Lebanese Society of Nephrology & Hypertension

DEMOGRAPHICS AND CLINICAL PROFILE OF PATIENTS INITIATED ON HEMODIALYSIS IN LEBANON

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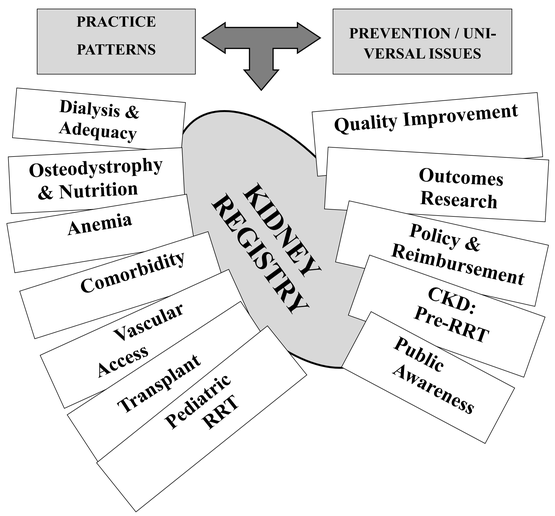
Abstract: The launch of a national kidney registry in Lebanon is underway and is set for March 2011. Data will be entered on site into a web-based database and deposited into a central file, with the goal of generating a public annual report and a confidential facility report that can be used for internal quality improvement by the facility. Complete demographic and dialysis initiation data will be captured for the first time for all incident patients during a 12-month period, and for over 2600 prevalent patients undergoing hemodialysis (HD) at 56 hospital-based dialysis centers in Lebanon. The initiation data include history of specific chronic kidney disease (CKD) management prior to dialysis, vaccinations, existing comorbidities, ongoing medications, laboratory values and history of vascular access creation. The collection of this data started in November 2010 and will be completed by end of February 2011 for all patients starting dialysis in the past 6 months and will continue routinely after the launch of the registry.

The planning and development of the national kidney registry comprehensive database was based on the experience gained from a pilot study conducted during 2007-09 at 18 dialysis centers. There were 1164 prevalent HD patients included in the study, of which 113 had initiated dialysis during the 6 months prior to the conduct of the study at the facility. The mean age of these incident patients was 60.9 years (± 14.6, median = 63.5 years), consisted of 58 males (51.3%), 57% had elementary education or lower and only 14% were working. About 40% initiated dialysis using a fistula, 1% using a synthetic graft and 49% using a temporary or permanent catheter (data missing for 11%). Mean hemoglobin was 9.8 g/dL (± 1.45), ferritin 371 mg/dl (± 332, median 205), transferrin saturation 44%, calcium 8.5 mg/ml (± 0.94), phosphorus 5.6 mg/ml (± 1.9), iPTH 462 pg/ml (± 493, median 264) and albumin 3.4 mg/ml (± 0.9, median 3.7). Comprehensive real-time incident data for patients initiating HD can prove to be of great value in informing a prevention plan in CKD patients prior to renal replacement therapy.

INTRODUCTION

The national kidney registry (NKR) for Lebanon has been 18 months in the making. During that period, the number of dialysis units grew from 54 to 59 and the estimated number of prevalent HD patients in Lebanon increased from 2400 to 2700.

The inception of the NKR was overseen by a scientific committee formed of Nephrologists representing the seven medical schools in Lebanon, the Lebanese Society of Nephrology and Hypertension and the Lebanese Ministry of Health. The project gradually evolved into a kidney disease research program (KDRP) with the NKR as its centerpiece.



Launch of the National Kidney Registry

The official launch of the NKR was set for March 2011. Up to April 20, 2011; thirty one facilities of the 59 total have been initiated and trained on the use of the web-based electronic database. The date of the last dialysis session of each month is used to key the monthly updates which fall into 7 modules: dialysis parameters, anemia, mineral balance, vital signs, adequacy, medications and outcomes & complications. Fixed patient data consist of demographics and dialysis initiation modules.

Fourteen of the initiated facilities have started entering real-time data into the registry.

Research Program: The concurrent research program was launched in late 2010. Eight studies are in various stages of progress, all of them are multi-center. The KDRP is planned to engage nephrologists throughout the country in research projects, as well as graduate students, interns, residents and fellows at the seven medical schools.

DIALYSIS INITIATION DATA

A pilot project at 18 dialysis centers in Lebanon was conducted from March 2007 to October 2008, and collected data from 1164 dialysis patients (about 40% of all patients). Of those patients, 113 have initiated dialysis within the last 6 months. This represents an incidence rate of 9 per 100,000 population. Additional preliminary real-time data is now available for incident patients from the recently launched national registry, summarized in tables 1 & 2 below.

