

survival, highlight the potential for the continuing spread of the epidemic and the need for more health promotion initiatives that have been shown to be effective.

We thank the Camden and Islington Health Authority for its financial support. We thank Dr Andrew Copas for statistical advice. We also thank members of the working group.

Contributors: AN, DEM, and AMJ initiated and designed the study. JPD and AN managed the project. JPD analysed the data, wrote the first draft, and coordinated subsequent revisions of the paper. All authors contributed to the final version of this paper. JPD and DEM are the guarantors.

Funding: Camden and Islington Health Authority.

Competing interests: None declared.

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- (Accepted 22 February 2000)

Retrospective case note review of acute and inpatient stroke outcomes

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The annual incidence of stroke in the community is about 2 per 1000 population,¹ whereas among hospital inpatients it is 11 per 1000.² However, a study that systematically and simultaneously identifies all inpatients experiencing stroke and all patients admitted with stroke does not exist. Previous work on stroke among inpatients has excluded some patients—for example, those with³ or without² obvious iatrogenic predisposing factors. Similarly, although risk factors for stroke have been used as predictors of an event in the context of a study,³ these are often not documented clinically. Secondary prevention is dependent on identification and documentation of risk factors.

We compared outcomes and the identification and documentation of known risk factors in a cohort of patients admitted with a stroke or having had a stroke while in hospital (having been admitted to hospital with a primary diagnosis other than stroke).

Subjects, methods, and results

University Hospital Aintree serves a predominantly urban population of 250 000 and admits about 32 000 patients annually. Its stroke unit has 18 acute and 25 rehabilitation beds. Guidelines for the management of acute stroke are available throughout the hospital.

We identified all patients with a primary diagnosis of stroke (excluding transient ischaemic attacks and subarachnoid haemorrhages) on a stroke register. From October 1994 to March 1997, 100 inpatients with stroke and 1274 patients admitted with stroke were identified prospectively by a 24 hour, on-call stroke research team or retrospectively from the hospital discharge coding. Data collection was by retrospective review of case notes.

Median ages were 75 (interquartile range 67-82) years for inpatients and 74 (66-81) years for admitted patients. Fifty four (54%) inpatients and 647 (51%) admitted patients were female. Forty seven (47%) inpatients and 537 (42%) admitted patients were managed in the stroke unit.

The table shows the numbers of patients for whom known risk factors for stroke were clearly documented and the numbers for whom no documentation existed. According to documentation, cardiovascular risk factors were significantly higher in inpatients whereas previous strokes or transient ischaemic attacks were more common among admitted patients. Documentation was less complete for inpatients than for admitted patients.

Of the 80 (80%) inpatients and 1092 (86%) admitted patients who had computed tomography, 5 (6%)

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BMJ 2000;320:1511-2

Identification and documentation of known stroke risk factors among patients who had a stroke while in hospital and among patients who were admitted with stroke. Values are numbers (percentages) of patients

	Identified			Not documented		
	Inpatients (n=100)	Admitted patients (n=1274)	P value	Inpatients (n=100)	Admitted patients (n=1274)	P value
Cardiac failure	35 (35)	41 (3)	<0.01	60 (60)	954 (75)	<0.01
Atrial fibrillation	32 (32)	253 (20)	<0.01	38 (38)	223 (18)	<0.01
Myocardial infarction	25 (25)	181 (14)	<0.01	30 (30)	207 (16)	<0.01
Angina	19 (19)	138 (11)	<0.03	68 (68)	830 (65)	>0.61
Hypertension	31 (31)	480 (38)	>0.19	30 (30)	196 (15)	<0.01
Diabetes mellitus	11 (11)	149 (12)	>0.88	33 (33)	195 (15)	<0.01
Previous stroke	16 (16)	329 (26)	<0.04	38 (38)	188 (15)	<0.01
Previous transient ischaemic attack	9 (9)	240 (19)	<0.02	56 (56)	334 (26)	<0.01
Ever smoked	39 (39)	685 (54)	<0.01	20 (20)	162 (13)	>0.05

All tests were with Yates's corrected χ^2 .

and 144 (13%) respectively had a primary intracerebral haemorrhage ($\chi^2 = 2.64$, $P > 0.05$).

