LETTERS TO THE EDITOR

A Reason for Choosing Peritoneal Dialysis: Lessons After the Japan Earthquake and the Fukushima Nuclear Accident

To the Editor:

Recently Ghaffari1 described a safe and effective urgent-start peritoneal dialysis (PD) program. As the author discussed, PD provides outcomes similar to hemodialysis (HD) and has several advantages. In Japan, in addition to traditional PD therapy, HD/PD combination therapy, which comprises 5 or 6 days of PD combined with one HD session per week, is used for patients to control body fluid and remove solutes more effectively.2 The other advantage of the combination therapy is the availability of the treatment in emergency situations, such as natural disasters. The Japan earthquake in 2011 and subsequent Fukushima nuclear accident adversely affected dialysis patients not only in the destroyed and radioactively contaminated areas, but also in the adjacent areas. Medical resources were temporarily limited because of an increased influx of patients from the disaster zone, shortages of dialyzers and dialysates, and scheduled blackouts. In addition, patients experienced difficulty reaching hospitals due to traffic paralysis. At Kashiwa Hospital of Jikei University School of Medicine, 10 combination-therapy patients were forced to stop HD sessions for 2 weeks. However, because they could continue to perform PD even without being able to travel to a medical facility, their interdialytic body weight gain, serum urea nitrogen level, and creatinine and potassium levels were not significantly different before and after the earthquake (Table 1). Our experience shows the reliability of PD in emergency situations and should further encourage using PD as the initial modality of renal replacement therapy.

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<th>Table 1. Body Weight Gain and Laboratory Measurements</th>
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<td>Before Earthquake</td>
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<tr>
<td>Body weight gain relative to dry weight (%)</td>
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<td>Serum urea nitrogen (mg/dL)</td>
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<td>Creatinine (mg/dL)</td>
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<td>Potassium (mEq/L)</td>
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Note: Measurements of 10 combination-therapy patients were obtained at the beginning of hemodialysis sessions before and 2 weeks after the earthquake and are expressed as mean ± standard deviation. Conversion factors for units: serum creatinine in mg/dL to μmol/L, ×88.4; serum urea nitrogen in mg/dL to mmol/L, ×0.357. No conversion necessary for serum potassium in mEq/L and mmol/L.

References


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In Reply to ‘A Reason for Choosing Peritoneal Dialysis: Lessons After the Japan Earthquake and the Fukushima Nuclear Accident’

Natural disasters, especially those that affect transportation, electricity, and water supplies, highlight the dangers posed to patients with end-stage renal disease (ESRD) who are treated by hemodialysis (HD). Within the United States, Hurricane Katrina affected close to 6,000 dialysis patients. Despite evacuation plans, 44% of HD patients displaced by Katrina reported missing at least one HD session, whereas 16.8% reported missing 3 or more sessions.1

Kimura et al2 describe their experiences during the 2011 Japanese earthquake. In this natural experiment, 10 Japanese patients with ESRD who previously were treated with a combination of HD and peritoneal dialysis (PD) were forced to stop HD treatment for 2 weeks, but because they were able to continue PD treatment, there were no untoward results. Consequently, the authors advocate for combination therapy as well as PD as an initial modality of dialysis.2 With more than 92% of all patients with ESRD in the United States receiving in-center HD, practitioners tend to forget the main advantages of PD: technique simplicity and patient independence. Continuous ambulatory PD is well suited for patients with ESRD during natural disasters because it does not require electricity or transportation to a dialysis facility and can be performed easily by most patients (or family members). This is just one more reason to support a “PD-first” model for dialysis services, especially for patients in areas at risk of natural disasters.

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References


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Renal Replacement Therapy Dosing in Acute Kidney Injury

To the Editor:

We read with interest the review by Vijayan and Palevsky concerning renal replacement therapy (RRT) dosing in acute