CASE REPORT

103-year-old on dialysis: was it worth it?

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SUMMARY

It is increasingly common for nephrologists to be faced with the question of whether starting dialysis on an elderly patient is appropriate. We present an extraordinary case of a 103-year-old person who has become the oldest patient in our unit, reportedly the world, to not only remain on haemodialysis, but to thrive on it. This case adds to the compelling literature, which suggests that it is indeed the number and severity of comorbidities that is more likely to impact survival than age alone.

BACKGROUND

It is not uncommon for elderly patients to be automatically assumed inappropriate for serious, invasive treatment. This case highlights the difference between physiological age and biological age, and that age should not be the only factor to consider in treatment options.

CASE PRESENTATION

A 95-year-old horologist, known to have chronic kidney disease (CKD) stage 5 from presumed ischaemic nephropathy, was started on haemodialysis after an acute hospital admission with nausea and anorexia from worsening uraemia. He had previously opted for maximal conservative management (MCM) after discussion with his nephrologist on the basis that the benefit, including survival, was likely to be minimal and, in fact, he may be burdened with the impracticalities of attending dialysis and dialysis-associated symptoms. He changed his mind during the acute admission, after discussing in length with the renal team, and realising he would not survive without dialysis. Indeed, it is anecdotally often the case that when patients are in extremis they change their mind, as no amount of counselling beforehand can prepare one for the reality of facing death imminently. Nevertheless, at the time of starting haemodialysis, his comorbidities were hypertension and long-standing intermittent claudication for which he had no previous formal investigation or intervention. He was completely independent, living alone and even continuing his life-long trade in watchmaking.

INVESTIGATIONS

At the time of referral to the renal clinic, he was asymptomatic with stage 5 CKD, without any previous abnormal biochemistry results available. His creatinine was 711 µmol/L, urea 25.5 mmol/L and bicarbonate 14 mmol/L (22–30). He was started on alfacalcidol to address hypocalcaemia, oral bicarbonate to correct acidosis and given intravenous iron and subcutaneous erythropoietin to manage

anaemia, all as part of active MCM. His creatinine slowly deteriorated to 768 µmol/L 4 months later. During this time, he remained asymptomatic and well. Two months later, he then suffered the acute kidney injury, with a creatinine of 1020 µmol/L, which precipitated the hospital admission leading to dialysis.

OUTCOME AND FOLLOW-UP

Immediately after starting haemodialysis, his appetite recovered and he eventually gained 10 kg of weight over the course of the following year and thereafter remained steady. Four years after starting haemodialysis, he suffered gangrene of his right leg, forcing a below-knee amputation which has left him wheelchair-bound. Now, at the remarkable age of 103, he has been on dialysis for 8 years surpassing all expectations. He lives with a private carer, although he is still able to transfer in and out of his wheelchair independently. His cognition has remained excellent, scoring 10/10 on an abbreviated mental test. He enjoys testing his memory and knowledge by watching television quiz shows, much to the delight of his carer who is amazed at how frequently he is still able to correctly answer the questions. His only symptom is fatigue after dialysis, while his appetite has remained excellent. He registered himself as having 0 distress of 10 on a visual scale and does not find dialysis burdensome at all. He believes 'life is good' now, the same as when he started dialysis, and ultimately has no regrets in his decision to start dialysis.

DISCUSSION

The number of older patients on dialysis is rising. The UK Renal Registry shows the percentage of those on renal replacement therapy (RRT) above the age of 70 has increased from 19% to 25% between 2000 and 2013.¹ The 2014 report also continues to demonstrate that survival is poorer with increasing age; the median survival for those aged between 65 and 74 years was 3.4 years and those aged above 75 was <2.5 years. The trend is consistent with Australian and New Zealand Dialysis and Transplant Data (ANZDATA), which shows a 2-year mortality rate on dialysis of 52% in Australians above 85 years, compared to 66% in 75–84 and 75% in those 65–74 years.² Data on even more extreme age (eg, above 95-year-olds) are more limited. In this context of poor outcomes, it has to be debated whether starting haemodialysis at such age is of benefit. One study looking at above 70-year-olds has shown that while survival may be improved in dialysis versus MCM (37.8 months vs 13.9 months, respectively), the RRT patients had higher rates of hospitalisation, and haemodialysis

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patients actually ended up with similar hospital-free days to MCM patients.³ In light of this, our patient, who has now survived for over 8 years, has been remarkable. It is worth noting, however, that the mortality rates on dialysis have improved over the past decade, with patients aged 65 years and above showing a 14.8% absolute improvement in 1 year survival from 1998 to 2012.¹ When haemodialysis first emerged, some older patients were excluded from initiating dialysis. Now with improving technology and outcomes, it has become widely available in the developed world, such that it would be considered unethical for it to be withheld on the grounds of age alone. It is therefore important to understand which patients are likely to sustain a survival benefit with dialysis and which are not. Significant comorbidities are detrimental to survival on dialysis, perhaps more than increasing age. One study showed having even a significant comorbidity (cardiac, respiratory, vascular, diabetes or cancer) conferred a HR of 1.38, compared to 1.24 for increasing age at 5-year increments.⁴ Another study comparing survival in MCM against RRT patients suggested there was a survival benefit in RRT, in those patients above 75 years with a low comorbidity score (29.4 vs 36.8 months survival, respectively); however, this benefit was lost when considering severe comorbidities.⁵ This case highlights how decisions surrounding dialysis should not be determined by age alone but be made on an individual basis. It is important to delve into the patient's social circumstances to weigh up the benefits a patient may encounter, against the difficulties of maintenance haemodialysis, and whether ultimately, there is enough to live for.

Learning points

- Survival rates on dialysis are poorer with increasing comorbidities, which seems to have a stronger impact than age.
- Survival rates on dialysis are improving.
- Age alone should not be a barrier to initiating dialysis.

Contributors AS interviewed the patient and wrote article. AB is consultant nephrologist who reviewed article before submission.

Competing interests None declared.

Patient consent Obtained.

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