We conclude that home parenteral nutrition is practicable and consistent with an acceptable quality of life, though further work is needed to resolve the nutritional and technical problems.

This work was supported by grants from the Danish State Research Council (No 512-8507), P Carl Petersen's Fund, and King Christian X's Fund.

References

- ¹ Bordos, D C, and Cameron, J L, *Archives of Surgery*, 1975, **110**, 439.
- ² Broviac, J W, and Scribner, B H, *Surgery, Gynecology and Obstetrics*, 1974, **139**, 24.
- ³ Ivey, M, et al, *American Journal of Hospital Pharmacy*, 1975, **32**, 1032.
- ⁴ Jeejeebhoy, K N, et al, *Gastroenterology*, 1976, **71**, 943.
- ⁵ Rault, R M J, and Scribner, B H, *Gastroenterology*, 1977, **72**, 1249.
- ⁶ Shils, M E, *American Journal of Clinical Nutrition*, 1975, **28**, 1429.
- ⁷ Solassol, C, et al, *Annals of Surgery*, 1974, **179**, 519.
- ⁸ Dudrick, S J, and Long, J M, *Annual Review of Medicine*, 1977, **28**, 517.
- ⁹ Broviac, J W, Cole, J J, and Scribner, B H, *Surgery, Gynecology and Obstetrics*, 1973, **136**, 602.
- ¹⁰ Riella, M C, and Scribner, B H, *Surgery, Gynecology and Obstetrics*, 1976, **136**, 602.
- ¹¹ Kay, R G, et al, *Annals of Surgery*, 1976, **183**, 331.
- ¹² Weismann, K, Fischer, A, and Hjorth, N, *Ugeskrift for Laeger*, 1976, **138**, 1403.
- ¹³ Heizer, W D, and Orringer, E P, *Gastroenterology*, 1977, **72**, 527.
- ¹⁴ Sanders, R A, and Sheldon, G F, *American Journal of Surgery*, 1976, **132**, 214.
- ¹⁵ Ryan, J A, et al, *New England Journal of Medicine*, 1974, **290**, 757.
- ¹⁶ Warden, G D, Wilmore, D W, and Pruitt, B A, *Journal of Trauma*, 1973, **13**, 620.
- ¹⁷ Ahmed, N, and Payne, R F, *Medical Journal of Australia*, 1976, **1**, 217.

(Accepted 28 March 1978)

Clinical Topics

Clinical check list for diagnosis of dementia

MARJORIE HARE

British Medical Journal, 1978, **2**, 266-267

Summary and conclusions

A clinical check list for testing speech and parietal function as well as memory was used on 200 people admitted to a psychogeriatric assessment unit and repeated four to six weeks later, to see whether those with true dementias could be identified. The finding of errors in all three areas, particularly at the second test, accurately predicted cases with a poor outcome at six months follow-up. Amnesia alone was an unreliable indicator of dementia.

Introduction

The accurate diagnosis of dementia in old age should be possible because it is the only common psychiatric disease with demonstrable lesions, clear clinical signs, and a precise prognosis.¹ Nevertheless, misdiagnosis, particularly overdiagnosis, is common, by at least as much again.²⁻⁴ The usual reliance on defects in memory and changes in personality, both common in the old, may cause misdiagnosis, which is further compounded by variations in the clinical definition of dementia.

"Intrinsic brain failure,"⁵ which produces a global, irreversible, and progressive cognitive dysfunction is the definition used here, and "extrinsic brain failure," or that due to factors outside the brain (and reversible if the causative illness is treated), is called a confusional state. Alzheimer's dementia and arteriosclerotic damage of the diffuse and global, rather than focal, type have a similar prognosis, with half the patients dying within six months of admission and the other half dying within two years; they do not recover. In this study dysfunction in three cognitive areas and its progress was surveyed and the

predictive value of these findings compared with those of other diagnostic procedures.

