One-stop clinics are more effective than neurology clinics for TIA

SIR—Approximately 15% of ischaemic strokes are preceded by a transient ischaemic attack (TIA) [1]. Whilst population-based studies initially underestimated stroke risk after TIA, recent studies have found stroke risk to be highest early (approximately 8% at 7 days, 12% at 1 month, and 17% at 3 months) with a rapid decline in risk over the first year [2, 3]. This “warning” event provides an opportunity to prevent stroke, and guidelines highlight the need for rapid access clinics [4–6].

The North American Symptomatic Carotid Endarterectomy Trial Collaborators and European Carotid Surgery Trial established that carotid endarterectomy (CEA) reduces the risk of recurrent stroke in patients with 70–99% stenosis of their symptomatic internal carotid artery [7, 8] and a recent analysis of these trials revealed benefit from surgery to be greatest in those who had CEA early after their event, with benefit falling with increasing delay [9]. Several approaches are currently being used to expedite assessment and treatment of symptomatic carotid artery stenosis. These include fast track carotid duplex services where referrals are made directly to the scanning service and patients with significant carotid artery stenosis are referred to a vascular clinic [10–11], single consultation cerebrovascular disease clinics with investigations performed before clinic attendance [12] and those in which patients are reviewed and investigated at the same clinic. The last option was adopted when we set up a ‘Rapid Access TIA clinic’ at Northwick Park Hospital with a stroke physician, vascular surgeon and carotid duplex service all present. The management of TIAs, particularly the assessment and treatment of symptomatic carotid artery stenosis, was compared between this TIA clinic and pre-existing neurology clinics in the same hospital.

Methods

In one calendar year, patients with a suspected diagnosis of TIA referred to the weekly TIA clinic were compared with patients referred to twice weekly conventional neurology outpatient clinics. Patients were referred to both clinics from both primary and secondary care. Data were collected retrospectively on patient demography and on the overall vascular risk profile including hypertension, diabetes mellitus, ischaemic heart disease, hypercholesterolaemia and cigarette smoking. Data on the time intervals between the following events were calculated: TIA; referral date; outpatient clinic appointment, carotid artery Duplex ultrasound scan, CEA. Using SPSS (version 12) categorical data were compared using Chi-squared tests, and continuous parametric and non-parametric data were compared using two sample t-tests and Mann-Whitney tests respectively. The study was approved by the local research ethics committee.

Results

Over a period of 12 months, 251 patients were referred to the TIA Clinic and 45 patients were referred to conventional neurology clinics. The characteristics of the patient populations are shown in Table 1.

Referrals to the TIA clinic were older than to neurology clinics and had a greater proportion of cigarette smokers but the two clinic populations had similar proportions of hypertension, diabetes and ischaemic heart disease. More patients in the TIA clinic had anterior circulation TIAs whilst more in neurology clinics had a completed stroke or posterior circulation TIA, although the latter was not significant. A large proportion of patients referred to both clinics had diagnoses other than stroke or TIA, including arrhythmias, vasovagal syncope and benign positional vertigo.

Compared with patients seen in neurology clinics, those in the TIA clinic were assessed more rapidly and had less time between TIA and subsequent investigation and treatment of carotid artery disease. The time intervals between patients’ TIA and its assessment, investigation and management are shown in Table 2.

Discussion

This study showed that the one-stop TIA clinic provided faster assessment, investigation and treatment compared with neurology clinics. This is important for secondary prevention to be started early. The combined presence of a stroke physician, vascular surgeon and carotid duplex service in the clinic enabled rapid assessment and treatment for patients with symptomatic carotid artery disease.

It is also important to identify correctly patients with a TIA and it is therefore interesting that about half of patients referred to either clinic had another diagnosis. By providing clinical assessment before starting investigations rather than the other way round, unnecessary requests and anxiety provoking investigations are prevented [13]. In order to improve further the efficiency of a specialist TIA service, screening of inappropriate referrals has been advocated [11].

The study was designed to compare the two clinic populations over 1 year in a single district general hospital. However, in so doing, there was a significant difference in the number of patients in each group and whilst the two groups were well matched for hypertension, diabetes and ischaemic heart disease, patients seen the TIA clinic were older and were more likely to be smokers. Both clinic services were available to both primary and secondary care physicians but
it may be that fewer patients with suspected TIA were seen in neurology clinics due to the large number of other neurological disorders needing evaluation and the fact that as the year progressed, referring physicians may have noticed faster assessment of their patients in the TIA clinic prompting repeat referral. We acknowledge that using a neurology clinic as a comparator for the TIA clinic has limitations but the ‘Rapid Access TIA clinic’ was introduced in response to local clinical need and so a ‘before and after’ comparison with a pre-existing TIA clinic was not possible. However, we are unaware of any previously published data that compares rapid access TIA clinics with pre-existing alternatives.

