REPLY

Further approaches to reduce the cost of renal replacement therapy

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We read with interest the comment by M. E. Elrggal and R. Zyada (Gradual initiation of dialysis as a means to reduce cost while providing quality health care. *Nat. Rev. Nephrol.* <http://dx.doi.org/10.1038/nrneph.2017.135>; 2017)¹ regarding our article discussing how to combat costs of kidney disease care (Vanholder, R. *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)².

In their correspondence, the authors add to our proposed approaches to reduce the costs of renal replacement therapy, by suggesting the use of incremental haemodialysis (that is, starting patients on dialysis with one or two sessions per week instead of the habitual three) as another means to reduce financial stress on health-care systems. On the basis of mathematics alone, this approach would undeniably reduce costs. Nevertheless we think this concept should be regarded with care, as stated in a 2014 comment by members of our group³ on a position statement propagating this approach⁴.

In looking at the conditions that are required to consider someone for incremental dialysis^{3,4}, one might realize that many patients initiating dialysis do not match these criteria, especially if the 2011 recommendations to start dialysis only in symptomatic patients are taken into account⁵. Most of these restrictions indeed refer to patients with symptoms or disorders that lead to conditions necessitating dialysis initiation, such as fluid overload, heart failure, hyperkalaemia, hyperphosphataemia and malnutrition. Hence, each time dialysis is needed to combat fluid overload (and by extension any other symptom or disturbance that would necessitate start of dialysis), restricting the number of sessions might increase the risk of complications due to the irregularity of the treatment scheme (for instance, by having to

remove too much plasma water by ultrafiltration or by enhancing the so-called ‘saw-tooth pattern’ of metabolic markers). On the other hand, if a patient has no symptoms, no intrinsic need to start dialysis exists, not even at one dialysis session per week.

Elrggal and Zyada attribute the high mortality associated with early dialysis to dialysis intensity, but no hard data exist to support this thesis, and we are not aware of any controlled studies that favour incremental dialysis. Of note, the long weekend interval is a notorious cause of dialysis mortality⁶, which is difficult to reconcile with a philosophy propagating even longer intervals, and to our knowledge the only conclusive controlled study on dialysis timeframes showed a survival advantage of increasing, not decreasing, frequency⁷.

Hence, incremental dialysis might be an option for starting haemodialysis, but it should in our opinion be applied in carefully selected patients. In addition, as this option cannot be used in all patients, can only be used for the first months of dialysis, after which residual kidney function declines, and it is very likely that more structural interventions will be needed², one wonders whether societal financial relief will be substantial. How and when to increase the frequency of dialysis sessions in these incremental schemes also remains unclear. We agree that incremental dialysis might be a useful option, especially in low and middle income countries like Egypt. However, we remain convinced that in those countries as well as elsewhere, the options of kidney transplantation, peritoneal dialysis and kidney disease prevention are underexploited, and that it is the responsibility of the nephrological communities around the world to propagate those solutions, which very likely will have more impact on health economics than will incremental dialysis.

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doi:10.1038/nrneph.2017.136

Published online 25 Sep 2017

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Competing interests statement

The authors declare no competing interests.