PAPERS

Depression after stroke: a hospital treatment survey

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Summary

Treatment with anti-depressant drugs of 61 in-patients admitted on account of stroke was studied. Eighteen patients (30%) were being so treated. Only 5 patients (17%) with dysphasia were being treated with anti-depressant drugs compared with 13 patients (41%) without dysphasia ($P < 0.05$). Dosage levels used were generally low and only one patient had been referred for a psychiatric opinion. We suggest that the difference in anti-depressant usage is because dysphasic patients are more difficult to assess and therefore less likely to have depressive symptoms recognized and treatment given. We also think that psychiatric referral should be used more often for assessment of stroke patients and for advice about treatment.

KEY WORDS: stroke, depression, anti-depressant drugs.

Introduction

Depression following stroke is common (Licht, 1975; Slater and Roth, 1969) and may be a cause of failure of rehabilitation (Adams and Hurwitz, 1963; Hook and Espmark, 1973; Brocklehurst *et al.*, 1978). The recognition of depression in a patient who has experienced a stroke may be difficult but has to be based on knowledge of predisposing factors (such as a past history of depressive illness or lack of support from relatives), the manifestations of depression (sleep disturbance, diurnal mood variation, anorexia, psychomotor retardation, hypochondriacal concern over minor handicaps, self-blame, tearfulness) and the time relationship with the stroke itself.

Recognition of this serious complication is important because it is potentially reversible. We have

examined the extent to which depression is recognized amongst hospitalized stroke patients using treatment with anti-depressant drugs as an index of recognition. We have also looked for relationships between recognition of depression and the presence of dysphasia, the side of the cerebral lesion, the time since the stroke, age and sex of the patient and whether the patient is on a geriatric or acute medical ward.

Materials and methods

All patients currently on the acute medical wards of City Hospital and the assessment and rehabilitation wards of Sherwood Hospital, Nottingham were identified from a register of stroke patients kept for research purposes. The medical records and treatment cards were examined and details of age, sex, date of stroke, side of stroke, presence or absence of dysphasia, psychiatric referral and drug treatment were recorded. Cross tabulations were made and chi-square tests of significance applied.

Results

Sixty-one patients were studied, of whom 9 had had a previous ipsilateral stroke (6 patients with bilateral strokes were not included). There were 25 (41%) males and 36 (59%) females with an age range of 55-93 years (median 75 years). Thirty-three (54%) had suffered a right-sided hemiplegia and 28 (46%) a left-sided hemiplegia. Twenty-nine (48%) had dysphasia as judged by the admitting house officer. Eighteen (30%) were receiving anti-depressant drugs and one other patient was receiving imipramine for urinary incontinence.

No patient had been treated with electro-convulsive therapy and only one patient had been seen by a psychiatrist. Eight patients were being treated with mianserin, 5 with amitriptyline, 3 with imipramine,

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one with nomifensine and one with dothiepin. The highest daily dose of mianserin prescribed was 30 mg, but 10–20 mg was more commonly administered. For amitriptyline and imipramine, the usual dose prescribed was 25 mg daily. No patient with a contraindication to treatment such as recent myocardial infarction, heart block or mania was prescribed anti-depressants and none was taking drugs known to interact with anti-depressants. Treatment with anti-depressants was started from 2 to 20 weeks after onset of stroke (mean 10 weeks).

Time since stroke, age and sex of patient did not affect the likelihood of anti-depressant drugs being used. Twenty-eight (46%) patients were on acute medical wards and 33 (54%) on geriatric wards and there was no difference in the proportion of patients being treated for depression. Five (17%) of 32 patients with dysphasia were being treated with anti-depressants compared with 13 (41%) of 29 patients without dysphasia ($P < 0.05$). Significantly ($P < 0.01$) more patients with left hemiplegia were receiving anti-depressants, 13 of 28 compared with 5 of 33 with right hemiplegia. The duration of time since admission to survey was similar for patients with right and left hemiplegia.

Discussion

Previous studies, based on psychiatric interviews and validated questionnaires, suggest that the prevalence of depression in stroke patients is from 30% amongst a group of patients referred to a stroke clinic (Robinson and Price, 1982) to 45% amongst a hospitalized group of patients (Folstein, Maiberger and McHugh, 1977). Thirty percent (95% confidence interval 19–42%) of our patients were receiving anti-depressants, but significantly more patients without dysphasia and with left hemiplegia were being treated. Patients with left hemiplegia are more likely to suffer from irritability, loss of interest and difficulty concentrating than those with right hemiplegia, although depression scores in the 2 groups have been reported as similar by Folstein *et al.* (1977). However, Robinson and Price (1982) found that right hemiplegic patients were significantly more depressed than left hemiplegic or brainstem stroke patients. This evidence is supported by the findings of Lishman (1978) who reported that left cerebral hemisphere lesions produced by head injury were more closely associated with psychiatric disability.

Speech impairment and right hemiplegia are closely related clinical findings and consequently their relationship with anti-depressant use in our study is similar. On balance, it seems possible that dysphasic and right hemiplegic patients are as likely (or even more likely) to become depressed as left hemiplegic patients. It seems probable that dysphasic

patients are less likely to have their depression recognized and receive treatment. They are often not able to clearly state their symptoms and are therefore more difficult to assess.

Relationships between depression and severity of stroke and impaired intellectual function are difficult to determine. We found no association between length of stay in hospital (a possible indicator of stroke severity) and use of anti-depressants. Intellectual function is difficult to measure in dysphasic patients and therefore no comparison of anti-depressant use could be made. However, emotional lability was often recorded as the reason for starting anti-depressant treatment.

Mental barriers to recovery from stroke have been defined (Adams and Hurwitz, 1963) and include behavioural abnormalities due to organic brain damage in both right or left cerebral hemisphere. Behaviour in dysphasic patients may vary depending on the type of dysphasia. Those with primary motor dysphasia (Broca's dysphasia) characteristically respond in a way that appears appropriate and are often depressed, tearful and distressed by their errors when tested. In contrast, patients with primary sensory dysphasia (Wernicke's dysphasia) can present with dramatic psychiatric syndromes. They are usually unaware of their speech difficulties and may be euphoric. They may also feel that their speech is normal but that of others is abnormal which may lead to agitation and paranoid reactions (Geschwind, 1970). Attention has also been drawn to the association between angry reactions such as cursing, biting, scratching and throwing objects which may occur in patients with primary sensory dysphasia (Fisher, 1970). There is, however, no evidence that stroke patients with dysphasia are less likely to be depressed than others.

Depression is not the only 'psychiatric' problem that may occur following a stroke. Problems include personality change, acute confusional state, perceptual difficulties, memory impairment, emotional lability and denial may all occur and hinder rehabilitation (Lishman, 1978; Licht, 1975; Adams and Hurwitz, 1963). Unfortunately, many of these problems are not directly treatable but recognition may help the patient and particularly the family. Disruption of household and leisure activities occurs in over a third of main carers of stroke patients in the first month falling to 6–10% by the end of the first year (Brocklehurst *et al.*, 1978). This may manifest itself as a raised incidence of minor psychiatric problems in spouses of stroke patients.

Dosage levels of anti-depressants used in our survey were generally low and it is possible that patients might benefit from larger doses. Psychiatric opinions should probably be sought more often, particularly with regard to assessment of patients

with dysphasia and for advice about drugs and dosage and type of treatment. There is also need for an appraisal of the effectiveness of anti-depressants in depression following stroke, both in improving mood and functional recovery.

Acknowledgments

We thank Dr G. P. Mulley for useful criticism of the manuscript.

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(Accepted 15 February 1983)