
Treatment for acute stroke – still best in urban areas

INVITERT KOMMENTAR

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The treatment provision for acute stroke is better for patients in urban areas compared to rural areas. This situation needs to be addressed.

Time is a critical factor for acute stroke patients, and the distance to diagnostic facilities and treatment centres affects patients' chances of a good prognosis and survival. In a study published in this edition of the Journal of the Norwegian Medical Association, Busund et al. analyse patient data from the University Hospital of North Norway (UNN) and variations between urban and rural settings (1).

The study shows that the proportion of patients who received intravenous thrombolysis (IVT) for acute ischaemic stroke was 38 % for those living in urban areas and 23 % for those in rural areas. Over the past few decades, IVT has been established as an acute treatment for ischaemic stroke, with good clinical outcomes in terms of functional status and survival (2). However, this treatment requires advanced diagnostics with CT or MRI within a narrow time window (3).

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Prehospital care is crucial in order for patients to receive acute treatment. Recognising symptoms, advance warning of patient arrival and rapid transport to the hospital all affect the likelihood of a good functional outcome following a stroke. Busund et al. highlight a significant difference in time to treatment within the study population, with patients residing in urban areas receiving IVT an average of 75 minutes sooner than those in rural areas (1). Interestingly, there were notable differences between the two groups, with the rural cohort comprising of a higher proportion of younger patients (73 versus 79 years) and a lower proportion of women (54 % versus 68 %). This may suggest disparities in the types of patients admitted to hospital.

«Patients residing in urban areas receive IVT an average of 75 minutes sooner than those in rural areas»

Several credible stroke studies have been conducted in Norway aimed at reducing the differences between rural and urban areas. A study of a specially designed ambulance with a Mobile Stroke Unit (MSU) equipped with a CT scanner and the capability for teleradiology was carried out in the county of Østfold. This model has proven to be safe, efficient (4) and cost-beneficial when treating at least 260 patients per year per unit (5). A recent study from a local medical centre in Ål, Hallingdal illustrates another model with prehospital access to CT. In this model, Ibsen et al. show that thrombolytics was administered an average of 89 minutes sooner compared to other areas in the country with similar geography and distances to hospital (6). The model in Ål shows clear potential for the introduction of an acute treatment provision in rural areas, and similar models have been established at rural medical centres in Brønnøysund and Finnsnes. Unfortunately, there has been a lack of willingness to implement prehospital models in clinical practice nationwide.

«Rapid response alone is not sufficient if the treatment facility is hours away»

Acutely ill patients in Norway have the right to the necessary health care under the Patient and User Rights Act, regardless of where they live in the country (7). In the study published in this edition of the Journal, a 30-minute response time was used to distinguish between urban and rural areas, with patients who spent

more than 30 minutes in the ambulance classified in the rural group. This is in line with proposals for legislating the right to emergency care, where response time has been set as a quality indicator for the ambulance service. The goal of this legislation is for 90 % of patients to be reached within 12 minutes and no more than 25 minutes in remote areas [\(8\)](#). However, the distance to acute treatment in the specialist health service is not specified. This factor is challenging for all patients with time-critical conditions that require advanced diagnostics to access life-saving and function-preserving interventions. Rapid response alone is not sufficient if the treatment facility is hours away. In the UNN study, 51 % of patients living in urban areas were admitted to hospital within four hours of symptom onset, compared to just 33 % of the rural cohort [\(1\)](#) – which is also significantly lower than the national average of 45 % reported in the Norwegian Stroke Registry [\(9\)](#).

A national survey is needed to identify disparities in the treatment provision for acute stroke. This requires quality indicators for prehospital care to be established that encompass more than just response time. Further research and development of the prehospital treatment provision for acute stroke patients is crucial, and initiatives to enhance competence and adopt new technologies must be implemented at every stage of the patient pathway.

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