Method

A modification of the Kew test used by McDonald⁶ to differentiate patients with true dementia from all those admitted with the diagnosis was used (see figure) to detect faults in memory (recent, intermediate, and remote); aphasia (expressive and receptive); and parietal signs (see figure). Altogether 214 alternate patients admitted to a psychogeriatric unit for patients aged over 70 were tested. The unit was an intensive unit with full supporting services and generous geriatric help. Stay for assessment and treatment was limited to four to six weeks. The initial diagnosis was made before or on admission and the final diagnosis on discharge.

The Kew test was given to all patients one to three days after admission and then again before discharge. They were followed up six months after admission, and their degree of independence was recorded; they were classified as dead, still in hospital, in sheltered accommodation, or independent at home. Patients at home but attending the day hospital every day were counted as sheltered. Four patients died at home from unrelated diseases and these were counted as having been discharged home. A total of 68 patients were referred for psychological testing, in which a battery of tests was used including the shortened Wechsler test with the block design subtest.

Results and comment

Fourteen patients were excluded because of insufficient information (usually owing to early discharge or death). The remaining 200 (132 women and 68 men) had an average age of 77 years. The results of testing and the outcome at six months are shown in table I. The number of patients with errors in all areas fell from 95 on admission to 71 at four to six weeks as those with confusional states recovered. The 71 patients who still had errors in all areas after investigation and treatment for four to six weeks had a very poor outcome; nearly half died and only one was discharged to her own home. Admission diagnosis by outcome (table II) showed that, of the 77 admitted with dementias, only 16 had died at six months and 21 had been discharged from hospital, which suggested an overdiagnosis of dementia.

Essex Area Health Authority

MARJORIE HARE, MRCPsych, locum consultant psychiatrist

Memory	Aphasia	Parietal signs
What year are we in? What month is it? Can you tell me two countries we fought in the second world war? What year were you born? What is the capital city of England?	What do you call this (a watch)? What do you call this (a wrist strap or band)? What do you call this (a buckle or clasp)? What is a refrigerator for? What is a thermometer for? What is a barometer for?	Show me your left hand Touch your left ear with your right hand Name the coin in hand named (as 10p or two shillings) No tactile inattention present Normal two point discrimination Draw a square

Questions asked on modified Kew cognitive test.

Twice as many as had originally been diagnosed as having confusional states turned out to be suffering from this condition—which is reversible—and the clearing of these confusions accounted for most of the improvement between the scores on admission and those on discharge. On the other hand, of the 56 patients with the discharge diagnosis of dementia (and based on the full clinical picture, as well as the results of the Kew test) 26 were dead at six months and only three were out of hospital (table II). The 15 patients with global error scores but who were not demented had clinically chronic resistant confusional states. Examples of the changes in individual scores during assessment and treatment are shown in table III.

This poor outcome for those with overall faulty cortical function contrasted appreciably with that for the 30 patients with memory faults only on admission: 27 of the latter were discharged, though nine went to sheltered accommodation. None of these patients with senescent memory loss were demented at follow-up. If severe memory loss had been the only criterion for diagnosing dementia too many patients would have been included. Sixty-six patients had severe amnesia (four or more memory errors in the test on admission), and table IV shows that 23 recovered. On the other hand, 11 patients with lesser memory defects but more ominous temporoparietal signs would have been missed.

Of the 68 patients referred for psychological testing, six were reported as untestable, 10 as not demented (in nine this was clinically confirmed), and 52 as having dementias or organic brain damage. Of these 52, 13 died by six months' follow up, 17 were still in hospital, nine were in sheltered accommodation, and 13 had been discharged to their own homes.