The inpatients remained in hospital longer after stroke (median 31 (interquartile range 13-59) days) than the admitted patients (16 (6-43) days). Twenty four (24%) inpatients returned to their previous residence, compared with 799 (63%) admitted patients (odds ratio 0.19, 95% confidence interval 0.11 to 0.31). Sixteen (16%) inpatients were newly discharged to an institution, compared with 124 (10%) admitted patients (1.77, 95% confidence interval 0.93 to 3.16), which may partly account for the longer stay for inpatients. Sixty (60%) inpatients died in hospital, compared with 351 (28%) admitted patients (3.94, 95% confidence interval 2.55 to 6.15); stroke was the primary or secondary cause of death for 51 (85%) inpatients and 301 (86%) admitted patients.

Comment

Although the inpatients and the admitted patients were similar in terms of age and sex, inpatients stayed in hospital longer, were more likely to die in hospital, and had less well documented risk factors. Improving staff awareness on medical and surgical wards

regarding the importance of the early identification and documentation of known risk factors for stroke may improve outcome.

We thank Liz Lightbody, Hazel Dickinson, and Dimitrios Theofanidis, who collected data from the European stroke database, and the BMJ reviewers (Gord Gubitz and M J Campbell) for their comments.

Contributors: NA contributed to the interpretation of the results and to writing the paper. KMCD analysed the data and contributed to writing the paper. ML advised on and contributed to the statistical analysis and interpretation of the results and to writing the paper. AS contributed to the interpretation of the results and to writing the paper and will act as guarantor for the paper. CW advised on the results, analysis, and interpretation and contributed to writing the paper.

Funding: None.

Competing interests: None declared.

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Preventing dog bites in children: randomised controlled trial of an educational intervention

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BMJ 2000;320:1512-3

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Dog bites are a major cause of injury, particularly in children.^{1,2} Guidelines on prevention are generally unevaluated and include controls on high risk breeds, keeping dogs on a leash, animal training, and educating dog owners.^{3,4} However, there are no evaluations of interventions designed to teach people how to avoid being attacked by a dog.

"Prevent-a-Bite" is an educational programme designed for primary school children.⁵ The programme aims to instil precautionary behaviour around dogs, assuming that this might reduce the incidence of attacks. A randomised controlled trial of the efficacy of the intervention was conducted in Australian children aged 7-8 years who were presented with an unsupervised opportunity to approach a strange dog.

Participants, methods, and results

Eight primary schools in metropolitan Sydney were randomly selected to participate in the trial. All agreed. The schools were cluster randomised into intervention and non-intervention control schools (four in each group), and two classes in each school were then selected to participate. Altogether 346 children aged 7-8 years took part. The study was approved by the human ethics committee of the University of Sydney.

The intervention consisted of a 30 minute lesson conducted by an accredited dog handler. The handler and dog demonstrated various "dos and don'ts" of behaviour around dogs, such as how to recognise friendly, angry, or frightened dogs and how children should approach dogs and owners when they wanted to pat a dog. Children practised patting the dog in the correct manner (that is, asking permission, approaching slowly, extending the hand palm down, patting the dog under the chin and on the chest, avoiding eye contact, walking away slowly and quietly) and precautionary and protective body posture to adopt when approached or knocked over by a dog. They were also told when not to disturb even a friendly, known dog (for example, when it is sleeping, eating, tied up, or in a car). A resource kit for teachers, which included activities to be undertaken before and after the demonstration, was also distributed.

Seven to 10 days after participating in the programme, children in the intervention schools were let out to play unsupervised in the school grounds. A docile Labrador dog was tethered five metres away from its owner, who was disguised as a tradesman. The children were not told that the dog was there and were videotaped by a hidden camera for 10 minutes. Children in control schools were let out to play in similar circumstances, but they had not received the intervention.