

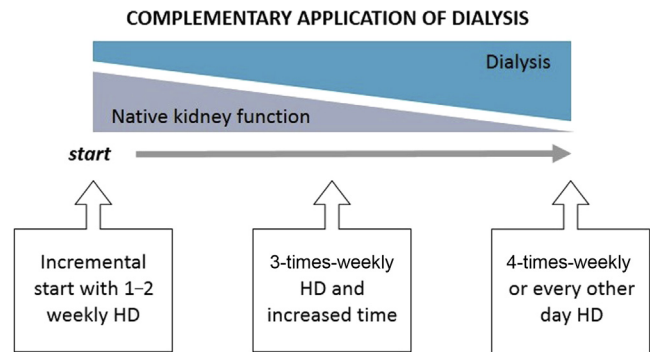
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**The Author Replies:** We thank Dr. Bolasco for his insightful comments.<sup>1</sup> We agree that “incremental” hemodialysis and “infrequent” hemodialysis can be viewed as different approaches for prescribing hemodialysis in incident patients who manifest residual renal function (RRF). Infrequent hemodialysis, with a once- or twice-weekly treatment schedule, emphasizes a complementary dietary management schema that often involves some degree of dietary protein restriction. Dietary protein restriction has been used as an adjunctive measure to delay dialysis initiation and reduce dialysis frequency in incremental treatment regimens. Decades ago, Locatelli *et al.*<sup>2,3</sup> and Morelli *et al.*<sup>4</sup> proposed an “Integrated Dialysis Diet Program” that focused on maintaining a predialytic blood urea nitrogen of <90 mg/dl on once-weekly hemodialysis by implementing a very low protein diet in the range of 0.3 to 0.4 g/kg per day, supplemented with essential amino acids for 6 days a week. These patients had very low levels of RRF. After 1 year, there was >50% dropout, and patients developed worrisome clinical signs, including loss of lean muscle mass and worsening uremia (e.g., decreased distal nerve conduction velocity), leading the authors to advise against broad application of this management strategy. Learning from those experiences, Caria *et al.*<sup>5</sup> proposed a “Combined Diet Dialysis Program” that instituted a less restrictive protein diet (0.6 g/kg per day) on nondialysis days while ensuring adequate dietary energy intake and unrestricted protein intake on hemodialysis days. Adherence to this strategy was improved with no dropouts. It was noted that the Combined Diet Dialysis Program was best suited for patients with less impaired RRF, good motivation, and ability to stick with the outlined diet. Other authors have supported use of adjunctive dietary therapy to less frequent dialysis.<sup>6,7</sup>

Incremental hemodialysis can really be viewed in the same manner. In our article, we emphasized the importance of formally measuring and calculating urea clearance in patients considered for an incremental schedule; however, the dietary angle is by no means trivial and should be considered. In fact, to truly gauge protein catabolism in patients with end-stage renal disease with



**Figure 1.** Idealized prescription of hemodialysis (HD), taking into account urea clearance (residual kidney as well as dialyzer), volume removal needs, clinical condition, and patient’s quality of life. Patients with no residual renal function may start immediately on the right side of the diagram, whereas those with substantial residual function may stay for some time on the left side.

RRF, knowing the urine urea nitrogen excretion is required. Determination of optimal protein intake when incremental or infrequent hemodialysis is prescribed is not an easy task, with protein malnutrition versus excessive protein breakdown-product accumulation in the balance.<sup>7</sup>

Observations that less than thrice-weekly dialysis may not confer a higher mortality risk when used in the appropriate setting are encouraging.<sup>8,9</sup> Given the positive association of RRF on hemodialysis patient survival, twice-weekly therapy may provide better prolongation of RRF, especially if used in the high-risk period during the transition from advanced chronic kidney disease to end-stage renal disease. Conversely, patients with a high burden of comorbidities may require more frequent hemodialysis, even at the beginning of end-stage renal disease, and should be given the correct corresponding dialysis prescription.

At the end of the day, whether you call it “infrequent” or “incremental” hemodialysis, we are all striving to prescribe hemodialysis in the same manner as we would for any other medication: (i) to provide the correct dose, (ii) at the correct frequency, (iii) monitoring for side-effects and efficacy, and (iv) considering alternative and adjunctive treatments. Semantics aside, both approaches are meant to optimize patient clinical status and quality of life with less than the typical thrice-weekly hemodialysis schedule, when circumstances allow. Thus, prescribing hemodialysis, including its frequency, should use an individualized approach in lieu of a “one-size-fits-all” strategy (Figure 1).

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