Stroke thrombolysis on equal terms?
Implementation and ADL outcome

Anna Stecksén

Akademisk avhandling

som med vederbörligt tillstånd av Rektor vid Umeå universitet för avläggande av medicine doktorsexamen framläggs till offentligt försvar i Aulan, Vårdvetarhuset, fredagen den 20 oktober, kl. 09:00. Avhandlingen kommer att försvaras på svenska.

Fakultetsopponent: Docent Anna-Karin Welmer,
Institutionen för Neurobiologi, Vårdvetenskap och Samhälle, Karolinska institutet, Stockholm.
Abstract
Stroke thrombolysis is a method for restoring cerebral blood flow after ischemic stroke, with high priority in the Swedish national guidelines. Implementation of stroke thrombolysis in Swedish routine stroke care has shown marked differences between demographic groups, hospital types, and regions. The general aim of this thesis were to examine the implementation of ischemic stroke thrombolysis in Swedish routine stroke care with an equity perspective; to gain more insight into the factors that influence implementation, how the treatment has reached patient groups, and differences in long-term outcomes between women and men.

Analysis of data from research interviews with clinicians working within stroke care displayed that the facilitators of and barriers to the implementation of stroke thrombolysis could broadly be categorized into those related to individuals, to social interactions and context, and to organizational and resource issues. Key facilitating factors expressed in interviews were work pride and motivation, good leadership, involvement of all staff members in the implementation process, and quality assurance. Major barriers concerned lack of competence and experience, outdated attitudes regarding stroke management, counterproductive power structures, lack of continuity, and insufficient human resources. National quality register data displayed that stroke thrombolysis treatment expanded to reach more patients with mild deficits. Groups with higher education were more likely to receive treatment, compared to groups with lower educational level. These education group differences have, however, decreased over time in relative terms, but not in absolute terms. Further, there were considerable between-hospitals differences in treatment rates for patients with milder deficits, associated with hospital's overall stroke thrombolysis rates. Moreover, larger non-university hospitals displayed treatment rate differences between educational groups that were not attributable to patient characteristics. Among thrombolysis-treated women and men, that was independent in ADL before their stroke and survived the first year post-stroke, women experienced higher probability to be dependent in ADL at both 3 and 12 months post-stroke, compared to men. This difference remained significant despite comprehensive adjustments for individual characteristics, symptom severity, and acute effects from stroke thrombolysis.

This thesis displays that clinicians face barriers and facilitators at several levels, suggesting implementation interventions could be targeted towards both the individual-, the social interactions and context-, and also the organisation and available resources level. Assurance of clinicians’ individual competence, peer support, and clinical leadership seem to be important areas to intervene. Stroke thrombolysis rates have expanded over time, and an increase in stroke thrombolysis delivery to patients with mild stroke symptoms has contributed to this increase. However, it seems considerable differences between hospitals inhibit equity of care delivery. Further, socioeconomically disadvantaged groups receive less often stroke thrombolysis. Type of hospital seems to play a role, yet the reasons for this difference are not fully understood. This thesis also display that stroke thrombolysis-treated women that survive 1 year after stroke, appears to face higher risk for dependency in ADL, compared to men.

Keywords
stroke, reperfusion, thrombolytic therapy, registries, multivariate analysis, healthcare disparities, female, educational status, Sweden