An Emergency Department Study of a Stroke Protocol & Service and the Impact on Stroke Management/ Thrombolysis in AMNCH

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Introduction

Stroke is the third leading cause of death and disability worldwide. In Ireland about 10,000 people will suffer a stroke in a year and the annual cost of stroke care exceeds €1 billion. 750 stroke victims and €13 million could be saved annually with greater availability of thrombolysis and access to stroke units.

The aim of our study was to assess the impact of our stroke service and protocols in the Emergency Department (ED) management of stroke in AMNCH.

Methods

This is a prospective observational study conducted in the ED of a university teaching hospital involving patients presenting with or diagnosed with a potential stroke. The information collected is from the ED and Stroke Service databases from January to August 2010.

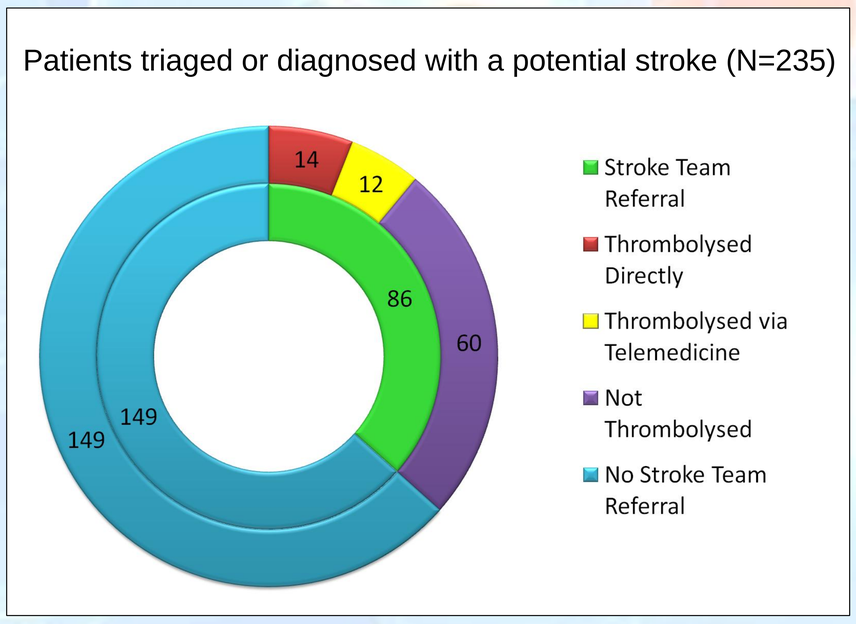
Results

235 patients were triaged or diagnosed with a potential stroke. 86 (37%) of these patients were referred to the stroke team. In total 26 patients (11%) were thrombolysed including 12 (5%) via telemedicine. 149 patients (63%) did not meet the referral criteria for the Stroke Team.

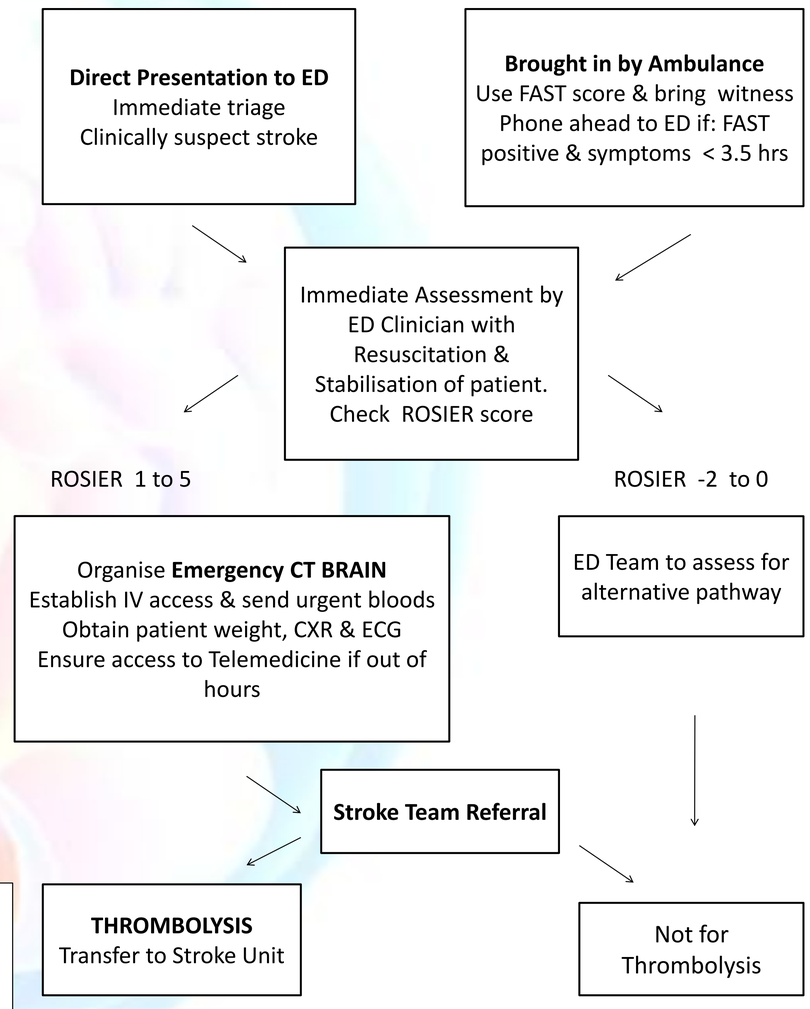
Of the 26 patients thrombolysed 16 were male and 10 were female. Ages ranged from 37-91 years and the median age was 67 years.

