By David C. Tong, MD

EXPRESS and SOS: Urgent Evaluation and Management of TIAs is Essential

Two new studies delve into the factors most likely to lower stroke risk in TIA patients.

In recent columns, we have outlined the increased risk of stroke associated with TIAs. But *can* anything be done to mitigate this risk? If so, what? Fortunately, two recent studies suggest that something can be done. Unfortunately, the intervention is very resource intensive, and the precise nature of the remedy probably varies between different patients. In addition, both studies were performed in foreign countries, potentially making their results not as applicable to the US. Nevertheless, these studies serve as the strongest evidence yet of the potential beneficial effect of acute intervention following TIA in the prevention of stroke.

The first project, called the EXPRESS ("Effect of urgent treatment of transient ischemic attack and minor stroke on early recurrent stroke") study,[1] was performed in England and enrolled 1279 patients. Patients were divided into two time periods. In the first time period (before), a daily TIA/minor stroke clinic was initiated, patients were referred on a routine basis, without urgent appointments, and no changes in medical management were immediately initiated in the clinic. Rather, recommendations were made to the primary care doctor who in turn was supposed to initiate the treatment. Diagnostic testing was done on a routine basis, usually completed within one week of evaluation. In the second time period (after) involving the same clinic, patients were seen immediately, without the need for a formal appointment, and treatment as well as diagnostic testing was initiated rapidly, usually within 24h of symptom onset. Thus, in this study the main variable was speed of the initiation of diagnostic testing and treatment. There was no significant difference in the clinical characteristics of the patients between the two time periods, but the median delay in evaluation fell from three days to <1 day.

The study showed a rather remarkable 80 percent reduction in the risk of a recurrent vascular event in the group that received rapid evaluation and treatment (2.1% versus 10.3%, adjusted hazard ratio 0.20, 95% CI 0.08-0.49, p=0.0001). This reduction was independent of age and sex, and there was no significant increase in hemorrhage risk. Nearly all the risk reduction was evident within the first few days; consistent with prior studies we have discussed showing a significant risk of recurrent vascular events within the first few days after symptom onset.

The second study, SOS-TIA,[2] was performed in France and enrolled 1085 patients, of which 701 (65 percent) had a confirmed TIA or minor stroke, and 144 (13 percent) had a possible TIA. In this study, a similar intervention of rapid evaluation of patients was initiated. Fifty-six percent of patients were seen within 24h of symptoms. As in the EXPRESS study, there was a dramatic 80 percent reduction (1.24% vs 5.96%) in the stroke recurrence rate, though in this case it was compared to the expected stroke rate that was predicted based upon the patients' demographic and medical risk factors using the ABCD2 rule. Similar to EXPRESS, patients were seen without a formal appointment, including on weekends.

Clearly, these studies suggest the substantial potential effect of aggressive rapid neurological evaluation in patients with transient ischemic attacks. However, because of the nature of the intervention, it remains unclear what specific factors were important. It is likely that multiple factors—particularly the identification of patients with large artery disease or atrial fibrillation—and the initiation of antithrombotic, BP control and cholesterol-lowering therapy are contributory.

In addition, and not to be underestimated, all patients were evaluated by expert vascular neurologists, who presumably have expertise that enhanced the effectiveness of the intervention.

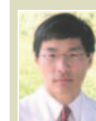
Implications

What is the practical importance of these studies? Clearly, they suggest the importance of very rapid evaluation of TIA patients in order to reduce the risk of future stroke. Waiting even a few days may be too long. Further, the studies indicate that inpatient versus outpatient evaluation is less important than providing rapid comprehensive evaluation led by a vascular expert. Whether these findings apply to routine evaluation by non-expert neurologists is uncertain, particularly given the reluctance of many neurologists to institute preventative measures such as antihypertensive treatment.

In addition, it should be noted that

1. Rothwell PM, Giles MF, Chandratheva A, et al. Effect of urgent treatment of transient ischaemic attack and minor stroke on early recurrent stroke (EXPRESS study): a prospective population-based sequential comparison Lancet 2007; 370:1432-1442.

2. Lavallee PC, Meseguer E, Abboud H, et al. A transient ischaemic attack clinic with round-the-clock access (SOS-TIA): feasibility and effects Lancet Neurol 2007;6:953-960.



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Vascular Clinic

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despite the large investment of time and resources in these studies, only a relatively small minority of TIA patients will have a recurrent ischemic event. Moreover, the severity of the subsequent event was not reported, so it is unclear how much such aggressive interventions will impact on disability. Nevertheless, these studies suggest that an organized rapid system of care can make a substantial impact on acute stroke prevention. It is up to us to implement these lessions and expand upon them in our daily practice. Scheduling follow-up on acute TIA patients on a routine basis appears to be inadequate, and individual practitioners should consider organizing a more rapid triage system, if they are to be caring for such patients. Future studies may help identify what specific factors have the greatest impact on acute prevention, as well as which patients most benefit from acute evaluation. However, until then, all patients should receive a rapid and thorough evaluation. **PN**

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