

# Management of cognitive impairment of vascular origin

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A postal questionnaire concerning the management of cognitive impairment of vascular origin was completed by 88 psychogeriatricians and 100 geriatricians. Aspirin was considered an important part of management, and clinically indicated with: a history, or clinical signs of stroke; computerised tomography (CT) scan changes suggestive of cerebrovascular disease; and atrial fibrillation. Advanced dementia was seen as a contraindication for treatment. Eighty per cent of responders indicated they would institute anti-hypertensive therapy in an elderly patient with a history of raised blood pressure and cognitive impairment. The median lower limit of systolic blood pressure requiring treatment was 160 mmHg, with a treatment target blood pressure of 150 mmHg.

Epidemiological surveys and clinicopathological studies have established that cerebrovascular disease is one of the three main causes of dementia (Tomlinson *et al*, 1970; Rocca *et al*, 1991; Ott *et al*, 1995). A variety of pathological processes may be involved, such as multiple cortical or lacunar infarcts and white matter ischaemia (Amar & Wilcock, 1996). There are now established preventative strategies for elderly patients at increased risk of developing stroke: the treatment of hypertension in older adults (Medical Research Council Working Party, 1992), and aspirin therapy (Antiplatelet Trialist's Collaboration, 1994) have both been found to be beneficial. There is still very little research specific to the treatment of vascular dementia, but some evidence does exist to suggest that cognitive function may be improved in those with vascular dementia with control of systolic hypertension and aspirin therapy (Meyer *et al*, 1986, 1989).

## The study

We conducted a postal survey of psychogeriatricians and physicians examining the management of patients with vascular-related cognitive impairment. The term 'cognitive impairment of probable vascular origin' was chosen in preference to vascular dementia to include those suffering with milder and focal impairments not classifiable as global dementia. A short two-sided

questionnaire was circulated to 133 consultant psychiatrists and 195 consultant physicians working with the elderly within four health regions. Returned forms were identified by a number specific for each clinician. Those not responding after six weeks received a second mailing. Results are expressed as percentages, and analysed using SPSS for Windows (1993). Comparisons between psychiatrists and geriatricians were performed using  $\chi^2$  for categorical data, and two-tailed *t*-tests for interval data.

## Findings

A total of 189 questionnaires (58%) were returned. The response rate from psychogeriatricians (88/133; 66%) was much higher than from geriatricians (100/195; 51%). Due to a damaged return, the speciality of one clinician could not be identified. The majority of clinicians (90; 48%) felt that cerebrovascular disease was responsible for less than 30% of patients they saw with cognitive impairment, and 72 (38%) for 30–50% of patients. Geriatricians were more likely to estimate a higher prevalence of probable vascular-related cognitive impairment than psychiatrists ( $\chi^2=10.2$ , *d.f.*=2, *P*=0.006). One-third estimated 50–80% of patients with vascular-related cognitive impairment were receiving aspirin, and only 21 (11%) thought that less than 10% were receiving aspirin. There were no significant differences between psychiatrists and geriatricians ( $\chi^2=5.8$ , *d.f.*=5, *P*=0.33). Possible indications for aspirin therapy in a patient with cognitive impairment are considered in Table 1. There were high rates of potential aspirin therapy in patients with a history or clinical signs of stroke, and brain computed tomography suggestive of cerebrovascular disease. Atrial fibrillation was considered an indication for aspirin by the majority of clinicians, though geriatricians were more likely to prescribe than psychiatrists ( $\chi^2=13$ , *d.f.*=2, *P*=0.002). A history suggestive of 'mixed dementia' was also commonly associated with aspirin therapy (119; 63%). Table 2 considers particular clinical situations which might preclude the use of aspirin. Most viewed severe end-stage dementia, history of peptic ulcer, and

Table 1. Indications for aspirin prescription in patients with cognitive impairment

	Geriatrician and psychiatrist (%)	Geriatrician (%)	Psychiatrist (%)	Significance ( $\chi^2$ )
History of stroke/transient ischaemic attack				
Yes	98	98	99	NS
No	0.5	0	0.5	
Do not know	1.5	2	0.5	
Atrial fibrillation				
Yes	80	89	70	0.002
No	12	9	15	
Do not know	8	2	15	
Clinical signs of stroke				
Yes	87	87	86	NS
No	5	5	6	
Do not know	8	8	8	
CT evidence of infarct or perivascular shadowing				
Yes	87	93	81	NS
No	4	1	7	
Do not know	9	6	12	

cerebral haemorrhage as contraindications, and would exercise caution when there is a history of iron deficiency anaemia, allergy and asthma. The most widely prescribed dose of aspirin was 75 mg (104; 55%), followed by 150 mg (66; 35%).

