

Gradual initiation of dialysis as a means to reduce cost while providing quality health care

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We read with interest the comprehensive Review by R. Vanholder *et al.* (Reducing the costs of chronic kidney disease while delivering quality health care: a call to action. *Nat. Rev. Nephrol.* **13**, 393–409; 2017)¹. In their Review, the authors provide an excellent discussion of the cost of care for patients with chronic kidney disease (CKD) and end-stage renal disease (ESRD) as well as approaches to decrease these costs without affecting the quality of care. We would, however, like to add to the list of proposed approaches to decrease the costs associated with renal replacement therapy, the concept of incremental haemodialysis, whereby patients undergo a gradual transformation from conservative CKD care to dialysis. Although thrice weekly haemodialysis is the standard of care in most parts of the world, patients with ESRD continue to experience low health-related quality of life², accelerated loss of residual kidney function (RKF)³ and high mortality rates, especially in the first year of dialysis initiation^{4,5}. Moreover, dialysis places a huge financial burden on health-care systems.

Gradual initiation of haemodialysis could provide a more individualized approach for patients with incident ESRD, with the frequency of dialysis determined by various criteria, including residual urine volume (RUV), RKF, cardiovascular status (that is, the presence or absence of heart failure), the presence

of comorbidities, findings from pre-dialysis laboratory investigations (for example, acidosis and levels of potassium, phosphorus, haemoglobin, and albumin), nutritional status and self-motivation. For example, once weekly dialysis sessions could facilitate the smooth initiation of dialysis for certain individuals without negatively affecting their social activities, working hours and, theoretically through preservation of RKF⁶ and cardiovascular condition (reported to be the main cause of mortality in the first year of dialysis initiation^{5,7,8}). Such an incremental approach to dialysis initiation also allows additional time to plan for fistula creation and maturation, preserves RKF and decreases health-care costs⁹. Cost reductions would not only result from the reduced number of haemodialysis sessions, but would also ensue due to vascular access preservation owing to the lower frequencies of punctures, reduced hospitalization from myocardial ischaemic events (as preserved RKF⁶ and RUV enables a lower ultrafiltration rate, which is associated with a low risk of myocardial stunning)⁹ and reduced absence from work.

Approaches to introduce such a strategy, however, face two main problems. The first involves teaching nephrologists to identify patients who might benefit from incremental haemodialysis². The second issue relates to approaches to monitor RKF and when

to increase dialysis frequency. We suggest that RKF monitoring could be simplified through the use of daily RUV¹⁰, instead of more cumbersome methods such as 24 h urea or creatinine clearance. Implementation of incremental haemodialysis will eventually cut the cost of dialysis, at least in the first year of dialysis initiation.

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Competing interests statement

The authors declare no competing interests.