



Is urgent treatment by specialized teams the way forward in treating transient ischemic attack?

Grethe Andersen

To cite this article: Grethe Andersen (2012) Is urgent treatment by specialized teams the way forward in treating transient ischemic attack?, Expert Review of Neurotherapeutics, 12:2, 109-110, DOI: [10.1586/ern.11.199](https://doi.org/10.1586/ern.11.199)

To link to this article: <https://doi.org/10.1586/ern.11.199>



Published online: 09 Jan 2014.



Submit your article to this journal [↗](#)



Article views: 287



View related articles [↗](#)

For reprint orders, please contact reprints@expert-reviews.com

Is urgent treatment by specialized teams the way forward in treating transient ischemic attack?

Expert Rev. Neurother. 12(2), 109–110 (2012)



Grethe Andersen

Aarhus University Hospital,
Nørrebrogade 44, DK-8000
Aarhus, Denmark
greander@m.dk

“The risk of a new stroke is highest in the first few hours and days after a transient ischemic attack, where half of the recurrent events occur...”

‘Time is brain’ is not only a slogan for acute stroke, but is as important in preventing new brain attacks in patients experiencing acute transient ischemic attack (TIA). TIA is a warning symptom. The risk of a new stroke is highest in the first few hours and days after a TIA, where half of the recurrent events occur, and 10–12% will experience a new stroke within 3 months unless an aggressive treatment strategy is chosen [1]. So ‘time is brain’ also in patients with transient neurological deficits of short duration, and although symptoms have disappeared at the time of call for attention, the condition is unstable and should be regarded as an emergency, such as in the case of stroke with ongoing symptoms where acute intravenous rtPA is considered. The time message is simple but there is no consensus for the most optimal organization, diagnostic work-up and management.

Patients with the highest risk for a recurrence of stroke can be identified by clinical criteria and a score of 0–7 points on ABCD², with a low risk of 1% (0–3 points), intermediate risk of 4.1% (4–5 points) and high risk 8.1% of (6–7 points) at 2 days after the index event [2]. The risk stratification, however, differs between studies according to clinical setting, being highest in population-based settings as compared with neurovascular units or outpatient clinics [3].

Prehospital selection appears significant whether based on the ABCD² criteria or not. Some guidelines have recommended

admission of patients under suspicion of TIA with a cutoff point of 3 or more on ABCD score. Although the sensitivity for new stroke is very high using this cutoff, the specificity is low. Using ABCD² scores of more than five in patients presenting themselves in an emergency department setting showed a low sensitivity and specificity of approximately 30% for new stroke at 7 and 90 days [4].

“Running awareness campaigns and distinguishing between symptoms that can ‘wait’ or not are confusing.”

Another ‘admission’ concept published recently focused on time criteria rather than clinical criteria when determining which patients should be admitted acutely [5,6]. The idea is that all patients with a recent TIA (within 2 days) have the highest risk for recurrence of stroke and should be admitted in order to be able to treat with intravenous thrombolytics if needed in case of recurrent stroke symptoms. This idea is simple and meaningful and gives a unified message in awareness campaigns: brain attack – ‘time is brain’ – act now – emergency call dial 112. Running awareness campaigns and distinguishing between symptoms that can ‘wait’ or not are confusing. If patients by mistake seek their general practitioner more than 2 days after index TIA then outpatient clinics

may be a logistically ideal way to handle diagnostic work-up within a few days, including imaging and ultrasound screening, securing that an individualized secondary medical prevention can start immediately and fast track surgery in case of carotid stenosis.

In the community study reported by von Weitzel-Mudersbach *et al.*, 58% of 306 TIA patients were seen within 24 h after their TIA and 70% within 24 h after their call for attention [6]. At 1 week, 89% had been seen. A specialized stroke team took care of all TIA patients disregarding their status as in- or out-patients. The TIA clinic were an integrated part of a stroke unit, and patients could easily be changed from an in- to an out-patient status and visa versa, but all were seen by a senior neurologist and all had a nurse-conducted health counseling telephone follow-up after 7 and 90 days and a final face-to-face follow-up after 1 year. Patients with index TIA within the last 2 days were admitted acutely. The rest were seen as outpatients 1–3 days after referral. All referrals were direct to the doctor on call in the stroke unit or TIA clinic after telephone contact or by fax, which means that the emergency room was bypassed.