The median door to CT scan time for patients thrombolysed was 50 mins (5-148 mins). The median door to thrombolysis time was 112 mins (44-250 mins).

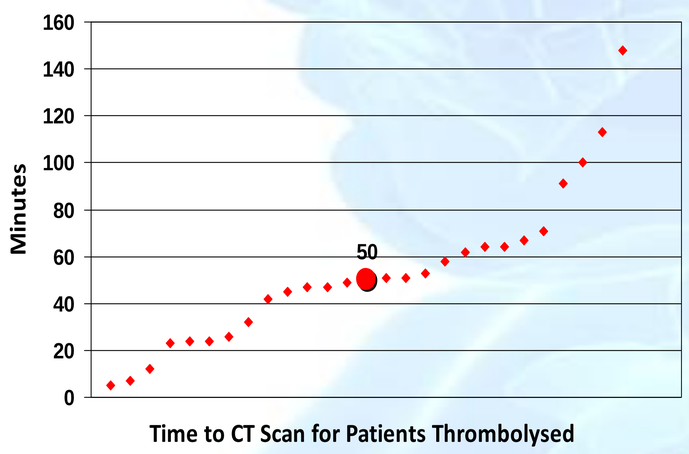
Presently, the final outcome for the 26 patients that were thrombolysed are as follows :
- 14 patients were discharged home with outpatient follow up within 3 months
- 3 patients were transferred to community rehabilitation units
- 2 patients were discharged with daily follow-up in day hospitals
- 1 patient was discharged with no follow up
- 4 patients died within 15 days of being thrombolysed
- 2 patients are currently in patients



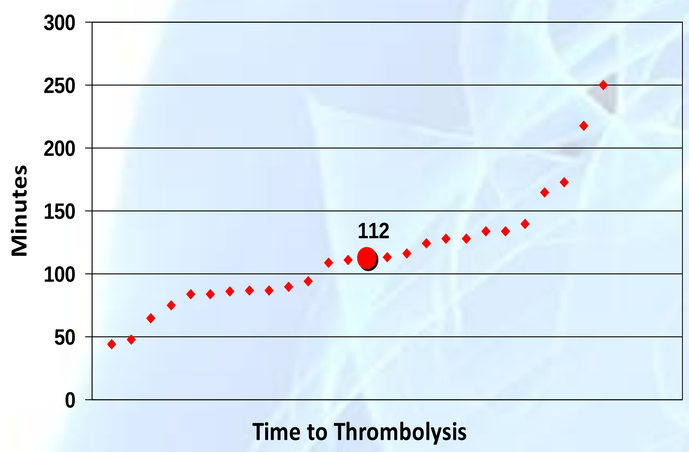
Stroke Protocol

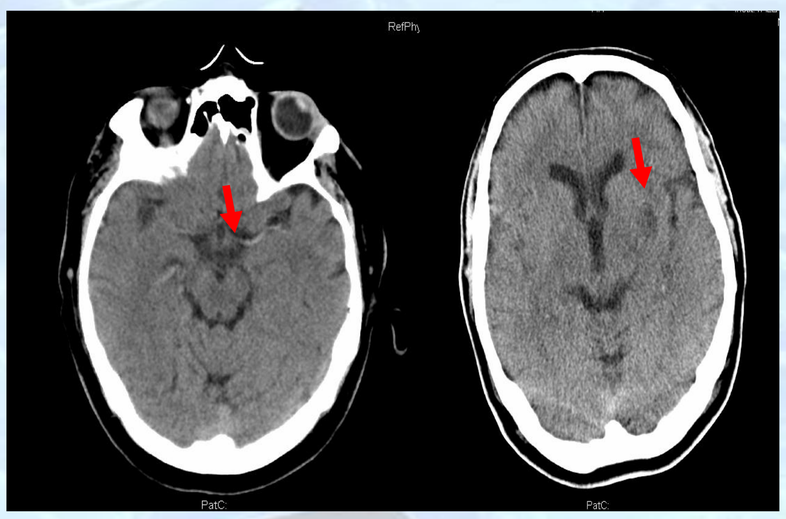


Door to CT Scan



Door to Thrombolysis





Occluded left middle cerebral artery (hyperdense MCA sign)

Residual small lentiform infarct after thrombolysis

Discussion

In AMNCH the establishment of a Stroke Service and protocol has enabled effective ED treatment for potential stroke victims. This is in keeping with the 2007 recommendations from the Irish Association of Emergency Medicine based on data from a survey by the Irish Heart Foundation in its submission to the National Stroke Strategy. These recommendations highlighted the need for thrombolysis which our study incorporates and secondly the need for stroke units.

The introduction of a stroke protocol has lead to a multidisciplinary approach involving rapid ED triage and assessment, prioritized access via Radiology to CT scan and immediate involvement of the Stroke Team for potentially thrombolysable patients. Telemedicine has enabled 24 hour access to thrombolysis.

In our study between January and August 2010 (N = 235), 37% of potential strokes were rapidly assessed and 11% of the total were thrombolysed.

The increased urgency of CT scan access and stroke team involvement in potential thrombolysable patients has been demonstrated by a median door to CT time of 50 mins and a median door to thrombolysis time of 112 mins.

Conclusion

The ED availability of a stroke protocol and a dedicated stroke service enables rapid assessment and management using a multidisciplinary team approach which incorporates thrombolysis in line with the National Stroke Strategy.

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