Limitations of the study include its retrospective nature and the fact that in some cases the patient was unable precisely to date the TIA or the date of TIA or referral was not recorded by the doctor, precluding calculation of appropriate time intervals. Furthermore, the total number of patients studied was limited and this probably led to there being relatively few CEAs performed which reduced the statistical power of our results. However, all patients with symptomatic carotid artery stenosis seen in the TIA clinic underwent surgery within the critical first 3 months [9].

A TIA has been considered as a “warning” event and for stroke prevention to be most effective, patients need to seek medical attention urgently [4]. Whilst this study concentrated on the benefits of introducing a designated TIA clinic to reduce the delay between a TIA and specialist assessment and investigation, the time interval between a patient suffering a TIA and their initial medical presentation to either their general practitioner or emergency department was not evaluated. Measurement of this time interval in future studies would provide useful information that may be helpful in improving stroke prevention strategies.

In summary, this study demonstrates that a designated TIA clinic enables patients with a TIA to be assessed and managed much faster than referral to conventional neurology outpatients. This has implications for the provision of effective, evidence-based secondary prevention of cerebrovascular disease, particularly with regard to optimal treatment in patients with significant carotid artery stenosis.

Key points

- Patients with TIA are at increased risk of stroke and require early preventive treatment.
- In patients with symptomatic carotid artery stenosis, carotid endarterectomy reduces the risk of stroke with the benefit falling with increasing delay.
- A designated TIA clinic expedites specialist assessment and treatment for symptomatic carotid artery stenosis.

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Research letters

Risk factors for functional decline and institutionalisation among community-dwelling older adults with mild to severe Alzheimer’s disease: one year of follow-up

SIR—In view of the present demographic evolution, Alzheimer’s disease (AD) is becoming increasingly common in older people [1]. A better knowledge of the natural history of the disease, such as the risk factors for functional decline or institutionalisation, is useful for resource planning and medical strategies needed for the care of patients. However, most studies of AD only include patients in the mild to moderate stages of disease, omitting the great majority of cases that end with a stage of marked severity which may last many years. Moreover, the few published studies concerning this group have studied institutionalised patients [2].

The aim of this study is to determine the risk factors for institutionalisation and functional decline at 1 year in community-dwelling older patients with mild to severe disease.

Methods

Recruitment

Patients were recruited as part of a larger prospective longitudinal study between 1994 and 2002 in which 585 community-dwelling outpatients with AD aged >65 and ≤85 years were followed-up prospectively in the Alzheimer Centre of the Department of Internal Medicine and Clinical Gerontology at Purpan University Hospital, Toulouse, France. They had a Mini-Mental State Examination (MMSE) score [3] between 10 and 26.

Data collected

Sociodemographic and medical information and the measures of cognitive and non-cognitive performance were collected. Patient’s physical disability was quantified using activities of daily living (ADL) [4] and instrumental activities of daily living (IADL) scales [5], and balance disorders and risk for falls were evaluated by one-leg balance test [6]. Social and familial dimensions of the disease were assessed by the Zarit scale [7]. Institutionalisation occurring during the 1 year of follow-up was recorded. Psychological and behavioural disturbances were evaluated using two different scales: initially, the Cohen-Mansfield scale [8] and, later, the Neuropsychiatric Inventory [9].

Statistical analysis

At baseline, patients were classified into two groups according to the disease stage defined by MMSE score: mild to moderate (MMSE ≥16) and moderately severe to severe (MMSE <16). First, baseline parameters between the two groups (MMSE <16 group and MMSE ≥16 group) were compared. Second, bivariate analysis was conducted to compare the changes at 1 year in cognitive and non-cognitive parameters according to baseline MMSE score. Multivariate logistic regression analysis was performed to study the specific effect of factors associated with moderately severe to severe AD at baseline and with institutionalisation and functional decline at 1 year. Further details of the methods used (sampling, data collected and analysis) can be found in Appendix 1 in the supplementary data on the journal website (http://www.ageing.oxfordjournals.org/).

Results

At inclusion, multivariate analysis shows loss of ADL and IADL, age, altered one-leg balance test, BMI <25 kg/m² and not receiving specific Alzheimer treatment as significant independent factors correlated with MMSE <16.

Regarding living arrangements, at inclusion, the percentage of patients living alone at home is similar in both groups (20 versus 22%; P = 0.547). Caregiver burden is significantly higher among the MMSE <16 group. Eighteen per cent (n = 21) of subjects with an MMSE score <16 and 8.7% (n = 29) of patients with an MMSE score ≥16 are institutionalised at 1 year (OR 2.35, 95% CI 1.28–4.31, P = 0.004). After 1 year of follow-up, multivariate analysis is performed using institutionalisation as the variable to be explained. An increasing Zarit score and change in living arrangement