“The specialized stroke team concept and the integrated TIA clinic in the acute stroke unit, as well as direct referral bypassing the emergency room, suggest a highly effective organization.”

The average stay in hospital was 1 day and the recurrence of stroke risk was low (1.6 and 3% at 7 and 90 days, respectively) comparable to other TIA studies. Moreover, the 1-year stroke risk and a composite vascular end point were also very low (4.4 vs 5.2%). In this TIA cohort symptomatic stenosis was found in 21.7%, and 8.5% had preventive carotid surgery within 10 days after index TIA (high-risk patients). All patients with symptomatic stenosis had dual antiplatelet therapy for 3 months. Cardioembolic TIA was found in 13.7%, which lead to anticoagulant treatment if indicated and no contraindications were present. Cholesterol and blood pressure lowering treatment were started if indicated and adjusted by their general practitioner according to national guidelines.

The adherence to all antithrombotic treatment and other preventive medication and smoking cessation were seen in approximately half the cases after 1 year. This preventive strategy was mostly achieved within the first 7 days and this compliance rate is higher than in other study reports.

The specialized stroke team concept and the integrated TIA clinic in the acute stroke unit, as well as direct referral bypassing the emergency room, suggest a highly effective organization. All patients have a systematic diagnostic evaluation (clinical examination, CT/MRI and ultrasound of precerebral arteries and transcranial Doppler) on the day of admittance or in the outpatient clinic followed by individualized aggressive antithrombotic treatment and preventive carotid surgery if needed. In-hospital stay is short in this organization and much shorter than reported in another study [5], service is high and the cost of introducing a trained nurse-counseling follow-up is likely to be cost-effective in postponing or preventing new vascular events within the first year of follow-up after TIA simply owing to better compliance, although this has not been evaluated. The use of advanced technology, such as MRI, may further improve risk stratification after TIA, as patients with a positive acute ischemic lesion have higher rates of early recurrent strokes compared to TIA patients with no lesion. Combining clinical scores and MRI gives the most accurate risk estimation [7]. This may be valuable in defining the pathophysiology in order to classify the TIA and shorten the length of in-hospital stay further and thus turn out to be cost effective.

More studies are needed to find the best organization of TIA management in a modern society with high expectations to healthcare systems at low costs.

Financial & competing interests disclosure

The author has no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties.

No writing assistance was utilized in the production of this manuscript.

References

- 1 Rothwell PM, Giles MF, Chandratheva A, *et al.* Effect of urgent treatment of transient ischemic attack and minor stroke on early recurrent stroke (EXPRESS study): a prospective population-based sequential comparison. *Lancet* 9596, 1432–1442 (2007).
- 2 Johnston SC, Rothwell PM, Nguyen-Huynh MN *et al.* Validation and refinement of scores to predict very early stroke risk after transient ischemic attack. *Lancet* 369, 283–292 (2007).
- 3 Giles MF, Rothwell PM. Systematic review and pooled analysis of published and unpublished validations of the ABCD and ABCD² transient ischemic attack risk scores. *Stroke* 41, 667–673 (2010).
- 4 Perry JJ, Sharma M, Sivilotti ML *et al.* Prospective validation of the ABCD² score for patients in the emergency department with transient ischemic attack. *CMAJ* doi:10.1503/cmaj.101668 (2011) (Epub ahead of print).
- 5 Al-Khaled M, Matthis C, Eggers J. Short-term risk and predictors of stroke after transient ischemic attack. *J. Neurol. Sci.* doi:10.1016/j.jns.08.018 (2011) (Epub ahead of print).
- 6 von Weitzel-Mudersbach PV, Johnsen SP, Andersen G. Low risk of vascular events following urgent treatment of transient ischemic attack: the Aarhus TIA study. *Eur. J. Neurol.* 18, 1285–1290 (2011).
- 7 Giles MF, Albers GW, Amarenco P *et al.* Early stroke risk and ABCD² score performance in tissue- vs time-defined TIA. A multicenter study. *Neurology* 77(13), 1222–1228 (2011).