Table1: Demographics of Incident HD Patients in Lebanon

Demographics

Parameters	Mean	SD	Minimum	Maximum
Age (years)	60.9	14.6	23	90
BMI (Kg/m2)	25.6	3.5	20.3	32.8

		Frequency
Gender	Male	51.3%
	Female	48.7%
Education		
	Illiterate	30.2%
	Read & Write	9.3%
	Elementary	36%
	Secondary	16.3%
	University	8.1%
Marital Status		
	Married	62%
	Divorced/Widowed	15%
	Single	23%
Living Situation		
	Alone	8%
	With others	92%
Job		
	Working	18%
	Not working	70%
	House wife	11%
	Students	1%
Smoking	Never smoked	36%
	Past smoker	42%
	Current smoker	22%
Payor	Ministry of Health	62%
	Social Security	19%
	Other	19%
Primary Cause of ESRD		
	Diabetes	34%
	Hypertension	36.2%
	Polycystic KD	4.3%
	Other KD	19.2%
	Other / Unknown	5.9%

Clinical Profile of Incident Patients in Lebanon

1. Prior to first dialysis session
- 62% were seen by nephrologist at least once, and on average 2.7 times during past year
- 36% of patients had a fistula constructed, and almost all patients were using a fistula by 6 months after first dialysis.
- 28% used erythropoietin at an average weekly dose of 6000 units
- 30% used oral iron supplementation

2. Vascular Access
- Over 85% used a temporary catheter on first dialysis, about 10% used a fistula and under 5% used a permanent catheter
- Fistula was inserted in upper arm: 52%, lower arm: 24%, thigh:21%
- If Perm-cath was inserted: right jugular 75% & right femoral 17% .
- A graft was used in < 5% of cases

3. Comorbidity at dialysis onset
- Hypertension: 69%, diabetes: 40% & heart disease: 54%.
- About 70% were vaccinated for hepatitis B, and 70% had HCV, HPB and HIV serology done and mostly tested negative.

4. Blood Pressure at first dialysis session

	Systolic	Diastolic
Pre-dialysis:	138	94
Post-dialysis:	124	70

Table 2: Lab Results of Incident HD Patients in Lebanon

Lab tests at initiation

Parameters	Mean	SD	Minimum	Maximum
Hemoglobin	9.8	1.7	5.0	14.5
Serum Iron	36.6	21.6	5.6	102
TIBC	237	76.3	46.8	390
Ferritin	165.9	259.3	11	1359
TSAT	17	9.8	7.1	48.1
BUN	119.5	75.8	28	426
Serum Creatinine	7.9	2.4	2.8	12.1
Calcium	8.1	2	5.4	15
Phosphorus	5.6	1.5	3	9.2
Alk Phosphatase	108.6	44	48	220
IPTH	276.5	243.3	68	799
Albumin	3.65	0.45	2.9	4.4

DISCUSSION

Data on incident HD patients in Lebanon is available for the first time through the NKR launched in March 2011. Results published in this presentation are preliminary, and will be accurately reaffirmed after one full year of real-time incident data is collected. No outcomes data is currently available in connection with HD practices in Lebanon. Such data will also be available at the conclusion of first year.

A few observations in the results are worth noting:

1. The relatively high proportion of patients who saw a nephrologist prior to dialysis initiation (62%) which translated into over 1/3 of patients having a fistula created prior to dialysis initiation, though not early enough to be mature in time for the first dialysis. That also resulted in start of erythropoietin and iron supplementation pre-dialysis in about 30% of patients.
2. The early creation of AVF prior to, or soon after start of dialysis, resulting in a high proportion of patients with AVF used for their maintenance HD (by month 6, over 90% of patients were dialyzing using an AVF).
3. Despite the two prior observations, patients were starting dialysis at high BUN and serum creatinine, corresponding to about eGFR of 7. The potential for earlier intervention to improve the prospective benefit of renal replacement therapy exists, which will possibly improve clinical outcomes.
4. A large proportion of these patients are severely iron deplete at the time of dialysis initiation.

CONCLUSIONS

The information generated by the NKR in Lebanon will stimulate research, impact outcome-driven quality improvement in patient management, inform better prevention planning and provide a platform to guide regulatory and reimbursement decisions.

The NKR in Lebanon is conducted as a web-based electronic database, with secure login for each of the participating dialysis units. Data is updated monthly and results will be published annually in a yearbook and posted on the registry website (www.kidneyregistrylb.com) .

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