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Outcome of patients on haemodialysis in Khuzestan, Iran

Sir

The prevalence and incidence rate of patients treated for end-stage renal disease (ESRD) undergoing haemodialysis is increasing in Iran, from 98 and 38.2 pmp to 169 and 66 pmp in 2004, respectively [1, 2]. Although many studies on the survival of patients with ESRD have been done in developed countries, lack of data from developing countries still exists.

This epidemiologic retrospective study was conducted in patients with ESRD referred to nine haemodialysis centres in Khuzestan province of Iran. The period of study was 15 years, started in 1994 and finished in 2009. Haemodialysis was performed for 9–12 h, three times a week, using semi-synthetic (cellulose diacetate) or synthetic (polysulphone) dialysis membranes. Acetate-based dialysis solution was used till January 2006 and bicarbonate-based dialysis solution, thereafter, at a delivered bicarbonate concentration of 35 mEq/L. We included only patients with ESRD on maintenance haemodialysis treatment, who were dialysed >90 days before entering the study. Patients who died within the first 90 days of commencing dialysis were excluded. Other exclusion criteria were incomplete data of patients, haemodialysis because of acute renal failure, kidney transplantation or peritoneal dialysis as renal replacement therapy at any time of study. The study was carried out under the approval of Ahvaz Jundishapur University of Medical Sciences Ethical Committee.

Over a 15-year period follow-up, overall 1312 patients with ESRD underwent haemodialysis in nine haemodialysis centres. After exclusion, data were analysed of 846 patients, 467 (55.2%) were male and 379 were female (44.8%). At the start of haemodialysis, the mean age of all patients was 51.8 ± 17.0 years (range, 6–90 years). The survival analysis was performed in 846 patients. The mean and median follow-up duration were 32.7 and 23.0 months, respectively. The mean patient survival at the end of 1 year was 10.6 months [95% confidence interval (CI): 10.4–10.8], 23.4 months (95% CI: 22.4–24.4) at 3 years, 28.2 months (95% CI: 26.4–30.0) at 5 years, 27.8 months (95% CI: 25.4–29.8) at 7 years and 26.8 months (95% CI: 24.4–29.2) at 10 years of follow-up. Table 1 and Figure 1 show the survival of patients according to diabetic status.

Table 1. One-, 3-, 5-, 7-, and 10-year survival of patients according to diabetic status

	Diabetic		Non-diabetic			All	
	n	%	*n*	%	P-value	*n*	%
1 year	250	70.0	596	82.0	<0.001	846	78.5
3 years	201	26.9	446	50.7	<0.001	647	43.3
5 years	189	9.0	378	28.6	<0.001	567	22.0
7 years	180	3.3	332	13.6	<0.001	512	10.0
10 years	179	0.6	313	4.5	<0.001	492	3.0

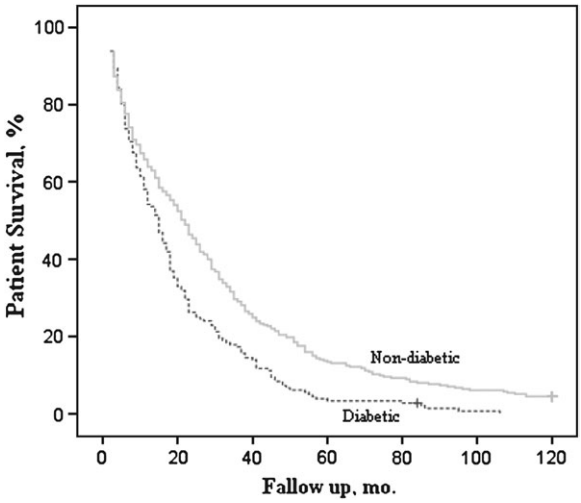

Fig. 1. Ten-year survival of diabetic and non-diabetic patients on haemodialysis patients (0.6 versus 4.5%; $P < 0.001$).

Although maintenance dialysis in patients with ESRD prevents death from uraemia, patient survival remains an important issue. We could not find published data that evaluated 10-year survival of patients on haemodialysis in Iran. This study shows that the survival of our patients is catastrophic and was much lower than that reported from many centres in the UK, Europe, Japan and France [3, 4]. Lower survival of diabetic patients on haemodialysis compared with non-diabetics has been demonstrated in other studies as well. Some factors play a role in the poor prognosis of diabetic patients with ESRD, including cardiovascular diseases, problems with vascular access and arteriovenous fistula, foot ulcers, infection, body weight during haemodialysis intervals and higher drops in blood pressure during haemodialysis. According to the very poor prognosis of diabetic dialysis patients, it appears that using other replacement therapy including kidney transplantation could be more important.

Conflict of interest statement. None declared.

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