Kobe Earthquake and the Patients on Hemodialysis

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Dear Sir,

A destructive magnitude 7.2 earthquake hit the City of Kobe at 05:46 h on January 17, 1995. It brought various forms of social, economical, and medical chaos [1]. In the wake of the disruption of normal city life, the facilities of hemodialysis severely collapsed together with the lack of supply of dialysate and water affected the health of patients on dialysis. We report the physical influence of the quake on the patients undergoing hemodialysis in our dialysis clinic.

Out of our 70 patients on dialysis, 62 (40 male, 22 female, mean age 54.9 years) responded to the questionnaire regarding the length and frequency of dialysis before and after the earthquake, the grade of damage to house and lifelines, and somatic problems. In 50 patients (31 male, 19 female, mean age 56.1 years) it was possible to examine the cardiothoracic ratios (CTR) with chest X-ray film before (January) and 1 and 3 months after (February and April) the hit.

Of the 62 patients, 28 had severely damaged houses and 15 lived in the shelters. Previously, most of the patients had undergone 3-5 h of hemodialysis 3 times/week. However, 27 patients had the opportunity of obtaining a first postquake dialysis over 3 days (range 3-7 days) after the last dialysis and the postquake dialysis was of 3-4 h duration at several different unaffected institutions outside the City of Kobe. This situation lasted for a few weeks. One patient was emergently admitted because of lung edema. A small but significant increase of CTR was observed in the chest roentgenograms after the earthquake. CTR was $49.72 \pm 0.74\%$

(January), $50.73 \pm 0.82\%$ (February), and $50.33 \pm 0.89\%$ (April) ($p < 0.05$, January vs. February by Bonferroni's test).

Thus, the patients with chronic renal failure hardly could get the treatment of hemodialysis as frequently as before, and this inadequate management might produce the cardiac enlargement. This might also be partly due to the inevitable lack of sodium restriction which was observed in most shelters as well as in our university hospital [S. Tsuchie, RD, pers.

commun.]. The quick construction of fine networks among various dialysis centers, especially in a highly populated city, is mandatory for the antidisaster measurements for catastrophic medical crisis possibly emerging in the future.

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Reference

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