

First Year Dialysis Mortality in Patients Previously Enrolled in a Structured Chronic Kidney Disease (CKD) Program

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INTRODUCTION

Providing CKD care in a dedicated CKD clinic has multiple goals. Most research questions regarding these clinics are focused on the prevention and delay of dialysis or transplantation. Another common outcome is survival with advanced CKD. An important goal of a CKD clinic is to make interventions so that people do better after transitioning to dialysis.

Previous studies looking at dialysis outcomes based on prior nephrology care have looked at unstructured pre-dialysis care. We wanted to know if a structured CKD clinic, that focused on pre-dialysis interventions including education, treatment of the complications of CKD, and preparation for dialysis and transplantation, would improve morbidity and mortality in dialysis.

To investigate this we retrospectively matched patients followed in a Detroit area CKD clinic to patients who subsequently developed ESRD and initiated dialysis at Davita run dialysis units.

METHODOLOGY

- Patients from the CKD Clinic and Davita® databases were matched by name and birth date
 - Any patient with a dialysis visit prior to their first CKD visit was censored, similarly any patient who underwent dialysis for 30 days prior to starting at a DaVita facility was censored
- Patients were stratified by the length of time they were enrolled in the CKD clinic: <6 months, 6-12 months, >1 to ≤2 years, and >2 years
- Outcomes analyzed included:
 - One-year mortality
 - Frequency of transplant in first year of dialysis
 - Type of access
 - Biochemical measures at 90, 120 and 180 days

Table 1: Demographics by Length Of Time Enrolled at the CKD Clinic

	<6 months n=34	6-12 months n=40	>1 to ≤2 years n=53	>2 years n=45	Total N=172
Mean Age	60	63	61.5	63.5	62
Race					
Black	15	10	29	18	72 (42%)
Non-Black	17	24	23	26	90 (52%)
Gender					
Female	26	24	30	26	106 (62%)
Male	7	12	23	19	61 (35%)
Access					
Fistula	2	3	13	10	28 (16%)
Graft	10	6	10	8	34 (20%)
Catheter	21	29	30	22	102 (59%)

Note: Missing values of 10 (6%) for race, 5(3%) for gender, and 8 (5%) for access.

Table 3: 90-Day Labs by Time from CKD Visit to First Day of Dialysis

Variable	<6 months n=18 Mean ± SD	6-12 months n=24 Mean ± SD	>1 to ≤2 years n=31 Mean ± SD	>2 years n=25 Mean ± SD
Alb	3.5 ± 0.4	3.5 ± 0.6	3.5 ± 0.5	3.7 ± 0.5
Cal	9.5 ± 0.7	9.2 ± 0.6	9.4 ± 0.5	9.2 ± 0.6
CalPhos	48.9 ± 15.0	44.8 ± 9.2	48.8 ± 14.8	47.6 ± 11.2
Ferritin	382.7 ± 275.1	287.0 ± 186.6	231.5 ± 197.6	302.4 ± 289.8
HCT	37.4 ± 3.7	35.7 ± 6.2	37.5 ± 5.5	37.6 ± 5.2
ISat	29.7 ± 15.5	23.7 ± 10.7	23.3 ± 11.2	31.2 ± 18.2
KTV	1.6 ± 0.4	1.5 ± 0.3	1.4 ± 0.4	1.5 ± 0.3
PTH	336.5 ± 287.0	287.9 ± 138.1	322.8 ± 203.8	500.9 ± 441.0
Phos	5.3 ± 1.9	4.8 ± 1.0	5.2 ± 1.6	5.2 ± 1.3
URR	71.8 ± 6.9	68.8 ± 9.9	65.7 ± 13.4	70.1 ± 6.6

Figure 1: % of patients who died

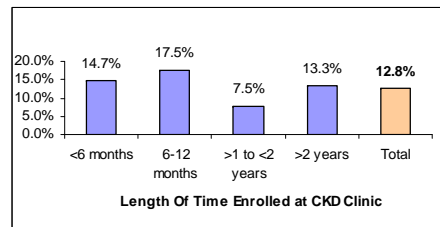


Table 2: Patients receiving a transplant

<6 months: 3 (8.8%)
 6-12 months: 3 (7.5%)
 >1 to ≤2 years: 4 (7.5%)
 >2 years: 4 (8.9%)
Total: 14 (8.1%)

RESULTS

- Data were collected on 213 patients at the CKD clinic and 172 patients met enrollment criteria (Table 1)
- 16% had fistulas in place
- 22 (12.8%) of patients died at one year (Figure 1)
- 14 (8.1%) patients received a kidney transplant (Table 2)
- We were unable to detect any relationship with the length of CKD treatment and biochemical or dialysis measures (Table 3)

CONCLUSION

- One-year mortality is less than half the first year mortality for Renal Network 11 (12.8% vs. 22.6%)
- We could not detect a "dose effect" such that lengthening the exposure time in the CKD clinic did not influence biochemical outcomes while on dialysis or mortality
- Factors other than traditional quality measures or physician visits may influence mortality
- Our analysis currently is lacking a control group and we have yet to analyze the specific interventions made in the CKD clinic. Both analyses are being conducted
- First year of dialysis has been identified as a high risk time for dialysis patients. Given the lack of dialysis interventions associated with higher survival, looking at pre-dialysis interventions may prove fruitful

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