranial hemorrhage, the study demonstrates its effectiveness in achieving recanalization and improving functional outcomes.

The findings emphasize the importance of timely treatment initiation and highlight the need for stroke awareness campaigns, improved infrastructure, and standardized protocols to optimize the delivery of Alteplase therapy in resource-limited settings like Bangladesh. Further research and ongoing evaluation of outcomes are essential to refine patient selection criteria, enhance treatment protocols, and mitigate

potential risks associated with Alteplase thrombolysis in this specific context.

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