Project Title

Reducing Door-To-Needle Time In Acute Ischaemic Stroke

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Organisation(s) Involved

National University Hospital

Project Category

Clinical Improvement

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Background

- Acute ischaemic stroke causes devastating loss of function and threat to life. rTPA given within 4.5hrs from symptom onset improves function and mortality[1].
- Due to delays in patient evaluation, patients initially eligible for rTPA cannot receive treatment or receive it later than is optimal.
- Faster administration of thrombolysis has been shown to increase recanalization and improve outcomes in acute stroke

Objective

- The aim of this project is to further reduce the door-to-needle (DTN) time for the administration of Intravenous (IV) recombinant Tissue Plasminogen Activator (rTPA), for patients suffering from acute ischaemic stroke in the emergency department (EMD).
- The secondary outcome is to increase the percentage of patients given rTPA within 60 minutes of registration..

Methods

DTN time is defined as time of registration to time of administration of IV rTPA.

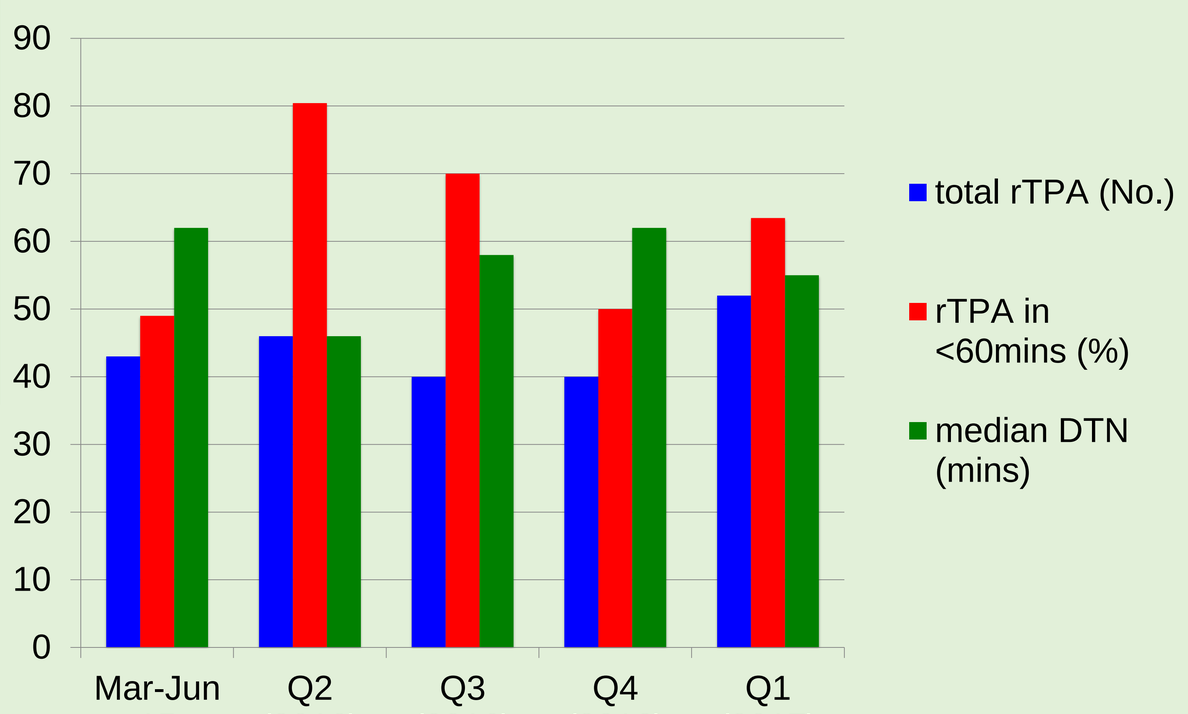
An improved inter-departmental stroke protocol was started in April 2016, and made standard practice.

1. Neurologist informed of case upon receiving standby message from SCDF
2. Patient sent directly to CT scan from SCDF stretcher
3. Patient weighed on weighing bed in EMD
4. Stroke team sees patient in EMD, rTPA mixed and given in EMD

Results

Data from 178 patients who received rTPA from Apr 2016-Mar 2017 after the implementation of this protocol was compared to 43 patients in Mar-Jun 2015, before the implementation of this protocol.

	Mar 15 – Jun 15	Apr 16 – Mar 17	P value
DTN median time (mins)	63	51	0.013
Door to CTA median time (mins)	8	0.5	0.00
% received rTPA within 60mins	49	66	-
Workload (stroke standbys/day)	1.4	1.4	-
Average no. of rTPA patients (per month)	10	15	-



Conclusion

The improved inter-departmental stroke protocol is effective in reducing the DTN time for administration of IV rTPA in acute ischaemic strokes presenting to the Emergency Department.

References

1. Hacke W, et al. "Thrombolysis with Alteplase 3 to 4.5 Hours after Acute Ischemic Stroke". *The New England Journal of Medicine*. 2008. 359(13):1317-1329.