TABLE I—Results of test on admission and at 4-6 weeks according to outcome

Outcome:	Dead	In hospital	In sheltered housing	Discharged home	Total
<i>Results on admission</i>					
Memory errors only ..	1	2	9	18	30
Aphasia or parietal signs ..	4	4	13	14	35
and/or memory defects ..	28	39	10	18	95
Errors in all areas ..	1	1	4	34	40
No errors ..					
Total	34	46	36	84	200
<i>Results at 4-6 weeks</i>					
Memory errors only ..	0	3	14	20	37
Aphasia or parietal signs ..	2	3	9	12	26
and/or memory defects ..	31	36	3	1	71
Errors in all areas ..	1	4	10	51	66
No errors ..					
Total	34	46	36	84	200

TABLE II—Diagnosis on admission and after 4-6 weeks according to outcome

Outcome:	Dead	In hospital	In sheltered housing	Discharged home	Total
<i>Diagnosis on admission</i>					
Dementia ..	16	31	9	21	77
Confusional state ..	3	5	12	9	29
Functional illness ..	13	9	12	51	85
Personality or memory disorder ..	2	1	3	3	9
Total	34	46	36	84	200
<i>Diagnosis at 4-6 weeks</i>					
Dementia ..	26	27	2	1	56
Confusional state ..	7	14	19	19	59
Functional illness ..	1	1	9	58	69
Personality or memory disorder ..	0	4	6	6	16
Total	34	46	36	84	200

TABLE III—Examples of changes in individual scores during assessment and treatment. Scores are shown in order: memory, aphasia, parietal signs

Case No	Diagnosis	Kew error score on admission	Score at 4-6 weeks
1	Senescent memory loss ..	4/0/0	3/0/0
2	Senescent memory loss with superimposed confusional state ..	5/3/5	2/0/0
3	Confusional state ..	5/6/4	0/0/0
4	Depressive pseudodementia ..	5/1/2	1/0/0
5	Alzheimer's senile dementia ..	2/2/1	4/4/3
6	Arteriosclerotic dementia ..	5/1/1	5/4/3

TABLE IV—Outcome in patients with severe amnesia at repeat Kew test

Outcome:	Dead	In hospital	In sheltered housing	Discharged home	Total
≥4 memory defects ..	20	23	11	12	66

Discussion

The failure of amnesia alone to predict the poor outcome expected in dementia suggests that it is an unreliable sign. Amnesia is present in other more benign conditions, including normal old age. Furthermore, the demonstration of one cognitive defect cannot indicate the global impairment, nor can one examination signify the progressive nature of dementia. All these difficulties in the diagnosis and aetiology of amnesia have recently been reviewed in an MRC report.⁷

Mental tests for the old, particularly those for diagnosing dementia, tend to be limited to or dominated by memory. Orientation is sometimes included but this is a function of memory. That the resulting overdiagnosis may have led to an imprecise match between clinical and neuropathological findings is suggested by a retrospective search of case notes⁸ and by another MRC report.⁹ The former suggested affective illness was included and the latter confusional states.

The disappointing psychological reports in this study may have had a similar cause. Psychological tests based on parietal function (and including the Kew test used here) have, however, satisfactorily predicted outcome.¹⁰ Certainly my results do not support the view that failure of memory is the first sign of dementia, though they do confirm the serious prognosis of dementia.

References

- Roth, M, *Journal of Mental Science*, 1955, **101**, 281.
- Savage, R D, *Recent Developments in Psychogeriatrics*, Special publication of the *British Journal of Psychiatry*, 1971, No 6, p 52.
- Larsson, T, et al, *Acta Scandinavica*, 1963, **39**, Suppl p 167.
- Clarke, M, and Weller, J, *British Journal of Psychiatry*, 1974, **125**, 208.
- Isaacs, B, and Caird, F I, *Age and Ageing*, 1976, **5**, 241.
- McDonald, C, *British Journal of Psychiatry*, 1969, **115**, 267.
- Medical Research Council, *Senile and Presenile Dementias*. London, MRC, 1977.
- Simon, A, and Malamud, N, *Psychiatric Disorders of the Aged*, p 328. London, Geigy, 1966.
- Medical Research Council, *Annual Report 1976-77*, p 23. London, MRC, 1977.
- Whitehead, A, *Psychological Medicine*, 1976, **6**, 469.

(Accepted 14 April 1978)