HAEMODIALYSIS IN THE HOME: A PROGRESS REPORT*

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Since we last reported to this association a further 19 patients have been trained in Seattle for home dialysis. There are now 29 in all, 19 men and 10 women. The average age is 37 and all patients but one dialyse three times a week for an average of 27 hours. Twelve of the patients are remote and live between 500 and 2000 miles from Seattle. One patient lives in the Philippine Islands. All these patients are fully rehabilitated.

Equipment

All patients use modified Kiil dialysers, some having a Milton Roy and others a Drake-Willock proportioning pump. Since changing to 1.5% formaldehyde for sterilization there have been no cases of bacteraemia. Furthermore, this enables the patients to store safely and re-use the dialyser up to three times and the blood tubing six or more times with considerable saving in labour and cost (Pollard, Barnett, Eschbach and Scribner, 1967).

Medical aspects

With thrice-weekly dialysis and blood flow rates of more than 125 ml per minute, pre-dialysis creatinine levels of around 12 mg% and B.U.N. levels of 75 mg% are fairly easy to achieve and permit an increase in protein in the diet up to 80 g per day or more. This should further help patients to regain true weight.

Haematocrits average 25%, with a range of 17 to 31%. When the haematocrit falls to an arbitrary level below which the patients develop symptoms, usually 20%, they order and administer to themselves the red cells from a unit of blood. Ten patients have not required blood and in some of these the haematocrit is rising. The others require an average of 0.5 to 2 units of blood monthly.

All but 6 of our patients have diastolic pressures of less than 90 mm Hg, and only one requires hypotensive drug therapy. Dietary sodium ranges from 0.5 to 2 g a day.

Early clinical neuropathy is present in 4 patients, but delay in conduction times without symptoms is present in half of the patients. One patient had symptomatic bone disease and required parathyroidectomy for secondary hyperparathyroidism.

There have been a number of clotting incidents in the cannulae and 50% of the patients are on anticoagulants. There have been no cases of hepatitis either among the home patients or the staff involved in their training.

Complications

Two patients developed pericarditis at a time when they were well dialysed. One patient lived in an area where 4 other cases of pericarditis occurred simultaneously. We think it

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unlikely that this was uraemic pericarditis. A case of pseudomonas septicaemia was cured with colistin but necessitated removal of infected cannulae. Subtotal parathyroidectomy for secondary hyperparathyroidism and bone disease was performed in a 47-year-old woman with polycystic kidney disease who had been on the programme for 12 months. She had persistent hypercalcaemia and raised alkaline phosphatase. All 4 parathyroid glands were adenomatous, one being felt by the patient as a lump in the neck. Bone biopsy showed both osteomalacia and osteitis fibrosa. Following surgery, apart from relief of bone pain, she experienced cessation of “jumping legs” and insomnia.

Recurrent atrial fibrillation during dialysis in a 48-year-old lady required dialysis in the centre. The cause of the dysrhythmia is uncertain and is undergoing investigation at the present time. It is probably related to changes in serum potassium and pH levels. This patient also had an appendectomy at her local hospital with no trouble. We were informed of the event when she was convalescing.

Mortality

Two patients have died, one a 19-year-old girl with systemic lupus erythematosus 30 months after joining the programme. She developed staphylococcal septicaemia, endocarditis, and died with a cerebral haemorrhage. The other was a 35-year-old man, who, following chest pain, had a series of convulsions and died of cardiac arrest 36 hours after his last dialysis. The cause of death was not established at post mortem. It is interesting that his parathyroid glands could not be identified at autopsy. He had never been hypercalcaemic and his alkaline phosphatase had risen only briefly following a fracture some months before death. He had been on the programme for 31 months.

Conclusion

The difference between patients dialysed twice a week in a centre and those dialysing satisfactorily three times a week at home is marked. The latter have fewer health problems, and are permitted a more liberal diet. They have satisfactory blood pressure control and smooth, tranquil dialyses. Their work record is better, they sleep more soundly, and they are independent of the centre. We only hear from them occasionally for problems that cannot be dealt with by their local doctor. Those whose schedule has been increased from twice to thrice weekly dialysis feel so much better that they would not consider returning to the former regime. These facts, together with the lower cost of home dialysis, we believe, make it the method of choice for treating the large number of patients who would otherwise die annually from renal disease and for whom transplantation is not yet available.

REFERENCE