One hundred and fifty-two responders (81%) felt they would institute anti-hypertensive therapy in a patient with a history of raised blood pressure and cognitive impairment of probable vascular origin, 13 (7%) would not, and 23 (12%) were unsure. The median lower limit of systolic blood pressure considered pathological and meriting treatment in elderly people was 160 mmHg. The median target treatment systolic blood pressure was 150 mmHg. There was no significant difference between psychiatrists or physicians on their perception of a pathologically elevated blood pressure, or treatment target blood pressure. The majority of respondents (119/181; 65%) felt that age would influence their management of hypertension, many practitioners deciding not to treat hypertension beyond the age of 80 unless severe. Diuretics (125/180;

69%), proved by far the most popular choice of drug for first line treatment of hypertension.

Finally, we asked whether responders were prepared to consider warfarin in the management of cognitively impaired persons with atrial fibrillation or other causes of cerebral embolus. Overall 123 clinicians (66%) responded positively, 40 (21%) were reluctant to consider warfarin, and 22 (13%) were unsure. Geriatricians were more likely to consider warfarin than psychiatrists ( $\chi^2=8.9$ , d.f.=2,  $P=0.01$ ).

### Comment

The survey showed a clear consensus that aspirin is generally seen as an important management strategy: history of stroke, transient ischaemic attack, atrial fibrillation, clinical signs of stroke, and CT evidence of infarct or perivascular shadowing are clearly viewed as indicators for aspirin. Aspirin is less effective than warfarin in reducing the risk of stroke in

Table 2. Prescription of aspirin in patients with cognitive impairment of probable vascular origin in particular clinical situations

	Yes n	(%)	No n	(%)	Caution n	(%)
Severe end-stage dementia	11	(6)	166	(90)	8	(4)
History of asthma	51	(28)	52	(29)	79	(43)
Impaired electrolytes/liver function tests	97	(52)	24	(13)	64	(35)
Hypertension	123	(66)	18	(10)	46	(24)
History of peptic ulcer	6	(3)	120	(66)	57	(31)
History of cerebral haemorrhage	7	(4)	151	(82)	26	(14)
Chronic obstructive airway disease	133	(72)	13	(7)	39	(21)
Iron deficiency anaemia	17	(9)	55	(30)	114	(61)

patients with atrial fibrillation, but appears a good compromise in cognitively impaired patients with fewer complications associated with treatment (Lip & Lowe, 1996). The dose of aspirin used by the Antiplatelet Trialists' Collaboration (1994) varied from 75–325 mg, and doses throughout this range seemed similarly effective in reducing vascular events in high-risk patients. However, the odds ratio for risk of hospitalisation from peptic ulcer bleed is lower for 75 mg (2.3), compared to 150 mg (3.2), and 300 mg (3.9) (Weil *et al*, 1995). A history of peptic ulcer and cerebral haemorrhage were seen by the majority as a contraindication for aspirin therapy, and the presence of an iron deficiency anaemia and asthma as reasons for caution. We asked clinicians to consider if they would prescribe aspirin to a patient with a severe 'end-stage' dementia, such as a patient who was immobile. There was a clear consensus that in these clinical circumstances it would be inappropriate to prescribe.

The evidence for treating hypertension in the elderly is now strong, with studies consistently showing reduction in the risk of stroke (Sanderson, 1996). Any benefit of treating those over 80 years of age has yet to be determined; though in a study involving a proportion of patients over this age, Starr *et al* (1996) found a higher mortality in healthy old people with a casual systolic blood pressure above 150 mmHg. Meyer *et al* (1986) found improved cognition in patients with vascular dementia when systolic blood pressure was controlled within the range 135–150 mmHg.

Anticoagulation with warfarin is not without problems in the elderly, and benefits and risk need to be carefully considered. Not surprisingly geriatricians were more likely to consider prescribing warfarin. Adequate supervision of the patient, availability of a monitoring service, risk of falls, and degree of impairment are all important factors.

A questionnaire of this nature is always open to bias, namely responders may take more of an interest in the area of enquiry compared to non-responders. In addition, clinicians' actual practice may in reality differ from their response to questionnaires (Jones *et al*, 1990). We found that the majority of clinicians were in favour of pharmacological preventative strategies for people with cognitive impairment of vascular origin.

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